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Community social capital and suicide rates

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**COMMUNITY SOCIAL CAPITAL
AND SUICIDE RATES**

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Sociology

by

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ABSTRACT

The integrating capacity of social institutions on community organization and the consequential benefits of community cohesion are well-known, i.e. lower crime rates, better health outcomes, economic and social stability. Drawing on the civil society and civic community literatures, this study applies the theory of social capital to study of suicide. Rather than focus on individual level data, macro-level data are analyzed to determine the relationship between the social capital of an area and the prevalence of suicide. Negative binomial regression is used to examine U.S. counties of 100,000 residents or more (urban) and counties of 1,000 to 25,000 residents (rural) to determine the effect of six community social capital measures on race, gender, and age specific suicide rates. The results indicate much variation among social groups. Urban areas are found to be more responsive to community social capital than are rural areas, although not all social capital indicators had the effect of reducing suicide rates. In the initial analyses, bonding and bridging social capital are associated with reductions in suicide more often among whites, whereas only bonding social capital is associated with reductions in black suicide. Upon further analysis the theory of social capital garnered much more support once age was accounted for in the analyses. In urban counties, 3 of the 5 social capital indices are associated with reductions in suicide across social groups and age categories. However, in rural counties, this relationship is only maintained among rural whites.

CHAPTER 1: INTRODUCTION

Statement of the Problem

This study is a sociological investigation of the relationship between social capital and suicide. In the United States, more than 30,000 people take their own lives annually.¹ According to the Centers for Disease Control (CDC), suicide ranked as the 11th leading cause of death in 2004. There were 10.93 suicides per 100,000 US residents, a negligible increase (0.21) over the previous year. In fact, the suicide rate demonstrates relative stability over the last 25 years having experienced a range differential of only 2.56 suicides per 100,000 US residents (1986 highest 12.99 – 2000 lowest 10.43 = 2.56). Although the overall suicide rate is relatively stable, it is well known that the propensity to commit suicide is not evenly distributed throughout the population. Various social groups exhibit strikingly different inclinations toward suicide as evidenced by age, gender, and race specific rates. For example, traditionally older persons have higher suicide rates than younger persons (*ages 85 and up = 16.4 per 100,000 and ages 15 to 24 = 10.4 per 100,000*), males (*17.7 per 100,000*) have much higher rates than females (*4.6 per 100,000*), and the suicide rate for whites (*12.3 per 100,000*) is more than double the rate for blacks (*5.2 per 100,000*) [CDC Wonder Website, 2004]. Approximately 79% of the suicides in 2004 were male and 90% were white. White males had the highest rate (*19.6 per 100,000*) while black males had the second highest rate (*9.0 per 100,000*). Even though female suicide rates are low relative to male rates, race is still a distinguishing feature in determining the female propensity for suicide. The suicide rate for white females (*5.1 per 100,000*) was almost three times the rate for black females (*1.8 per 100,000*).²

¹ Approximately, twice as many people killed themselves than were murdered in 2004.

² The previously mentioned statistics are from the CDC 2004.

The variability of suicidal tendency among social groups, according to Emile Durkheim (1951), is a product of varying degrees of integration and regulation engendered by the social environment in which the events occur. He recognized, as others did before him, that suicide events are not random and that certain patterns emerge across social groups. However, he was the first to explicate a sociological theory of this seemingly individual endeavor. Although Durkheim's study of suicide has been routinely debated over the decades, his contribution to and influence on the sociology of suicide remains profound.

Durkheim suggested integrated societies with adequate social control function better overall than societies lacking integration and regulation (integration and regulation are the mechanisms through which communities are able to dictate the expectations and obligations of community members). His basic proposition is that communities appropriately integrated and regulated provide more protection (as indicated by low suicide rates) than communities possessing either very high or very low rates of integration and/or regulation (high suicide rates).³ Although, the specifics (propositions, methods, and data) of Durkheim's theory are continually reevaluated, his general proposition is accepted. Durkheim's impact on sociology is evident by the dominant position his perspective has maintained in the literature on suicide throughout the years. In fact, social integration is a theme that runs through a variety of sociological perspectives (Durkheim, 1951; Tolbert, Lyson, and Irwin, 1998; Putnam 2000; Tolbert, Irwin, Lyson, and Nucci, 2002; Lee and Bartkowski, 2004; Lee and Ousey, 2005; Lee, 2006; Lee, 2008).

A more contemporary version of Durkheim's regulation/integration thesis is the theory of social capital developed by Robert Putnam (2000) in *Bowling Alone: The Collapse and Revival*

³ Protection including lower crime rates and over health and welfare of a community.

of the American Community. Though not specifically applied to the question of suicide, Putnam, like Durkheim, argues that the community benefits when its members know and interact with one another. Social participation is a mechanism through which social capital is accumulated. Social capital is a community resource that provides the capacity for action that otherwise cannot be accomplished solely by the individual. Social capital is considered an outgrowth of a cooperative commonwealth.

For Putnam, a community's stock of social capital is directly associated with the strength of its civil society. Civil society represents the web of voluntary cooperative relationships among community members organized around the available social institutions in a society. The degree to which a community can develop a strong civil society depends on the degree to which the community encourages social participation. A community able to encourage social participation enables the formation and maintenance of social relationships among community members providing for the accumulation of social capital; therefore a strong civic community engenders the accumulation of social capital.

Other researchers offer macro level theories that parallel Putnam's theory of social capital. Tolbert, Lyson, and Irwin (1998) and Tolbert, Irwin, Lyson, and Nucci (2002) revisit Mills and Ulmer's (1947/1970) "civil welfare perspective" which also emphasizes the notion of a dynamic civil society. Tolbert et al. (1998) and Tolbert et al. (2002) focus on the functions that civil society performs to enhance the welfare of communities by producing local institutional infrastructures that are adaptive to changing socioeconomic environments. Their "civil society" perspective focuses on local capitalism coupled with civic engagement and emphasizes the role of locally oriented socioeconomic institutions in the production of a more stable community

structure. In essence, they are identifying community structures that encourage the accumulation of social capital.

In an effort to better understand the mechanisms that drive crime rates, Lee and Bartkowski (2004) also emphasize the importance of a vibrant civil society. Their civic community (community resource) perspective focuses on aspects of the community structure that help to inhibit the production of crime. Their study specifically addresses the availability of social institutions and investigates whether variations in levels of secular and religious access are associated with variations in crime rates across communities.

The integral part social institutions play on community organization and the consequential benefits of community cohesion are well-known, i.e. lower crime rates, economic and social stability, better health outcomes, etc (Seeman, 1996; Lee and Bartkowski, 2004; Kawachi, Kennedy, Lochner, 1997). Institutions are important for both the integrative (networks and trust) and regulatory (norms) functions within society. The more prevalent mainstream social institutions are in a community, the greater the opportunity for community members to interact and establish ties to one another which increases exposure to conventional norms, values, and social control mechanisms. This structure allows for the production of social capital that contributes to the stability of a community and therefore decreases the likelihood community members will personally revoke their own membership through suicide. Drawing on the civil society and civic community literatures, this study is an investigation as to the applicability of the theory of social capital to the sociological study of suicide.

Relevance of Further Sociological Research Investigating Suicide

Much of the literature examining suicide concentrates on either individual explanations or aggregate individual level data. No study has yet to examine suicide rates in the context of

community social capital using community level indicators. It is important to consider the structural context in the explanation of varying suicide rates; simply focusing on individual indicators of social capital is insufficient in that it leaves out the community (social) context in which suicides occur.

It is the work of the social scientist to discover/reveal the social contingencies that lead to certain outcomes. Social capital has become a widely used theory to demonstrate the effects of social integration (social cohesion) on individual and community outcomes. Social capital has already been used to investigate patterns of homicide, employment acquisition and academic performance, delinquency, and health outcomes. Despite, existing social capital research, there is little evidence examining the relationship between social capital and the most extreme form of social dislocation, suicide. Since social capital has been used to explain the aforementioned social outcomes, coupling suicide with social capital seems appropriate. The basic questions that will be addressed are: (1) Does social capital in the form of institutional access help to protect communities from high levels of suicide? (2) Which facets of institutional access are beneficial to which social groups of society? This study focuses on the availability of various social institutions as evidence of the communities' stock of social capital to examine whether community social capital is a factor that affects race, gender, and age specific suicide rates.

Organization of the Study

The following chapters are organized as follows: Chapter 2 provides a review of the literature beginning with Emile Durkheim's contribution to, not only the study of suicide, but to sociological inquiry as a whole. In addition, I elaborate on "integration as a theme" in sociological literature specifically addressing social capital, civil society, and civic community perspectives. Chapter 2 concludes with a path model depicting the predictions of the study.

Chapter 3 provides information regarding the data and methods used in the analysis. The dependent and independent variables are specified and the study variable descriptives are provided. Chapter 4 includes the negative binominal regression analysis and a discussion regarding the results (includes Tables 1 through 10). Chapter 5 provides a discussion about the implications of the effects of social capital on suicide. And lastly, chapter 6 concludes with directions for future study.

CHAPTER 2: LITERATURE REVIEW

Emile Durkheim and the Sociological Study of Suicide

Suicide has been a focus of theoretical and empirical interest since the inception of sociology as an academic discipline. In particular, Emile Durkheim's examination of suicide as a consequence of the social structure, rather than simply the outcome of an individual's impulse/motivation was revolutionary. He looked at a very intimate, seemingly personal event, took the individual out and showed that the decision to kill oneself is a part of the social context. He demonstrated that variations in the social environment correspond to variations in suicide rates; meaning suicide rates are driven by something beyond simple individual suicidal motivation. He argued that social integration and social regulation are the mechanisms by which communities flourish (and perish). For Durkheim, variations in suicide rates were indicative of varying degrees integration and regulation. He classified suicides into four categories (he identified four distinct causes of suicide); egoistic, anomic, fatalistic, and altruistic.⁴ His typology is as follows: excessive integration leads to altruistic suicide, excessive regulation leads to fatalism, lack of integration leads to egoistic suicide, and lack of regulation leads to anomic suicide.⁵

⁴ Durkheim's definition of suicide covers all cases in which the person knows his/her actions or lack thereof will produce his/her own death. "Suicide is applied to all cases of death resulting directly or indirectly from a positive or negative act of the victim himself, which he knows will produce this result" (Durkheim 1951: 44). Conceptually and/or technically this definition may be true, but is not supported in official data. The official recognition of suicide often focuses on method and intent. Much of what Durkheim defines as suicide is not recorded as such in official statistics. A researcher's world is less than ideal, so we must add to the definition, and that which is so designated by officials. For detailed discussions regarding suicide statistics see, Pescosolido and Mendelsohn 1986.

⁵ Durkheim did not emphasize the high end of regulation and integration (altruism and fatalism).

Decades ago, theorists began to challenge Durkheim's typology and began to debate its utility. Some argue that in modern society there is only one type of suicide; egoistic suicide (Johnson, 1965; Pope, 1976). Altruistic and fatalistic suicides are dismissed because neither is recognized in contemporary/modern society. Moreover, Durkheim digressed into psychological interpretations in his explanations of each. In addition, anomie and egoism are thought to spawn from the same social condition and therefore are not conceptually distinct from one another. The problem lies in the difficulty differentiating between levels of integration and levels of regulation in society. Even if able to distinguish between the components, another difficulty arises in determining the effects of one concept relative to the other. Integration and regulation go hand in hand.⁶ So, rather than Durkheim offering a typology of suicides per se, according to some he actually proposed a general causal theory to explain variations in suicide rates. Basically, the communities that are able to encourage integration (and therefore regulation) among their members should have better outcomes, i.e. lower suicide rates, than communities that are unable to provide cohesion and interdependence among community members. Durkheim examined the components in society that encourage the formation of social relationships, namely social institutions.

Durkheim's analysis included what he called domestic, political, and religious "societies". He believed the integrating capacity of social institutions plays a countervailing role against suicide. If we believe that the institutional infrastructure is the glue that holds society together, then a strong institutional infrastructure adequately bonds individuals to society and therefore fewer people will be willing to revoke their membership. Durkheim argued that a variety of social institutions (religion, family, politics/civic engagement, and employment)

⁶ They occur simultaneously and reinforce each other.

stimulate and maintain social integration by promoting repeat interactions and shared values and sentiments; thereby encouraging the development of strong social bonds. He proposed that suicide rates vary inversely with the degree of integration provided by each facet of society.

In reference to domestic society, Durkheim argued that the integrating capacity of the family generally acts as a protective barrier to suicide. Marriage solidifies social bonds. Single people are, by definition, less bonded to society and consequently less integrated than married people. Marriage also represents a union of two families.⁷ Marriage not only has an integrating effect, but it also has a regulatory function that increases social control. Single people are less integrated into society and therefore are less regulated by it. According to Durkheim, single people are less attached to society and therefore are more likely (freer) than married people to commit suicide.

In essence, Durkheim believed domestic relationships generally have an inhibiting influence on suicide.⁸ However, “marriage may very possibly act in an opposite way for husband and wife” (Durkheim, 1951, p. 269). He recognized the “unequal immunity of husbands and wives” relative to the effects marriage and divorce have on gender specific suicide rates. He found that in places where divorce is not an option, marriage provides greater protection from suicide for the husband than the wife. Alternatively, where divorce is an accepted practice, marriage provides greater protection for the wife than the husband. This

⁷ Bride and groom’s families.

⁸ Social disorganization theorists often account for the lack of marriage (the presence of female headed households) as a contributor to crime. It’s not the single parent, but high rates of single parent households that are reasoned to be affecting delinquency rates. Single parent households offer fewer accountable parents to watch over and care about the behavior of potential delinquents (Coleman, 1988). Communities dominated by single parent family structures lack adequate social control and consequently have higher crime rates.

finding illustrates the variegated effects social institutions can have on different social groups with regard to suicide.

In reference to political society, Durkheim recognized the polity as part of the “collective conscious” and as such the polity consequently affects the overlying social condition. According to Durkheim, a strong collective consciousness diminishes the influence of the individual conscious. Being involved in politics provides another avenue to social interaction and networking and therefore encourages social bonding among individuals within the community.

Many authors have examined the relationship between suicide and the business cycle. The basic finding being that suicide rises in times of economic depression and fall during times of prosperity. The economy is an integral, integrating social institution and therefore which affects the likelihood of suicide. However, due to the cultural, socioeconomic, and historical differences among races in the United States, racial groups will not be afforded the same protections. Historically, whites have dominated the economic and political spheres, while access for blacks has been restricted (disenfranchised). “...when access to the labor force is constricted, the socially organizing functions of noneconomic community institutions become particularly critical” (Lee and Ousey, 2005, p. 37). Therefore, when jobs are not available other noneconomic social institutions are necessary to maintain social order; religious and civic access and familial integration become especially important. Lee and Ousey (2005) found that black homicide rates were lower in areas where churches and civic associations are more prevalent, meaning blacks were afforded greater protection from high homicide rates in areas that provide greater access to non-economic social institutions.

Of all the fervor that was a result of *Suicide*, the most celebrated aspect of Durkheim’s work is his examination of the relationship between religion and suicide. Religious institutions

are unique relative to other social institutions. Religion is available to all people; unlike employment in which there are requirements and one must be accepted to participate. Religious participation is relatively unbiased when it comes to access.

Many different religious organizations participate in a variety of “good will and good works” efforts. Religious institutions are a generous source of various types of support spiritual, emotional, physical (shelter and food), and sometimes even financial. Even people who are not “religious” benefit from religious institutions. Many religious organizations run outreach programs that benefit the community by helping those that are in need. Religious institutions, therefore, benefit not only those who abide by religious doctrine, but also others in the community not affiliated with the church. Consequently, by promoting opportunities for religious members to interact with one another and other community members, religious participation acts as an effective integrative tool in society.

Churches are an obvious source of, to be specific, community/institutional social capital. However, it is well known that different denominations have variegated effects on suicide rates. In fact, Sociology’s “one law” pertains to the Protestant/Catholic suicide differential. According to Durkheim, Catholics have lower suicide rates than Protestants because Catholicism mandates participation in a religious community that reinforces its teachings through ritualistic behaviors, and thus engenders a greater integrating capacity than Protestantism which encourages a personal relationship with God with less oversight from a religious authority. Durkheim focused on the integrative capacity of religious practice, rather than religious dogma (specific teachings/moral code) to distinguish between denomination specific suicide rates because few religions actually approve of self slaughter as a remedy to life’s ills. Sociology’s “one law”, as it pertains to the Catholic/Protestant differential, is still studied in the academic community. Although, the

denominational differences proposed by Durkheim are not as robust as initially conceived, his general proposition regarding the depressing effect religion has on suicide rates has had more success (Pope,1976; Pope and Danigelis,1981; Bankston, Allen and Cunningham, 1983; Stack, 1983). In a national study, Lester (1987) used the percentage of each state's population that attends church as a measure of religiosity. He found that church attendance was negatively associated with suicide rates—the states with greater church attendance tend to have the lower suicide rates. Stack (1983) credited decreasing church attendance in the United States as an impetus to an increasing suicide rate.

Further research demonstrated that religious context plays a role in whether religiosity has a depressing effect on suicide rates. According to Christopher G. Ellison (1997) religious homogeneity is important to consider when examining the strength of religious integration. He proposed that communities in which the religious structure is dominated by one faith have the highest capacity of integration because there is no competition for “market share and social influence” between faiths. He found religious homogeneity is inversely related to suicide rates and in fact is a stronger predictor than many of the traditional measures of religiosity; percent Catholic or church membership rates.

In sum, Durkheim's general integration/regulation thesis is firmly established in the sociological literature. It is believed that integrated societies with adequate social control function better than societies lacking in integration and regulation.⁹ It is reasonable to assume that social integration and social regulation are major components in the production of the social

⁹ Durkheim acknowledges that too much integration and too much regulation can have negative impacts (fatalistic and altruistic suicide), although the focus is usually on the two forms of suicide that correspond to there being too little integration and regulation in a society (anomic and egoistic suicide).

capital. Durkheim's integration/regulation thesis paved the way for the theory of social capital and its predictable relationship to suicide rates.¹⁰

Integration as a Theme: The Theory of Social Capital

Many scholars (economists, political scientists, sociologists) have been exploring the various types and uses of capital that exist in society. The benefits of human, physical, and cultural capital are well documented in the literature. Social capital is unique relative to the other forms of capital. Whereas the aforementioned types of capital are either embodied by the individual or possessed by the individual, social capital exists only within the associations between individuals. "To possess social capital, a person must be related to others, and it is those others, not himself, who are the actual source of his or her advantage" (Portes, 1998, p. 7) Social capital develops within interpersonal relationships. It is, in effect, an outcome/product of social participation (social integration). Any social interaction has the potential to become a functional association and therefore social integration provides the platform on which social action can arise. Taken further, it is the associations created among individuals during social discourse that provide the opportunity for action that otherwise cannot be accomplished solely by the individual. A group orientation allows for accumulation of group resources that can be used for the benefit of the group. Initially, theorists focused on social capital as an individual asset, capital accessed for individual purpose. Once the focus shifted to social capital as a community asset the popularity of the theory exploded.

¹⁰ Although Durkheim identified causes of suicide, he believed homicide and suicide are distinctly different acts with a particular set of causes.

Pierre Bourdieu and James Coleman

Pierre Bourdieu (1986) and James Coleman (1988) were among the early pundits of the theory. For Bourdieu, social capital is a resource that enables individuals to capitalize from the relationships that constitute their social network. Bourdieu's conception of social capital focused on the benefits an individual can accrue via their membership in a group (associations). He defined social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition—or in other words, to membership in a group—which provides each of its members with the backing of the collectivity-owned capital, a "credential" which entitles them to credit" (Bourdieu, 1986, p. 248). A person invests in relationships to be able to pull available resources from the social circles in which he/she participates. Bourdieu ascribed a direct exchange or cost/benefit analysis to the meaning of social capital. According to Bourdieu, individuals contrive (invest) social relationships for the specific purpose of receiving some benefit (return). Whereas Bourdieu was concerned with the tangible benefits of social capital, Coleman was concerned with the functions of social capital (collective action).

According to Coleman (1988) social capital "is not a single entity but a variety of different entities, with two elements in common: they all consist of some aspect of social structure, and they facilitate certain actions of actors—whether persons or corporate actors—within the structure. Like other forms of capital, social capital is productive, making possible the achievement of certain ends that in its absence would not be possible" (Coleman, 1988, p. 98). Social capital is derived from the social structure and functions as a resource that enables collective action. By examining the social context of education, Coleman demonstrated how the organization of the social structure can facilitate or impede the acquisition of individual and community goals. Communities in which parents know and interact with one another (closure)

provide a greater likelihood of educational success among juveniles than their un-tethered counterparts. Juveniles in tight knit communities are more closely monitored and are therefore (consequently) subjected to more efforts to control their behavior. According to Coleman, a social structure that provides an adequate measure of “closure” is more conducive to academic success than an “open” structure that does not provide for the control of juveniles.¹¹ His analysis demonstrates the significant role of social capital in the creation (development) of other forms of capital (specifically human capital).

Robert Putnam

Although Putnam was not the pioneer of social capital, it was his work that reestablished the centrality of “community” among contemporary scholars and piqued the interest of policy makers. For Putnam, “social capital refers to social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit” (Putnam, 1995, p.67) Communities made up of members who know each other and who are able to work together to achieve common goals have more social capital than communities comprised of highly independent actors. In other words, an interconnected community is better able to satisfy community needs, than a community whose members are operating independently of one another. “...a well-connected individual in a poorly connected society is not as productive as a well-connected individual in a well-connected society. And even a poorly connected individual may derive some of the spillover benefits from living in a well-connected community” (Putnam, 2000, p. 20). Everyone, including free-riders, benefit in an interconnected society. Putnam successfully revitalized academic interest in the notion of “community”.¹²

¹¹ Closure: sufficient ties to guarantee the observance of norms.

¹² Community as a matrix of associations.

For Putman, social participation is the mechanism through which social capital is created and maintained. A community with a rich social life creates and maintains stable, dependable networks of relationships. By contributing to the social environment, through social interaction, people learn that they can depend on and trust others. The associations established through social participation are valuable not only to the individuals comprising the associations, but also to the outlying community because of the increased capacity for collective action.¹³

According to Putnam (2000, p. 22) there are two basic forms of social capital; bonding and bridging. Bonding social capital represents our more intimate relationships with family, friends, coworkers, and neighbors; relationships characterized by strong social ties. Bonding social capital is an integral part of the social support system, but is usually limited by the resources of a relatively homogeneous group. Bridging social capital, on the other hand, represents relationships that are characterized by weaker social ties. However, these ties cover a greater social distance than do the ties characterized by bonding social capital. Consequently, bridging social capital allows for greater access to social resources because the social network spans different social groups. Whereas bonding social capital is confined to more intimate social groups, thereby limiting the availability of resources. The community provides the structure within which bonding and bridging social capital is accumulated and therefore it is the community structure that determines the extent to which either type of capital is produced.

Although, it is assumed that bonding and bridging social capital will inhibit suicide, I do not assume these types will necessarily have equal effects on different social groups. Males commit suicide at much higher rates than females. It stands to reason that males' primary

¹³ Whether that is watching over teens (reduce delinquency, increase educational attainment), neighborhood watch programs (reduce crime), access to healthcare and other social services, etc.

attachments to the community may be more tenuous than those formed by females.¹⁴ Women have a significant role in the family as caregivers, while men are expected to conquer the economic sphere. This may help to explain the significant gender differentials in suicide rates. Although it is expected that both genders will benefit from greater institutional access in the community, i.e. a well established domestic society, greater access to religion, gainful employment, and a strong civic society, the degree to which these community resources affect females and males may be quite different. Theoretically, bonding and bridging social capital can be accumulated from any of the aforementioned sources, however, female social networking is likely to result in a higher degree of bonding social capital, while a higher degree of male social bonds are likely to be involved with bridging social capital. As mentioned before, bonding social capital tends to be characterized by stronger social bonds, while bridging social capital spans different social groups but is characterized by weaker ties, suggesting the ties needed for bridging social capital are more tenuous and more readily prone to dissolution than those characterized in the formation of bonding social capital.

To Putnam (2000), a strong civil society engenders social capital. Putnam focused on participation in political, civic, and/or religious activities, the labor force, informal social groups (with friends and/or informal groups such as book clubs and neighborhood barbeques), and also through altruism, volunteering, and philanthropy as an indication of the matrix of relationships that can be mobilized to satisfy community needs. Political participation can be as minimal as voting and/or identifying with a particular party, more extensive involvement includes activities such as attending a political event and running for a political office. Civic participation includes

¹⁴ A mother is always a mother, even if no longer a wife, while a man's employment status is more tenuous.

membership in different organizations such as the Elks, Women's Clubs, PTA's, Boy Scouts, etc. Religious participation is regarded as simply being a member of a church, attending church, or having more extensive obligations to church activities. Informal social connectedness, according to Putnam, can include, but is not limited to, visiting with friends, socializing in coffee shops or bars, and participation in leisure activities (sports, book clubs, etc.). The social interaction involved with participating in these activities allows for the accumulation of bridging and/or bonding social capital.

Putnam's theory of social capital emphasizes the importance of social participation and interpersonal relationships (trust and norms of reciprocity) for the benefit of the individual and the community as a whole. The social capital created within networks enables communities to operate in an organized and efficient manner (socially organized as opposed to disorganized). "Social networks are threads holding the local social fabric together; they contribute to an atmosphere of familiarity and enhance the ability of communities to regulate behavior. When conventional social institutions (i.e., churches, civic associations) abound in a community, residents have an increased potential to meet and develop personal relationships with persons who reside in their local area, but are not necessarily their immediate neighbors. Thus, by facilitating a growth in social ties, social institutions work to increase social organization and the control capacity in communities" (Lee and Ousey, 2005, pp. 33-34). Communities that lack an institutional base that encourages the formation and maintenance of social networks are therefore deficient in social capital (at the macro level, social organization) and have the potential to fall into disarray. Communities that are no longer able to dictate expectations (conformity and social control) for community members are said to be socially disorganized.

The theory of social capital and the theory of social disorganization can be considered complements of one another, they focus on opposite ends of the continuum of social structure (organized vs. disorganized). Social capital emphasizes the aspects of community structure that are present and produce positive outcomes, while social disorganization focuses on that which is lacking in the community structure and results in negative outcomes. Disorganization is the outcome of declining social capital. Social disorganization is often used to explain high crime rates and racial disparities in offending rates; citing concentrated disadvantage (low SES, ethnic heterogeneity, and residential instability), diminished community attachment, weakened social ties and low collective efficacy as factors that encourage (does nothing to inhibit) the production of crime (Sampson and Groves, 1989; Massey and Denton, 1993; Morenoff, Sampson, and Raudenbush, 2001). According to Wilson (1987) this concentration of criminogenic factors is the consequence of a communities' "isolation" from mainstream social institutions. Social institutions provide the structure on which social capital is established, and therefore, the lack of access to mainstream social institutions leaves some communities bereft of social capital.¹⁵

According to Putnam, it is social capital that helps to minimize the social ills that plague many American communities. In Putnam's view, individuals should be socially involved within their communities because community involvement increases the intensity of social interaction, increasing the probability that social interaction will be transformed into functional

¹⁵ "The social conditions underlying egoism, altruism, anomie, and fatalism all actively impel individuals toward violence by making them dissatisfied" (Unnithan, Corzine, Huff-Corzine, and Whitt 1994, p 28). It is within the context of our social institutions that people interact and react to their social environments. Social institutions determine the social conditions under which people live.

associations.¹⁶ The more people retreat into their homes for their nightly block of television viewing the less opportunity they have to form cooperative relationships (trust/reciprocity) and therefore decrease the ability to accumulate community social capital. Consequently, communities lose the power to dictate expectations for community members (social control) due to the lack of organized resistance.

Other authors have examined the impact of social capital on social outcomes, such as crime rates. In an effort to better understand criminal violence, Rosenfeld, Messner, and Baumer (2001) examined the association between two dimensions of social capital (trust and civic engagement) and U.S. homicide rates from a sample of the adult population (18 and older) across 99 geographic areas. Social capital was represented as a latent construct created using aggregated voting data, organizational membership data and survey data on trust. The results indicated that when there are high levels of generalized trust and civic engagement (social capital) in an area, homicide rates are low independent of population density, level of deprivation, and other sociodemographic indicators.

In a related article, Messner, Rosenfeld, and Baumer (2004), limited their analysis to survey data from the Social Capital Benchmark Survey (SCBS). They selected 50 items to represent Putnam's seven social capital dimensions. They aggregated individual level responses in an effort to devise community level indicators of social capital (means and percentages). Social trust was found to have an inverse relationship to homicide rates (controlling for resource deprivation, population structure, divorce rate, and southern location). Moreover, their

¹⁶ Bridging or bonding social capital. However, it is understood that social capital is not always a positive resource. In some respects, bonding social capital can have counterproductive outcomes by limiting access to resources within the same group and by restricting the ability to establish and maintain ties outside of the primary social group.

examination showed “that communities with high levels of social trust also tend to show high levels of informal socializing, community involvement, volunteering and charity, community service, and political engagement” (Messner et al., 2004). This suggests individual level indicators of social capital such as trust can be inferred by the presence of a community structure that encourages community members to interact; i.e. matrix of social institutions. They also discuss issues pertaining to a reciprocal relationship between homicide and social capital.

Social capital is often conceptualized at the individual level as trust, norms, and networks.¹⁷ Many social capital scholars rely heavily on aggregate individual level survey data to indicate an area’s degree of social capital and to draw conclusions about community level outcomes (Putnam, 2000; Rosenfeld et al., 2001; Messner et al., 2004). Although a useful method for the examination of individual social capital at the macro level, it fails to fully develop a macro level analysis of social capital. “Social structure consists of the patterned relationships among persons and groups defined and organized through social institutions” (Messner et al., 2004). Measuring the quality and quantity of individual social networks provides little information about the community structure within which social networks are embedded. Another avenue of study uses community level indicators to investigate the structural attributes that enable the development of social capital, i.e. social institutions (Tolbert et al., 1998; Tolbert et al., 2002; Lee and Bartkowski, 2004; Lee and Ousey, 2005; Lee, 2006; Lee, 2008).

¹⁷ Suicide at the individual level: Why one person rather than another commits suicide? The focus of macro level research is to answer questions about groups or populations (suicide rates). Why do suicide rates vary across different groups (ex. Gender)? Why do the rates vary across locales (neighborhoods, cities, nations)? Rates are aggregates of individuals and therefore provide no information about individuals per se, but rather allow for a greater understanding the social system in which the individual is embedded. For this paper, instead of focusing on individual measures (ex. survey data), I solely rely on features of the social structure (presence of institutions) to explain the variability of suicide rates across counties.

It should be noted here that social capital is not always beneficial to the community and/or to the individual. Putnam, among others, recognized that certain configurations of capital can actually be counterproductive and harm the community. Street gangs (crips/bloods), Islamic extremists, unethical businessmen (current mortgage and bank crisis) are often tightly bonded through intense loyalty and obligation—although this orientation is essentially producing social capital of either type (bonding and/or bridging)—we would normally not think of these network ties as “benefiting” society. Therefore, there are social structures that encourage the production of social capital that in effect produce negative returns for the community as a whole.

Civil Society and Civic Community Perspectives

Against the current economic tide, Tolbert et al. (1998) and Tolbert et al. (2002) direct attention away from global markets to emphasize the importance of local economies to establish and sustain positive social (community) outcomes. They argue that community structures dominated by locally oriented social institutions are more flexible and adaptive than communities dominated by “global” institutions. They emphasize the importance of a community orientation based on “place”; in that members are stable and invested in the community in which they reside. They reason that when the economy of a community is locally oriented, the business leaders and laborers occupy (and are invested in) the same space.¹⁸ This means that not only do the business leaders know and interact with the workers, but they also know and interact with one another creating interdependence among the business community. “This embeddedness helps ensure that small producers are less likely to pull out of the local community during economic downturns and more likely to provide support, membership, and

¹⁸ As opposed to global markets in which owners of production and laborers are spatially separated.

direction for local institutions” (Tolbert et al., 1998, p. 405). When communities are dominated by local social institutions, stronger ties exist between community institutions and among community members. Tolbert et al. (1998) and Tolbert et al. (2002) reason that locally oriented community activity organized within a strong civil society knits a tighter social weave because the structure of community associations creates a web of networks that penetrates all facets of social life.

The civil society perspective is supported at both county level and small town data level. Tolbert et al. (1998) and Tolbert et al. (2002) found that local capitalism and civic engagement have a positive effect on various socioeconomic outcomes (higher median income, lower poverty rates, lower unemployment rates). They argue that small manufacturing firms, churches and local associations encourage communitarianism among community members which increases social capital enabling a stable and productive socioeconomic climate. “A community’s social and economic institutional matrix not only fosters a sense of public integration and cohesion but also enhances development of public goods and civic welfare” (Tolbert et al., 2002, p. 91). So, not only does a community rife with social capital offer normative socialization and social support, but also the necessary public goods and services that contribute to the social order of a community; like clean streets and parks, emergency services (fire stations, police, and ambulance services), effective schools, health care, etc.

According to Tolbert et al. (1998) and Tolbert et al. (2002) the social capital created through local capitalism and civic engagement (local institutional participation) helps mediate the effects of economic changes (ups, downs, reconfigurations). They promote the idea that a local community orientation coupled with a strong institutional infrastructure can better withstand times of economic instability (economic change). Disruptions in one part of the

structure are absorbed by the matrix of available institutions. Their emphasis resides in the organizational embeddedness of the institutional infrastructure, in this paper the focus is the strength of the institutional infrastructure.

In addition to the civil society perspective, another counterpart to the theory of social capital is the civic community perspective (community resource perspective). In an effort to disentangle age graded violent crime rates, Lee and Bartkowski (2004) synthesized existing structural and cultural explanations of crime to form a civic community perspective that focuses on the resources provided by the community structure to shed light on both juvenile and adult homicide rates. They advocate investigating the “protective” aspects of community organization that inhibit violence, rather than the traditional focus on the “poisonous character of community deficits”(Lee and Bartkowski, 2004, p.9). Rather than ask what is wrong (what is missing) with an area that produces high crime rates, they asked what is right (what is present) in areas that manage to keep a lid on criminal activity. Lee and Bartkowski argue that strain theory and the concentrated disadvantage perspective argue only one side of crime continuum; the crime production side:

“.....they both suggest (strain and concentrated disadvantage perspective) crime rates are primarily driven by a process of normative breakdown due to deficits in the socialization functions of major social institutions. Whether citing social, familial, economic, religious, or political institutions, these major theories (and others) assume that the institutions so vital to maintaining social order and regulating group behavior patterns are, in one way or another, rendered ineffective. If adapted to integrate the language of social capital, these theories reveal how the networks, norms, and trust usually engendered through institutional participation and attachment (i.e., aggregate social capital) are effectively weakened, thus causing crime rates to increase.” (p. 5)

Meaning a lack of institutional organization in communities has a detrimental effect for community outcomes. The focus is on community breakdown and the consequential increase in the production of crime. In contrast, Lee and Bartkowski (2004) focus on aspects of successful

community structures that are able to inhibit the production of crime; active civic involvement of community members. “Social capital is engendered through civic participation (e.g., volunteering, political engagement) because such participation builds networks of exchange based on mutual obligation and reciprocity (in a word, trust)” (Lee and Bartkowski, 2004, p 11). Although civic involvement is beneficial to the community as a whole, Lee and Bartkowski (2004) argue that the benefits accrued through social participation are not evenly distributed throughout the population. “...careful attention must be given to the interplay of age and the specific protections provided by particular types of civic participation” (Lee and Bartkowski, 2004, p. 14). They specifically focus on variations in levels of secular and religious access across urban communities. Adults and youth are differentially engaged with society and consequently the two groups are differentially affected by an area’s available social institutions. Religious participation is regarded as an “open” civic resource because it is available to people of all social groups (regardless of age, race, and gender). On the other hand, access to other forms of civic participation is limited to adults and therefore regarded as a “closed” civic resource to young people.

By disaggregating civil society into secular and religious participation, Lee and Bartkowski (2004) were able to determine the effects different forms of civic engagement have on age-graded homicide rates. They found that while religious participation inhibits homicide among both juveniles and adults, secular participation only affects the homicide rates of adults due to the exclusion of juvenile participation in a sample of urban counties. It is important to note the significance of age when considering community social capital or civic effects due to the social stratification of activities across the lifespan. It stands to reason that various forms of civic participation may also have variegated effects on suicide rates across age groups.

In light of the conclusions drawn by Lee and Bartkowski (2004), it is reasonable to expect that increases in the strength of the religious community will be associated with reduced suicide rates for all social groups because of the “open” nature of religion. The more secular representations of civic association (civic society, local economy, political investment, and domestic investment) are likely to have more variegated effects on social groups with respect to suicide due to greater restriction on participation.

Lee (2006), limiting his analysis to religious access (churches per 1,000) and homicide, demonstrates that the civic community perspective also holds ground in rural areas as it did with urban areas. In a more recent article, Lee (2008) expanded the community resource perspective to incorporate the tenets of the civil society perspective. “Where the population is stable and locally invested in terms of home ownership, where civic engagement is robust in terms of political, civic, and religious participation and institutions, and where there is an active class of locally oriented business persons, establishments, and entrepreneurs, community welfare should be better, including low rates of violent crime.” (Lee, 2008, p. 2) Basically, communities are most stable when the economy is locally oriented and civic engagement is strong. The present study also includes a measure of local “economy” to indicate the level to which a community provides a local base for community members. It is assumed that social capital is strengthened when members have a vested interest in the survival of the community structure.

A strong institutional base encourages civic participation among community members. Social institutions provide the structure within which individuals interact, establish networks, and take action. A cooperative commonwealth hinges on an outlying organizational structure. A strong local institutional base provides access to mainstream norms and values in addition to providing access to a support structure in times of instability.

Rather than use attitudinal individual level data to measure the quality or quantity of network ties, the data in this study is restricted to community level indicators, i.e. access to social institutions, in an effort to distinguish between social systems. The opportunity provided by the community to formulate informal/formal ties should be evident by community level indicators. There is evidence that “communities with high levels of social trust also tend to show high levels of informal socializing, community involvement, volunteering and charity, community service, and political engagement” (Messner et al., 2004). This paper focuses on the social structure (organization) that provides the opportunities for individuals to interact, share norms, and develop trust; specifically, the resources provided in the community that encourage the creation and maintenance of social capital.¹⁹ Therefore, the general theoretical position of this research is that race, gender, and age specific *suicide will be inversely associated with community social capital measured as various forms of institutional access.*²⁰ Although the general expectation is that social capital measures will have a depressing effect on suicide, there is no expectation that different social groups will respond equally to all the various facets of social capital.²¹ This paper

¹⁹ . “...social institutions help to cultivate a collective sense of obligation, trust, and empowerment” (Lee and Ousey, 2005).

²⁰ I do not expect a reciprocal relationship between social capital and suicide, as is a concern with homicide studies, due to the private nature of suicide (Messner et al, 2004). Homicide instills fear in the surrounding community because murders are reported daily via the media. Fear of crime can have devastating effects for communities. People are afraid to walk outside at night. When people begin to retreat into their homes out of fear, not only are communities not able to maintain the existing social capital, but they also become incapable of establishing new investments and consequently communities decline. Although suicide rates tend to be higher than homicide rates, suicide carries less of a sense of vicarious victimization and consequently is less likely to have an impact that alters the general behavioral patterns within the community that might decrease social capital.

²¹ Social groups are not equally integrated into the available social institutions; therefore, additional analysis is required to investigate which social groups benefit from which aspects of

is an exploratory study to investigate community social capital in relation to race, gender, and age specific suicide.

Although it is expected that a tightly weaved community will provide general protections from high suicide rates, it is unlikely that all social groups will be provided equal protections from the community structure. Lee and Bartkowski (2004) demonstrate the variability among age groups with respect to “open” and “closed” civic resources. Due to the “open” access of religion and domestic resources, decreases in suicide were expected across social groups in communities with a dominant religious presence and in a pronounced domestic structure.²² In contrast, the more “closed” forms of civic participation (local economy and political) are likely to have variegated effects with regard to race, gender, and age specific suicide.

Due to the fact significant disparities occur among gender specific suicide rates, it is important to examine male and female rates separately. Males have a much higher propensity for suicide than females. This differential may be a product of the traditional gender roles of males and females. Although gender roles are changing the general expectations still remain. Females are usually expected to be the caregivers within the family, while males are expected to integrate into the economic sphere. Some authors have argued that the equalization of gender expectations and changing gender roles will result in the reduction in the differentials between female and male behavior, meaning there should be a narrowing of the gap between male and female suicide rates (Kessler and McRae, 1982; Stack, 1987). In an examination of national

the community structure. Consequently, I examine race, gender, and age specific suicide counts in relation to the specified social capital indicators.

²² Although it is expected that a tightly weaved community will provide general protections to the community from suicide rates, it is likely that closed structures such as gainful employment, local investment, social and civic participation are not likely to offer the same protections to all social groups.

suicide rates from 1960 to 1978, Renee H. Steffensmeier (1984) found the narrowing of the gender disparity that occurred during the period was first due to an increase in female rates, but later a consequence of a decrease in older male suicide. It has been argued that the greater inclusion of women in society's institutions (economy, politics, and social/civic organizations) would, over time, evolve women's behaviors which would begin to mimic men's behavior (ex. criminal proclivity and suicidal tendency). The gender differential in suicide rates is actually wider today than it was in the 60s and 70s (the range of the gender differential between 1960-1978 was 23.0 to 28.8, while the range in the following years 1979-2005 was 18.07 to 24.39) (Steffensmeier, 1984; Cutlip and Steffensmeier, unpublished paper).

It stands to reason, however, that the gender suicide differential may be a function of economic stability; i.e. local investment. A number of studies give credence to the notion that the status of the male is more heavily affected by economic conditions than the status of the female (Henry and Short, 1954; Steffensmeier and Allan 1996; Yang, 1992). Although the overall expectation is that female and male suicide rates will be inversely associated with community level indicators of social capital (religious society, civil society, domestic society, and employment), it is suspected that men may be better protected from suicide in areas that have greater local investment (stability) because a man's status is more heavily entrenched in the economy than is a woman's status.

It is apparent that racial differentials are evident not only in suicide rates but also in institutional integration due to the cultural, socioeconomic, and historical differences that exist among the races in the United States. There is no expectation that blacks and whites are provided equal protections from institutional availability. Since suicide is much more common among whites, than blacks, it is necessary to examine them separately in order to determine which facets

of community social capital afford protections to which racial group.²³ Historically, whites have dominated the economic and political spheres, while access for blacks has been restricted. Therefore, it can be reasoned that the social capital accumulated within these institutional spheres is less likely to affect black suicide rates. Therefore, it is expected that whites will be afforded protections from all the community has to offer, while suicide among blacks will be lower in areas that have a strong religious and domestic presence. A general summary of the expected relationships is presented in Figure 1 below.

²³ “Generally the effect of race/ethnicity on lethal violence in the United States has been consistent across different studies and time periods, with minorities exhibiting higher homicide rates and lower suicide rates than dominant groups” (Unnithan et al. 1994, p 59).

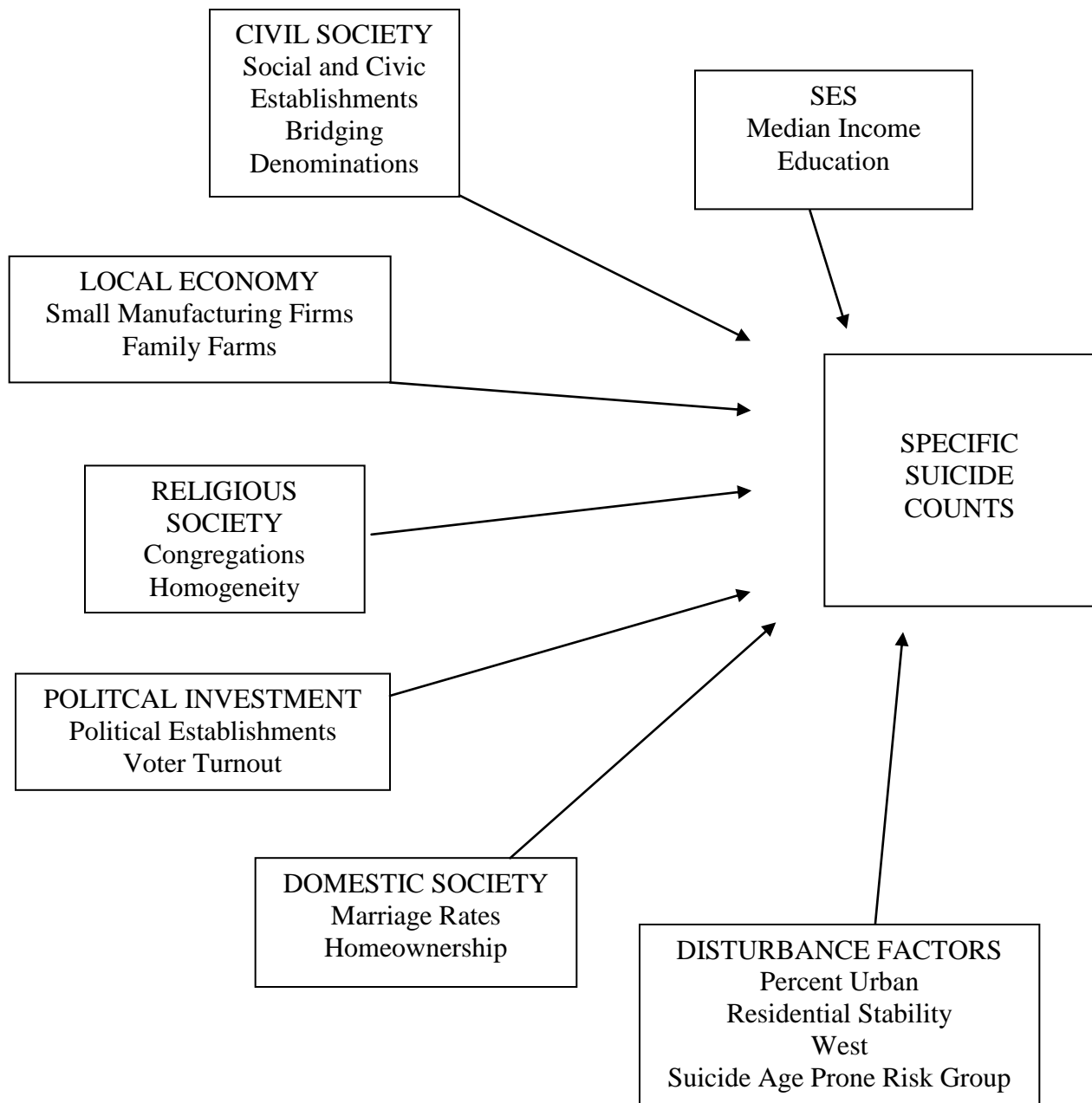


FIGURE 1: A Path Model depicting the relationship between Suicide and Social Capital.

CHAPTER 3: DATA AND METHOD

People's normal social engagements (dinners, meetings, recreation, work, worship, school, dating, etc.) are (mostly) local. Most of what we do is confined to the local area in which we live. Therefore, people are limited by what is available in the "local community". However, due to the dual nature of social capital (bonding and bridging), it cannot be assumed that the local community should be limited to a small, homogeneous group like a neighborhood. Although a county does not necessarily equate to a "community" for the purposes of this study it is an appropriate level of measure. This study is an examination of the association between community social capital and suicide in a sample of large urban counties (100,000 residents and above) and a sample of smaller rural counties (1,000 to 25,000 residents) in the contiguous United States from 1999-2005 (most current data available).²⁴ States and MSA's encompass too much variability to make reasonable assertions about the effect of measures of local social capital on suicide rates.

The following analysis is a macro level study using secondary data sources. For the purposes of this study, county level data was used to examine community social capital for two reasons: (1) County level data allows for the inclusion of both types of social capital, bonding within intimate groups and bridging among social groups. Although an artificial construction of "community", the county approximation theoretically allows for the inclusion of both types of bonds that result in the accumulation of social capital; strong and weak ties (neighborhood or block data excludes much of the bridging social capital that spans a greater distance than the more intimate relationships of the neighborhood). (2) County level data is readily available.

²⁴ In the models depicting black suicide, urban populations with at least 1,000 blacks were selected and rural populations with at least 500 blacks were selected.

Suicide is a rare event in society. Many scholars who investigate homicide utilize negative binomial regression to deal with the low frequency in which homicides occur. It is useful in the case of a dependent variable with a unique distribution and helps to provide a more reliable estimation (Osgood, 2000; Lee and Bartkowski, 2004).²⁵ Therefore, negative binomial regression was used in this study to predict suicide counts. The natural log of the population at risk was specified as an offset variable in the regression equation and is also used as a predictor in the model. By using this method, it allows for the interpretation of suicide rates as opposed to suicide counts. If appropriately applied to homicide studies, negative binomial regression also seems to be the appropriate statistical tool to examine the effects of social capital on suicide.

Dependent Variables

The dependent variable of interest in this study is the sum of disaggregated suicide counts for a 7 year period 1999-2005. Dramatic variation occurs among social groups with regard to suicide (white males have the highest rates, while black females have the lowest). An examination of race (white/black), gender, and age (age 20-54 years/ 55 plus years) disaggregated suicide counts is necessary because white males account for the majority of suicides and therefore group specific effects would be obscured in an analysis of total rates. Race, gender, and age specific suicide counts were compiled from the CDC Wonder website. Because of the low frequency of suicide, it is necessary to use the sum of the counts over a 7 year period for greater statistical reliability in the analysis.

²⁵ Negative binomial regression assumes an overdispersed Poisson distribution.

Primary Explanatory Variables

In an effort to capture macro level indicators of community social capital, this paper focuses on the degree to which various social institutions are available in the community. For this analysis, *institutional access* is used as the proxy indicator of community social capital. Areas deplete of social capital should exhibit comparatively higher rates of suicide among community members than areas rich in social capital.

Civil Society

It has been established in the literature that a community's civic welfare is dependent on the strength of its' civil society. This means that communities that do not provide adequate opportunities for community members to interact do not fare as well as communities with a rich social life. In an effort to capture a county's civil society, data were compiled from the County Business Patterns 2000 data file (U.S. Census Bureau, 2002) regarding the number of social and civic associations in a given area per 1,000 residents. It is believed that communities that provide greater opportunities for members to socially participate and interact with other members will have lower rates of suicide than communities dominated by strangers.

In addition, Troy Blanchard (2008), among others, demonstrates that certain religious denominations are structured in a way that encourages the formation of social ties with community members who are external to the congregation, therefore allowing for the development of bridging social capital within the community. In line with Blanchard's research, data were collected from the American Religious Data Archive (2000) regarding the prevalence of "external" religious congregations in a county. A composite measure was created by adding the number of mainline protestant congregations, the number of evangelical protestant congregations, and the number of catholic congregations for a measure of externally oriented

congregations per 1,000 residents. Appendix A displays the religious denominations used to construct the mainline and evangelical Protestant categories (bridging denominations).

Local Economy

It is believed that a locally oriented economy is more conducive to a stable community than a global economy. A community established within the context of a global economy is dependent on decisions made by individuals external to the community. A locally oriented community has a greater representation of the population strata and greater interdependence between community members, than a community with an external locus of control. In an effort to capture a county's local economic orientation, data were collected on the number of small manufacturing firms (fewer than 20 workers) per 1,000 residents (County Business Patterns 2000 data file), the number of family farms per 1,000 residents (Census of Agriculture, 2002), and the number of self employed per 1,000 residents (U.S. Census Bureau Summary File 3, 2000). It is predicted that a locally oriented economy will provide greater protection to community members with regard to the risk of suicide.

Religious Society

Religious adherence involves integrating oneself into a community; learning the particular dogma (belief system) and the established rules and rituals of the group. A church is a physical representation of a congregation—a group acting/believing in concert. The church is a venue that provides the opportunity for social interaction among members. The implication is that churches (locations of worship) are a powerful, integrating force in society. Churches encourage interaction among people. Therefore, it is expected that areas with a higher prevalence of churches will have lower suicide rates.

According to Ellison (1997), religious homogeneity can enhance social integration due to the lack of competition for religious market share among other religions. Therefore, it is predicted that homogeneity may have protective effects for community members with regard to suicidal inclination. Both measures were compiled from the American Religion Data Archive 2000 (Glenmary Data).

Political Investment

In addition, political access is a cornerstone in American ideology. And thus, included is a measure of political establishments per 1,000 residents and voter *turnout* for the 2000 presidential election, calculated as the number of voters per 1,000 voting age citizens. This provides an indication to the degree to which a county is politically active (political integration). These data were compiled from Dave Leip's Atlas of U.S. Presidential Elections 2000. It is believed that strength of the polity is inversely associated with suicide rates.

Domestic Investment

The family is the core social institution in society. Therefore, communities with a stronger domestic presence should exhibit lower suicide rates than communities deplete of domestic attachments. It has been established that the institution of marriage offers some protection against suicide for those who participate in the union. Marriage is also good for the community. Social disorganization theorists often account for the lack of marriage (the presence of female headed households) as a contributor to crime. It's not the single parent, but the structure of the single parent household that is reasoned to be affecting delinquency rates. Single parent households offer fewer accountable parents to watch over and care about the behavior of potential delinquents (Coleman, 1988). Communities dominated by single parent family structures lack adequate social control and consequently have higher crime rates. If marriage

provides some immunity for the community against high rates of violence, then it is reasonable to expect that communities dominated by married couples provides greater protection from high rates of suicide. The structure of the married household offers greater immunity because of the increase in family density increases social integration. Communities replete with married couples cast a greater social net than communities dominated by persons living alone. Data on the number of married couples per 1,000 residents were drawn from the 2000 Census.

Moreover, homeownership is an investment in the community. When residents own their homes they have a greater stake in the maintenance of the community structure. The number of owner occupied housing units per 1,000 residents was drawn from the Summary File 3 of the 2000 U.S. Census of Population and Housing. It is believed that the prevalence of married couples and owner occupied housing units will have a depressing effect on community suicide.

Employment

We know communities lacking employment opportunities are more likely to experience negative outcomes, than communities that provide adequate opportunities for community members. In an effort to distinguish between counties, rates of *full time employment* will be examined. It is believed that communities that provide adequate employment opportunities provide greater protection against high rates of suicide than communities lacking access to the labor market. Employment data will be collected from the *2000 Census*.

In addition to full time rates of employment, data was also be compiled on *female labor force participation*. While some authors propose that females are likely to experience status conflict when they have social roles that conflict like mother and employee, evidence suggests that female labor force participation allows for greater access to social bonds for women (increases integration) and breaks up the monotony of home life (Kessler and McRae, 1982).

Therefore, it is expected that where there is greater access to the labor market suicide rates will be lower.

Population Stability

Residential stability is often cited as an indicator of the social organization of an area (Sampson and Groves, 1989). Residential instability is known to negatively impact communities. High turnover in a community's population discourages the production of social capital due to the decreased opportunity to form functional associations within the community. In addition, a highly mobile population also factors into population instability. Therefore, an index of residential stability is included in the analysis. The index was created using the population change from 1990 to 2000 and the number of residents that lived in the same house 5 years prior to the census. Both measures were devised from the Summary File 3 of the 2000 U.S. Census of Population and Housing.

Disturbance Factors²⁶

Several disturbance factors must be taken into account in the analysis. Education and income are two alternative forms of capital that increase a community's capacity to develop social capital. It is possible that education (*number of individuals with high school diploma and up per 1,000 residents*) and income (*median household income*) may differentiate between county suicides rates independent of the institutional structure and therefore must be controlled for in the analysis (Coleman, 1988; Stack, 2001). Moreover, historically urban areas have higher suicide rates than rural areas, and therefore *proportion urban* within a county is controlled for in the analysis (Kowalski, Faupel, and Starr, 1987). Suicide rates also vary by *region* and therefore regional differences need to be accounted for in the analysis so that any effects attributed to

²⁶ Data compiled from the Summary file 3 of the 2000 Census.

social capital are not confounded by location (Baller and Richardson, 2002; Cutright and Fernquist, 2004).²⁷ Due to evidence that age is a determining factor in the incidence of suicide, suicide rates were examined to determine the suicide age prone risk group for each social group which was included in the analysis.

²⁷ Regional suicide rates (2004) are as follows: West 12.4, South 11.8, National Rate 11.1, Midwest 10.8, and Northeast 8.1.

CHAPTER 4: ANALYSIS AND RESULTS

The descriptives for the specified study variables are found in Appendices B and C. The following are the basic variable descriptives for both the urban (100,000 residents or more) and rural (1,000 to 25,000 residents) populations. In urban counties, the mean suicide counts are as follows: whites 260, blacks 22, female 59, and male 223. In rural counties, the mean suicide counts are as follows: whites 11, blacks .5, female 2, and male 10. Rural counties had a higher representation of bridging denominations per 1,000 residents than did urban areas (rural mean 1.53 and urban mean .38). Rural counties had a slightly higher presence of social and civic establishments than did urban areas (rural mean .15 and urban mean .12). Urban areas had a slightly higher representation of small manufacturing per 1,000 residents (urban mean .80 and rural mean .74), whereas rural areas had a much significantly larger number of family farms per 1,000 residents than did urban counties (rural mean 47.83 and urban mean 4.10). Only a negligible difference occurred between urban and rural counties with regard to homogeneity (urban mean .31 and rural mean .33), however more significant differences occurred with regard to the number of churches per 1,000 residents (urban mean .84/ urban maximum 2.69; rural mean 2.95/ rural maximum 9.30). Political investment was very low in both samples of counties (.009 and .005), while voter turnout per 1,000 voting age citizens was more highly represented (urban mean 548 and rural mean 561) in the counties. More residents were married and owned their own homes in rural counties than in the urban counties (urban married mean 572, urban own home mean 680, rural married mean 615, rural own home mean 763). Urban counties had a higher mean educational attainment (824 compared to 753 in rural counties) and higher household median income (44,216 compared to 31,756 in rural counties). Urban counties proved

to be less stable than the rural counties with about half of the population residing in the same house 5 years prior to the census, compared to more than 60% in rural counties.

Tables 1 and 2 provide the mean crude suicide rates for the study period by race and gender across age groups.²⁸ Table 1 shows the suicide rates in urban counties and Table 2 shows the rates in rural counties.

Table 1: Mean Crude Suicide Rates (per 100,000) by Age Category and Social Group in Urban Counties								
	Urban (100,000 residents and above)							
Age Groups	Male	Female	White	Black	White Male	White Female	Black Male	Black Female
10-14	4.04	1.78	2.71	2.01	1.96	.76	1.27	.75
15-19	12.27	3.89	7.03	4.22	5.60	1.42	3.29	.93
20-24	54.07	11.10	26.05	21.87	22.18	3.86	19.50	2.37
25-34	44.24	9.95	23.38	17.01	19.11	4.27	14.58	2.43
35-44	36.65	11.04	25.16	11.01	23.64	5.79	8.65	2.35
45-54	46.11	15.16	34.89	11.79	26.37	8.53	9.54	2.25
55-64	42.97	12.15	29.23	12.86	22.68	6.55	11.42	1.44
65-74	45.40	8.92	29.13	10.54	24.78	4.36	8.60	1.94
75-84	61.21	8.13	43.60	12.95	39.34	4.25	12.37	.58
85pl	89.98	16.64	55.82	8.33	52.20	3.62	7.70	.64

Table 2: Mean Crude Suicide Rates (per 100,000) by Age Category and Social Group in Rural Counties								
	Rural (1,000 to 25,000 residents)							
Age Groups	Male	Female	White	Black	White Male	White Female	Black Male	Black Female
10-14	4.83	4.14	4.24	.73	3.67	.57	.64	.08
15-19	13.60	1.59	9.34	1.81	7.96	1.39	1.78	.04
20-24	54.54	13.08	37.87	14.47	33.80	4.07	14.02	.44
25-34	46.67	10.14	29.01	12.90	25.16	3.85	11.96	.93
35-44	46.02	14.24	30.23	16.73	28.14	5.94	13.63	3.10
45-54	51.55	17.02	38.15	12.09	30.17	7.99	10.87	1.22
55-64	43.26	7.03	32.39	7.14	27.31	5.08	6.77	.37
65-74	52.20	10.18	35.21	20.13	31.17	4.04	19.67	.45
75-84	59.77	13.56	53.53	7.90	50.68	2.84	6.70	1.19
85pl	76.72	2.89	70.48	9.13	67.59	2.89	9.13	.000

²⁸ Mean crude rates over the 7 year study period (1999-2005).

As these tables demonstrate there is much variability with regard to suicidal inclination among social groups. White males maintain the highest suicide rates; black males have the second highest, white females have the third highest, while black females have the lowest inclination for suicide. As evidenced by Tables 1 and 2, age is also a significant determinant of suicidal proclivity (white males 85 years old and older maintain the highest rates in both urban and rural counties occurs). Consequently, it is necessary to analyze race, gender, and age specific suicide rates in both large and small communities.

The preliminary analysis of the study variables revealed multicollinearity problems which necessitated the creation of 6 indices; 5 community social capital indices and 1 control index (civic society, local economy, religious society, political society, domestic investment, and socioeconomic status). Several variables had to be excluded from the final analyses (self employed, work at home, families with children, and living alone) due to multicollinearity problems. Once the remaining variables were combined using factor analysis all variance inflation factor scores were below 2.5 for both urban (520) and rural populations (1530). The bivariate correlations among the dependent variable, explanatory indices, and control variables are presented in Appendix D. By controlling for the natural log of the population and also including it as an offset variable, it is necessary to interpret the coefficients as being different from 1 rather than zero.

Race, Gender, and Age Specific Suicide in Urban Counties

Table 3 provides the results of 6 negative binomial regression models predicting race, gender, and age specific suicide for urban counties (100,000 residents or more). The civic society index achieved significance in 4 of the 6 models in Table 3. As predicted, increases in the strength of the civic society were associated with reductions in suicide among females (Model

Table 3: Negative Binomial Regression Models Predicting Suicide for Whites, Blacks, Males, Females, Age 20-54, and Age 55 plus in Urban counties.

	White (N=520)	Black (N=488)	Male (N=520)	Female (N=520)	Age 20-54 (N=520)	Age 55 plus (N=520)
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Civic Society	-.000 (.032)	.217** (.072)	.107** (.030)	-.044** (.046)	.148** (.040)	.006 (.037)
Local Economy	-.002 (.019)	.067* (.032)	-.017 (.017)	.068** (.025)	.064** (.023)	.031 (.020)
Religious Society	-.086** (.016)	-.068+ (.031)	-.057** (.015)	-.061** (.023)	-.064** (.020)	-.092** (.019)
Political Society	.006 (.016)	-.003 (.026)	.036* (.014)	.023 (.021)	.058** (.019)	.020 (.017)
Domestic Investment	.075** (.011)	.022 (.018)	.116** (.010)	.080** (.014)	.162** (.013)	.092** (.011)
SES	-.180** (.015)	-.051+ (.026)	-.194** (.014)	-.160** (.019)	-.200** (.018)	-.123** (.016)
Residential Stability	-1.34** (.192)	-.554 (.339)	-1.27** (.179)	-2.65** (.265)	-1.69** (.234)	-2.21** (.222)
Proportion Urban	.173+ (.091)	.445* (.189)	.132 (.085)	.052 (.128)	.271* (.110)	-.220* (.106)
Dummy West	.252** (.027)	.297** (.052)	.297** (.025)	.227** (.035)	.145** (.033)	.287** (.028)
Suicide Risk Age Group	.002 (.002)	.004** (.001)	-.004+ (.002)	.082** (.007)	N/A	N/A
Population Log Likelihood	-.035* (.017)	-.022 (.020)	-.014 (.016)	.018 (.022)	-.047* (.020)	-.018 (.017)
ratio chi-square	383.86**	98.94**	445.47**	310.55**	307.21**	404.62**
Pseudo R2	.0680	.0370	.0815	.0726	.0549	.0898

Note: The first row is the negative binomial regression coefficient and the second row in the parentheses is the standard error. +p < .10; *p < .05; **p < .01

4), however, unexpectedly, a stronger civic society was associated with increases in suicide among blacks (Model 2), males (Model 3) and those age 20-54 (Model 5). An increasingly present civic society increased suicide among blacks, males, and those age 20-54 in this set of models. It may be that the variables that were used to construct the civic society index were determinant of the results. For the purposes of this study, macro level indicators were selected to represent community social capital with the belief that counties with higher levels of social capital would have lower rates of suicide. The analysis does not account for the racial, gender, or age distribution of participation within civic and social establishments and bridging religious denominations. It could be that rates of participation within these groups vary which may clarify these results.²⁹

The local economy index achieved significance among 3 of the 6 urban models in Table 3. Increases in the strength of the local economy were associated with increases in suicide among blacks (Model 2), females (Model 4), and those age 20-54 years old (Model 5). The local economy measure failed to achieve significance among whites (Model 1), males (Model 3), and those age 55 years and older (Model 6). Again, the analysis does not account for participation rates. A greater presence of small manufacturing firms and family farms may indicate that a lack of alternative opportunities for those less integrated into this type of economic environment. Blacks, females, and those age 20-54 may tend to have a more tenuous relationship with the labor market and therefore may be disadvantaged in a market with a greater presence of small manufacturing and family farms. Similarly, increases in the strength of the polity were also

²⁹ Those who participate in these organizations may reap more rewards from participation than other community members not so affiliated in the community. Although civic/social organizations and external bridging denominations may be represented and available in a community the specified social groups may not be equally integrated into these organizations and therefore are likely to have varying outcomes.

associated with increases in suicide among males (Model 3) and those age 20-54 years old (Model 5), but failed to register effects in the other models.

In contrast, the religiosity index did achieve significance in the predicted direction in all of the 6 urban models in Table 3. As expected, the strength of an established religious presence (large number of churches and religious homogeneity) is associated with reductions in suicide among whites, blacks, males, females, age 20-54, and age 55 plus (Models 1-6). Although this supports the notion that a strong religious base produces overall better community outcomes, it does not designate any specific denominational effect.

A rather consistent serendipitous finding is the positive association between the strength of domestic obligation and suicide. The domestic investment index achieved significance among 5 of the 6 models (blacks excluded), but not in the predicted direction. In this study, increases in the strength of a community's domestic investment (marriage and homeownership) are associated with increased rates of suicide among whites, males, females, and both age groups. It could be that the increases in rates are due to higher rates of suicide among single people in communities rife with domestic obligation and expectation. Moreover, it may be necessary to account for the number of divorces relative to marriages in a county. It could be that divorce rates are high in many places that have high rates of marriage which may refute the notion that the institution of marriage can counter negative community outcomes even in the presence of divorce. It may be necessary to gauge a community's "norm of marriage" by controlling for the number of divorces in an area.³⁰

³⁰ "Norm of marriage" implies low divorce rates.

The results in Table 3 reveal that not all forms of community social capital have uniform positive effects across social groups. The degree to which a community's economy is locally oriented, a community's political investment, and a community's strength of domestic investment had only poisonous effects for some urban social groups in Table 3. This may indicate that the civil society and civic engagement perspectives may suffer from the same type of theoretical problem posed in social capital discussions. Some social capital can be harmful. And thus, here too, some macro level indicators of social interaction actually have the unexpected effect of increasing suicide within certain social groups. Although the community social capital indicators did not perform quite as expected in the first group of models in Table 3, upon further analyses the theoretical propositions fare much better.

With regard to the disturbance variables included in the models, the socioeconomic index and residential stability variable had consistently negative impacts on suicide rates in all social categories. Table 3 reveals that urban counties (100,000 residents or more) with higher degrees of socioeconomic standing and residential stability benefit from reductions in suicide rates. However, the proportion of the population that is urban achieved significance in 4 of the 6 models, indicating proportion urban positively impacts the suicide rates of both racial categories and both of the two age groups (20-54 years), but failed to gain significance among males and females. Moreover, being in the West was associated with increases in suicide in all social categories in Table 3.

Race, Gender, and Age Specific Suicide in Rural Counties

Table 4 shows the results of 6 negative binomial regression models predicting race, gender, and age specific suicide for rural counties. Among the rural counties, the civic society index achieved significance in only 1 of the 6 models in Table 4. A strong civic society was

Table 4: Negative Binomial Regression Models Predicting Suicide for Whites, Blacks, Males, Females, Age 20-54, and Age 55 Plus in Rural counties.

	White (N=1530)	Black (N=425)	Male (N=1530)	Female (N=1530)	Age 20-54 (N=1530)	Age 55 Plus (N=1530)
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Civic Society	-.032* (.013)	.090 (.111)	-.001 (.013)	-.032 (.030)	-.003 (.016)	-.029 (.019)
Local Economy	-.034** (.011)	.149** (.056)	.019 (.012)	-.066** (.025)	.022 (.015)	-.022 (.017)
Religious Society	.004 (.013)	-.006 (.068)	-.004 (.014)	.011 (.028)	.003 (.016)	-.010 (.020)
Political Society	-.011 (.011)	-.018 (.056)	-.006 (.011)	-.035 (.025)	-.002 (.014)	-.019 (.017)
Domestic Investment	.020 (.016)	.006 (.067)	.088** (.016)	.133** (.033)	.134** (.018)	.080** (.023)
SES	-.114** (.014)	.110 (.087)	-.113** (.015)	-.087** (.031)	-.094** (.019)	-.079** (.023)
Residential Stability	-1.19** (.020)	-.336 (.948)	-1.51** (.211)	-2.28** (.433)	-1.46** (.258)	-2.11** (.314)
Proportion Urban	-.104* (.048)	-.180 (.234)	.004 (.051)	.061 (.104)	.009 (.061)	-.164* (.076)
Dummy West	.392** (.030)	-	.402** (.033)	.415** (.067)	.340** (.040)	.458** (.046)
Suicide Risk Group	.003 (.002)	.020** (.003)	-.002 (.004)	.040** (.011)	N/A	N/A
Population Log Likelihood	-.018 (.020)	.109 (.077)	-.044* (.022)	.138** (.048)	.035 (.027)	-.001 (.032)
ratio chi-square	351.50**	50.56**	292.48**	158.26**	175.96**	226.53**
Pseudo R2	.0417	.0417	.0357	.0329	.0220	.0356

Note: The first row is the negative binomial regression coefficient and the second row in the parentheses is the standard error.

+p < .10; *p < .05; **p < .01

found to be associated with reductions in suicide only among whites (Model 1) in rural counties. Although it is believed that community social capital is a resource for communities, it is not assumed that its benefit is necessarily evenly spread throughout the community. It may be that many forms of community social capital are more beneficial to groups that have the greatest access to social participation.

The local economy index achieved significance in 3 of the 6 models in Table 4. Increases in the presence of small manufacturing firms and family farms were associated with reductions in suicide among whites (Model 1) and females (Model 4), but had the opposite effect among blacks (Model 2). The strength of the local economy was associated with increases in suicide among rural blacks. This serendipitous finding may be a reflection of social status.

Oddly enough, unlike the urban counterpart, there was no religiosity or political effect among any of the specified social groups in rural counties. However, domestic investment again appears to be damaging by increasing the propensity for suicide among 4 of the 6 models included in Table 4. Increases in domestic investment were associated with increases in suicide among males (Model 3), females (Model 4), and both age groups (Models 5 and 6).

The effects of socioeconomic status and residential stability in the rural models were similar to the effects in the urban models. Proportion urban, on the other hand, played a different role among the rural populations than it did among the urban populations. In the urban counties, increases in the proportion of the population that is urban had positive effects on suicide, but in the rural counties the association is negative. Proportion urban decreases the propensity for suicide among whites (Model 1) and 55 plus (Model 6) in rural counties. This means that the increasing presence of an urban population in rural counties of 1,000 to 25,000 residents is associated with reductions in suicide among whites and those age 55 plus. It could be that a

higher proportions of an urban population in rural areas acts to increase options for rural residents therefore providing greater opportunities for social networking. This may indicate that increases in the proportion urban in rural areas (1,000 to 25,000 residents) may increase options for residents which may act to relieve a fatalist orientation, while at the same time increases in the proportion urban in more densely populated areas (100,000 or more residents) increases social options but rather than alleviating constricted choices, too many options may result in anomie.

Race and Gender Specific Suicide in Urban Counties

Table 5 shows the results of 4 negative binomial regression models predicting race and gender specific suicide rates for urban counties (100,000 residents or more). The civic society index achieved significance in 2 of the 4 models. Again, like in Table 3, the effects of the civic society index are not uniform across social groups. A strong civic society is associated with reductions in the propensity for suicide among white females (Model 3), but increases suicidal inclination among black males (Model 2). Here again, these results may be a consequence of either selection bias regarding the types of establishments included in the analysis or differentials in participation rates.

In model 2 of Table 5, the effects of social capital on urban black male suicide are not in the predicted direction for either of the two indices that achieved significance. Both a strong civic society and a strong local economy are associated with increases in suicide among black males. A strong local economy is also associated with increases in suicide among white females (Model 3) in counties of 100,000 residents or more. These serendipitous results may be a consequence of participation differentials or a reflection of status frustration experienced by blacks and females in more densely populated counties.

Table 5: Negative Binomial Regression Models Predicting Suicide for White Males, Black Males, White Females and Black Females in Urban counties.

	White Male (N=520)	Black Male (N=488)	White Female (N=520)	Black Female (N=488)
	Model 1	Model 2	Model 3	Model 4
Civic Society	.037 (.031)	.182* (.078)	-.135** (.048)	.193 (.136)
Local Economy	-.010 (.018)	.089* (.035)	.053* (.027)	.053 (.054)
Religious Society	-.081** (.016)	-.063 (.032)	-.114** (.024)	-.094 (.067)
Political Society	.011 (.015)	.008 (.028)	.016 (.023)	.067 (.045)
Domestic Investment	.084** (.011)	.031 (.020)	.039* (.016)	-.009 (.033)
SES	-.193** (.014)	-.081** (.029)	-.158** (.021)	.018 (.048)
Residential Stability	-1.12** (.184)	-.751* (.367)	-1.97** (.275)	-.218 (.577)
Proportion Urban	.192* (.088)	.453* (.205)	.224 (.137)	.934* (.397)
Dummy West	.260** (.026)	.176** (.057)	.180** (.037)	.452** (.090)
Suicide Risk Group	.003 (.002)	.001 (.001)	.005+ (.003)	-.006 (.006)
Population Log Likelihood ratio chi-square	-.037* (.017)	-.013 (.022)	-.025 (.024)	-.057+ (.034)
Pseudo R2	402.64**	49.26**	258.48**	55.47**
	.0747	.0193	.0600	.0350

Note: The first row is the negative binomial regression coefficient and the second row in the parentheses is the standard error.

+p < .10; *p < .05; **p < .01

Consistent with previous results, the religiosity index maintained a negative relationship with suicide, but only for whites (Models 1 and 3) in Table 5. The strength of the established religious presence is associated with decreases in suicide among urban white males and urban white females, but not among urban blacks in this table. The strength of the polity had no effect on the rates in urban counties (100,000 residents or more) in Table 5, while domestic investment maintained its' poisonous character, but only among white males (mode 1) and white females (Model 4) in urban counties.

The socioeconomic index achieved significance in 3 of the 4 models (no effect on black female suicide) in the predicted negative direction. Residential stability inhibits suicide among white males (Model 1), black males (Model 2), and white females (Model 3), but has no effect on black males. Like in Table 3, increases in the proportion of the population that is urban and being in the West increase the propensity of suicide in counties of 100,000 or more.

Race and Gender Specific Suicide in Rural Counties

Table 6 shows results of 3 negative binomial regression models predicting race and gender specific suicide for rural counties (the analysis of black female suicide did not achieve significance and was excluded). Of the 5 community social capital indices only the civic society index and local economy index achieved significance in any of the models. The civic society index achieved significance in 2 of the 3 models. Much like in Table 4 (Model 1), the civic society index maintains significance in the predicted direction for whites (Models 1 and 3) indicating increases in the strength of civic society are associated with decreases in rural white male and rural white female suicide.

Again, no protective effects registered among black males (Model 2) with regard to any of the community social capital indicators in Table 6. In counties of 1,000 to 25,000 residents, a

Table 6: Negative Binomial Regression Models Predicting Suicide for Whites, Blacks, Males, and Females in Rural counties.

	White Male (N=1530)	Black Male (N=429)	White Female (N=1530)	Black Female
	Model 1	Model 2	Model 3	
Civic Society	-.030* (.013)	-.043 (.124)	-.064* (.029)	-
Local Economy	-.017 (.012)	.184** (.066)	-.099** (.025)	-
Religious Society	.003 (.013)	.007 (.076)	.007 (.027)	-
Political Society	-.006 (.011)	.000 (.064)	-.022 (.025)	-
Domestic Investment	.015 (.017)	-.119 (.073)	.032 (.036)	-
SES	-.126** (.015)	.140 (.097)	-.068* (.031)	-
Residential Stability	-1.06** (.212)	.631 (1.05)	-1.25** (.449)	-
Proportion Urban	-.082 (.051)	-.224 (.263)	-.040 (.106)	-
Dummy West	.372** (.032)	N/A	.394** (.066)	-
Suicide Risk Group	.003 (.002)	.019** (.004)	.005 (.004)	-
Population Log	-.037+ (.021)	.012 (.088)	.099* (.046)	-
Likelihood ratio chi-square	291.37**	30.48**	131.27**	-
Pseudo R2	.0363	.0256	.0277	-

Note: The first row is the negative binomial regression coefficient and the second row in the parentheses is the standard error.

+p < .10; *p < .05; **p < .01

locally based economy is associated with reductions in suicide among white females (Model 3), but again, serendipitously is associated with increases in suicide among black males (Model 2). In fact, in Tables 4 and 6, the local economy index is the only social capital index to achieve significance among blacks in smaller counties and it is not in the expected direction. This could be a consequence of competition in the labor market in rural areas. Meaning a higher representation of local enterprise verses global enterprise in counties of 1,000 to 25,000 may negatively impact opportunity by limiting the size of the labor market and increasing competition for jobs. An established religious presence, the strength of the polity, and domestic investment had no effect in rural counties in Table 6.

A county's socioeconomic status and degree of residential stability maintain their negative relationship with suicide for white males and white females in rural areas, but had no effect for black males. Proportion urban failed to achieve significance in Table 6, while being in the West is associated with increases in suicide for white males and white females.

Race and Gender Specific Suicide in Two Age Categories in Urban Counties

Table 7 shows the results of 8 negative binomial regression models predicting race and gender specific suicide for 2 age categories in urban counties (100,000 residents or more). When social categories are disaggregated by age, a slightly different picture arises. By disaggregating race, gender, and age specific suicide rates, 3 of the 5 social capital indices achieved significance in the predicted direction among most of the social groups. The strength of a community's civic society and the strength of the established religious society achieved significance in the predicted direction in all 8 models in Table 7. Increases in the strength of civic society in counties of 100,000 or more are associated with reductions in suicide among white males 20-54 (Model 1), black males 20-54 (Model 2), white females 20-54 (Model 3), black females 20-54 (Model 4),

Table 7: Negative Binomial Regression Models Predicting Suicide for White Males, Blacks Males, White Females, and Black Females for 2 Age Categories in Urban counties.

	White Male (N=520)	Black Male (N=488)	White Female (N=520)	Black Female (N=488)	White Male (N=520)	Black Male (N=488)	White Female (N=520)	Black Female (N=488)
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	AGE 20-54				AGE 55 Plus			
Civic Society	-.167** (.056)	-.544** (.153)	-.331** (.073)	-.425* (.209)	-.361** (.071)	-.755** (.241)	-.671** (.096)	-.813* (.393)
Local Economy	.060+ (.035)	-.011 (.080)	.105* (.045)	-.056 (.097)	.038 (.046)	.098 (.114)	.129* (.055)	.081 (.168)
Religious Society	-.164** (.030)	-.296** (.078)	-.193** (.039)	-.527** (.106)	-.249** (.040)	-.423** (.122)	-.288** (.049)	-.324+ (.193)
Political Society	-.029 (.029)	-.152** (.058)	.005 (.037)	.082 (.076)	-.034 (.037)	-.032 (.097)	.018 (.046)	.103 (.146)
Domestic Investment SES	-.044* (.020)	-.182** (.052)	-.050* (.025)	-.125* (.056)	-.068** (.026)	-.084 (.071)	-.119** (.030)	-.065 (.090)
Residential Stability	-.132** (.027)	-.216** (.064)	-.150** (.035)	-.187* (.075)	-.178** (.034)	-.327** (.088)	-.158** (.041)	-.329* (.131)
Proportion Urban	.668+ (.343)	2.32** (.815)	.007 (.437)	4.15** (.967)	1.66** (.451)	-4.56** (1.21)	1.37* (.546)	4.06* (1.87)
Dummy West	1.50** (.150)	2.49** (.384)	1.62** (.196)	1.92** (.571)	1.93** (.186)	1.58** (.602)	2.43** (.245)	2.46* (1.10)
Population Log	.180** (.050)	-.507** (.118)	.111+ (.062)	-.275+ (.145)	.379** (.063)	-.578** (.175)	.248** (.075)	-.318 (.259)
Likelihood ratio chi- square	-.447** (.020)	-.490** (.086)	-.461** (.025)	-.354** (.046)	-.643** (.018)	-.517** (.050)	-.649** (.022)	-.509** (.070)
Pseudo R2	630.79**	208.30**	480.79**	95.99**	1253.22**	161.45**	972.54**	61.64**
	.1036	.0672	.1051	.0571	.2126	.0929	.2270	.0768

Note: The first row is the negative binomial regression coefficient and the second row in the parentheses is the standard error.

+p < .10; *p < .05; **p < .01

white males 55 plus (Model 5), black males 55 plus (Model 6), white females (Model 7), and black females (Model 8). Unlike the previous urban models (Table 3 and 5), once age is taken into account, domestic investment achieved significance in the predicted direction in 6 of the 8 models in Table 7. As predicted, communities rife with domestic obligation are associated with reductions in suicide among all 4 models in the 20 to 54 age category (Models 1 through 4), but only among whites (Model 5 and Model 7) in the 55 plus age category. The strength of the polity achieved significance in the predicted direction among only one social group, black males 20-54 (Model 2).

The results displayed in Table 7 provide evidence to the notion that community social capital is good for the community as a whole and not simply beneficial to those who may be socially involved in the community. Although the social capital indicators fare better in this set of models than previous ones, there are still serendipitous findings that must be noted. The strength of the local economy achieved significance in 3 of the 8 urban models, but contrary to predictions. Increases in the strength of the local economy are associated with increases in urban suicide among white males 20-54 (Model 1), white females 20-54 (Model 3), and white females 55 plus (Model 7). The consistent positive relationship between a local economic orientation and suicide may be a function of the index itself. Although it is reasonable to assume that a greater presence of small manufacturing and family farms may indicate a local economic presence, it is possible that the index may be capturing a lack of opportunity. It may be beneficial to strengthen the local economy index with other measures of “local” (ex. self employed or works at home).

Three of the 5 social capital indices achieved significance in the predicted direction among urban whites in both age groups (Models 1, 3, 5, and 7). Increases in the strength of the

civic society, the strength of the established religious society, and increases in the strength of domestic obligation are associated with decreases in urban suicide among young and older whites, male and female. Although the local economy index achieved significance among the younger white males, the relationship did not hold in the 55 plus age group.

Once age is taken into account, the analysis reveals benefits of community social capital to blacks with regard to suicide propensity rather than the previously described positive relationships (associated with increases in suicide among blacks) in Tables 3, 4, 5, and 6. Four of the 5 community social capital indices achieved significance in the predicted direction in Table 7 among urban black males 20-54 years of age. In this model, increases in civic society, an established religious society, increases in the polity, and increases in domestic obligation are all associated with reductions in urban suicide among black males 20-54 years of age (Model 2). This indicates that the suicide rates of urban working aged black males decrease in a community rife with social capital.³¹ Only the civic society index and religious society index achieved significance in the predicted direction among older black males (Model 6).

Three of the 5 indices achieved significance in the predicted direction among black females 20-54 years of age. Increases in civic society, an established religious presence, and increases in domestic obligation are associated with decreases in urban suicide among black females 20-54 (Model 4). Again, only civic society and religious society maintained significance in the predicted direction among the older black female group (Model 8).

The younger age groups fared slightly better with regard to community social capital than the older age groups in urban counties (100,000 residents or more). However, it is reasonable

³¹ The highest suicide and homicide rates of black males occur in the younger 20-24 age groups. Therefore, not only does community social capital benefit black male suicide, but also black male homicide (Rosefeld et al., 2001; Lee and Ousey, 2005).

that the civic society index and the religious society index are the only two indices to consistently maintain significance among older whites and blacks (Models 5, 6, 7, and 8).

Voluntary organizational participation becomes more relevant as people age due to decreases in social interaction in other institutional spheres (i.e. employment and family).

Race and Gender Specific Suicide in Two Age Categories in Rural Counties

Table 8 shows the results of 6 negative binomial regression models predicting race and gender specific suicide for 2 age categories in rural counties (black females excluded due to insignificant model). The most obvious discrepancy between Table 7 and Table 8 is the lack of significance of the social capital indices among rural black males (Models 2 and 5). Whereas in urban areas (Table 7), black males were afforded protections through increases in community social capital, it appears as though these effects are lost in the rural counties (1,000 to 25,000 residents). It is important to note that the strength of the civic society is associated with reductions in working age black male suicide (Model 2), but the effect is lost in the older age group (Model 5). Increases in domestic investment are also associated with reductions in suicide among young and older black males (Model 2 and 5).

Another notable difference between Table 7 and Table 8 is the change in direction for the local economy index. In the urban counties, the relationship is positive, but the relationship is negative in the rural counties. This may indicate that in more densely populated areas (100,000 or more) the greater presence of small manufacturing and family farms is an indication of lack of

opportunity which can negatively impact a population. While the greater presence of small manufacturing and family farms in rural areas (1,000 to 25,000) may actually be capturing the stabilizing benefits of local enterprise.

Table 8: Negative Binomial Regression Models Predicting Suicide for White Males, Black Males, and White Females for 2 Age Categories in Rural counties.

	White Male (N=1530)	Black Male (N=429)	White Female (N=1529)	White Male (N=1530)	Black Male (N=429)	White Female (N=1529)
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Age 20-54			Age 55 plus		
Civic Society	-.159** (.019)	-.325* (.148)	-.204** (.037)	-.143** (.023)	.081 (.223)	-.135* (.052)
Local Economy	-.069** (.017)	.066 (.083)	-.094** (.032)	-.051* (.021)	.147 (.131)	-.163** (.047)
Religious Society	-.116** (.020)	-.134 (.090)	-.102** (.035)	-.158** (.025)	-.076 (.154)	-.206** (.054)
Political Society	-.039* (.017)	-.063 (.079)	-.032 (.030)	-.028 (.019)	-.228 (.153)	-.052 (.045)
Domestic Investment	.030 (.024)	-.180* (.085)	.023 (.041)	.050+ (.031)	-.269+ (.143)	.102 (.062)
SES	-.088** (.023)	.013 (.115)	-.041 (.039)	-.134** (.028)	.512** (.187)	-.083 (.058)
Residential Stability	-.503 (.329)	3.13* (1.27)	-.546 (.569)	-.731+ (.407)	2.36 (2.23)	-1.45+ (.818)
Proportion Urban	.264** (.074)	-.315 (.303)	.294* (.127)	.181* (.092)	-1.08* (.535)	.194 (.184)
Dummy West	.117* (.048)	N/A	.195* (.082)	.243** (.057)	N/A	-.006 (.123)
Population Log	-.665** (.017)	-.749** (.034)	-.630** (.034)	-.792** (.017)	-.827** (.053)	-.790** (.039)
Likelihood ratio chi-square	1481.45**	271.21**	319.15**	1526.29**	168.39**	301.13**
Pseudo R2	.1573	.2049	.0711	.1932	.2564	.1003

Note: The first row is the negative binomial regression coefficient and the second row in the parentheses is the standard error.
+p < .10; *p < .05; **p < .01

In contrast to Table 7, Table 8 shows only negative relationships (with the exception of domestic obligation and older white males) between community social capital and white suicide (Models 1, 3, 4, and 6). Four of the 5 social capital indicators achieved significance among white males 20-54 years old (Model 1), while 3 of the 5 achieved significance among white females 20-54 years old. The strength of the civic society, the local economic orientation, the strength of the established religious society, and the strength of the polity were all inversely related suicide among the younger white males (Model 1), all but the strength of the polity maintained significance among the older white male age group (Model 4). Tables 7 and 8 provide greater general support for the theoretical predictions regarding community social capital and suicide, than did the previous set of tables (3 through 6).

In summary, as predicted, community social capital is associated with suicide. However, as evidenced in Tables 9 and 10, various components of community social capital have variegated effects on different social groups. The most significant component of community social capital for all urban social groups is the strength of the established religious society. An established religious presence consistently reduced suicide in urban counties, but less so in the rural counties. Of the 18 urban models, the religious society index achieved significance in the predicted (negative) direction in 16 of them (Table 9). Comparatively, of the 16 rural models, the religious society index achieved significance in the predicted direction in only 4 of the models (Table 10). The most significant component of community social capital for all rural social groups is the strength of the civic society which achieved significance in the predicted direction in 8 of the 15 rural models (Table 10). The predictions regarding civic society were also supported in 10 of the 18 urban models (Table 9).

Table 9: General Predictions and Final Results for the Race, Gender, and Age Disaggregated Suicide Analyses for Urban Counties

		Civic Society		Local Economy		Religious Society		Political Society		Domestic Investment	
		P/R	Supported	P/R	Supported	P/R	Supported	P/R	Supported	P/R	Supported
Race	White	-	No	-	No	-	Yes	-	No	- / +	No
	Black	- / +	No	- / +	No	-	Yes	-	No	-	No
Gender	Male	- / +	No	-	No	-	Yes	- / +	No	- / +	No
	Female	-	Yes	- / +	No	-	Yes	-	No	- / +	No
Age	20-54	- / +	No	- / +	No	-	Yes	- / +	No	- / +	No
	55 Plus	-	No	-	No	-	Yes	-	No	- / +	No
Race/ Gender	WM	-	No	-	No	-	Yes	-	No	- / +	No
	BM	- / +	No	- / +	No	-	No	-	No	-	No
	W F	-	Yes	- / +	No	-	Yes	-	No	- / +	No
	BF	-	No	-	No	-	No	-	No	-	No
Race/ Gender / Age	W M 20-54	-	Yes	- / +	No	-	Yes	-	No	-	Yes
	B M 20-54	-	Yes	-	No	-	Yes	-	Yes	-	Yes
	W F 20-54	-	Yes	- / +	No	-	Yes	-	No	-	Yes
	BF 20-54	-	Yes	-	No	-	Yes	-	No	-	Yes
	WM 55 Plus	-	Yes	-	No	-	Yes	-	No	-	Yes
	BM 55Plus	-	Yes	-	No	-	Yes	-	No	-	No
	WF 55 Plus	-	Yes	- / +	No	-	Yes	-	No	-	Yes
	BF 55 Plus	-	Yes	-	No	-	Yes	-	No	-	Yes

- denotes an inverse relationship; + denotes a positive relationship; - / + signifies that the relationship was significant yet not in the predicted direction.

Table 10: General Predictions and Final Results for the Race, Gender, and Age Disaggregated Suicide Analyses for Rural Counties											
		Civic Society		Local Economy		Religious Society		Political Society		Domestic Investment	
		P/R	Supported	P/R	Supported	P/R	Supported	P/R	Supported	P/R	Supported
Race	White	-	Yes	-	Yes	-	No	-	No	-	No
	Black	-	No	- / +	No	-	No	-	No	-	No
Gender	Male	-	No	-	No	-	No	-	No	- / +	No
	Female	-	No	-	Yes	-	No	-	No	- / +	No
Age	20-54	-	No	-	No	-	No	-	No	- / +	No
	55 Plus	-	No	-	No	-	No	-	No	- / +	No
Race/ Gender	WM	-	Yes	-	No	-	No	-	No	-	No
	BM	-	No	- / +	No	-	No	-	No	-	No
	W F	-	Yes	-	Yes	-	No	-	No	-	No
Race/ Gender/ Age	W M 20-54	-	Yes	-	Yes	-	Yes	-	Yes	-	No
	B M 20-54	-	Yes	-	No	-	No	-	No	-	Yes
	W F 20-54	-	Yes	-	Yes	-	Yes	-	No	-	No
	WM 55 Plus	-	Yes	-	Yes	-	Yes	-	No	- / +	No
	BM 55Plus	-	No	-	No	-	No	-	No	-	Yes
	WF 55 Plus	-	Yes	-	Yes	-	Yes	-	No	-	No

- denotes an inverse relationship; + denotes a positive relationship; - / + signifies that the relationship was significant yet not in the predicted direction.

Although variation in the findings was expected, the significant positive associations among some of the indicators were unexpected and serendipitous. None of the predictions regarding the relationship between a local economic base and urban suicide were supported (Table 9). However, the local economy index did achieve significance in the predicted direction in 7 out of the 15 rural models (Table 10). Likewise, initially domestic investment is only positively associated with suicide which was unexpected (Tables 3 through 5). However, the prediction regarding community domestic obligation is supported in the age disaggregated models and more so in the urban populations than the rural populations (Tables 7 and 8).

CHAPTER 5: DISCUSSION, IMPLICATIONS, AND LIMITATIONS

Macro level indicators of community social capital do in fact affect suicide among various social groups, although the specific associations are far from uniform across groups in urban and rural counties. Overall, urban counties were more responsive to the presence of community social capital indicators than were the rural counties with regard to suicide, although these effects were not always in the predicted direction.³² Due to the increased heterogeneity of larger populations, there is likely more diversity among social institutions. This means more competition among institutions for the existing social market share; meaning residents have more options with regard to institutional participation.³³ Being that urban life is replete with weak associations (consequence of density), it is reasonable that people benefit from the more established/traditional/engrained modes of social engagement that most mimic bonding rather than bridging social capital (religious participation).

Civic Society and Suicide

A community's civic society was associated with reductions in urban suicide among females (T3, M4) and white females (T5, M3), but the same institutional structure was associated with increases in suicide among blacks (T3, M2), males (T3, M3) and those age 20-54 (T3, M6), and black males (T5, M2). These initial race and gender differences in urban counties (100,000 residents or more) may be a function of selection bias with regard to the participation rates in the "civic society" index. However, these conflicting results could be an indication of the social stratification (degree of status frustration) experienced by the specified groups. The strength of a

³² Not all social capital indices were inversely associated with suicide.

³³ Assumption that rural areas lack the competitive institutional economy of urban areas and instead family and religion dominate the institutional market share.

community's civic society differentially affects suicide among social groups because of the inherent social/demographic distribution that exists within the society. The analyses of urban counties demonstrates that the effects of certain facets of community social capital are not uniform across social groups. Although the expectation is that community social capital is inversely associated with suicide, the effects were not expected to be evenly distributed throughout the population, just as violence, whether suicide or homicide, is not evenly distributed throughout the population. Others have found that various facets of community social capital (i.e. civic associations, churches, local capitalism,) are associated with decreases in homicide among different groups to varying degrees (Rosenfeld et al. 2001, Lee and Ousey, 2005). This study demonstrates the variable effects community social capital have for suicide rates of various social groups.

Many researchers have already explicated theories with regard to the suicide/homicide differentials that exist in society (mainly male endeavors, with white males disproportionately committing suicide and black males disproportionately committing homicide). Andrew Henry and James Short (1954) used the aggression-frustration hypothesis to explain the similarities and direction of aggression. They proposed that suicide varies negatively and homicide positively with the strength of external restraint (the degree to which behavior is required to conform to the demands and expectations of others) over behavior. They suggested that low status combined with high integration equates to a high degree of external restraint over behavior. When external restraint is weak aggression will be directed toward the self (nobody to blame) and when external restraint is strong aggression will be directed toward others (the cause of distress is perceived to be external to the individual) (Henry and Short, 1954). Ultimately they identified status (positively related to tendency to choose suicide over homicide) and network ties (negatively

related to tendency to choose suicide over homicide) as the mechanisms through which individuals choose either homicide or suicide as an expression of frustration. Several authors suggest homicide and suicide are bipolar responses to the same underlying causes (social forces). “Specifically, there are numerous issues related to lethal violence that can be better addressed—and, in some cases, understood—by working from an integrated model that emphasizes the similarities between self-directed and other-directed lethal violence” (Unnithan, Corzine, Huff-Corzine, and Whitt, 1994, p. 5). Unnithan, Corzine, Huff-Corzine, and Whitt suggest using an integrated model to enable the examination of suicide relative to homicide and vice versa.

Others suggest that status frustration/ social inequality/ economic frustration / social isolation contribute to an external locus of control orientation which leads to expressions of other-directed aggression, whereas in the absence of external blame individuals turn their aggression inward (Unnithan et al. 1994).³⁴ These alternative perspectives provide some insight into why social capital has such variegated effects on suicide depending on the social group. However, once age was controlled for in the analyses, the strength of a community’s civic society was inversely related to urban suicide across all social groups and both age categories (T7, M1-8) which provides support for the theory of social capital as it relates to suicide.

Comparatively, a community’s civic society was associated with only reductions in rural suicide. The strength of a community’s civic society was associated with reductions in suicide among whites (T4, M1), white males (T6, M1), white females (T6, M3). Negative relationships were also found between the strength of the civic society and suicide in 7 of the 8 rural models in

³⁴ According to this logic, disadvantaged/powerless groups are in a position to blame the external social environment for their social position and therefore evolve an external locus of control. Consequently, aggression produced by external forces is other directed. In the absence of an “external” cause of frustration it is reasoned that individuals (advantaged/powerful) turn their aggression inward.

Table 8 (excludes black males 55 plus), providing further support for the theory of social capital as it relates to suicide.

As evidenced in this study, some forms of bridging social capital provide protection for whites by reducing suicide rates, while at the same time increasing rates among blacks (T3, T5). In Tables 3 and 5, the only social capital indices to produce reductions in urban black suicide was the strength of the established religious presence (the same was not found for rural areas). An established religious presence was associated with reductions in suicide among urban blacks. According to Wilson, Massey and Denton, among others, blacks are more likely to experience high rates of segregation within communities (restriction from mainstream social activities). It can be reasoned that the openness of religious participation provides community support for a historically excluded social group.

Religious Society and Suicide

Most notably, as predicted, an established religious presence was associated with reductions in suicide across social groups, while the other measures of community social capital had more variegated effects. A stable religious presence was consistently found to be inversely related to suicide for many of the social groups in all the urban models (Tables 3, 5, and 7), however, this was not the case in most of the rural models (Tables 4 and 6). It may be that people cling more closely to religion to attain and/or maintain a sense of community that is not present (less salient) in a more heterogeneous institutional economy. Urban areas with a strong religious presence (higher number of churches and greater religious homogeneity) were associated with

lower suicide rates among all social groups in Table 3 and only whites in Table 5 (M1, M3).³⁵ Perhaps, religion acts as to combat the rigors that come with the urban social setting.

In addition, religion is readily available to all social groups regardless of gender, race, and age. The other social capital indices are not equally participated in by all social groups and therefore one would expect there to be some variability among the models. Religious affiliation is a voluntary association. These voluntary organizations are a very powerful socializing force in society, whether bonding or bridging oriented denominations. As measured here, the strength of the religious establishment is likely capturing more bonding types of social capital, than the other social capital indicators (domestic investment excluded).³⁶

This indicates that bonding types of social capital have strong implications for community outcomes across social groups in urban areas. This finding gives credence to the idea that religious institutions provide solace in communities with a highly competitive institutional economy, and supports the literature that reports the effects of religion on positive community outcomes (low rates of violence whether suicide or homicide) [Lester, 1987; Lee, 2006; Lee and Bartkowski, 2004]. The more formal modes of social interaction (joining a civic association or social club, gainful employment, voting and/or participation in political organizations) are more exclusive in their orientations.³⁷ Therefore, these types of organization are not equally available

³⁵ Once age is taken into account in the analysis there is a negative relationship with suicide found among rural whites (table 6, models 1, 3, 4, and 6).

³⁶ External, bridging religious denominations are accounted for in the civic society index.

³⁷ Although social segregation is not the intention of most organizations, selection bias often exists based on race, gender, and/or age.

to all social groups which may help to explain some of the discrepancies in the data with regard to the measures of community social capital.³⁸

Against expectations, an established religious presence did not maintain its seemingly protective effects in rural counties in Tables 4 and 6.³⁹ There was no religion effect across the board in the initial rural models. The lack of a rural religiosity effect is unexpected because religion is a defining characteristic of many rural areas; one would expect religious integration to affect rural suicide rates too. It could be that the religious landscape in rural areas does not play the same role as in urban areas. Religion may be more important with regard to suicide in urban areas because it helps individuals maintain community (a social support system) in a more difficult social environment.

However, once the suicide rates are disaggregated by race, gender, and age, a slightly different picture arises in the rural counties (Table 8). Where there was no effect in the previous rural models, now within age categories, as evidenced in Table 8, the strength of the religious society achieved significance among whites (Models 1, 3, 4 and 6), but no effect registered among blacks. The fact that no effect was found for blacks may be a function of the selection bias with regard to which denominations are more likely captured in the Glenmary Archival Data.

Local Economy and Suicide

There were significant discrepancies across social groups with regard to the relationship between the local economic base and suicide. The same institutional economic structure had

³⁸ Social engagement in our society is stratified on many levels, most notably by race (and class).

³⁹ In comparison, religiosity consistently reduces suicide in all urban social categories, where no rural effect was initially found.

variegated effects on the various social groups. In the urban models (T3, T5, T7), increases in the presence of the local economic indicators were consistently associated with increases in suicide in 8 of the 18 urban models. In contrast, there was more variability among the effects of a local economy on rural populations. In Table 4, the local economy index achieves significance among the race disaggregated rates, but in opposite directions (for whites the association is negative, while for blacks the association is positive). A locally oriented economy had opposite effects on suicide between the urban and rural counties when age was included in the analysis (Tables 8 and 9). A local orientation increased rates among urban counties, but decreased the rates in the rural counties. It could be that urban areas with a higher degree of local economic orientation may have fewer economic options for residents (not enough integration), thereby not providing adequate support for community members and therefore increasing rates of (egoistic) suicide. In contrast, in rural counties, a locally based economy is associated with decreases in suicide. This indicates that a locally oriented economy is beneficial to rural counties, but not in urban counties. This could indicate that urban areas dominated by a locally oriented economy may not provide as many opportunities for residents as urban areas with a more diverse and economically powerful market base. While at the same time implying that rural areas characterized by a strong locally oriented economy positively affects residents because of the stability a local orientation provides in a rural demographic (Lee, 2008).

It is important to note the integral role the economy plays in the evolution of our other prominent noneconomic social institutions (family, religion, education). Messner and Rosenfeld (2001) suggest the United States has a “broad institutional foundation for anomie”. As Robert Merton (1938) once suggested, American culture has an exaggerated emphasis on monetary success without the appropriate accommodations for all social groups to achieve the “American

Dream". This structure invariably leads to frustration/strain within the population consequently producing negative consequences (higher crime rates). According to Messner and Rosenfeld (2001), the institutional dominance of the economy has (1) devalued noneconomic roles in society, (2) noneconomic roles are made to accommodate economic roles when role conflict arises, and (3) the logic of the marketplace is usurping the traditional interactions in noneconomic realms. They conclude by suggesting economic dominance at the institutional level reflects and reinforces anomie at the cultural level. Although not specifically examined in this study, the dominance of the marketplace and the differential interactions, expectations, and obligations of various social groups may be a clue to the variation among race, gender, and age specific rates of suicide and homicide and variations in community social capital.

Domestic Investment and Suicide

The same relationship was expected with domestic investment as was found with religious commitment; increases in domestic commitment in a community were expected to result in decreases in suicide. Unexpectedly, throughout the urban and rural populations increases in domestic investment had a poisonous relationship with race and gender disaggregated suicide rates (Tables 3 through 5). As previously mentioned, this could be a function of divorce rates. These results may indicate that communities with a strong normative structure of marriage and homeownership could be somewhat destructive for its' unmarried residents, resulting in status incongruence/inconsistency. The data does not account for who exactly is committing suicide (married or unmarried) and therefore it could be that the unmarried/single are choked by a community's norm of marriage and are killing themselves (to escape) at higher rates. A community with a norm of marriage is likely to provide more support

to the normative structure of marriage and homeownership, which invariably leaves out persons who are unmarried and do not own their homes.

It is counterintuitive that domestic investment (marriage and homeownership as the normative structure) increases the propensity for suicide. Although variegated effects were expected, negative consequences of any facet of community social capital were serendipitous. Social groups were expected to, at least, have variable outcomes with regard to community domestic investment in marriage and homeownership, not simply a positive effect on suicide rates across all specified social groups (although some variability was found in the age specified groups). The results of this study supports Durkheim's finding that marriage is not a universally protective social institution but rather social groups differentially interact with the same social institution and consequently react to these institutions differently.

With the heavy toll economic uncertainty takes on the institution of marriage and even homeownership, the domestic front is further confronted with a reduced role in social control due to the increasing economic pressure on both institutions (difficult to manage the *American Dream*; the economy reduces roles of noneconomic social institutions). Durkheim might suggest that these results are indicative of a fatalistic orientation with regard to "norms of marriage and homeownership", that is, if the suicide counts represent married persons.

A community's domestic orientation did register protective effects once age was accounted for in the analysis (Tables 7 and 8). Increases in a county's domestic investment were associated reductions in suicide among all 4 models in the 20-54 age group and among older whites in the 55 plus models (Models 5 and 7).⁴⁰ This demonstrates the necessity to disaggregate

⁴⁰ A strong domestic front may be beneficial to the younger black males because it symbolizes stability for a relatively unstable social group. It is reasonable to suggest that a strong domestic

by age when examining suicide rates. By disaggregating the suicide counts further by age revealed results obscured when only considering race and gender.

Social Capital and Age Disaggregated Suicide

This study shows just how important it is to disaggregate suicide rates by age because when not taken into account group effects are obscured due to the skewed distribution of suicide in the population. By disaggregating race and gender specific suicide counts by age, the effects of community social capital are more pronounced and more often than not in the predicted direction supporting the study's predictions. Comparing the age effect in both the urban and rural counties, the social capital indicators were more equally represented among the urban race, gender, and age disaggregated rates (Table 7), in rural counties most of the benefit of community social capital was accrued by whites (Table 8).

All of the social groups experienced benefits from community social capital in urban counties, black males did not fare as well in the rural counties with regard to the presence of community social capital. Although, domestic investment was found to be associated with reductions in suicide among black males in both age categories and the strength of the civic society was associated with reductions in suicide in young black males, none of the other social capital indices achieved significance among black males (Models 2 and 5) in rural counties. On the other hand, many of the social capital indices were associated with reductions in suicide among whites in rural counties (Table 8). While rural black rates were relatively unaffected by social capital indicators (except those previously mentioned), whites fared much better. The

presence negatively impacts homicide rates of this group too, if previous findings in the literature are sound.

propositions based on the theory of community social capital found strong support among rural whites (Table 8).

In summary, it must be noted that the prevalence of suicide was least affected by the strength of the polity. A main reason for this is probably the very low frequency in which political organizations exist. However, the political investment index did achieve significance in the predicated direction among urban black males 20-54 (T7, M2) and rural white male 20-54 (T8, M1). Political representation is power. The benefits accrued by urban black males and rural white males may be a reflection their increased power in some counties. For the rest of the groups, stronger political representation was positively associated with suicide (meaning a stronger polity increased suicide among some groups).

The theory of social capital fared much better once age was taken into account in the models. Since age is a major determining factor in a group's proclivity toward suicide it must not be left out of sociological studies of suicide. The strength of a community's civic society, the strength of a community's established religious presence, and a community's domestic investment were all inversely associated with suicide once age was factored into the analysis. Tables 7 and 8 provide the most support for the theory of social capital with regard to inverse associations with suicide prevalence among social groups.

CHAPTER 6: CONCLUSION

In conclusion, it has been shown in previous studies that a high degree of (local) institutional representation (civic and social organizations, churches, a local economy, domestic obligation, and political participation) is a community resource which helps to combat problems facing communities, high crime rates, public health problems, and overall measures of wellbeing (Kawachi et al., 1997; Tolbert et al., 1998; Putnam, 2000; Rosenfeld et al., 2001; Lee and Bartkowski, 2004; Lee and Ousey, 2005; Lee, 2006; Lee, 2008). Several authors have found that a community that is well connected through a web of social institutions is likely to have lower rates of violent crime among blacks and whites and overall greater well-being, although there is variation among blacks and whites regarding which aspects of the community structure protect which social group (Tolbert et al., 1998; Lee and Ousey, 2005; Lee, 2006). While community social capital is protective in nature, it may not have consistently protective effects overall. In fact, some aspects of community social capital show to be associated with increases in suicide among some social groups in this study. This serendipitous finding contrary to predictions demonstrates that community social capital affects groups differently based on race, gender and age.

Although this research specifically addresses social capital and suicide, it does support the notion that the processes involved with the most deviant forms of behavior (killing) work differently among social groups. This paper helps to shed light on the fact that there is much variability among social groups with how they process/respond to the presence of community social capital. Moreover, this may help to shed light on the black/white homicide/suicide differential with respect to social capital or community resource orientations. Historical context and social participation differentials may factor into which facets of community social capital are

beneficial to which social groups and which groups are actually negatively affected by the increasing presence of certain types of social organization that produces group specific social capital.

It would be interesting to track changes over time with regard to demographic stratification within society that determines social interaction and expectations (status). White males have historically dominated the economic sphere and yet maintained the highest rates of suicide among social groups. Blacks males have historically been restricted with regard to economic and social opportunity yet maintain very low suicide rates relative to white males (while at the same time maintaining high homicide rates). Various measures of social capital such as the presence of churches and civic/social organizations camped in a locally based economy have been found to inhibit acts of homicide among whites and blacks (Lee and Bartkowski, 2004). Some authors suggest that as a group's status improves the expression of aggression within the group changes direction from external expressions (homicide) to internal expressions (suicide) [Henry and Short, 1954].⁴¹ This study complements other studies that have illuminated the institutional mechanisms that drive/inhibit homicide and suicide. A consistent finding in most of the aforementioned literature is the positive effect religion has on community outcomes (lower crime rates, lower suicide rates, and overall better wellbeing). This study indicates that not only is a strong religious presence associated with reductions in suicide among the specified social groups, but also, a strong civic society is also consistently associated with reductions in suicide among various social groups. Although the other indicators of social

⁴¹ It is only somewhat surprising that the local economic indicators increased suicide among certain social groups. According to Henry and Short (1954) as a group's economic status improves their homicide rates decline, while their suicide rates increase.

capital did not perform as consistently as religious society and civic society, many of the indices did achieve significance among specific groups.

Whites clearly benefit more from increases in community social capital than blacks, (except with respect to increases in an established religious presence which tended to reduce suicide rates among urban whites and urban blacks). This may be because whites are more able to establish the bridging type of social capital than blacks because of their higher status position in society (whites have greater access than blacks). It was expected that high levels of community social capital would benefit the community as a whole. However, the results of this study indicate that groups who are “excluded” from social participation may actually suffer (higher suicide rates) in a highly integrated community.⁴²

Social capital is a viable theoretical tool to illuminate the social processes and mechanisms that influence human behavior. The analyses in this paper help to shed light on the specific aspects of community social capital that affect suicide among various groups. The major serendipitous finding is that certain aspects of social capital may actually function to increase suicide among some social groups instead of decreasing rates. This study is a demonstration of the complicated nature of social capital in reference to suicide. Some of the variability that exists between social groups is to be expected due to Durkheim’s predictions regarding the causes of suicide as a function of high/low integration and high/low regulation and how these social states and the accompanying status position affects the suicidal inclination of various social groups. Consequently, some of the variability that occurs among race and gender specific suicide may be a result of status inconsistency that may exist within social groups.

⁴² However, this analysis only allows for speculation due to the lack of information regarding participation rates.

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APPENDIX A: BRIDGING DENOMINATIONS

Evangelical Protestants

Allegheny Wesleyan Methodist Connection
American Baptist Association, The
Associate Reformed Presbyterian Church
Christian Churches and Churches of Christ
Christian Reformed Church in North America
Cumberland Presbyterian Church
Evangelical Presbyterian Church
Association of Free Lutheran Congregations, The
Free Methodist Church of North America
Fundamental Methodist Conference, Inc.
Lutheran Church – Missouri Synod
Orthodox Presbyterian Church, The
Presbyterian Church in America
Primitive Methodist Church in the USA
Seventh-day Adventist Church
Wesleyan Church, The
Wisconsin Evangelical Lutheran Synod

Mainline Protestants

United Methodist Church
Presbyterian Church (USA)
Episcopal Church
Evangelical Lutheran in America
American Baptist Churches
United Church of Christ

APPENDIX B: BIVARIATE CORRELATIONS AMONG DEPENDENT, EXPLANATORY INDICES, AND CONTROL VARIABLES

	1	2	3	4	5	6	7	8	9	10
Civic Society										
Local Economy	.46**									
Religious Society	.23**	.26**								
Political Society	.24**	.31**	-.00							
Domestic Investment	.14**	.31**	.25**	.12**						
SES	-.00	.06**	-.46**	.38**	.02					
Residential Stability	.40**	.28**	.49**	.08**	.42**	-.38**				
Proportion Urban	-.31**	-.39**	-.54**	-.04*	-.53**	.40**	-.55**			
Dummy West	-.04*	.03	-.02	.16**	-.09**	.16**	-.29**	.09**		
Logged Population	-.45**	-.43**	-.58**	-.11**	-.40**	.40**	-.46**	.75**	-.02	
Total Suicide Count	.20**	.14**	.24**	.02	-.30**	.23**	-.27**	.43**	.12**	.60**

*Note: *p < .05; ** p < .01.*

**APPENDIX C: DESCRIPTIVE STATISTICS FOR URBAN (100,000 AND ABOVE) AND
RURAL (1,000 TO 25,000) COUNTIES**

	URBAN (N=520)		RURAL (N=1530)	
	Mean	Std Dev	Mean	Std Dev
Total Suicide Count	282.30	365.02	11.37	7.81
White Suicide Count	260.22	332.20	10.92	7.68
Black Suicide Count	22.08	47.20	.45	1.14
Male Suicide Count	223.32	286.59	9.57	6.53
Female Suicide Count	58.97	79.34	1.81	1.87
External Religion	.38	.19	1.53	1.06
Civic and Social Establishments	.12	.07	.15	.19
Small Manufacturing Family Farms	.80	.32	.74	.48
Homogeneity Churches	4.10	3.97	47.83	35.63
Political Establishments	.31	.15	.33	.16
Voter Turnout	.84	.34	2.95	1.25
Married	.01	.01	.01	.02
Homeowners	548.78	79.52	561.44	92.45
Education	572.23	55.48	615.48	51.81
Median Income	680.34	92.79	763.08	60.96
Residential Stability	824.79	63.46	753.50	91.28
Proportion Urban Dummy West	44,216	10,352	31,756	6,436
Population LN	.53	.07	.62	.06
	.81	.15	.27	.25
	.17	.38	.14	.35
	12.49	.81	9.21	.69

**APPENDIX D: DESCRIPTIVE STATISTICS FOR URBAN (WITH AT LEAST 1,000
BLACK RESIDENTS) AND RURAL (WITH AT LEAST 500 BLACK RESIDENTS)
COUNTIES**

	URBAN (N=488)		RURAL (N=429)	
	Mean	Std Dev	Mean	Std Dev
Total Suicide Count	291.46	374.65	13.43	7.14
White Suicide Count	267.97	341.122	11.98	7.03
Black Suicide Count	23.49	48.40	1.45	1.76
Male Suicide Count	230.37	294.21	11.21	6.03
Female Suicide Count	61.09	81.37	2.22	1.88
External Religion	.40	.19	1.01	.53
Civic and Social				
Establishments	.12	.07	.07	.09
Small Manufacturing	.79	.32	.55	.38
Family Farms	3.81	3.62	26.31	20.61
Homogeneity	.31	.15	.40	.15
Churches	.84	.38	2.63	.99
Political Establishments	.01	.01	.01	.02
Voter Turnout	545.79	78.22	489.96	74.20
Married	570.93	56.08	581.85	58.70
Homeowners	678.47	94.59	760.49	74.26
Education	824.14	63.17	686.56	63.50
Median Income	44,474	10,441	30,181	6,554
Residential Stability	.53	.07	.61	.07
Proportion Urban	.82	.15	.27	.27
Dummy West	.15	.35	.00	.00
Population LN	12.28	.77	9.37	.44

VITA

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