

Abstract

FROMM, SUZETTE JOYCE. The Processes that Moderate the Effect of Community Structural Factors on Neighborhood Child Maltreatment Rates. (Under the direction of Craig C. Brookins, Ph.D.)

This study examined the processes that moderate the effect of community structural factors on neighborhood child maltreatment rates. It is hypothesized that social capital (intergenerational closure, reciprocal exchange) and collective efficacy for children (child-centered social control) moderate the relationship between community structural factors and neighborhood child maltreatment rates. This hypothesis was tested utilizing survey data from Harvard University's Project on Human Development in Chicago Neighborhoods, the U.S. Census Bureau and the Illinois Department of Children and Family Services. A multiple regression was conducted indicating that community stability, the number of adults per child, concentrated disadvantage and density predicted child maltreatment rates. Additional regression models indicate that intergenerational closure and reciprocal exchange help to buffer the effects of disadvantage on child maltreatment rates while increasing the rates in affluent communities. There was also indication that child-centered social control buffered the effect of concentrated disadvantage and density while increasing the effect of immigrant concentration on child maltreatment.

Running head: COMMUNITY FACTORS AND CHILD MALTREATMENT
**The Processes that Moderate the Effect of Community Structural
Factors on Neighborhood Child Maltreatment Rates**

by

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Dedication

This dissertation is dedicated to my loving parents, Earl and Joyce Fromm, and my best friend and fiancé, Max Reed. My parent's love and support provided the stability and strength I needed to make it through graduate school. Their belief in my abilities encouraged me to continue moving forward despite my own doubts.

Max, my best friend and partner, came into my life as I began this dissertation. His friendship and love opened my eyes to a social world I did not know existed. I spent many years buried in graduate school before Max came into my life. He showed me a new world, but more importantly, he showed me that having a life did not have to be an impediment to the completion of my degree.

Biography

Suzette Joyce Fromm was born in Joliet, IL. She lived in Shorewood, IL for the first 17 years of her life. She attended the University of Illinois at Chicago from 1991-1994 where she graduated with a Bachelor's of Arts in Psychology. She worked for Harvard University's Project on Human Development in Chicago Neighborhoods from 1994-1995. In 1995, she entered California School of Professional Psychology, San Diego, CA where she earned her Master's of Arts degree in Clinical Psychology. After obtaining her Master's degree she entered North Carolina State University, 1997. From 1997-1999, she completed her coursework at North Carolina State University. Following this, she moved to Chicago, IL to conduct research for Prevent Child Abuse America. In 2004, she remains at Prevent Child Abuse America and has earned her Ph.D. in Psychology in the Public Interest from North Carolina State University.

Suzette was born to Earl and Joyce Fromm. She has one brother, Earl Fromm, two nieces, Holly and Brooke and a nephew, Jared.

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Introduction

We are facing a child maltreatment¹ emergency in the United States (U.S. Advisory Board on Child Abuse and Neglect, 1993). Three children die every day as a result of child abuse and neglect. One million children are victims of substantiated abuse or neglect every year and it is estimated that the number of unsubstantiated cases has reached three million (Sedlack and Broadhurst, 1996).

The effects of child abuse on children are staggering including physical injuries, brain damage, chronic low self-esteem, difficulty with social interactions ranging from problems with bonding and forming relationships to aggressive behavior and irreversible, below average cognitive abilities (Weiss, M. & Wagner, S., 1998; Willis, Holden and Rosenberg, 1992; The National Clearinghouse on Child Abuse and Neglect Information: NCCANI, 2001). The psychological damage caused by child maltreatment is often long-lasting. Adults who were abused as children exhibit many symptoms of suffering including, but not limited to, feeling unloved, suffering from depression and low self-esteem, acting out aggressively, and having poor social skills and post traumatic stress disorder (NCCANI, 2001).

¹ Henceforth, the terms "child maltreatment," "child abuse," and "child abuse and neglect" are used interchangeably. Child maltreatment, scaled by severity, refers to "death, sexual abuse, physical abuse, substance exposed infant, emotional abuse, lack of supervision, environmental neglect, other neglect, and substantial risk of harm" (see Children & Family Research Center, 2002, pp. A-4).

Society also suffers from the burdens of child abuse and neglect. Child abuse and neglect is the root cause of many problems that society faces. Abused and neglected children are at an increased risk for being emotionally and behaviorally disturbed, low academic achievers, drug users, teen parents, juvenile delinquents, and criminals as adults (NCCANI, 2001). The increase in children with these problems has led to an increase in the need for social services. This need is reflected in an increased need for mental health programs, substance abuse treatment programs, police and court interventions, correctional facilities, welfare programs, and job training programs.

In addition to child abuse and neglect being a root cause of many social ills, child abuse and neglect is a root cause of many health concerns (Moeller, Bachman & Moeller, 1993). Adverse childhood exposures have strong long-term associations with the adoption of health risk behaviors, hi-risk health status, disease and death. Child abuse and neglect has been identified as a major risk factor in a large percentage of the risk factors associated with the leading causes of death. Exposure to negative childhood events (abuse, household dysfunction) increases the prevalence and risk for smoking, severe obesity, physical inactivity, depression, suicide attempts, alcoholism, drug use, greater than 50 sexual partners, a history of sexually transmitted diseases and a variety of HIV risk behaviors. The more exposures the greater the risk, and

sadly, most children in abusive or neglecting homes experience more than one exposure (Felitti, 1998).

Fromm (2001) conducted an analysis of the direct and indirect costs of child maltreatment to society. Direct costs refer to the cost of responding to abused and neglected children's immediate needs. These costs may include the costs of medical services and hospitalization to treat injuries of abused and neglected children, the cost of police investigations, the cost of running child protective services, the cost of out of home placement services such as foster care, the cost of programs directed toward family preservation, rehabilitation and treatment (NCCANI, 2001). Indirect costs refer to the long term economic consequences of child abuse and neglect. These costs may include special education, mental health, substance abuse, teenage pregnancy, welfare dependency, domestic violence, homelessness, juvenile delinquency, lost productivity to society (injury, mental illness, incarceration, long term unemployment or death) and adult criminality (NCCANI, 2001).

This analysis determined that a conservative estimate of the cost of child maltreatment to the United States is \$94 billion annually. It is becoming clear that child maltreatment is not just an individual problem. It is a societal problem.

The idea that child maltreatment is a societal concern is not new. Rossi (1967) provided a strong foundation for the notion that childrearing is a societal issue. Rossi examined parenting from a biosocial perspective. He makes the argument that, for the human species, parenting has always been a social phenomena. Throughout history we have raised children in stable environments that had many monitors who took responsibility for childrearing. Rossi goes as far as stating that parenting today is “unnatural” to the extent that parents are disconnected from familial and communal support.

Given the communal nature of child maltreatment, the field of child maltreatment is beginning to embrace an ecological perspective *theoretically*, however, much of the *research* and practice in the field is still focused on individual level variables (Zuravin, 1989). The literature speaks of the importance of understanding the individual in context. However, there is a shortage of research that focuses on understanding the context.

A focus on individual level attributes implies that individuals are responsible for and solely in control of the problem. This line of research tends to inadvertently blame single, young, minority mothers for their situations because statistically they are “high risk” parents. Interventions are focused on changing these individuals, rather than on concomitantly changing the situations that created the problem.

There is a need to understand the socio-cultural milieu that has fostered child maltreatment. This can be done by examining community level factors. Understanding the context of child maltreatment and the mutual influence of the individual and the context will allow for more targeted prevention efforts.

In summary, child maltreatment is a societal problem with far reaching consequences. The field of child maltreatment is beginning to embrace the notion that "it takes a village to raise a child." The field is moving away from individualistic models and moving toward the acceptance of ecological models to explain child maltreatment. This paradigm shift from the individual to the ecological needs to be accompanied by research that uncovers the etiological pathways that exist in the ecological setting. Thus, we cannot only agree that "it takes a village to raise a child", but we can also begin to explain how the village supportively raises the child and how the child and the parent influence the village.

Literature Review

The Tradition of Individual Level Analysis

There are various theoretical models that can be used to approach the problem of child abuse. Every theoretical model implies values about how child abuse is caused and how it should be remedied. Most of the

research focused on the individual parent, or child, is based on a theoretical model derived from the psychiatric/psychological model.

The psychiatric/psychological model

The psychiatric/psychological model of child abuse is focused on analyzing the psychiatric functioning of abusive parents (Wiehe, 1989). Early research and treatment on child abuse followed this model exclusively. This model conceptualizes the problem of child abuse as residing solely within the parent. Therefore, child abuse is caused by parents who experience unresolved intra-psychic conflict. Logically, the treatment to address the problem of child abuse, given this conceptualization, would be extensive psychiatric treatment. With regard to parenting, this model hypothesizes that once insight into unconscious conflict is attained, adaptive parenting changes can take place.

More recently psychologists have attempted to understand child abuse within this model in a slightly different manner. This work focuses on discovering characteristics of abusive parents. This information may assist psychologists with treatment. For example, psychologists have found that abusive parents lack empathy. The treatment focus would be on developing empathy, which could assist with secondary and tertiary prevention efforts.

The Tradition of Group Level Analysis

The sociological model

In contrast to the psychiatric/psychological model, the sociological model focuses on the socio-cultural environment that affects the family in which child abuse occurs (Wiehe, 1989). The model moves completely away from focusing on intra-psychic conflict, or psychological characteristics of parents. This model focuses on social values, and emphasizes the importance of the organization of the culture, the community, and the family.

Examples/findings of group level analysis

The examination of neighborhoods in relation to “child-linked” social problems has a long history within the sociological model (Sampson, 2001). Dating back to the 1920’s, researchers examined the relationship between neighborhood variables (i.e., poverty, residential instability and high rates of crime and delinquency) and outcome variables (i.e., high rates of infant mortality and physical abuse).

According to Sampson (2001), the empirical research examining social ills from an ecological perspective has established certain “neighborhood facts” relevant to children and adolescents. One of these facts is that the neighborhood predictors of concentrated poverty, racial isolation, family disruption, and residential instability are consistently linked to negative child outcomes. Another “fact” is that research

indicates that social problems tend to link together at the neighborhood level. Sampson (2001) also states that the ecological stratification of communities by race, social class, family status and, therefore, crime is a fact. In addition, this phenomenon is robust regardless of the unit of analysis (census tract, block group, or local community area).

More specifically, the sociological model has also found some significant factors related to child abuse. These include: 1) the cultural attitude toward violence, 2) social stress within the family, 3) family size, and 4) social isolation of the family (Wiehe, 1989). According to this model, child abuse is more likely to occur when the culture accepts violent behaviors, there is social stress within the family, the family has many children, and the family is isolated.

The Tradition of Community Psychology

The sociological model's concentration on the group offers a vastly different perspective than that of the individualistic psychiatric/psychological model. Community psychology also offers a correction to the individualistic biases of the psychiatric/psychological model without solely concentrating on the group. This model provides a framework to examine the person-in-context. In order to examine the person-in-context, multiple levels of analysis (the individual, the family, the community, and society) are needed. Perhaps as a backlash to the historical reliance on individual level analysis, the community level of

analysis is receiving much attention in policy statements and in practice (Barry, 1994; U.S. Advisory Board on Child Abuse and Neglect, 1993).

This interest needs to be followed by sound research that offers guidance to policy and practice.

Community psychology studies

Ideally, research utilizing a community psychology approach examines both the individual and the group. New statistical techniques have been developed that allow researchers to study multiple levels of analysis within one study. However, this is not yet the norm. Individual level analysis still offers “state of the art” statistical procedures, whereas community and multi-level analysis are not as precise (Sampson, 2001). For a study to adhere to an ecological framework it does not have to involve all levels in one study. Rather, it needs to have an understanding of the importance of all levels.

For example, in the field of child maltreatment, the individual level of analysis has been studied extensively. Whereas, the community level has been neglected (Korbin, Coulton, and Furin, 1995). Studies that focus solely on the community level can offer insight into the person-in-context by adding an understanding of the context to the existing research on the person. Future research can build upon these findings and examine multiple levels together in one study.

Since there is a lack of understanding of the context of child abuse and neglect, a concentration on the community level is appropriate at this time. Social organization theory complements a community psychological approach by offering a framework for exploring the impact that community structures have on child maltreatment.

Social Organization Theory

Social organization theory provides a good framework for examining the community factors related to child abuse and neglect (Coulton, Korbin and Su, 1999). Social organization is “the ability of a community structure to realize the common values of its residents and maintain effective controls” (Sampson and Groves, 1989) and (Kornhauser, 1978) as cited in (Sampson, 2001). This perspective suggests that social organization is related to community outcomes such as child abuse. More specifically, the theory states the processes by which organizational structures of a community lead to outcomes in a community (Bursik & Grasmich, 1993; Sampson, 1991; Sampson and Groves, 1989). For instance, neighborhood structural factors such as stability, affluence, and collective action lead to pro-active parenting (less child abuse) *by* enhancing that community’s abilities to exert informal social control. Thus, the theory not only offers a framework for what leads to outcomes, it also offers a framework for how this occurs.

Structural variables represent ecological and demographic aspects of the community that may be associated with outcomes. These typically involve community level poverty or affluence, stability, child-care burden, or immigrant concentration.

The process variables explain how the structural variables affect an outcome. Process variables have been described as "...activating or converting social ties to achieve desired outcomes..." The ties are referred to as social capital. (Sampson, Morenoff, and Earls, 1999).

There are various ways of measuring and conceptualizing social capital. In general, social capital consists of the strengths within a community that act as resources. These strengths are what the community has to draw upon to maintain social controls and ultimately to avoid negative outcomes. These strengths are realized through relationships and efficacious beliefs. Both the relationship and the efficacious beliefs are often placed together under the heading of collective efficacy. Collective efficacy is "...shared beliefs in a neighborhoods conjoint capability for action to achieve an intended effect..." (Sampson, Raudenbush and Earls, 1997)

Sampson et al. (1997) created a neighborhood level measure that would assess social capital and collective efficacy in relation to violence. This measure was originally a two-part scale. The two components in this scale were shared expectations (collective efficacy) about informed social

control and social cohesion (relationships- a form of social capital). These two measures were correlated across communities ($r=.80$) indicating that they were tapping the same latent construct. Although social cohesion is not "a shared belief..." therefore, not within the definition of collective efficacy, it is expected that collective efficacy would be enhanced under conditions of social cohesion (Sampson, 2001). Therefore, the two concepts are combined under the same heading, collective efficacy. The reliability of all the measures at the neighborhood level, coined "ecometric" reliability by Raudenbush and Sampson (1999), was highly reliable (.85) for this scale. "Ecometric" reliability is an integration of a traditional "latent-variable approach with hierarchical linear models (HLM)" that accounts for measurement errors that occur when examining community level factors that have collective properties.

This measure of collective efficacy has since been modified as a measure of collective efficacy for children. Collective efficacy for children focuses on only those aspects of collective efficacy that directly influence the lives of children. The three aspects of social organization that effect children are: intergenerational closure, reciprocal exchange, and child-centered social control (Sampson et al., 1997). Intergenerational closure is the "extent to which adults and children are linked to each other in a community". Reciprocal exchange is "the frequency of social exchange within the neighborhood on issues of consequence for children." Child-

centered social control is “the expectation that neighborhood residents can and will intervene on behalf of children.” Both aspects of the original two-part measure developed by Sampson et al. (1997) are retained in this measure. Intergenerational closure and reciprocal exchange can be viewed as social capital (relationships) within a community. The belief that the community can draw upon these strengths, collective efficacy, is reflected in the third variable, child-centered social control.

Social organization theory provides a good framework for understanding the complex issue of child maltreatment. It provides insight into what (the structural variables) affects child maltreatment and also what moderate these affects. The following sections provide a review of the literature examining the structural variables related to child maltreatment and the social capital and collective efficacy variables that may serve to moderate against the effect of the structural variables on child maltreatment.

Structural Variables Related to Child Maltreatment

Studies that have examined how neighborhood structural factors relate to child maltreatment have similar findings. The variables that tend to relate most consistently to child maltreatment rates are:

- impoverishment,
- child-care burden (number of children: number of adults within a community),

- stability (% of residents five years or older who resided in the same home five years earlier), and
- density (persons per square kilometer).

In 1978, Garbarino and Crouter conducted a study of 93 census tracts in an attempt to identify the neighborhood correlates of child maltreatment. They conducted a stepwise regression with poverty indicators entered first. They found that poverty, female-headed households, residential stability and neighborhood educational level were related to child maltreatment reports. Their data also indicate that biased reporting is not the sole reason for the correlation between poverty and child maltreatment.

Garbarino and Sherman (1980) examined two neighborhood's environments for childrearing. The neighborhoods were matched on socioeconomic level in an attempt to control for poverty, the largest known community level predictor of child abuse and neglect. A multiple regression analysis was utilized to identify a low risk and high risk community. An in-depth, qualitative analysis in the form of an interview was conducted with parents and expert informants in each community. These informants ranged from mail carriers to school principals. The results indicate that high-risk communities exhibit a general pattern of "social impoverishment"; a poor environment for child-rearing. Social impoverishment is a state where families with the highest levels of need

are congregated together competing for scarce social resources such as neighborhood giving, child-care and support systems (Garbarino and Sherman, 1980). In these neighborhoods, there is less organization and cohesion.

Zuravin (1986) examined child maltreatment from a density pathology model. The study examined the impact of residential density on child maltreatment in 202 census tracts in Baltimore. Zuravin found that having greater than 1.51 persons/room was associated with physical or sexual abuse reports, after controlling for ethnicity and social class.

Zuravin (1989) examined seven community characteristics in relation to child maltreatment rates. These were the same variables examined by Garbarino and Crouter (1978). The seven variables included two economic indicators and five social support indicators: affluence, poverty, stability, female-headed households, employed mothers of young children, percentage of single-family dwellings and percentage of vacant housing. She found that all had a correlational relationship with abuse and neglect except for affluence and female-headed households. Instability was correlated with neglect, but not with abuse. Poverty and vacant housing were the strongest predictors of official child maltreatment rates.

Garbarino and Kostelny (1992) studied child maltreatment rates in 77 Chicago communities. They found that 79% of the variation among

community child maltreatment rates can be accounted for by nine neighborhood structural variables: percentage living in poverty, percentage unemployed, percentage female-headed households, percentage living in over-crowded housing, percentage African-American, percentage Hispanic, percent affluent, median education income, and percent resident less than five years. In addition to this quantitative analysis, they undertook a qualitative analysis to try to understand the “community climate.” They utilized a 12-item questionnaire in personal interviews with community leaders. The questionnaire examined neighboring behavior, morale, and perceptions of the social environment. They found evidence that higher morale, community integration and a better quality of life were present in communities that had a low risk (defined primarily by socioeconomic status) of child maltreatment. In addition, social deterioration was related to increases in child maltreatment rates whereas positive community trends were related to decreases in maltreatment rates.

Deccio, Horner, and Wilson (1994) replicated Garbarino and Sherman’s 1980 study. Census tracts were used to map child maltreatment rates. Two neighborhoods were matched based on socioeconomic data, one was identified as low-risk for child maltreatment and the other as high-risk. Interviews were conducted with parents to determine if there was support for Garbarino and Sherman’s finding that

high-risk neighborhoods were “socially impoverished.” The results did not support this notion, however, there were methodological differences. The original study interviewed parents as well as expert informants, whereas this study only interviewed parents. The original study also utilized an open-ended questionnaire, whereas the present study utilized a close-ended questionnaire. Deccio et al. (1994) concluded that Garbarino and Sherman’s model should be expanded from a social support model to a social integration model. Social support simply indicates the quantity and quality of interactions in the community, whereas, social integration involves “membership, participation, and belonging.” Therefore, a community could be socially impoverished even if there are a large amount of quality services/resources available if they do not feel connected to those services/resources.

Coutlon, Korbin, Su and Chow (1995) conducted a study of 177 urban census tracts using census data and administrative data. They found that the structural variables that had significant effects on child maltreatment rates were neighborhood impoverishment, child-care burden, instability and a concentration of female-headed households. This suggests that the same underlying community structural variables are related to many social ills including child abuse and neglect.

Vinson, Baldry, and Hargreaves (1996) conducted a study of two adjacent communities with different rates of child abuse. This study

utilized an ecological framework. Parents ratings of 1) the social environment, 2) the locality as a place to raise children and 3) transport and communication patterns were analyzed in relation to the social support networks. The structure of the social networks was the one significant factor that differentiated between the two neighborhoods. Specifically, in the neighborhood with a higher level of abuse, there was less connection between immediate social networks (family) and distant social networks (i.e., professionals, organizations, school). This supports the supposition that the lack of connection to services and resources predicts "social impoverishment", not the presence of services and resources (Deccio et al,1994).

Drake and Pandey (1996) examined neighborhood factors in relation to physical abuse cases. They found that the rates of substantiated physical abuse cases between low, medium, and high poverty neighborhoods were 1 to 6 to 19, respectively. They also found that neighborhoods with a higher percentage of single parent families had higher rates of physical abuse. In addition, they found that neglect rates were much more strongly associated with poverty than abuse rates.

Coulton, Korbin and Su (1999) examined child maltreatment in 20 Cleveland census tracts. They found that neighborhood structure was related to official child maltreatment rates. They found little variation between neighborhoods in Child Abuse Potential (CAP) scores. CAP is an

individual level survey designed to measure the potential for abusive behaviors.

Summary

In summary, the neighborhood structural variables that have been found to consistently relate to child maltreatment are poverty, female-headed (or single parent) households and residential instability. Other variables that have been linked to child maltreatment are unemployment and education, over-crowding, percent minority, child-care burden and affluence. In addition to examining structural factors, some of the above studies conducted a qualitative analysis to better understand how the structural factors were linked to child maltreatment. Deccio, Horner and Wilson (1994) drew upon the work of Garbarino and Sherman (1980) to posit the notion that "social integration", involving "membership, participation, and belonging", could act as a mediator against the effects of structural variables on child maltreatment. This idea of "social integration" has been more widely studied in relation to other neighborhood outcomes as "collective efficacy." Collective efficacy is the belief that a community has in its' ability to draw upon its' social capital.

Collective Efficacy and Social Capital Related to Child Maltreatment

Few studies exist that examine collective efficacy as a process variable in relation to child maltreatment. Some studies have found that collective efficacy mediates the relationship between neighborhood

structural variables and other negative community outcomes such as violence, homicide and low birth weight.

Sampson et al. (1997) found that social capital, as measured by intergenerational closure and reciprocal exchange and collective efficacy as measured by child-centered social control, have a strong negative relationship with violence even after controlling for neighborhood structural factors such as poverty and for individual characteristics such as race. This study analyzed both official homicide rates and victims reports. Significantly lower rates of violence on both measures were found in neighborhoods high in social capital and collective efficacy. This study also found that the neighborhood structural factors concentrated disadvantage and residential stability were related to social capital and collective efficacy. More importantly, the study indicates that social capital and collective efficacy moderates the relationship between violence and the neighborhood structural variables concentrated disadvantage and instability.

Social capital and collective efficacy have also been found to be related to both homicide and low birth weight even after controlling for neighborhood structural factors and spatial dependence (Sampson, 2001). However, the mediating effect of collective efficacy is smaller for low birth weight babies than for homicide.

There has been some qualitative research that indicates the importance of social capital variables in relation to child maltreatment. Garbarino and Sherman (1980) conducted a qualitative analysis of Chicago neighborhoods. They interviewed parents in neighborhoods and found that lack of social resources was related to child maltreatment rates. Social resources can be viewed as one form of social capital because it is a strength the community has to draw upon.

Garbarino and Kostelny (1992) interviewed community leaders and social service agency personnel in communities of the same economic status, but with high and low rates of child maltreatment. They found that higher morale, community integration, and generally a better quality of life tended to mediate some communities from the effects of poverty. This indicates that when there are strengths within the community to draw upon, social capital, and a belief by community members that these strengths can be accessed, collective efficacy, child maltreatment rates are lower.

Korbin and Coulton (1997) conducted an ethnographic study of 13 high and low maltreatment neighborhoods. They found that diminished social control and low resources were key factors in neighborhoods that had high impoverishment, child-care burden, instability and child maltreatment rates. This study indicates how the lack of social capital is related to higher child maltreatment rates.

Vinson et al. (1996) conducted a study of lower socio-economic status neighborhoods in Australia. They examined two adjacent neighborhoods and found that the community with a higher rate of maltreatment also had a weaker social network, social capital.

Deccio, Horner and Wilson (1994) also conducted a study to examine the effect of social capital defined as neighborhood social support. They found no significant differences in child maltreatment rates between neighborhoods with low levels of social support and neighborhoods with high levels of social support. They concluded that the “ties” to the neighborhood support were more important than the support itself indicating that the presence of social capital alone is not sufficient to mediate against child maltreatment. Rather, there is a need for a belief (collective efficacy) in the neighborhood support (social capital).

Coulton, Korbin, and Su (1999) sought to conceptualize the processes within the neighborhood that mediate the relationship between neighborhood structural variables and child maltreatment. The process measures examined were neighborhood resident’s perceptions of resources and social control, concepts akin to social capital and collective efficacy. They found that the neighborhood structural factors such as impoverishment, child-care burden and instability were related to at least one of the process measures. The process variable “lack of child control” was explained by all three neighborhood structural variables. This study

used a multi-level model to determine if the process variables were acting as mediators. They found no significant mediators after controlling for structural and individual level variables. However, the outcome measure analyzed was the Child Abuse Potential (CAP). CAP is 160-item self-report instrument that measures potential to do harm. It is not highly correlated with official abuse rates and does not measure neglect. Although the small number of neighborhoods prohibited a multivariate analysis at the aggregate level, the authors did conduct a bivariate analysis of official child maltreatment rates and the four process measures. The results indicate relations in the expected directions. Neighborhood disorder and lack of child control were significantly correlated with official child maltreatment rates indicating that lack of social capital variables is related to higher rates of child maltreatment

Summary

In summary, there is evidence that social capital and collective efficacy mediate the relationship between neighborhood structural variables and other negative outcomes (i.e., violence, homicide, and low birth-weight).

There is also evidence from qualitative research that cohesion, integration and social resources (conceptually similar concepts to social capital) and social ties (conceptually similar to collective efficacy) are

factors in child maltreatment. This relationship has been further explored and validated utilizing correlational research.

There were no studies found that examined collective efficacy as a mediator of the relationship between neighborhood structural variables and child maltreatment. However, Coulton, Korbin and Su (1999) found a bivariate relationship between similar process variables and official child maltreatment rates.

There is evidence that collective efficacy mediates the relationship between neighborhood structural factors and neighborhood outcomes. There is also preliminary evidence linking similar process variables to child maltreatment rates. This study will examine whether the process variables social capital (intergenerational closure, reciprocal exchange) and collective efficacy (child-centered social control) moderate the relationship between neighborhood structural variables and child maltreatment.

Research Questions

1. Does intergenerational closure moderate the relationship between neighborhood structural factors and child maltreatment?
2. Does reciprocal exchange moderate the relationship between neighborhood structural factors and child maltreatment?

3. Does child-centered social control moderate the relationship between neighborhood structural factors and child maltreatment?

Methods

Secondary data analysis was utilized.

Sample

There were a total of 343 Neighborhood Clusters studied. Of these, 321 remained after missing data was accounted for.

Variables

Social Capital and Collective Efficacy

Social capital and collective efficacy were measured with data obtained from Harvard University's Project on Human Development in Chicago Neighborhoods (PHDCN). PHDCN's Community Survey data was chosen because it was designed to assess the social organization of communities. Much of the community level research in the literature draws solely upon data sources that offer poverty rates or other social-demographic characteristics (Sampson et al., 1999). PHDCN's data offers more than a structural level analysis. It was designed to analyze process. It also offers a sample that is racially, socio-economically and ethnically diverse. Table 1 displays the racial composition by socioeconomic strata for all communities, defined as neighborhood clusters (NC's).

Table 1: Racial Composition by SES Strata: Distribution of 343 Chicago Neighborhood Clusters

| Racial/Ethnic Strata | Low SES | Medium SES | High SES | Total |
|--|------------|---------------|-------------|-------|
| 75% Black or more | 77 | 37 | 11 | 125 |
| 75% White or more | 0 | 5 | 69 | 74 |
| 75% Hispanic or more | 12 | 9 | 0 | 21 |
| 20% Hispanic or more/ 20% White or more | 6 | 40 | 12 | 52 |
| 20% Hispanic or more/ 20% Black or more | 9 | 4 | 0 | 13 |
| 20% Black or more/ 20% White or more | 2 | 4 | 11 | 17 |
| NC's not classified above | 8 | 15 | 12 | 35 |
| ALL NC's | 114 | 114 | 115 | 343 |

The Community Survey was conducted in 1995-1996 in every Chicago community. It was administered to 8,782 Chicago residents in their homes, representing all 343 neighborhood clusters, (NC's). The number of census tracts per NC ranged from 1-6. There were a minimum of 20 respondents per NC (J.K. Holton, January 29, 2004). There were three stages to sampling (Sampson et al., 1999). Stage one consisted of sampling city blocks within each NC. Stage two consisted of sampling dwelling units within each city block. Stage three consisted of sampling one adult resident (18 or older) within each dwelling unit. A final response rate of 75 percent was obtained.

Neighborhoods were defined ecologically based on "a systematic theory of the local community in mass society" (Janowitz, 1975; Kasarda, 1974) as cited in (Sampson et al., 1999). This theoretical framework is based in sociology and emphasizes the need to study social control at a "concrete level of abstraction." Utilizing this framework, neighborhood clusters (NC's) were defined as the unit of measurement. To obtain relative homogeneity of racial/ethnic mix, socioeconomic status, housing density and family structure, the creation of the NC's was guided by geographic boundaries, knowledge of local community areas, and a cluster analysis of census data (Sampson et al., 1997). Each NC represents 2-3 contiguous and ethnographically similar census tracts containing approximately 8,000 individuals. PHDCN uses the NC

construct to represent neighborhoods as distinct from “community” or “community areas” (the latter is a city of Chicago Planning Department construct).

Social Capital

The two social capital variables examined were intergenerational closure and reciprocal exchange. Intergenerational closure is the extent to which adults and children are linked in the neighborhood. It consists of five variables/questions ranked on a 5-point scale strongly agree to strongly disagree: 1) parents in this neighborhood know their children’s friends, 2) adults in the neighborhood know who the local children are, 3) there are adults in the neighborhood that children can generally look up to, 4) parents in this neighborhood generally know each other, 5) you can count on adults in the neighborhood to watch out that children are safe and don’t get in trouble. Sampson et al. (1999) found that the neighborhood reliability is .74 indicating that the items are consistent with each other. The neighborhood reliability was developed in an effort to partition the variance within and between neighborhoods. As defined by Sampson et. al. (1999), it is a function of: “(1) the sample size (N) in each of the j neighborhoods and (2) the proportion of total variance that is between neighborhoods relative to the amount that is within neighborhoods.” The intraclass correlation is .13 indicating that 13% of the scale’s variance is between neighborhoods. Intraclass correlations

are utilized to identify the “proportion of relevant variance” that is associated with each unit of analysis (Nichols, 1998), in this case neighborhoods. For neighborhood level measures, an intraclass correlation above .10 indicates that with “reasonable precision, meaningful differences among neighborhoods” can be ascertained (Sampson, et. al., 1999).

Reciprocal exchange is the frequency of social exchange within the neighborhood on issues of consequence for children. It consists of five variables/questions ranked never, rarely, sometimes, often: 1) about how often do you and people in your neighborhood do favors for each other? By favors we mean such things as watching each other’s children, helping with shopping, lending garden or house tools, and other small acts of kindness. 2) how often do you and people in this neighborhood have parties or other get-togethers where other people in the neighborhood are invited? 3) when a neighbor is not at home, how often do you and other neighbors watch over their property? 4) how often do you and other people in this neighborhood visit in each other’s homes or on the street? 5) how often do you and other people in this neighborhood ask each other advice about personal things such as child rearing or job openings? The neighborhood reliability is .65 indicating that the items were consistent with each other. The intraclass correlation is .10 indicating that 10% of the scale’s variance is between neighborhoods.

Collective Efficacy

The one collective efficacy variable examined was child-centered social control which is the expectation that neighborhood residents can and will intervene on behalf of children. It consists of three variables/questions ranked on a five-point scale very likely to very unlikely that neighbors could be counted on if: 1) children were skipping school and hanging out on a street corner, 2) children were spray-painting graffiti on a local building 3) children were showing disrespect to an adult. The neighborhood reliability is .72 indicating that the items were consistent with each other. The intraclass correlation was .12 indicating that 12% of the scale's variance is between neighborhoods.

Community Structural Variables

Census data for each Chicago census tract from 1990 were utilized to examine community structural variables. All community structural variables were drawn directly from census variables with the exception of "adults per child" which was calculated based on the ratio of percent "people 18 and over" to percent "persons under 18" within the community. This year was chosen over 2000 census data because it was collected prior to the PHDCN Community Survey, thus, allowing for temporal prediction. The community structural variables are hypothesized to lead to child maltreatment (collected in 1995 and 1996) and be moderated by process variables collected in 1995-1996.

Census data was utilized to examine the six structural variables used in Sampson et al.'s (1999) study. These variables were chosen for three reasons. First, employing the same variables allows for continuity in research. Second, Sampson et al. (1999) utilized a strong theoretical framework based on social organization theory to choose the census items that would be included. Third, these six variables encompass all of the variables that have been consistently found to be related to child maltreatment in the literature. The specific variables (factors) were defined through a principle components analysis with oblique rotation.

The structural variables are: 1) Residential stability, 2) Adults per child, 3) Concentrated disadvantage, 4) Concentrated affluence, 5) Immigrant concentration, and 6) Population density.

Neighborhood residential stability is defined by the census variable: percent of residents five years old or older who resided in the same home five years earlier.

Adults per child is defined by the ratio of the census variables: percent of people 18 and over to persons under 18 within the community.

Concentrated disadvantage is defined as "economic disadvantage in racially segregated neighborhoods". It includes the census variables: 1) percent below the poverty line, 2) percent receiving public assistance, 3) percent unemployed, 4) percent female headed families with children, and 5) percent black.

Concentrated affluence is defined by the census variables 1) percent of families with incomes higher than \$75,000, 2) percent of adults with a college education, 3) percent of the civilian labor force employed in professional or managerial occupations.

Immigration concentration is defined by the variables 1) percent Latino (in Chicago 70% are Mexican American), and 2) percent foreign born.

Population density is defined by the census variable: persons per square kilometer.

Child Maltreatment rates

Community maltreatment rates were provided by the Illinois Department of Child and Family Service's for each census tract in Chicago. These tracts were then aggregated into NCs.

There are limitations to using official rates of child maltreatment. These data only account for reported rates from such sources as police, social services, etc. There is a criticism that these rates over-represent poverty stricken areas and minorities. Report rates have been criticized as being biased toward lower SES families and to underestimate the prevalence of child abuse and neglect (O'Toole, Turbette and Nalpeka, 1983). There is criticism that only the most severe cases come to the attention of authorities. Furthermore, there is concern that this data is flawed because of problems with record-keeping and misidentification of

cases. Garbarino and Crouter (1978) report that sources of reporting varied by economic level. Lower SES families were reported by more “distant” sources such as schools, agencies and law enforcement; whereas, higher SES families were reported by family members, neighbors and friends. This information could mean that lower SES families are discriminated against. Garbarino and Crouter (1978) concluded that even after controlling for reporting sources, poverty still has an impact on child maltreatment. This gives one indication that report rates can offer some valuable information for this study. Others have come to this same conclusion and although they have proceeded with caution, they indicate that reports offer an indicator of “the distribution of, recognition of, and response to child maltreatment and have usefully been applied in past research” (Coulton, Korbin and Su, 1996).

Analysis

Preliminary Analysis

A confirmatory factor analysis was conducted with the census data to confirm that the six structural variables are factors composed of the stated census variables as defined in Sampson et. al. (1999). Table 2 describes the proposed factors and the factor loading for each underlying variable. Additionally, standardized alphas are included which display the internal consistency of each scale based on standard scores and are very similar to the high factor loadings. Some of the unstandardized alphas indicate that "alpha if item deleted" for a variable with a low factor loading (e.g., % below poverty) reduce the alpha more than a variable with a higher factor loading (e.g., % receiving public assistance). Unstandardized scores are affected by an items standard deviation (McClendon, 1994). The differences in the variables standard deviations may provide some explanation for why the unstandardized scores "if item is deleted" do not provide the scores that would be expected given the factor loadings.

All of the variables displayed high factor loadings (at or above .75) except for % below poverty line (.565). The internal consistency of concentrated disadvantage (.493) did not improve with the removal of % below poverty.

There was improvement in internal consistency for concentrated disadvantage with the removal of % black (.493 to .627) and for % receiving public assistance (.493 to .508). There was also improvement in internal consistency for concentrated affluence with the removal of % of adults with a college education (.352 to .438). However, these improvements coupled with the high factor loadings do not provide support for the removal of these variables from the factors. Additionally, previous research and theory provide support for the inclusion of these variables in this factor (Garbarino and Kostelny, 1992; Sampson et. al, 1999; Sampson, 2001) and inclusion allows for continuity of research. Specifically, the removal of % black from this factor was not prudent given the potential confounds between race and reporting of cases of child maltreatment. Sampson (2001) has found that the intersection between race and poverty is a critical factor when examining outcomes that impact children.

Table 2: Community Structural Factors and the underlying variables.

| Factor | Underlying variables | Factor Loading | Alpha (scale & if removed) | Stand. Alpha |
|----------------------------------|---|--------------------------------------|---------------------------------------|---------------------|
| Factor 1: Stability | % of residents 5 years or older who resided in the same home five years earlier. | | | |
| Factor 2: Adults per Child | Ratio of: % of people 18 and over to % of persons under 18 | | .493 | .896 |
| Factor 3: Con. Disad | % below poverty line % receiving public assistance % unemployed % female-headed families with children % African American | .565 .901 .915 .944 .866 | .425 .508 .443 .334 .627 | |
| Factor 4: Con. Affluence | % of families with incomes higher than \$75,000 % of adults with college education % of the civilian labor force employed in professional or managerial occupations | .817 .912 .745 | .352 .040 .438 .089 | .764 |
| Factor 5: Imm. Con. | % Latino (in Chicago 70% are Mexican American) % foreign born | .940 .940 | .247 | .868 |
| Factor 6: Pop. Density | Persons per square Kilometer | | | |

Univariate Analysis

Pre-regression univariate analyses were conducted. Variables were transformed into log form as needed. All missing data were deleted from analysis. Given the overlap in NC's with problematic data, all NC's with missing data were deleted from the entire analysis, resulting in a total sample size of 290 NC's. The univariate statistics are displayed in Figure 1. For a more detailed univariate analysis of each variable see Appendix A.

Table 3: Univariate Statistics (N=290)

| Variables | Mean | Median | Mode | SD | Range | Skewness | Kurtosis |
|----------------------------------|-------------|---------------|-------------|-----------|--------------|-----------------|-----------------|
| Stability | 57.81 | 58.42 | 23.87 | 11.58 | 66.54 | -.255 | .143 |
| LN adults per child revised | 5.55 | 5.49 | 4.99 | .374 | 1.74 | .846 | .255 |
| % below poverty line revised | 19.61 | 17.66 | 1.39 | 12.02 | 56.70 | .656 | -.178 |
| LN % receiving public assistance | 1.88 | 1.95 | -1.09 | .903 | 4.55 | -.562 | -.170 |
| Revised % unemployed | 7.04 | 6.25 | 1.19 | 3.66 | 15.48 | .549 | -.648 |
| % female headed revised | 13.07 | 11.26 | 1.73 | 7.93 | 32.54 | .579 | -.671 |
| % AA | 44.58 | 22.28 | .08 | 43.10 | 98.85 | .256 | -1.80 |
| % high income revised | 17.96 | 16.00 | .00 | 9.94 | 58.50 | 1.15 | 1.92 |
| LN % with college education | 1.15 | 1.16 | .35 | .345 | 1.56 | -.025 | -.813 |
| % in management revised | 40.19 | 36.42 | 9.87 | 18.70 | 85.51 | .853 | .329 |
| LN % Latino | 2.20 | 2.74 | -1.12 | 1.81 | 5.70 | -.320 | -1.45 |
| % foreign born | 23.77 | 23.94 | 1.02 | 17.56 | 71.48 | .277 | -.943 |
| Persons per square kilo revised | 6638.4 | 5817.63 | 7325.6 | 3417.54 | 18268.98 | .909 | .633 |
| Reciprocal Exchange | 2.47 | 2.48 | 2.4 | .281 | 1.5 | -.171 | -.306 |
| Intergenerational Closure | 2.39 | 2.39 | 2.37 | .273 | 1.61 | -.124 | .094 |
| Child Centered Social Control | 2.59 | 2.60 | 2.69 | .44 | 2.46 | -.014 | -.420 |
| LN Child Maltreatment Revised | 2.46 | 2.6 | .83 | .918 | 4.37 | -.557 | -.360 |

Bivariate Analysis

A bivariate analysis was conducted (Table 4). There was no multicollinearity [correlation values that exceed $-.8$ or $.8$ (Hays, 1994)] among most of the predictors with the following exceptions:

- female-headed households and public assistance ($.82$),
- female headed households and unemployment ($.84$), and
- Latino and foreign-born ($.81$).

The variables that were highly correlated with each other were later combined into factors based on the preliminary analysis and past research. In addition, most of the other intercorrelations were relatively low (i.e., below $.5$), an indication that multicollinearity is not present for this data set as a whole. Appendix B details significant bivariate correlations.

Table 4: Bivariate Correlations *Correlation is significant at .05 level. **Correlation is significant at .01 level.

| | | Stability | Adults child | Poverty | Pub Assist | % unemploy | Female headed | AA | High Income | College Education | % in Mngmt | Latino | Foreign Born | Density | IC | CCSC | RE | Child Maltx |
|------------------------|------------------------|-----------|-----------------|---------|---------------|---------------|------------------|--------|----------------|----------------------|---------------|--------|-----------------|---------|--------|--------|--------|----------------|
| Stability | Pearson Correlation | 1 | -.26** | -.07 | .81 | .21** | .21** | .35** | .06 | -.37* | -.24** | -.34** | -.33** | -.52** | -.21** | -.116 | -.17** | -.06 |
| | Sig. (2- tailed) | . | .00 | .25 | .17 | .00 | .00 | .00 | .29 | .00 | .00 | .00 | .00 | .00 | .00 | .05 | .01 | .31 |
| LN Adults per child | Pearson Correlation | -.26** | 1 | -.33** | -.63** | -.61** | -.73** | -.40** | .28** | .48** | .74** | -.12* | .04 | .22** | -.27** | -.40** | -.32** | -.37** |
| | Sig. (2- tailed) | .00 | . | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .05 | .55 | .00 | .00 | .00 | .00 | .00 |
| Poverty | Pearson Correlation | .67 | -.33** | 1 | .45** | .41** | .45** | .31** | -.73** | -.57** | -.27** | -.13* | -.18** | .08 | .23** | .30** | .24** | .44** |
| | Sig. (2- tailed) | .25 | .00 | . | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .03 | .01 | .18 | .00 | .00 | .00 | .00 |
| LN Pub Assist | Pearson Correlation | .08 | -.63** | .45** | 1 | .77** | .83** | .70** | -.35** | -.31** | -.47** | -.43** | -.29** | .00 | .39** | .58** | .38** | .76** |
| | Sig. (2- tailed) | .17 | .00 | .00 | . | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .99 | .00 | .00 | .00 | .00 |
| % Unemploy | Pearson Correlation | .21** | -.60** | .47** | .76** | 1 | .85** | .77** | -.32** | -.35** | -.39** | -.58** | -.40** | -.15* | .21** | .49** | .31** | .69** |
| | Sig. (2- tailed) | .00 | .00 | .00 | .00 | . | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .01 | .00 | .00 | .00 | .00 |

Table 4: Bivariate Correlations Continued

| | | Stability | Adults child | Poverty | Pub Assist | % unemploy | Female headed | AA High Income | College Educ | % in Mngent | Latino | Foreign born | Density | IC | CCSC | RE | Child Maltx | |
|------------------|------------------------|-----------|-----------------|---------|---------------|---------------|------------------|----------------|-----------------|----------------|--------|-----------------|---------|--------|--------|--------|----------------|--------|
| Female Headed | Pearson Correlation | .21** | -.71** | .45** | .83** | .85** | 1 | .79** | -.31** | -.34** | -.45** | -.55** | -.52** | -.12* | .29** | .52** | .36** | .70** |
| | Sig. (2- tailed) | .00 | .00 | .00 | .00 | .00 | . | .00 | .00 | .00 | .00 | .00 | .00 | .04 | .00 | .00 | .00 | .00 |
| AA | Pearson Correlation | .35** | -.40** | .31** | .70** | .77** | .79** | 1 | -.22** | -.26** | -.17** | -.87** | -.79** | -.22** | .07 | 0.30** | .15** | .68** |
| | Sig. (2- tailed) | .00 | .00 | .00 | .00 | .00 | .00 | . | .00 | .00 | .00 | .00 | .00 | .00 | 0.26 | .00 | .01 | .00 |
| Con Disad | Pearson Correlation | .21** | -.64** | .57** | .90** | .92** | .94** | .87** | -.42** | -.41** | -.41** | -.62** | -.55** | -.11** | .28** | .52** | .34** | .79** |
| | Sig. (2- tailed) | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .06 | .00 | .00 | .00 | .00 |
| High Income | Pearson Correlation | .06 | .28** | -.73** | -.35** | -.32** | -.31** | -.22** | 1 | .67** | .34** | .05 | -.25 | -.10 | -.29** | -.26** | -.29** | -.30** |
| | Sig. (2- tailed) | .29 | .00 | .00 | .00 | .00 | .00 | .00 | . | .00 | .00 | .41 | .70 | .84 | .00 | .00 | .00 | .00 |
| College Edu | Pearson Correlation | -.37** | .48** | -.57** | -.31** | -.35** | -.34** | -.27** | .67** | 1 | .56** | .07 | .05 | .28** | -.12 | -.13* | -.15* | -.17** |
| | Sig. (2- tailed) | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | . | .00 | .23 | .43 | .00 | 0.38 | 0.22 | .01 | .01 |
| % in mngmnt | Pearson Correlation | -.24** | .74** | -.27** | -.47** | -.39** | -.45** | -.17** | .34** | .56** | 1.00 | -.07 | -.27** | .24** | -.30** | -.33** | -.28** | -.19** |
| | Sig. (2- tailed) | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | . | .22 | .00 | .00 | .00 | .00 | .00 | .00 |
| Con Aff | Pearson Correlation | -.23** | .60** | -.64** | -.45** | -.42** | -.43** | -.27** | .82** | .91** | .74** | .03 | -.09 | .17** | -.28** | -.28** | -.29** | -.26** |
| | Sig. (2- Tailed) | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .67 | .18 | .00 | .00 | .00 | .00 | .00 |

Table 4: Bivariate Correlations Continued

| | | Stability | Adults per child | Poverty | Pub Assist | % unemploy | Female headed | AA | High Income | College Educated | % in Manage | Latino | Foreign born | Density | IC | CCSC | RE | Child Maltx |
|-----------------|---------------------|-----------|---------------------|---------|---------------|------------|------------------|--------|----------------|---------------------|----------------|--------|-----------------|---------|-------|-------|-------|----------------|
| Latino | Pearson Corr | -.34** | .12* | -.13* | -.43** | -.54** | -.55** | -.87** | .05 | .07 | -.72 | 1.00 | .77** | .25** | .13* | -.07 | .06 | -.45** |
| | Sig. (2- tailed) | .00 | .05 | .03 | .00 | .00 | .00 | .00 | .41 | .23 | .22 | . | .00 | .00 | .03 | .22 | .32 | .00 |
| Foreign born | Pearson Corr | -.33** | .04 | -.18** | -.29** | -.48** | -.52** | -.79** | -.03 | .05 | -.26** | .77** | 1.00 | .25** | .24** | -.04 | .15* | -.46** |
| | Sig. (2- tailed) | .00 | .55 | .01 | .00 | .00 | .00 | .00 | .70 | .43 | .00 | .00 | . | .00 | .00 | .59 | .02 | .00 |
| Immig Con | Pearson Corr | -.36** | .15** | -.17** | -.45** | -.59** | -.61** | -.89** | .04 | .10 | -.10 | .95** | .94** | .29** | .16** | -.07 | .07 | -.53** |
| | Sig. (2- Tailed) | .00 | .01 | .01 | .00 | .00 | .00 | .00 | .48 | .09 | .09 | .00 | .00 | .00 | .00 | .21 | .26 | .00 |
| Density | Pearson Corr | -.52** | .22** | .08 | .00 | -.15** | -.12** | -.22** | -.10 | .28** | .24** | .25** | .25** | 1 | .37** | .28** | .28** | .11* |
| | Sig. (2- tailed) | .00 | .00 | .18 | .99 | .01 | .04 | .00 | .08 | .00 | .00 | .00 | .00 | . | .00 | .00 | .00 | .05 |
| IC | Pearson Corr | -.21** | -.27** | .23** | .39** | .25** | .29** | .07 | -.29** | -.12* | -.30** | .13* | .24** | .37** | 1.00 | .61** | .67** | .32** |
| | Sig. (2- tailed) | .00 | .00 | .00 | .00 | .00 | .00 | .26 | .00 | .04 | .00 | .03 | .00 | .00 | . | .00 | .00 | .00 |
| CCSC | Pearson Corr | -.11 | -.40** | .30** | .58** | .49** | .52** | .30** | -.26** | -.13** | -.33** | -.07 | -.04 | .28** | .61** | 1.00 | .58** | .55** |
| | Sig. (2- tailed) | .06 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .02 | .00 | .22 | .59 | .00 | .00 | . | .00 | .00 |
| RE | Pearson Corr | -.16** | -.032** | .24** | .38** | .31** | .36** | .15** | -.29** | -.15** | -.28** | .06 | .15* | .28** | .67** | .58** | 1.00 | .38** |
| | Sig. (2- tailed) | .01 | .00 | .00 | .00 | .00 | .00 | .01 | .00 | .01 | .00 | .32 | .02 | .00 | .00 | .00 | . | .00 |
| Child Maltx | Pearson Corr | -.06 | -.37** | .44** | .76** | .69** | .70** | .68** | -.320* | -.17** | -.19** | -.45** | -.46** | .11* | .32** | .55** | .38** | 1.00 |
| | | .31 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .05 | .00 | .00 | .00 | . |

Regression Analysis

A regression analysis was conducted. In order to understand whether social capital variables (intergenerational closure and reciprocal exchange) and collective efficacy (child centered social control) moderate the relationship between structural variables and neighborhood child maltreatment rates. Interaction terms were created for each potential moderator (IC, RE, CCSC) and each structural variable. Multiple regression models were tested one at a time including all structural variables, a potential moderator and the interaction of this moderator with a structural variable.

Structural variables alone

The first model analyzed the relationship between the structural variables and child maltreatment (Table 5). The F value of 108.36 was statistically significant ($p < .0001$). The model explains 70% of the variation ($R = .70$). The b for stability was -1.19 ($p < .0001$). This indicates that as the number of people who have resided in their homes for more than five years increases by one, child abuse decreases by 1.19 cases. The b for adults per child was $.308$ ($p < .05$) indicating that as the number of adults per child increases, child maltreatment increases by $.308$ cases. The b for concentrated disadvantage was $.890$ ($p < .0001$) indicating that as concentrated disadvantage increases by one unit, child maltreatment increases by $.890$ cases. The b for density was 2.66

($p < .05$) indicating that as the number of people per square kilometer increases by 100, child maltreatment increases by 2.66 cases. Other variables did not significantly contribute to the model.

The most important predictors were concentrated disadvantage ($B = .951$), stability ($B = -.151$), and adults per child ($B = .125$), respectively.

| | Structural Variables Alone | Structural Variables Plus IC * ConDis | Structural Variables Plus IC * Affluence | Structural Variables Plus RE * Con Dis | Structural Variables Plus RE * Affluence | Structural Variables Plus CCSC * Con Dis | Structural Variables Plus CCSC * ImmCon | Structural Variables Plus CCSC * Density |
|-----------------|----------------------------|---------------------------------------|--|--|--|--|---|--|
| F | 108.36*** | 84.45*** | 84.86*** | 87.66*** | 88.04*** | 89.94*** | 88.01*** | 88.11*** |
| R square | 0.697 | .706 | .707 | .714 | .715 | .719 | .715 | .715 |
| Stability b | -1.19*** | -1.18*** | -1.06*** | -1.18*** | -1.05*** | -1.19*** | -1.23*** | -1.22*** |
| B | -.151 | -.149 | -.134 | -.148 | -.132 | -.150 | -.156 | -.154 |
| Adult/Child b | .308** | .246 | .256 | .281* | .274* | .271* | .334** | .263* |
| B | .125 | .100 | .104 | .114 | .112 | .110 | .136 | .107 |
| ImmCon b | 2.12 | -6.63 | -4.11 | -6.66 | -4.25 | -.104 | -4.38* | -8.23 |
| B | .002 | -.074 | -.046 | -.075 | -.048 | -.116 | -.492 | -.092 |
| Con Affluence b | 8.03 | 8.04 | -.674** | 8.46* | -.787** | 6.45 | 4.90 | 6.58 |
| B | .086 | .086 | -.723 | .091 | -.844 | .069 | .053 | .071 |
| ConDisad b | .890*** | 1.58*** | .820*** | 1.68*** | .818*** | 1.25*** | .758*** | .717*** |
| B | .951 | 1.68 | .877 | 1.79 | .875 | 1.34 | .811 | .767 |
| Density b | 2.66* | 2.21* | 2.20* | 1.61 | 1.72 | 1.37 | 1.51 | 1.36* |
| B | .099 | .082 | .082 | .060 | .064 | .051 | .056 | .507 |
| IC b | | .185 | .181 | | | | | |
| B | | .055 | .054 | | | | | |
| ConDis*IC b | | -.324** | | | | | | |
| B | | -.822 | | | | | | |
| Affluence*IC b | | | .321** | | | | | |
| B | | | .813 | | | | | |
| RE b | | | | .325** | .328** | | | |
| B | | | | .100 | .101 | | | |
| ConDis*RE b | | | | -.353** | | | | |
| B | | | | -.940 | | | | |
| Affluence*RE b | | | | | .364*** | | | |
| B | | | | | .947 | | | |
| CCSC b | | | | | | .370*** | .334 | .64*** |
| B | | | | | | .177 | .136 | .307 |
| ConDis*CCSC b | | | | | | -.208** | | |
| B | | | | | | -.587 | | |
| ImmCo* CCSC b | | | | | | | .140* | |
| B | | | | | | | .428 | |
| Dens * CCSC b | | | | | | | | -4.48* |
| B | | | | | | | | -2.05 |

Table 5: Regression Models with significant moderators.

*Correlation is significant at .05 level, ** Correlation is significant at .01 level, *** Correlation is significant at .001 level

Does Intergenerational Closure Moderate the Relationship Between Community Structural Variables and Child Maltreatment Rates?

To answer this question, six regression models were tested each including interaction terms for intergenerational closure and each of the six community structural variables. There was indication of a negative moderating effect for intergenerational closure with concentrated disadvantage on child maltreatment ($p < .01$) and a positive moderating effect for intergenerational closure with concentrated affluence on child maltreatment ($p < .01$) (Table 5).

Does reciprocal exchange moderate the relationship between neighborhood structural factors and child maltreatment?

To answer this question, six regression models were tested each including interaction terms for reciprocal exchange and each of the six community structural variables. There was indication of a negative moderating effect for reciprocal exchange with concentrated disadvantage on child maltreatment ($p < .01$) and a positive moderating effect for reciprocal exchange with concentrated affluence on child maltreatment ($p < .01$).

Does child-centered social control moderate the relationship between neighborhood structural factors and child maltreatment?

To answer this question, six regression models were tested each including interaction terms for child-centered social control and each of the six community structural variables. There was indication of a negative moderating effect for child-centered social control with

concentrated disadvantage on child maltreatment ($p < .01$) and for child-centered social control with density on child maltreatment ($p < .001$). Additionally, there was a positive moderating effect for child-centered social control with immigrant concentration on child maltreatment ($p < .01$).

Discussion

As expected from previous research, the community structural variables proposed provide a strong model for understanding child maltreatment. Stability, adults per child, immigrant concentration, concentrated disadvantage and density each contributing significantly. This study sought to examine whether the process variables social capital (intergenerational closure, reciprocal exchange) and collective efficacy (child-centered social control) moderate the relationship between neighborhood structural variables and child maltreatment. Specifically, this study examined the following research questions:

1. Does intergenerational closure moderate the relationship between neighborhood structural factors and child maltreatment?
2. Does reciprocal exchange moderate the relationship between neighborhood structural factors and child maltreatment?
3. Does child-centered social control moderate the relationship between neighborhood structural factors and child maltreatment?

Does intergenerational closure moderate the relationship between neighborhood structural factors and child maltreatment?

Intergenerational closure displayed a negative moderating effect on concentrated disadvantage and a positive moderating effect on concentrated affluence indicating that when intergenerational closure is present, the effects of concentrated disadvantage and concentrated affluence on child maltreatment rates are moderated. Specifically, this implies that intergenerational closure can help to lower child maltreatment reports in disadvantaged communities while increasing rates in affluent communities.

Does reciprocal exchange moderate the relationship between neighborhood structural factors and child maltreatment?

Reciprocal exchange displayed a negative moderating effect on concentrated disadvantage ($p < .01$) and a positive moderating effect on concentrated affluence ($p < .01$) indicating that when reciprocal exchange is present, the effect of concentrated disadvantage and concentrated affluence on child maltreatment rates is moderated. Intergenerational closure and reciprocal exchange displayed identical moderating effects indicating that both of these social capital variables can help to buffer the effects of disadvantage on child maltreatment rates while increasing the rates in affluent communities.

Does child-centered social control moderate the relationship between neighborhood structural factors and child maltreatment?

There was indication of a negative moderating effect for child-centered social control on concentrated disadvantage ($p < .01$) and on density ($p < .001$). Additionally, there was a positive moderating effect for child-centered social control on immigrant concentration ($p < .01$). These results indicate that collective efficacy, as measured by child centered social control, contributes both similar and different buffering aspects than social capital. The similarity is that the effects of concentrated disadvantage are buffered by both social capital and collective efficacy. Child-centered social control did not offer the same significant moderating effects on affluence that were seen with intergenerational closure and reciprocal exchange. However, child-centered social control did provide a positive moderating effect on immigrant concentration indicating that the more neighbors look out for each other in high immigrant concentration communities the higher the reports of child maltreatment, thus, mirroring the effect of social capital on affluence. Specifically, child-centered social control when present in immigrant concentrated communities leads to more reports of child maltreatment. In addition, child-centered social control helped to buffer the effects of density on child maltreatment.

Overview

Both social capital and collective efficacy offer moderating effects for community structural variables on child maltreatment rates. When

social capital is present less cases of child maltreatment are reported in disadvantaged communities and more are reported in affluent communities than when it is not present. Given the literature, it would be expected that when social capital is present parents have supports that decrease the amount of abuse that occurs.

The findings from this study are interesting with respect to the direction of the moderating effect of intergenerational closure (an aspect of social capital) on affluence and child-centered social control (a type of collective efficacy) on immigrant concentration. The findings indicate that the closer adults and children are in a community (intergenerational closure) and the more people are willing to look out for each other's children (child-centered social control), the more cases of child maltreatment are reported in these communities. This could indicate that when the "family bubble", a phenomena that tends to be in place in affluent communities, is penetrated by other adults knowing children in the community, than child abuse cases are identified more often. The same results may occur in immigrant concentration communities when people are looking out for each other's children.

Limitations

Generalizability

Caution should be taken when generalizing the findings of this study. Given the racial and economic makeup of the sample,

generalizability to other populations could be expected. However, the circumstances surrounding the collection of child maltreatment information may be unique to this geographic setting.

Child Maltreatment Rates

The utilization of child maltreatment rates has been criticized due to reporting procedures and the potential for biased results based on contact with poverty-stricken communities. Due to this potential bias, it is unclear whether more child maltreatment occurs in disadvantaged areas, or whether it is reported more often than in affluent communities. Garbarino and Crouter (1978) concluded that even after controlling for reporting sources, poverty still has an impact on child maltreatment. Others have come to this same conclusion and although they have proceeded with caution, they indicate that reports offer an indicator of “the distribution of, recognition of, and response to child maltreatment and have usefully been applied in past research” (Coulton, Korbin and Su, 1996).

Implications for Future Research

Future research should examine why intergenerational closure and child-centered social control increase maltreatment reports in affluent and immigrant concentrated communities, respectively. Controlling for reporting sources may help to clarify this finding. Other outcome measures should also be studied such as parenting behaviors and

parent's feelings of support. A decline in child maltreatment rates will require years of steady progression. This progression needs to be measured as it occurs, to shed light on the process.

Future research should exam the child-centered social control scale. This scale describes a person's likelihood of "intervening" if: 1) children were skipping school and hanging out on a street corner, 2) children were spray-painting graffiti on a local building 3) children were showing disrespect to an adult. This scale may need to be revised for purposes of measuring an individual's likelihood of intervening on issues related to child maltreatment. Research should also exam the ways in which individuals might intervene under different circumstances that may lead to child maltreatment. For instance, community members could be surveyed and asked "if you knew a child was being left at home unattended how would you respond." Further exploration may investigate what surrounding circumstances would elicit a call to police versus other courses of action such as offering to babysit.

Future research may also examine if there is a difference in physical abuse cases versus neglect cases. Further examination of how each of these is reported and the reasoning behind reports should also be included. It may be that distant sources are more likely to report neglect so that authorities come in to take children into custody. Whereas, it is possible, particularly given the DCFS kinship care policies during 1995-

1996, that proximal sources, such as family members, would be more likely to call regarding an abuse case in an effort to provide assistance to the parent.

Future research could also examine multiple sources of information on child abuse and neglect, rather than relying solely on official report rates. Additional variables such as spatial proximity may be examined, and the utilization of a multi-level design may prove useful.

In addition, future research could examine proxies of collective efficacy. This study utilized the Community Survey from PHDCN. However, this survey was only conducted in Chicago and was very expensive and time consuming. Future research endeavors could examine ways to estimate social capital and collective efficacy from existing data. For example, the percent of individuals who vote in a given neighborhood, or the percent of parents involved in the PTA, may be valid proxies of collective efficacy.

Efforts to explore the impact of density may also be useful. Previous research that examined density defined it as persons per room (Zuravin, 1986), whereas this study defined it as persons per square kilometer.

Implications for Practice in Child Maltreatment Prevention

At this point, implications for practice are tentative. However, the finding that aspects of social capital, specifically intergenerational closure

and reciprocal exchange, moderate the effect of disadvantage on child maltreatment reports may indicate that increasing communal support systems may lead to less child maltreatment. Increased community building, networking and social support may be beneficial as an effort to prevent child abuse from occurring in the first place.

Implications for Prevention Policy Towards Child Maltreatment

There are tentative implications for policy at many levels. First, the larger societal issues must be taken into account. As noted by Garbarino and Kostelney (1992), a society in which low income is not associated with access to basic services, concentrated poverty, would not have as large of an effect on child maltreatment.

Future research may want to examine the impact that policy has on these findings. During 1995-1996, the Illinois Department of Children and Family Service's policies were changed regarding kinship care. This may have lead to an increase in the number of calls to child welfare by proximal sources. For instance, these policies may have enabled grandparents and other close relatives to access services through reporting.

At the community level there are many policy issues that may be relevant. For instance, the zoning policies may encourage or discourage the belief that neighbors will look out for the children in the community, child-centered social control. Future research would need to examine this

to the extent that they can be structured to facilitate child-centered social control. The placement of schools, homes and the placement of liquor stores, for example, may facilitate, or hinder the ability, or motivation of adults to look out for children in the community.

References

- Barry, F. (1994). A neighborhood-based approach: What is it? In G. Melton, & Barry, F. (Ed.), *Protecting children from abuse and neglect* (pp. 14-39). New York: Guilford.
- Bursik, R. J., & Grasmich, H.G. (1993). *Neighborhood and Crime*. New York: Lexington Books.
- Cleveland, W.S. (1984). Graphical methods for data presentation: Full scale breaks, dot charts, and multibased logging. *The American Statistician*, 38 (4): 270-280.
- Coulton, C., Korbin, J., Su, M., & Chow, J. (1995). Community level factors and child maltreatment rates. *Child Development*, 66, 1262-1276.
- Coulton, C., Korbin, J., and Su, M. (1999). Neighborhoods and Child Maltreatment: A Multilevel Study. *Child Abuse and Neglect*, 23(11), 1019-1040.
- Deccio, G., Horner, W., & Wilson, D. (1994). High-risk neighborhoods and high-risk families: Replication research related to the human ecology of child maltreatment. *Journal of Social Service Research*, 18, 123-137.
- Drake, B., & Pandey, S. (1996). Understanding the relationship between neighborhood poverty and specific types of child maltreatment.

Child Abuse and Neglect: The International Journal, 20, 1003-1018.

Duncan, G., & Raudenbush, S. (1999). Assessing the effects of context in studies of child and youth development. *Educational Psychologist*, 34, 29-41.

Felitti, Anda, Norenberg, Williamson, Spitz, Edwards, Koss, & Marks. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death. *American Journal of Preventive Medicine*, 14 (4), 245-257.

Fromm, S. (2001). The Cost and Consequences of Child Maltreatment. Prevent Child Abuse America: Chicago.

Garbarino, J., & Crouter, A. (1978). Defining the community context for parent-child relations: The correlates of child maltreatment. *Child Development*, 49, 604-616.

Garbarino, J., & Kostelny, K. (1992). Child maltreatment as a community problem. *Child Abuse and Neglect*, 16, 455-464.

Garbarino, J., & Sherman, D. (1980). High-risk neighborhoods and high-risk families: The human ecology of child maltreatment. *Child Development*, 51, 188-198.

Hays, J. (1994). Statistics, Fifth Edition. Harcourt Brace College Publishers: Fort Worth, TX."

- Janowitz, M. (1975). Sociological theory and social control. *American Journal of Sociology*, 81, 82-108.
- Kasarda, J., & Janowitz, M. (1974). Community attachment in mass society. *American Sociological Review*, 39, 328-339.
- Korbin, J., Coulton, C., and Furin, J. (1995). A neighborhood-based approach to risk assessment. *The APSAC Advisor*, 8(4), 9-11.
- Korbin, J., and Coulton, C. (1997). Understanding the neighborhood context for children and families: Combining epidemiological and ethnographic approaches. In D. Brooks-Gunn, J., & L. Aber (Ed.), *Neighborhood poverty* (Vol. II). New York: Sage.
- McClendon, M. (1994). *Multiple Regression and Causal Analysis*. Itasca, Illinois: F. E. Peacock Publishers, Inc.
- Moeller, T., Bachman, G., & Moeller, J. (1993). The combined effects of physical, sexual and emotional abuse during childhood: long term health consequences for women, *Child Abuse & Neglect*, 17:623-640.
- The National Clearinghouse on child abuse and neglect (NCCAN) (2001). Available on-line at www.calib.com.
- Nichols, D. (1998). Choosing an Intraclass Correlation Coefficient. Available on-line at www.ats.ucla.edu/stat
- O'Toole, R., Turbette, P., and Nalpeka, C. (1983). Theories, professional knowledge and diagnosis of child abuse. In D. Fenkelhor, R. Gelles,

- G. Hottaling, and M. Strauss (Eds.), *The dark side of families: Current family violence and research*. Newbury Park, CA: Sage.
- Raudenbush, S., and Sampson, R.J. (1999). 'Ecometrics': Toward a science of assessing ecological settings, with application to the systematic social observation of neighborhoods. *Sociological Methodology*.
- Rossi, A. (1968). Transition to parenthood. *Journal of Marriage and the Family*, 26-39.
- Sampson, R. J. (1991). Linking the micro- and the macro-level dimensions of community social organization. *Social Forces*, 70, 43-64.
- Sampson, R. J. (2001). How do communities undergird or undermine human development? Relevant contexts and social mechanisms. In A. Booth, and Crouter, N. (Ed.), *Does it Take a Village? Community Effects on Children, Adolescents, and Families*. New Jersey: Lawrence Erlbaum.
- Sampson, R. J., & Groves, W. B. (1989). Community structure and crime: Testing social disorganization theory. *American Journal of Sociology*, 94, 775-802.
- Sampson, R. J., Morenoff, J., & Earls, F. (1999). Beyond Social Capital: Spatial Dynamis of Collective Efficacy for Children. *American Sociological Review*, 64(October), 633-660.

- Sampson, R. J., Raudenbush, S.W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*, 277, 918-924.
- Sedlack, A., & Broadhurst, D. (1996). *The third national incidence study of child abuse and neglect (NIS-3)*. Washington, DC: U.S. Department of Health and Human Services.
- U.S. Advisory Board on Child Abuse and Neglect. (1993). Neighbors helping neighbors: A new national strategy for the protection of children. Washington DC: US Government Printing Office.
- Vinson, T., Baldry, E., & Hargreaves, J. (1996). Neighbourhoods, networks and child abuse. *British Journal of Social Work.*, 26, 523-543.
- Weiss, M., & Wagner, S. (1998). What explains the negative consequences of adverse childhood experiences on adult health? Insights from cognitive and neuroscience research. *American Journal of Preventive Medicine*, 14(4): 356-360.
- Wiehe, V. R. (1989). Child abuse: an ecological perspective. *Early Child Development and Care*, 42, 141-149.
- Willis, D. J., Holden, E.W., & Rosenberg, M. (Ed.). (1992). *Prevention of child maltreatment: Developmental and ecological perspectives*. New York: John Wiley and Sons.

Zuravin, S. (1986). Residential density and urban child maltreatment:

An aggregate analysis. *Journal of Family Violence*, 1(4), 307-322.

Zuravin, S. (1989). The ecology of child abuse and neglect: Review of the literature and presentation of data. *Violence and Victims*,

4(101-120).

Appendix A

Appendix A displays all univariate statistics for each variable.

Skewness and Kurtosis were considered acceptable if they were under 1. A standard deviation/range ratio of 1:8 was considered acceptable. The mean, median and mode for adults per child were 3.45, .17, and 2.52, respectively (Table 3). The standard deviation of .93 with a range of 22.83, this is not within acceptable limits. The distribution's skewness was 3.794 and kurtosis was 16.728, both are not within acceptable limits.

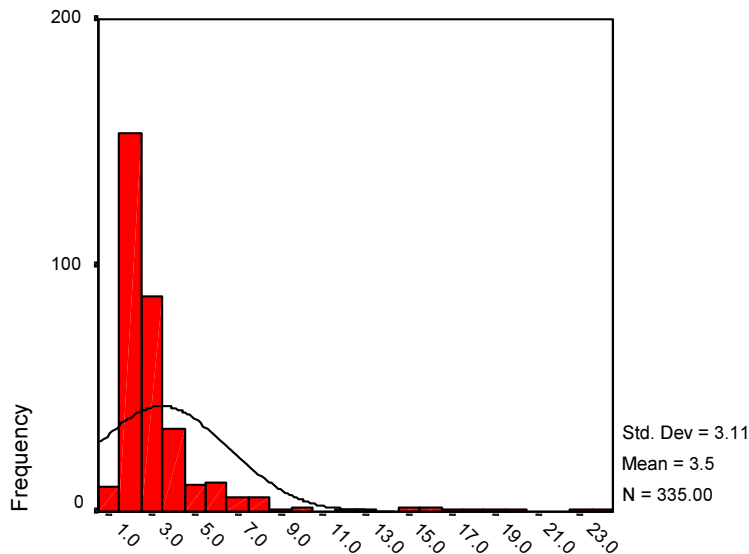


Figure 2: Adults per child

To account for the large skewness and kurtosis and range, adults per child was transformed using the natural log. The natural log was chosen as a means to approach normality without drastically changing the data (Cleveland, 1984). The mean, median and mode for the revised, transformed variable were 5.57, 5.50, and 4.53, respectively (Table 3).

The standard deviation of .4139 with a range of 2.21 is within acceptable limits. The distribution's skewness was .662 and kurtosis was .240, both are within acceptable limits (Figure 3).

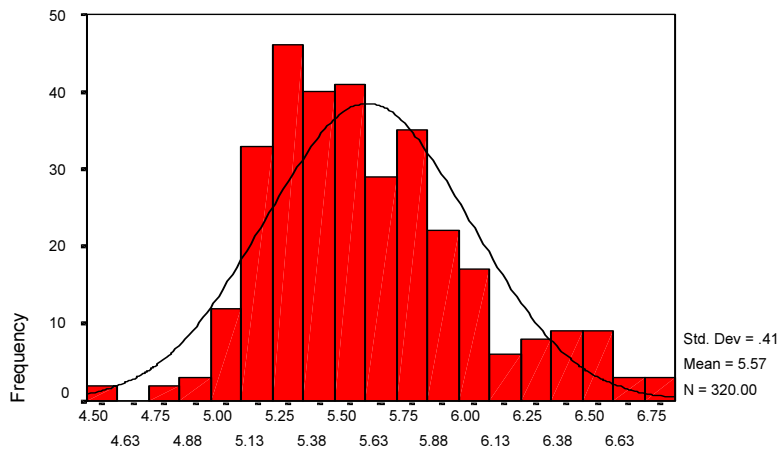


Figure 3: LN Adults per child

Factor 3: Concentrated Disadvantage

The mean, median and mode for % below poverty line were 20.14, 17.71, and 1.05, respectively (Table 3). The standard deviation of 13.28 with a range of 72.90 is within acceptable limits. The skewness and kurtosis is .925 and kurtosis is .854, both within acceptable limits. Examination of the histogram indicates potential outliers over 60% (Figure 4).

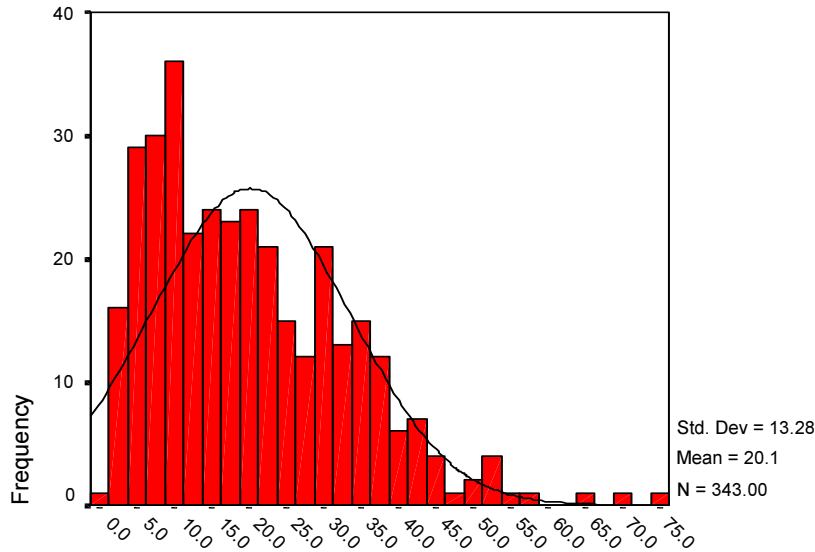


Figure 4: % below poverty

After deletion of the three cases over 60%, the mean, median and mode were 19.71, 17.66, and 1.05, respectively (Table 3). The standard deviation of 12.48 with a range of 57.04 is within acceptable limits. The skewness of .660 and kurtosis of -.251 were also acceptable. The deletion of outliers provided a distribution that approaches normality (Figure 5).

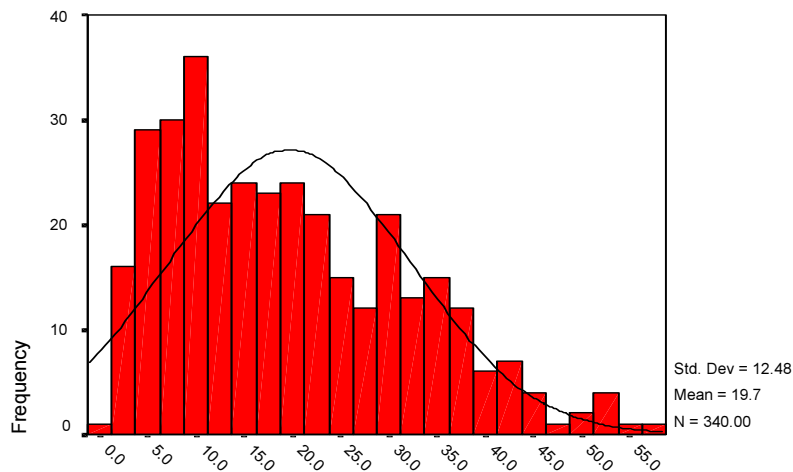


Figure 5: % below poverty revised

The mean, median and mode for % receiving public assistance were 9.26, 6.20, and .00, respectively (Table 3). The standard deviation of 8.26 with a range of 55.56 is within acceptable limits. The skewness of 1.67 is within acceptable limits while the kurtosis of 4.275 is not within acceptable limits. The histogram also indicates outliers above 40% (Figure 6). The four cases above 40% were deleted and the variable was logged to account for the kurtosis (Figure 7).

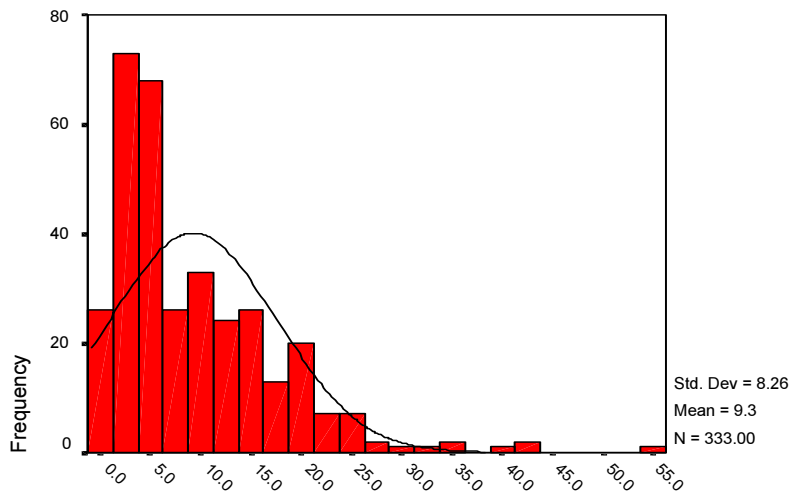


Figure 6: % with public assistance

After transformation, the mean, median and mode for % with public assistance was 1.82, 1.85, and -1.20, respectively (Table 3). The standard deviation of 1.01 with a range of 5.22 is within acceptable limits. The skewness of -.512 and kurtosis of -.154 were also within acceptable limits.

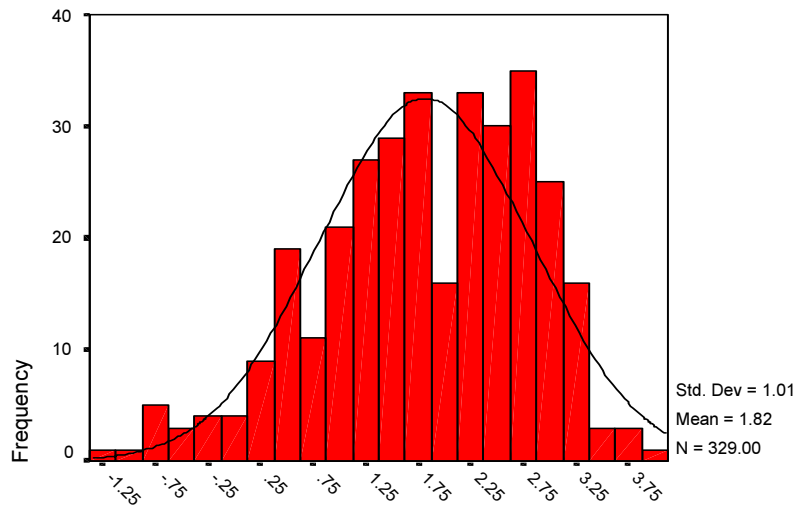


Figure 7: LN % with public assistance revised

The mean, median and mode for % unemployed were 6.97, 6.02 and .78, respectively (Table 3). The standard deviation of 4.10 with a range of 27.36 is within acceptable limits. The skewness of 1.06 and kurtosis of 1.69 were also within acceptable limits. However, the histogram indicates outliers inflating the skewness and kurtosis (Figure 8). Once the 11 outliers were removed the distribution approaches normality (Figure 9).

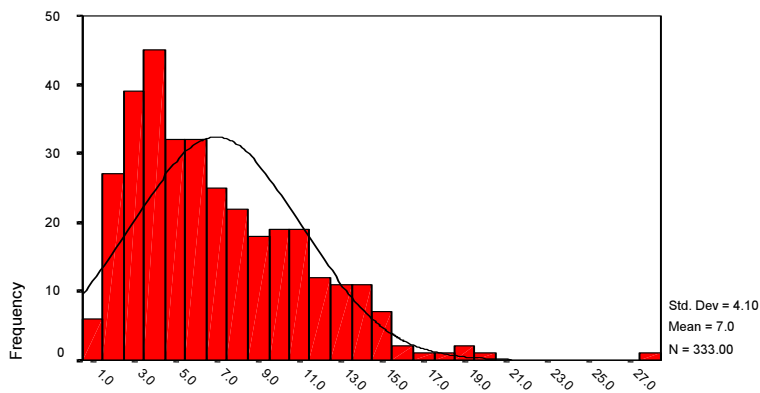


Figure 8: % unemployed

After removal of the outliers the mean, median and mode for % unemployed were 6.9, 6.02 and .78, respectively. The standard deviation of 3.93 with a range of 19.58 are within acceptable limits. The skewness and kurtosis of .776 and .005 are also within acceptable limits.

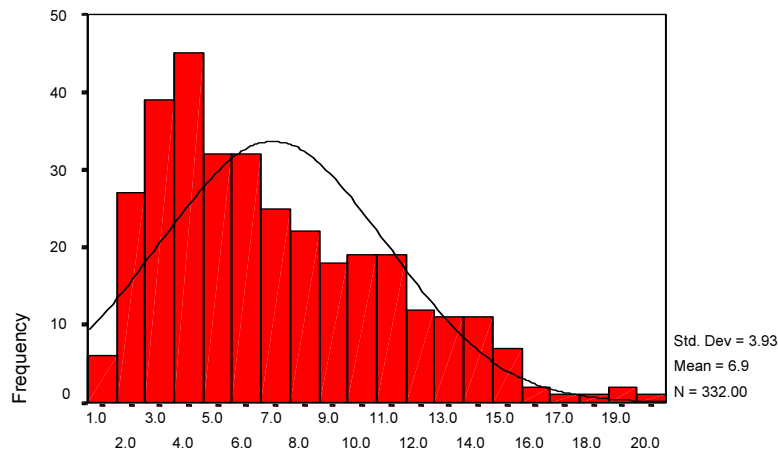


Figure 9: % unemployed revised

The mean, median and mode for % female-headed households were 12.73, 10.58, and .71, respectively (Table 3). The standard deviation of 9.37 with a range of 53.09 is within acceptable limits. The skewness of 1.27 is also acceptable, however, the kurtosis of 2.28 is not within acceptable limits. The histogram indicates outliers above 40% (Figure 10).

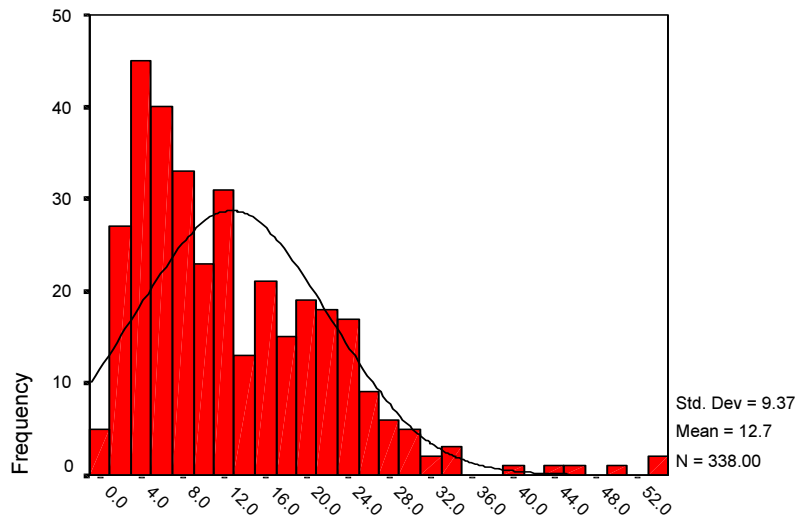


Figure 10: % female headed w/ child

After the six outliers over 40% are removed, the distribution approaches normality (Figure 11). The mean, median and mode are 12.09, 10.45 and .71, respectively (Table 3). The standard deviation of 8.13 with a range of 33.56 is within acceptable limits. The skewness of .644 and kurtosis of -.565 are also within acceptable limits.

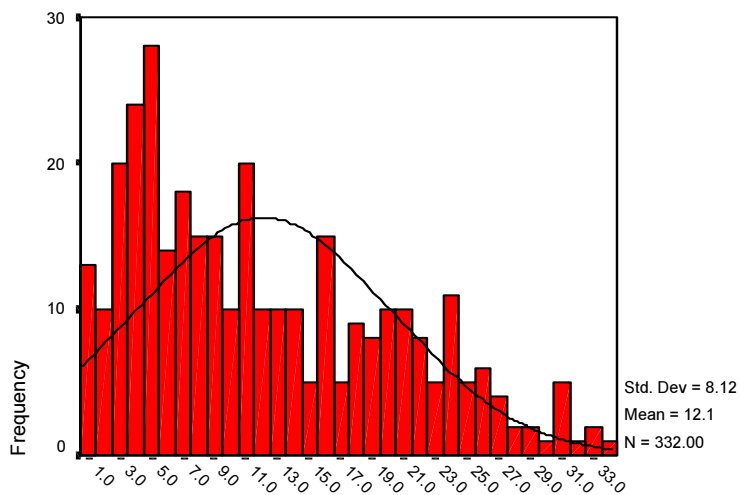


Figure 11: % female headed w/ child revised

The mean, median and mode for % African American were 43.05, 21.43, and .08, respectively (Table 3). The standard deviation of 42.46 with a range of 99.36, this is within an acceptable range given the nature of the bi-modal distribution (Figure 12). The distributions skewness was .340 and Kurtosis was .133, both within acceptable limits.

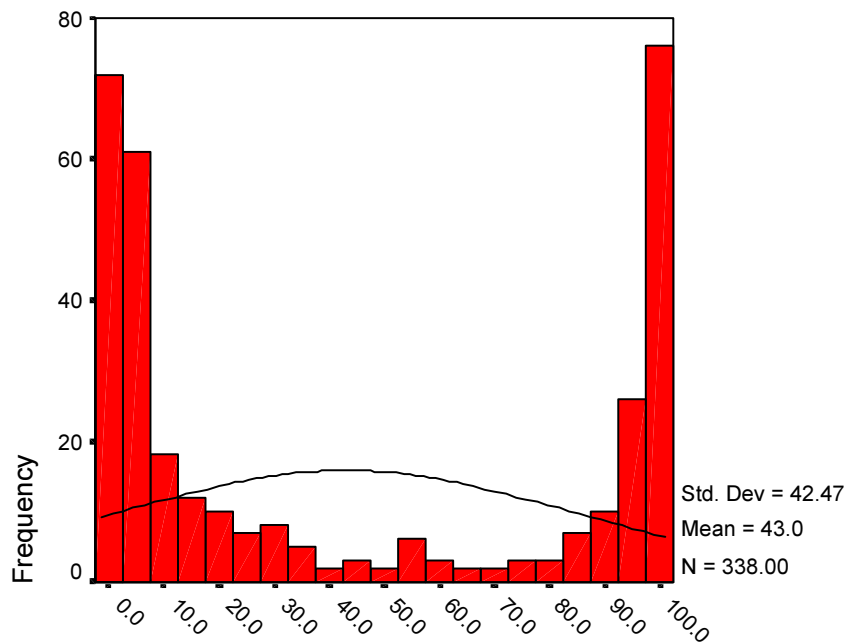


Figure 12: % AA

Factor 4: Concentrated Affluence

The mean, median and mode for % income over \$75,000 were 19.32, 16.18 and .00, respectively (Table 3). The standard deviation of 12.90 with a range of 81.59 is within acceptable limits. The skewness of 1.83 is within acceptable limits, however, the kurtosis of 4.71 is not within acceptable limits. The histogram indicates outliers at the high end

of the range (Figure 13). After removing the 7 outliers, the graph approaches normality (Figure 14).

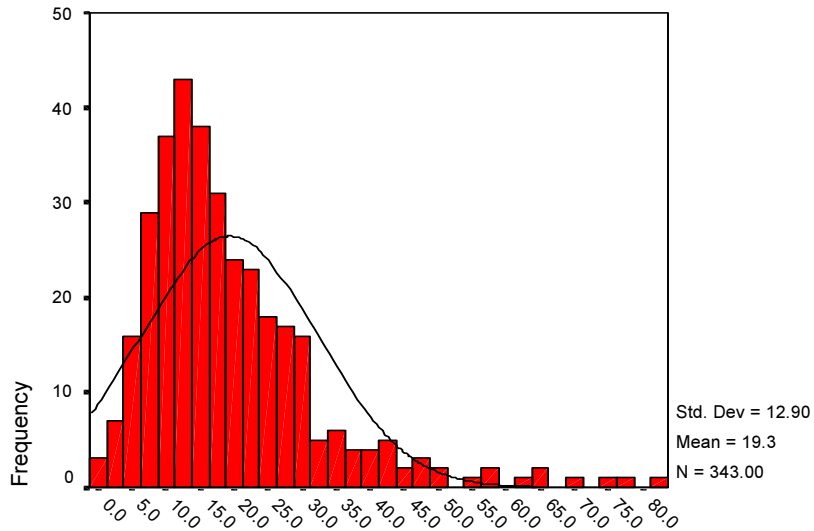


Figure 13: High income

The mean, median and mode for high income revised were 18.24, 15.9 and 0, respectively (Table 3). The standard deviation of 10.58 with a range of 58.50 is acceptable. The skewness of 1.11 and kurtosis of 1.38 are within acceptable limits.

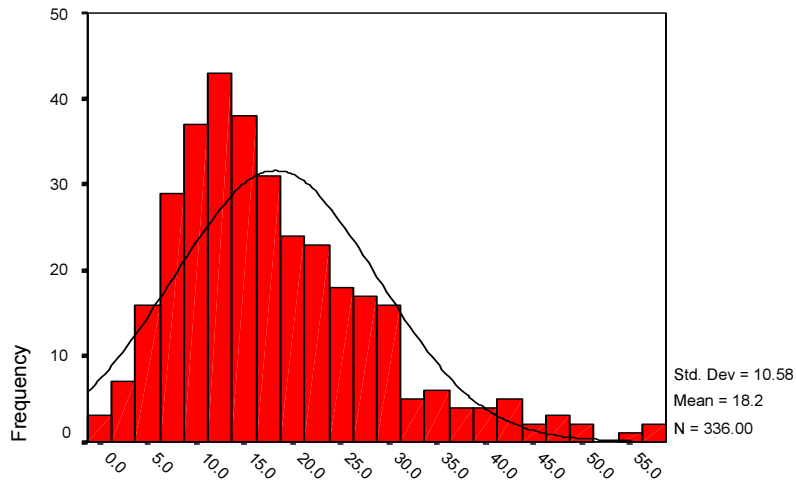


Figure 14: High income revised

The mean, median and mode for % with college education were 22.42, 15.68, and 2.22, respectively (Table 3). The standard deviation of 19.66 with a range of 83.31 is within acceptable limits. The skewness of 1.43 and kurtosis of 1.42 are within acceptable limits. The histogram indicates peaks at the low end of the distribution (Figure 15). After logging the variable, the histogram displays a distribution that approaches normality (Figure 16).

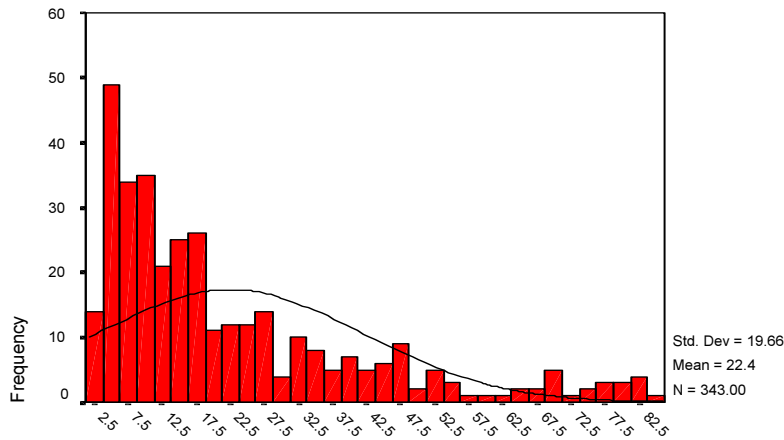


Figure 15: % with college education

The mean, median and mode for the log of % with college education were 1.19, 1.19 and .35, respectively. The standard deviation of .38 with a range of 1.59 is within acceptable limits. The skewness of -.039 and kurtosis of -.846 are also acceptable.

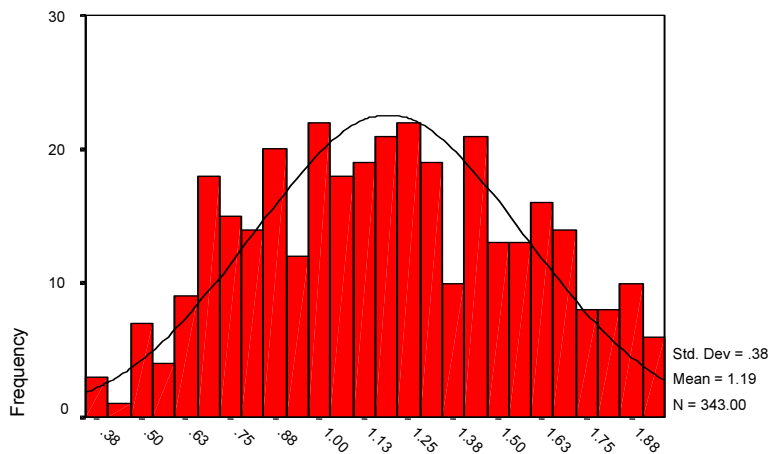


Figure 16: LN % with college education

The mean, median and mode for % in professional occupations were 44.46, 38.58 and 6.32, respectively (Table 3). The standard deviation of 24.80 with a range of 124.79 is within acceptable limits. The skewness of 1.25 and kurtosis of 1.42 are also within acceptable limits.

The histogram indicates values over 100% (Figure 17). These 16 values were deleted from analysis (Figure 18).

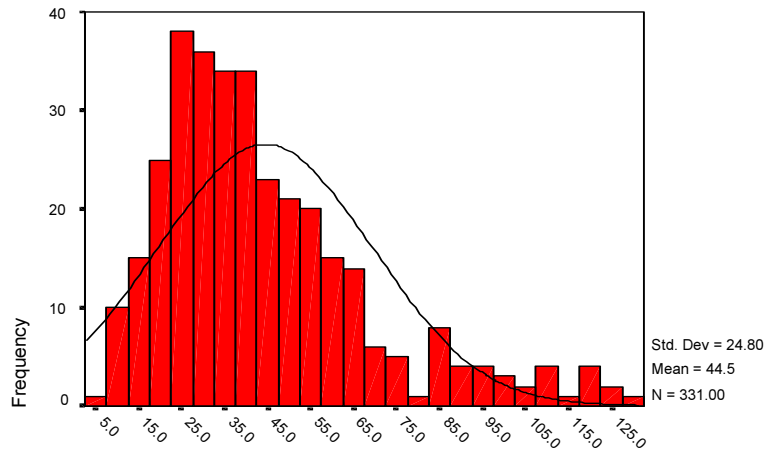


Figure 17: % in management

The mean, median and mode got % in management revised were 40.91, 37.31, and 6.32, respectively (Table 3). The standard deviation of 19.52 with a range of 92.84 is within acceptable limits. The skewness of .80 and kurtosis of .24 are also acceptable.

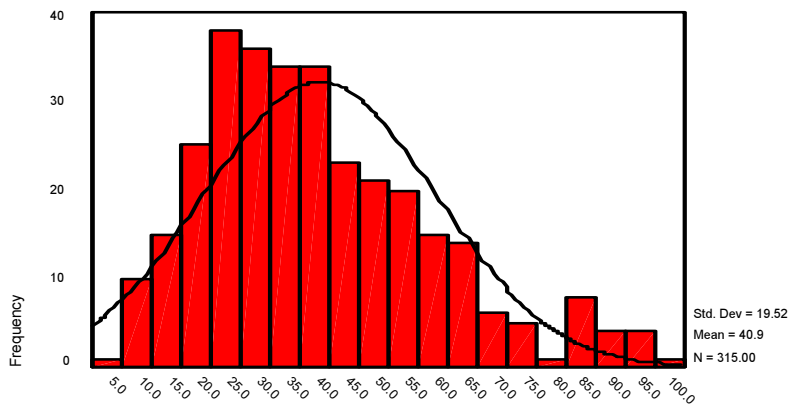


Figure 18: % in management revised

Factor 5: Immigrant Concentration

The mean, median and mode of % Latino were 24.72, 12.96, and .31, respectively (Table 3). The standard deviation of 28.13 with a range of 96.50 is within acceptable limits. The skewness of 1.04 and kurtosis of $-.227$ are also within acceptable limits. The histogram indicates a distribution that approximates normality with a peak at 0% (Figure 19).

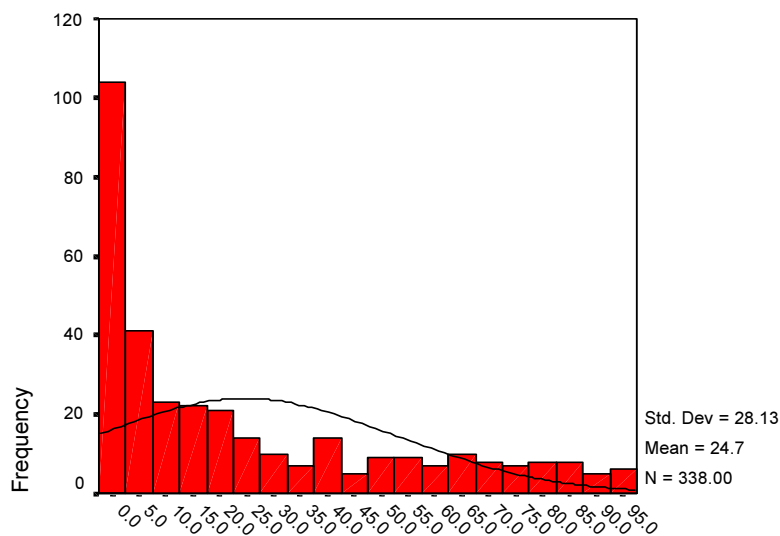


Figure 19: % Latino

A log transformation of this variable provides a distribution that is more widely dispersed (Figure 20). The mean, median and mode for the log of % Latino were 2.13, 2.56 and -1.18 , respectively (Table 3). The standard deviation of 1.76 with a range of 5.75 is within acceptable limits. The skewness of $-.260$ and kurtosis of -1.38 are also within acceptable limits.

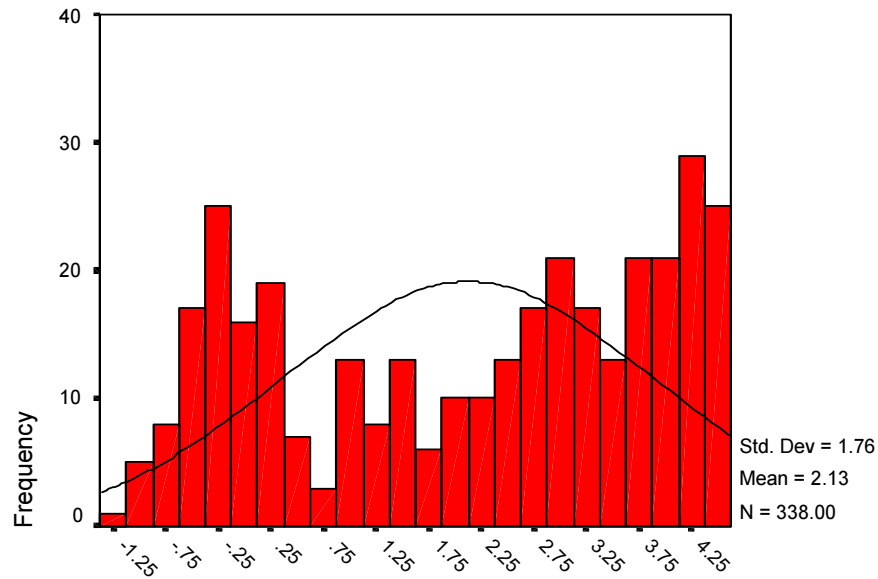


Figure 20: LN % Latino

The mean, median and mode for % foreign born were 19.28, 16.36 and .0, respectively (Table 3). The standard deviation of 17.71 with a range of 72.50 is within acceptable limits. The skewness of .563 with a kurtosis of -.818 are also within acceptable limits. The histogram indicates a distribution that approaches normality with a peak at 0% (Figure 21). A log transformation of this variable does not improve upon the distribution.

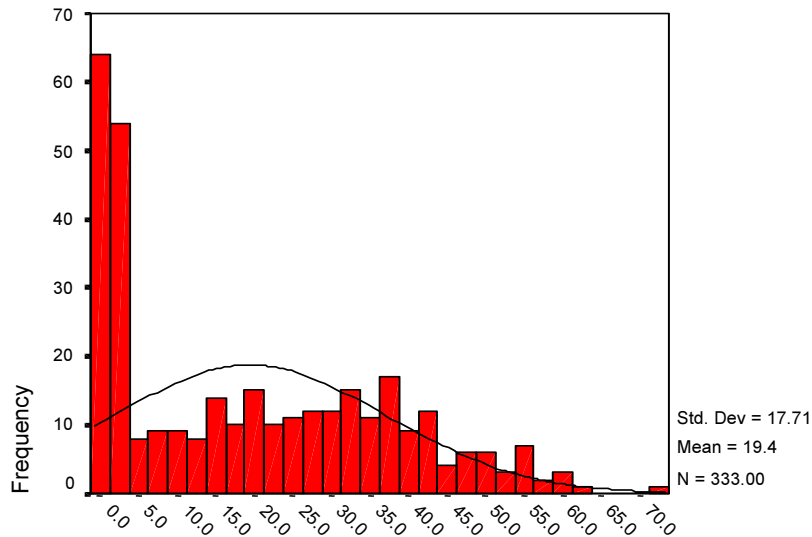


Figure 21: % foreign born

Factor 6: Population Density

The mean, median and mode for persons per square kilometer were 7601.19, 5958.83, and 7325.60, respectively (Table 3). The standard deviation of 6072.55 with a range of 46930.50 is within acceptable limits. The skewness of 3.06 and kurtosis of 12.98 are not within acceptable limits (Figure 22). The histogram indicates outliers at the high end of the range. These outliers were removed. The mean, median, and mode for persons per square kilometer revised were 6664.37, 5809.05, and 7325.60, respectively (Table 3). The standard deviation of 3585.78 with a range of 18504.93 is large, however, still within acceptable limits. The skewness of .896 and kurtosis of .553 are within acceptable limits.

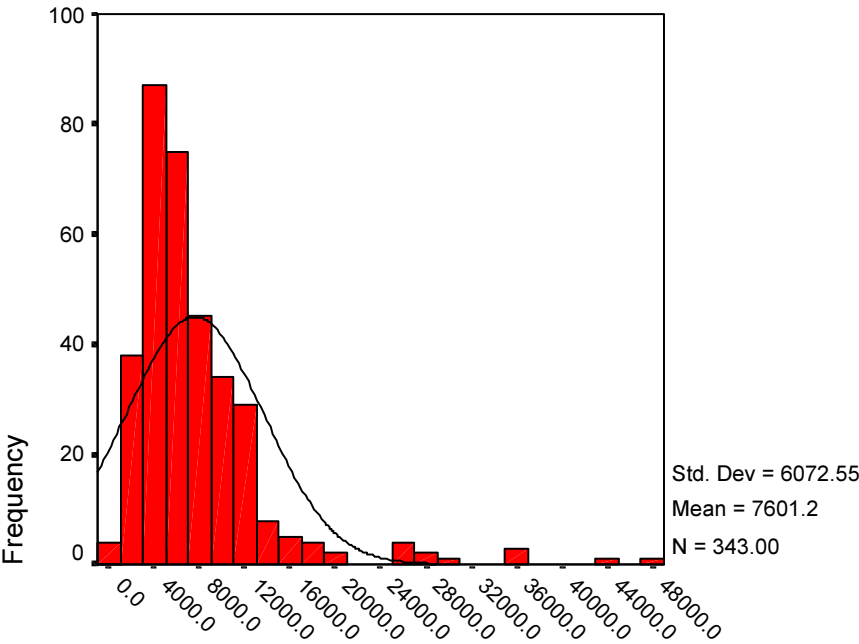


Figure 22: Persons per square kilometer

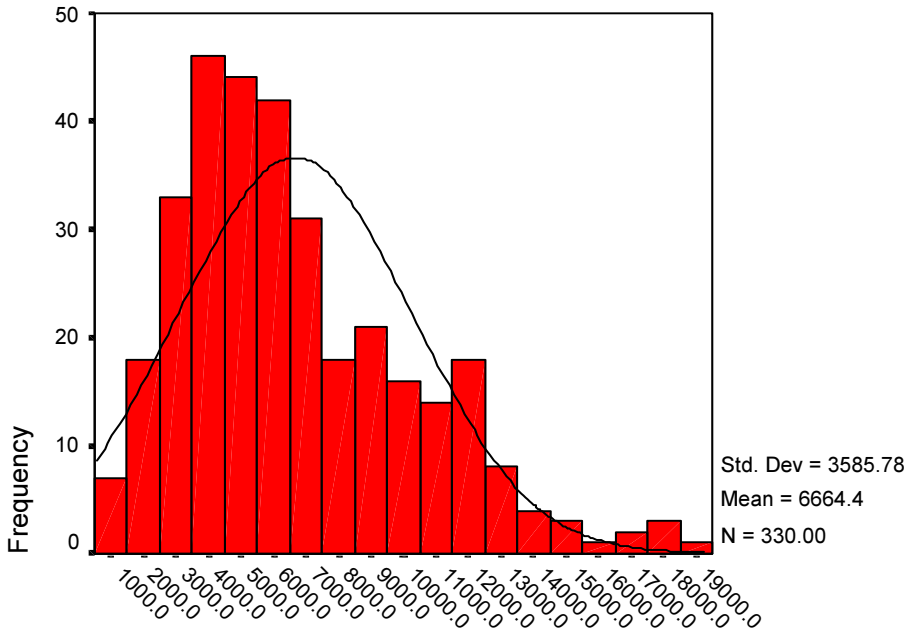


Figure 23: Persons per square kilometer revised

Process Variables

The mean, median and mode for reciprocal exchange were 2.46, 2.48, and 2.49, respectively (Table 3). The standard deviation of .2795 with a range of 1.50 was within acceptable limits. The skewness of -.186 and kurtosis of -.337 were also within acceptable limits (Figure 24).

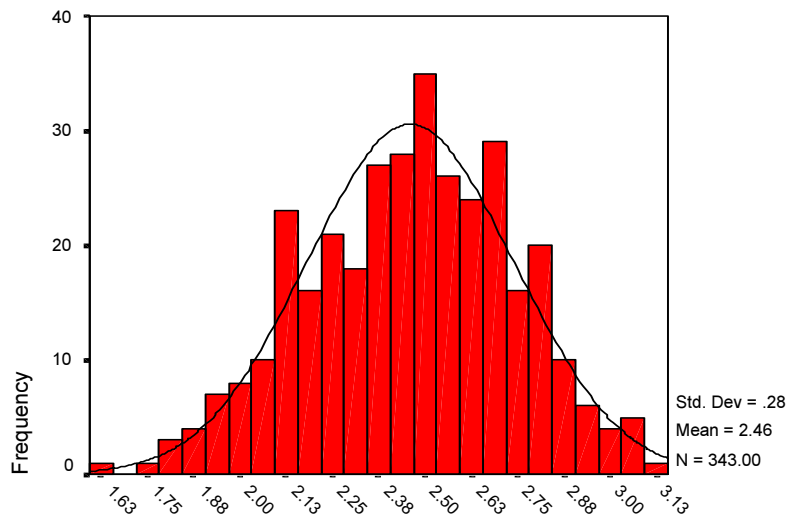


Figure 24: Reciprocal Exchange

The mean, median and mode for intergenerational closure were 2.4, 2.4 and 2.37, respectively (Table 3). The standard deviation of .28 with a range of 1.66 is within acceptable limits. The skewness of .005 and kurtosis of .027 are also within acceptable limits (Figure 25).

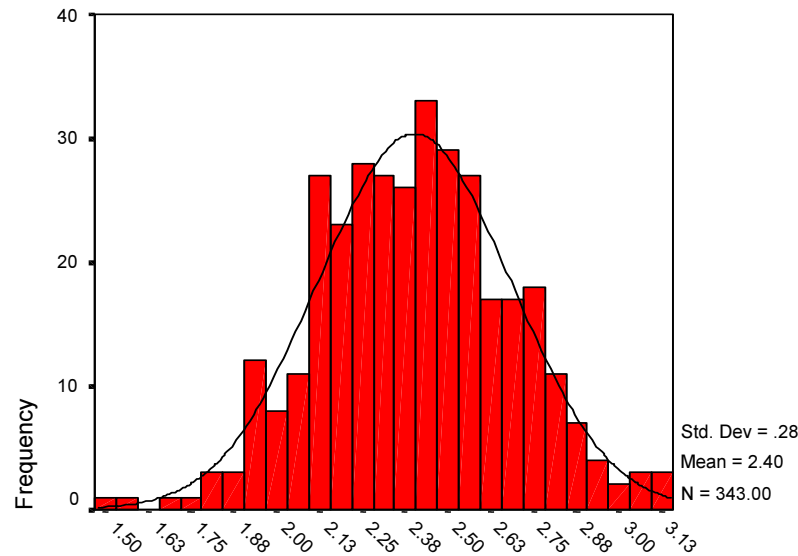


Figure 25: Intergenerational Closure

The mean median and mode for child-centered social control were 2.58, 2.6, and 2.49, respectively (Table 3). The standard deviation of .45 with a range of 2.46 is within acceptable limits. The skewness of -.018 and kurtosis of .263 are also within acceptable limits (Figure 26).

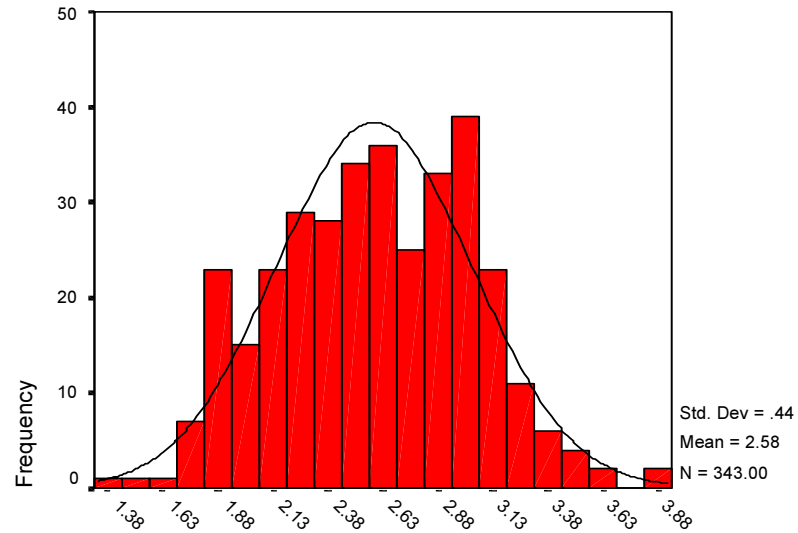


Figure 26: Child Centered Social Control

Child Maltreatment

The mean, median and mode for the average of child maltreatment rates in 1995 and 1996 were 18.71, 14.35, and 2.29, respectively (Table 3). The standard deviation of 23.28 with a range of 284.85 is within acceptable limits. The skewness of 6.36 and kurtosis of 60.36 are not within acceptable limits. The histogram indicates values outside of acceptable range (Figure 27).

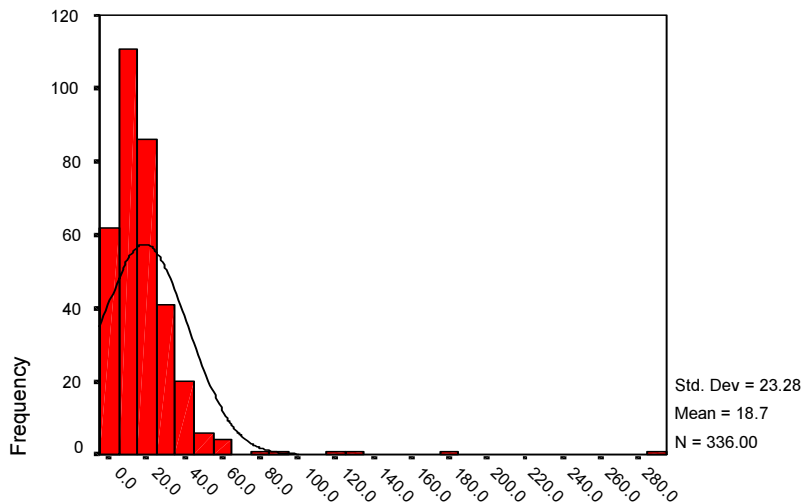


Figure 27: Child Maltreatment Rates

These four items were deleted and a natural log transformation was utilized. After transformation, the mean, median and mode were 2.47, 2.66, and .83, respectively. The standard deviation of .9182 with a range of 4.37 is within an acceptable range. The skewness of -.525 and kurtosis of -.327 were also within an acceptable range (Figure 28).

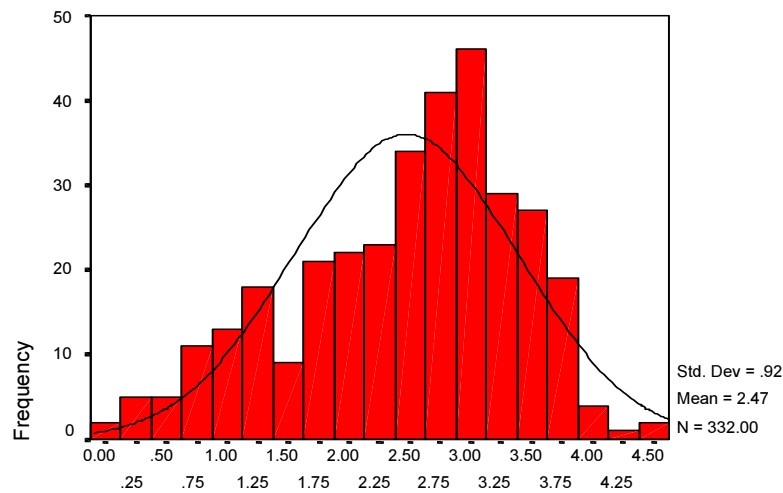


Figure 28: LN Child Maltreatment Rates Revised

Appendix B

Stability

with predictor variables

Stability was correlated with adults per child ($r = -.32$), public assistance ($r = .20$), unemployment ($r = .26$), female-headed (.32), African American (.38), college educated ($r = -.46$), management ($r = -.27$), Latino ($r = -.28$), foreign born ($r = -.24$) and density ($r = -.54$) ($p < .01$), and high income ($r = -.11$) ($p < .05$).

with predictor factors

Stability was correlated with immigrant concentration ($r = -.30$), concentrated affluence ($r = -.25$) and concentrated disadvantage ($r = -.30$) ($p < .01$).

With mediator variables

Stability was correlated with intergenerational closure ($r = -.26$) and reciprocal exchange ($r = -.17$) ($p < .01$), and child-centered social control ($r = -.12$) ($p < .05$).

with child maltreatment

Stability was not significantly correlated with child maltreatment.

Adults per child

with predictor variables

The number of adults per child was correlated with stability ($r=-.32$), poverty ($r=-.35$), public assistance ($r=-.64$), unemployment ($r=-.63$), female-headed ($r=-.73$), African American ($r=-.44$), high income ($r=.31$), college education ($r=.52$), management ($r=.75$), Latino ($r=-.15$), foreign born ($r=.05$), and density ($r=.19$) ($p<.01$).

with predictor factors

Adults per child was correlated with immigrant concentration ($r=.19$), concentrated affluence ($r=.60$) and concentrated disadvantage ($r=-.64$) ($p<.01$).

With mediator variables

Adults per child was correlated with intergenerational closure ($r=-.20$), child centered social control ($r=-.37$) and reciprocal exchange ($r=-.27$) ($p<.01$).

with child maltreatment

Adults per child was correlated with child maltreatment ($r=-.36$) ($p<.01$).

Concentrated Disadvantage

with predictor variables

Concentrated disadvantage was positively correlated with stability ($r=.30$) and negatively correlated with adults per child ($r=-.64$), high income ($r=-.47$), high education ($r=-.48$), management

($r=-.43$), latino ($r=-.56$), foreign born ($r=-.45$), and density ($r=-.16$) ($p<.01$).

with predictor factors

Concentrated disadvantage was correlated with immigrant concentration ($r=-.59$) and concentrated affluence ($r=-.51$) ($p<.01$).

with mediator variables

Concentrated disadvantage was correlated with intergenerational closure ($r=.22$), child-centered social control ($r=.50$) and reciprocal exchange ($r=.31$) ($p<.01$).

with child maltreatment

Concentrated disadvantage was significantly related to child maltreatment ($r=.75$) ($p<.01$).

Concentrated Affluence

with predictor variables

Concentrated affluence was correlated with stability ($r=-.25$), adults per child ($r=.60$), poverty ($r=-.63$), public assistance ($r=-.48$), unemployment ($r=-.46$), female-headed ($r=-.49$), African American ($r=-.31$), foreign born ($r=-.07$) and density ($r=.16$) ($p<.01$).

with predictor factors

Concentrated affluence was correlated with concentrated disadvantage ($r = -.51$) ($p < .01$).

with mediator variables

Concentrated affluence was correlated with intergenerational closure ($r = -.24$), child-centered social control ($r = -.30$) and reciprocal exchange ($r = -.26$) ($p < .01$).

with child maltreatment

Concentrated affluence was correlated with child maltreatment ($r = -.28$) ($p < .01$).

Immigrant Concentration

with predictor variables

Immigrant concentration was significantly correlated to stability ($r = -.30$), adults per child ($r = .19$), poverty ($r = -.15$), public assistance ($r = -.37$), unemployment ($r = -.54$), female-headed ($r = -.53$), African American ($r = -.85$) and density ($r = .23$) ($p < .01$).

with predictor factors

Immigrant concentration was correlated with concentrated disadvantage ($r = -.59$) ($p < .01$).

with mediator variables

Immigrant concentration was correlated with intergenerational closure ($r=.15$) ($p<.01$).

with child maltreatment

Immigrant concentration was correlated with child maltreatment ($r=-.49$) ($p<.01$).

Density

with predictor variables

Density was correlated with stability ($r=-.54$), adults per child ($r=.19$), unemployment ($r=-.14$), female-headed ($r=-.15$), African American ($r=.05$), college educated ($r=.28$), management ($r=.21$) Latino ($r=.19$), and foreign born ($r=.25$) ($p<.01$).

with predictor factors

Density was positively correlated with immigrant concentration ($r=.23$) and concentrated affluence ($.15$), and negatively correlated with concentrated disadvantage ($-.15$) ($p<.01$).

with mediator variables

Density was positively correlated with intergenerational closure ($r=.35$), child centered social control ($r=.26$) and reciprocal exchange ($r=.27$) ($p<.01$).

with child maltreatment

Density was correlated with child maltreatment ($r=.11$) ($p<.05$).