The Spatial Distribution of Social Capital and Media Activity in the United States

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Abstract: The spatial distribution of social capital at the county scale for the United States (U.S.) is estimated and explained by media activity, socioeconomic characteristics, and levels of social capital in adjoining localities. A Geographic Information System is used to generate portraits of social capital, television use, newspaper use, and internet use at the county scale. A local indicator of spatial autocorrelation is also calculated to find regional clusters of social capital. High clusters of social capital are found in the Northeast and the Breadbasket states of Iowa, Nebraska, Kansas, Minnesota, and the Dakota's. Low value clusters of social capital are found in the South and de-industrialized Midwest. A thin diagonal band of counties, extending from southern Michigan to west Texas cleaves regional clusters of High-High (HH) and Low-Low (LL) social capital. Spatial lag regression results indicate that local social capital is positively predicted by newspaper and internet use, and negatively predicted by heavy television use, controlling for socioeconomic variables.

Key words: Social Capital, Television Use, Newspaper Use, Internet Use, and Spatial Adjacency.

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Ⅰ. Introduction

At the close of the 20th Century, Robert Putnam (Putnam, 1995: 666) asserted that: "America's stock of social capital has been shrinking for more than a quarter century." He argued that American civic vitality, once heralded by Alexis de Tocqueville as an outstanding quality of American social and political life, had given way to "civic malaise." Confidence and trust in social institutions, the willingness of citizens to participate in collective action, and norms of reciprocity all showed signs of weakness. Putnam arrived at his diagnosis of declining social capital from longitudinal data on civic engagement, participation in voluntary associations and non-profit organizations, involvement in public affairs, and measures of informal sociability and trust.

Putnam examined a series of factors to explain this apparent decline in social capital. His list of factors includes: "the slow, steady, and ineluctable replacement" (Putnam, 2000: 283) of a civically minded generation of Americans by more socially detached and libertarian cohorts; patterns of residential settlement like suburban sprawl and residential segregation by race and income; and time constraints from labor market participation. Of all factors responsible for the downturn in American social connectedness, Putnam devotes considerable energy to television and electronic media. Media activities explain as much as 40 percent of variation in civic disengagement (Putnam, 2000: 283-284). Americans, Putnam argued, spend too much time in digital worlds, incubated by technologies that reduce rates of civic participation.

With the breakdown of civic engagement, individual "ability to secure benefits through membership in networks and other social structures" (Portes, 1998: 6) is reduced, as are the societal benefits of connectivity, generalized reciprocity, and norms of so-

cial trust that follow from civic engagement (e.g. Putnam, 1993; Shah, McLeod, and Yoon, 2001). According to Putnam, and many other social scientists, the effects of social capital breakdown are many. Social capital predicts crime and delinquency; happiness, health and life satisfaction; employment stability and economic equity; and generosity and charitable giving (e.g. Brooks, 2005; Bursik and Grasmick, 1993; Casey and Christ, 2005; Coleman, 1993; Fukuyama, 1995; Iyer, Kitson, and Toh, 2005; Messner et al, 2004; Marmot, 2005).

Following Putnam, social scientists have produced many empirical studies of civic engagement. These studies are generally well crafted, but are almost exclusively conducted at the individual level of analysis (e.g. Brehm and Rahn, 1997; Lake and Huckfeldt, 1998; Moy, Scheufele and Holbert, 1999; Shah, 1998; Uslander, 1998).[1] Progenitors of the concept like James Coleman, Pierre Bourdieu, and Robert Putnam note that social capital is both an individual possession and a collective property, arising from other-regarding behaviors like participation in voluntary associations and non-profit organizations. Moreover, Mohan and Mohan (2002:198) maintain that: "there are good reasons to suppose that there is geography of social capital." Literature on political culture, civic participation, voter turnout, non-profit organizations, and social disorganization indicate substantial spatial and regional variation (e.g. Almond and Verba, 1963; Beugelsdijk and Van Schaik, 2005; Saxton and Benson, 2005; Verba,

1. Notable exceptions to the scholarly emphasis on individual analyses of social capital are found in literature on community health and epidemiology (see Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997; Kawachi, Kennedy, & Glass, 1999), as well as regional science, rural sociology, and development literatures that emphasize the role of community-based organizations and activities in urban welfare, revitalization strategies, and economic growth (Beugelsdjik & Van Schaik, 2005; Iyer, Kitson, & Toh, 2005;Jennings, 2001).

Scholzman, and Brady, 1995; Wilson, 1991).

Putnam (2000) himself devotes a chapter to the spatial dimension of social capital in *Bowling Alone*, but his analysis is at the state level — too high a level of aggregation to reasonably approximate the social geographic concept of locality. State-level analysis precludes investigation of where social capital pools and clusters locally. Following Putnam, this study produces a national portrait of social capital at the county scale. By moving analysis to the county level, it uncovers important sub-state variation in social capital that could yield more refined policy responses to social and political problems associated with shrinking social capital (i.e., crime and delinquency). In addition to mapping spatial variation in social capital, this paper examines "adjacency effects" or the extent to which the level of social capital in county X is associated with levels of social capital in neighboring localities.

Following Putnam's observations on media and electronic entertainment, extensive research has been done on the independent effects of television use (e.g. Moy et al., 1999; Wilkins, 2000), newspaper use (e.g. Kang and Kwak, 2003; Wilkins, 2000) and Internet use (e.g. Franzen, 2003; Uslaner, 1999) on social capital. As with the distribution of social capital, we find good reasons to suppose a geography of media activity. For example, cross-national data from the United Nations on internet users (per 1,000) indicate that the notion of a digital divide is not only demographic problem (as widely noted in communications literature), but also a geographic problem where individual access to internet technologies is partially determined by the accident of location in the world system. The various studies performed at the individual level provide many fruitful leads in testing spatial hypotheses of media use and social capital, specifically how percentages of heavy users of all three forms of major media affect levels of social capital in localities across the United States. To our knowledge, this is the first study to examine the relationship of

media activities and social capital at the county scale of geographic precision.

With these things in mind, this study sets two analytic objectives: estimate the spatial distribution of social capital at the county scale for the United States; and explain the spatial distribution of social capital by rates of media activity, socioeconomic characteristics, and spatial adjacency variables[2]. The investigation of the study is organized into five sections. First, the paper reviews theoretical literature on social capital as an aggregate phenomenon. Second, it discusses empirical literature on media use and social capital to distill testable propositions. Third, it explains our methodology, detailing data sources and variable operations. Fourth, it presents results. Fifth, it revisits hypotheses of media use and social capital in relation to statistical results and suggests lines of future inquiry.

Ⅱ. Literature Review and Theory

1. Social capital as a collective property

Social capital is an embattled concept. Efforts to clarify the

2. Data is collected by county, even though county boundaries, as artificial political constructs, typically have little bearing on relevant sociological boundaries. Social phenomenon such as civic engagement level in a county can be determined by a lot of factors that cut across political jurisdictions. Thus, we acknowledge that empirical analyses of social phenomena that must be conducted using such county-level data frequently may be characterized by spatial autocorrelation. Put differently, the possibility of spatial autocorrelation reflects a concern that if a county has high social capital, a neighboring county may be affected by spillover effects. Spatial lag model has been employed to capture geographic spillover effects or adjacency effects (Anselin, 1995).

meaning of the concept are numerous (e.g. Foley and Edwards, 1999; Ostrom and Ahn, 2001; Paxton, 1999; Portes, 1998; Putnam, 2000; Turner, 1999; Woolcock, 1998). What follows is an abbreviated review of theoretical literature emphasizing the collective properties of social capital.

The modern concept of social capital was promulgated by two sociologists, Pierre Bourdieu (1986) and James S. Coleman (1988, 1990). Bourdieu defines 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" (1986: 249). With terms like aggregate, network, collectivity, and group membership, Bourdieu's definition of social capital has group properties. For Bourdieu, social capital is clearly a group enterprise — it cannot exist as an individual possession alone.

Like Bourdieu, Coleman regards social capital as a collective resource produced in "relations among persons that facilitate action" for mutual benefit (Coleman, 1988: S 100). Social capital is located, Coleman writes, "in the structure of relations between actors and among actors. It is not lodged ··· in the actors themselves" (1988: 98). Coleman (1988) also defines social capital by its function. He argues that: "the function identified by the concept of social capital is the value ··· of social structure to actors as resources that they can use to achieve their interests" (1988:101). Here, Coleman defines social capital as a store of value that individuals can draw from in the pursuit of private interests.

Robert Putnam's (1993, 1995, 2000) concept of social capital is more altruistic but equally collective. For Putnam (1995), social capital "refers to the *collective value* of all social networks and the inclinations that arise from these networks to do things for each

other···social capital refers to features of social organizations such as *networks, norms, and social trust* that facilitate coordination and cooperation for mutual benefit" (1995: 664-665). Like Bourdieu and Coleman, Putnam views social capital as having group properties and value. For Putnam, social capital is a reservoir of *collective good* that is anchored by trust and habits of reciprocity that facilitate social relationships.

Apart from noting the group qualities of social capital, Bourdieu, Coleman and Putnam empirically converge on "other-regarding" behaviors like volunteerism, fundraising, and organizational involvement as activities that build social capital. On what builds social capital, Coleman (1988:104) highlights the prescriptive norm "that one should forgo self-interest and act in the interests of the collectivity" by joining organizations that promote other-regarding behaviors. Putnam's (2000) operational measurement of social capital includes numerous other-regarding behaviors, including indicators of community organizational life, volunteerism, and engagement in public affairs (2000: 291).

These other-regarding behaviors are believed to build social cohesion. According Jackman and Miller (1998), Coleman's concept of social capital is something of "a public-good by-product of organizations" (1988:55). The collective and individual goods of social cohesion are many (e.g. Ahn and Ostrom, 2002). Cohesion enables the flow of material and symbolic resources, improves individual access to beneficial weak ties, engenders norms of trust and reciprocity, and increases the probability of cooperative collective behavior for the resolution of social dilemmas (Smith, 2002).

As a collective good, social capital has qualities of being non-excludable and non-rival. From a geographic standpoint, social capital is non-excludable because the benefits of residing in a social capital rich locality (i.e., low crime rates) are enjoyed by all persons regardless of whether or not an individual resident par-

ticipates in the production of social capital (i.e., volunteer for a neighborhood watch program). Social capital produces positive externalities in which costly investments in other-regarding behaviors by individuals in time and effort "end up unintentionally benefiting the community at large and democracy in general" (Smith 2002: 3). Social capital is non-rival because enjoyment of the benefits of social capital by an individual does not preclude the enjoyment of others (Ostrom and Ahn, 2001).

These public good qualities make social capital different from other more individual forms of capital (i.e., human capital). In Coleman's (1988) words: "A property shared by most forms of social capital that differentiates it from other forms of capital is its public good aspects" (1988:119). Absent social structural conditions that lock-in obligations and expectations, Coleman (1988: 118) argues that social capital can emerge and disappear rather rapidly without a single person "willing it into or out of being." In other words, social capital has qualities independent of the actors that make it or benefit from it. Putnam (2000) summarizes the point: "[S]ocial capital also can have "externalities" that affect the wider community, so that not all the costs and benefits of social connections accrue to the person making the contact ··· Social capital can thus be simultaneously a "private good" and a "public good." Some of the benefit from an investment in social capital goes to by-standers, while some of the benefit redounds to the immediate interest of the person making the investment" (2000:20).

Embedded in this conception of social capital as a public good is the idea that the volume of social capital in a community ebbs and flows as a function of the number (or percentage) of people that engage in other-regarding behaviors (or what Putnam calls "doing things for each other"). To the extent that social capital is anchored locally, we search for it in local aggregations of other-regarding behaviors like volunteering, fundraising, and public involvement that presumably foster cohesion, trust, and norms of

reciprocity. A logical question that follows from this search for local aggregations of other-regarding behavior is what actions or conditions affect individual willingness to participate in social capital formation. Communications literature indicates that media use variables are crucial to explain individual willingness to invest time, effort, and money in other-regarding behaviors. In the next section this paper discusses research on media activities and social capital to derive testable hypotheses on how these phenomena may be related spatially.

2. Social capital and television use

In *Bowling Alone*, Robert Putnam (2000) asserts: "Americans at the end of the twentieth century were watching more TV, watching it more habitually, more pervasively, and more often alone, and watching more programs that were associated specifically with civic disengagement (entertainment, as distinct from news) ··· Moreover, it is precisely those Americans most marked by this dependence on televised entertainment who were most likely to have dropped out of civic and social life — who spent less time with friends, were less involved in community organizations, who were less likely to participate in public affairs" (2000: 246). For Putnam, the effects of television use on civic engagement are magnified at the high user end of the television use distribution.

Cross-sectional studies of television use and civic engagement detect a modest but consistent negative relationship (e.g. Hooghe, 2002). In communications literature, the negative relationship between television use and civic engagement is called the television or time displacement hypothesis. The basic logic of this hypothesis is a zero-sum relationship between television use and civic activities that build social capital — the more a person watches television, the less likely he or she will participate in community activities that build social capital. In effect, television crowds out

activities which invigorate social capital. In Robinson and Godbey's (1997) words: "television is the 800-pound gorilla of leisure time."

There is some evidence to suggest that the time displacement argument is incomplete. Moy et al. (1999) find that excessive television use undermines civic engagement, but also find that the relationship is not mediated by time constraints as some presume. Something other than time pressure explains the relationship. A possible explanation is that television displaces persons spatially. Television content is increasingly national in content. As television viewers are ensconced in national popular culture and news stories, they are less likely to know and engage the specific concerns of their locality. This may create feelings of "strangeness" to "local others" (Meyrowitz, 1997: 69), and "lack of connectedness to those in close proximity" (Moy et al., 1999: 40).

Television not only occupies a person's time and displaces his or her sense of locality, but heavy television exposure is known to affect persons psychologically, promoting feelings of distrust among heavy viewers (e.g. Shah, 1998). This effect is empirically observable. Heavy television users are more likely to see the world as a "mean or scary" place than light users of the medium. This "mean world" hypothesis from cultural theory (Gerbner et al, 1980) is based on longitudinal analyses of television content. Studies show that television content is violent with emphases on law and order that are out of step with reality. Heavy exposure to television cultivates an affective psychology in viewers more consistent with media accounts of reality than reality itself. Heavy television users are less trusting of generalized others than light users (e.g. Gerbner et al., 1980; Putnam, 1995). As levels of trust are eroded by excessive television use, overall propensities to engage in civic life are reduced. The consistently positive relationship between trust and civic participation verifies this claim (e.g. Brehm and Rahn, 1997; Putnam, 1995; Uslaner, 1998).

Therefore, the relationship between heavy television use and civic engagement may be mediated by social trust, not time pressure.

Whatever the exact chain of causation, some scholars criticize the television exposure argument as too simple (e.g. Bennett, 1998; Norris, 1996; Shah, 1998). Television content, channel, and programming effects matter, as well as typologies of television viewers that condition the relationship between television use and civic disengagement. Television displacement theorists typically ignore such factors. Others go further, arguing that the negative relationship between television use and social capital is an illusion, rubbed out by statistical controls (e.g. Hooghe, 2002; Norris, 2000; Uslaner, 1998). Of those scholars that empirically question the observed relationship between television use and social capital, few disagree that heavy users of television fit Putnam's description of the negative relationship between civic engagement and television use.[3]

What few macro studies exist, all report negative relationships between *heavy* television use and social capital (e.g. Norris, 2000). The theoretical logic of linking rates of heavy television use to rates of other-regarding behavior spatially relates to the public good qualities of social capital. Recall, social capital is formed collectively, requiring the actions of many for it to exist and persist. As high percentages of a local population engage in behavior that draws them from public life (like heavy television use), the pool of potential social capital contributors is reduced.

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3. From a representative sample of the Dutch-speaking population of Belgium, Marc Hooghe (2002) finds that the relationship between television use and participation in voluntary associations is possibly curvilinear. The linearity of the relationship is spoiled by respondents that watch less than 1 hour of television a day. This group is significantly less engaged civically than others. On the other end of the television user spectrum, those that watch 20 hours or more per week also spend significantly less time volunteering.

With the pool of potential contributors reduced, the expected volume of local social capital ought to fall. Therefore, for this research purpose of linking geographies of *heavy television use* and social capital, a global measure of television use (insensitive to content effects) is sufficient for a decent test. With that said, this paper proposes the following testable hypothesis:

H1: The percentage of heavy television viewers in a county is negatively related to levels of local social capital, controlling for other variables.

3. Social capital and newspaper use

Tocqueville is known to have said: "Newspapers make associations, and associations make newspapers" (1961:131). In the United States, this connection between newspapers and associations is particularly strong. Tocqueville writes: "Thus, of all countries on earth, it is in America that one finds both the most associations and the most newspapers" (1961: 518). Some 150 years later, Uslaner observes: "people who read newspapers are much more likely to vote ··· to give charity ··· and to take part in civic life more generally" (2002:133). Putnam (1993: 36) too maintains that high newspaper readership is a vital sign of community health or "hallmark of a successful region." That is, in regions where one finds high newspaper readership one also finds high levels of participation in other-regarding behaviors. For Putnam, the connection between newspaper use and participation in social capital formation has a geographic logic.

Empirical studies consistently report that newspaper use enhances civic engagement, group membership and social trust (e.g. Hooghe 2002; McLeod, Scheufele, and Moy, 1999; Moy et al., 2004; Putnam, 1995; Shah, Kwak, and Holbert, 2001). Beaudoin and Thorson (2004) find positive linkages between news con-

sumption and various components of social capital from neighborliness to participation in voluntary associations across rural and urban community types. Peer, Malthouse, and Calder (2003), in a study of 37,000 respondents sampled randomly from 100 media markets find that newspaper use positively predicts voting behavior, adjusting for both socioeconomic and community context variables. Shah et al. (2001) show that both hard and soft news consumption increases interpersonal trust and civic participation. Lee, Cappella, and Southwell (2003) report that consumers of print media have significantly higher regard for and levels of trust in social institutions and fellow citizens. Individuals with higher levels of trust manifest greater willingness to engage in other-regarding behaviors like volunteering (Putnam, 1995).

Newspaper use enhances civic engagement for at least two reasons. First, newspapers report on civic and political affairs. Studies show that newspaper readers possess higher levels of civic literacy, and manifest more coherent and mutually constrained attitudes on civic affairs (e.g. Milner, 2002; Riger and Lavrakas, 1981). Because newspaper readers are generally more knowledgeable of civic affairs, they tend to target their activities and civic involvement more effectively (Shah et al, 2002). Newspaper use therefore lowers the personal costs of civic participation in time and effort expended (e.g. Eveland and Scheufele, 2000; Lubell, Zahran, and Vedlitz, 2005).

Second, newspapers are civic bulletins, advertising, classifying and calendaring events and civic activities open to the public, increasing awareness among readers of things to do and groups to join (e.g. Kang and Kwak, 2003; McLeod et al,1999). Because newspapers alert readers to group enterprises, they function as conduits for social connectivity. Shah et al. (2001) argue that newspapers do more than just inform readers of events and opportunities for civic engagement – they provide a basis for political discussion and informed deliberation on civic affairs. From

newspapers, residents derive a sense of their community and their own civic beliefs (e.g. Rothenbuhler et al, 1996). Citizens develop an awareness of the social objectives pursued by various groups and where they stand in relation to these group pursuits.

Like studies of television use, little is known about the relationship between newspaper consumption and social capital at the local scale. What few studies exist, most are the nation-state level (Norris, 2000). These cross-national studies show that in countries where rates of newspaper readership are high, one finds higher levels of political participation, social trust, and rates of membership in voluntary organizations. The relationship between newspaper use and social capital is strongest in countries with high percentages of heavy users of newspaper media. We test whether the same relationship between heavy newspaper use and social capital exists at the county scale. With this in mind, we propose the following hypothesis:

H2: The percentage of heavy newspaper readers in a county is positively related to levels of local social capital, controlling for other variables.

4. Social capital and internet use

According to the Pew Internet and American Life Project (2005), about 63 percent of adults in the United States (about 128 million people age 18 or older) use the Internet. For many, the Internet has become an important daily activity, affecting ways they communicate, work, shop, educate, bank, and spend their leisure time. An unresolved question is whether Internet use will positively or negatively affect the civic vitality of a locality. Like television, will Internet use occupy a person's time and displace his or her sense of locality? Or, will Internet use function like newspaper use, promoting connectivity and facilitat-

ing interest in civic life? The theoretical literature is usefully divided into utopian and dystopian camps on such questions (e.g. Wellman et al, 2001).

The dystopian camp argues that Internet use privatizes our leisure time and fractures community social bonds. Like television, Internet use has a time allocation effect that reduces face-to-face communication and levels of engagement in civic affairs — as more time is spent in front of computer screens, less time is spent engaging in civic life. In Franzen's words: "If [Internet] users substitute the time they spend on social activities (e.g., communicating with friends, family members and neighbors) with the time using the Internet it could reduce social capital" (2003: 341). Similarly, Cummings, Butler, and Kraut (2002) argue that Internet use transforms the nature of social relationships with trust building face-to-face relationships giving way to online weak ties. Kraut et al. (1998) find that heavy Internet users are less likely to socially interact with family and friends, and more likely to manifest psychological problems like depression, feelings of loneliness, and alienation that increase propensities to socially retreat. Putnam (1995) is agnostic on the subject, arguing that Internet use has neither a decidedly positive or negative effect on social capital.

The utopian camp argues that Internet use engenders the formation of cyber communities that reinforce rather than fracture locally rooted social relationships (Sproull and Kiesler, 1991). Wellman et al. (2001) maintain that "most relationships formed in cyberspace continue in physical space, leading to new forms of community characterized by a mixture of online and offline interactions" (2001: 438). Lin (2001) argues that Internet use facilitates social capital by increasing accessibility and flow of information through residential and professional communities. Wellman (2001) asserts that the Internet makes social relationships portable, enabling users to keep touch with community

members at farther distances. Pruijt maintains that "Social capital is the spirit of the Internet ··· Getting connected means getting access to a stock of social capital" (2002:113).

The bulk of empirical literature suggests that the utopian argument is more correct, though some field research supports the pessimistic view of social withdrawal (e.g. Patterson and Kraut, 1998). Shah et al. (2002) find that heavy Internet use positively predicts attendance of public events and involvement in civic activities, but not informal sociability. Overall, they report no evidence of a time displacement effect. Howard, Rainie, and Jones (2001) show that frequent Internet users are better connected to friends and family members. Hampton and Wellman (2001) argue that Internet users keep community ties through both online and face-to face communication. In a rare regional (or state-level) study, Matei (2004) finds that computer-mediated social relationships enhance geographically anchored social relationships. Matei writes: "In broad terms, the analyses support the idea that the Internet strengthens offline interaction, sociability online building on sociability offline" (2004: 23). Following Matei (2004), but moving toward a more refined spatial scale, we test whether the local geography of internet use is associated with the local geography of other-regarding behaviors. Consistent with empirical literature, this paper proposes the following hypothesis:

H3: The percentage of daily Internet users in a county is positively related to levels of local social capital, controlling for other variables.

Ⅲ. Methodology: Data Sources And Variable Operations

We collected, measured and analyzed data from numerous

sources: television use, newspaper use, Internet use, and indicators of social capital are from Applied Geographic Solutions Inc. and Mediamark Inc.; demographic data were obtained from the U.S. Census Bureau's Population and Housing Summary Tape Files. County FIPS codes and longitude and latitude coordinates were used to merge data. Data are collected at the county level for pragmatic and theoretical reasons. Pragmatically, data for all variables included in our analysis are available at the county, metropolitan, state, or national levels. This research selected the smallest available geographic level to approximate the sociological notion of locality.

The county scale is not without flaws. Counties in the U.S. have varied political meaning. Some counties have limited administrative power, whereas other counties are central political units. Counties also vary considerably in size and composition. Theoretically, smaller geographic units like zip codes, census tracts, and census blocks are more textured and homogeneous than county units, but are too small to capture regional qualities of civic engagement. Many opportunities for civic engagement are located outside a person's census block or zip code area. Civic engagement generally occurs within a geographic triangle that links a person's place of employment, residence, and routine recreation areas. Journey-to-work data indicate that routine activity triangles are more like counties in size than smaller spatial units. Therefore, we believe that the county scale is a reasonable unit for exploring the spatial dimensions of social capital and media activity. Below is an abbreviated discussion of secondary data sources and variables used in prediction equations. Variable operations are summarized in Table 1.

From the U.S. Census Bureau (2000), the following subset of demographic variables is used: *percent African American, median age, and percent urban population*. These variables are used as statistical controls in prediction models. It is expected that the

Table 1. Variable Labels, Definition Statements, Directionality, and Data Sources

Variable Labels	Definition Statement	Sign	Data Source
Television use	The total number of adult persons (18+) classified as heavy television users, divided by the total number of adults in a county area. Heavy users are in the upper quintile nationally in terms of the number of half hours viewed in an average day between primetime periods.	-	Applied Geographic Solutions Inc. and Media Mark Inc., 2003
Newspaper use	The total number of adult persons (18+) classified as heavy newspaper readers, divided by the total number of adults in a county area. Heavy readers are in the upper quintile nationally in terms of the number of newspapers read. The number of newspapers read in an average 28-day period is derived from a weighted average of daily newspapers read in a week, and the number of Sunday papers read in 4 weeks, based on the number of newspaper issues respondent's reported reading.	+	Applied Geographic Solutions Inc. and Media Mark Inc., 2003
Internet use	The total number of adult persons (18+) reporting to have used the Internet daily in the last month divided by the total number of adults in a county area.	+	Applied Geographic Solutions Inc. and Media Mark Inc., 2003
Percent black	Total number of persons identifying themselves as black or African American, or recorded entries as Haitian or Nigerian, divided by the total number of persons residing in a county area.	-	US Census Bureau, Population and Housing Files, 2000
Median age	Total number of persons 65 years and above divided by the total number of adult persons (18+) residing in a county area.	+	Applied Geographic Solutions Inc. and Media Mark Inc., 2003
Percent urban	Total number of persons residing in an urban defined area divided by the total number of persons residing in a county area. For 2000, the Census Bureau classifies as urban all territory, population, and housing units located within an urbanized area (UA) or an urban cluster (UC). It delineates UA and UC boundaries to encompass densely settled territory, which consists of: core census block groups or blocks that have a population density of at least 1,000 people per square mile and surrounding census blocks that have an overall density of at least 500 people per square mile. Under certain conditions, less densely settled territory may be part of each UA or UC.	-/+	US Census Bureau, Population and Housing Files, 2000
Social capital	Social capital is an index that averages county rates for three civic engagement behaviors: fundraising, volunteering, and involvement in public organizations. Index items are equally weighted.		Applied Geographic Solutions Inc. and Media Mark Inc., 2003

percent African American variable would behave negatively in prediction models of social capital. The variable of percent African American is used as a negative predictor because African Americans face considerably higher selective costs in civic participation due to institutionalized discrimination, lower levels of human capital, and circumscribed access to political and cultural resources that enable social capital formation (e.g. Musick, Wilson, and Bynum, 2000; Wilson, 1991).

The median age variable allows commentary on Putnam's claim that the erosion of social capital is partially explainable by a demographic effect.[4] Putnam argues that the passing of a "long civic generation" is driving down the stock of social capital nationally. The problem is amplified by the replacement of this civic generation with less civically minded cohorts. According to Goss (1999: 389), older persons are the "torchbearers of voluntary activity." Therefore, we expect a positive relationship between median age in a county area and rates of social capital.

The effect of urbanization on social capital is more complicated. In *The Truly Disadvantaged*, Wilson (1987) argues persuasively that highly urbanized inner cities are plagued by social and cultural pathologies (i.e., fractured families and crime) linked to the decline of manufacturing operations and job losses in the secondary sector of the labor market. These structural processes negatively affect stocks of social capital. Similarly,

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4. Rates of civic engagement are positively associated with age, with retirees first among age cohorts in civic participation. Scholars are divided on whether this relationship is a lifecycle or period effect (as Putnam believes). Lifecycle explanations predict that as a person ages he or she becomes more invested in system stability. Investments induce a person to participate in system decisions because the effects of non-participation are potentially costly. Also, as a person reaches the age of retirement, he or she encounters lower selective costs for participation because of time and schedule flexibility, and the acquisition of civic knowledge and skills.

Robert Putnam's (2000:206) research suggests that social capital is highest in less urbanized areas with populations of 10,000 persons or less. In contrast, political scientific studies show that persons of higher education, income, and political knowledge tend to reside in urbanized metropolitan areas. Such persons generally possess economic, political, and cultural resources and skills that lower personal costs of participation in civic affairs (Brady, Verba, and Schlozman, 1995).

This study derives some variables such as social capital, television use, newspaper use, and Internet use from the MRI Consumer Behavior data. Consumer behavior, media exposure, lifestyle, and psychographic data on US adults are collected in bi-annually by Mediamark Inc. Adults are selected randomly from a population list of 90+ million households. Each wave consists of 12,000+ field interviews, totaling 25,000 per year since 1979 (about 550,000 in all). Data are weighted to reflect probabilities in sampling design. Researchers at Applied Geographic Solutions Inc. have configured MRI household records to various levels of political, administrative, and statistical scale. A Mosaic coding technology based on a cluster algorithm (i.e., iterative relocation) is used to derive geo-demographic profiles of areas.

The *heavy television use* variable is measured as the total number of adult persons (18+) classified by Mediamark as heavy television users, divided by the total number of adults in a county area. Heavy users are in the upper quintile nationally in terms of the number of half hours viewed in an average day between primetime periods. The *newspaper use* variable is calculated as the total number of adult persons (18+) classified as heavy newspaper readers, divided by the total number of adults in a county area. Heavy readers are in the upper quintile nationally in terms of the number of newspapers read. The number of newspapers read in an average 28-day period is derived from a weighted average of daily newspapers read in a week, and the

number of Sunday papers read in 4 weeks, based on the number of newspaper issues respondent's reported reading. The *Internet use* variable is measured as the total number of adult persons (18+) reporting to have used the Internet daily in the last month dived by the total number of adults in a county area.

Social capital variable (*alpha*= .848) is an index that averages three items of civic engagement or other-regarding behaviors – fundraising, volunteerism, and public group involvement. Respondents were asked by Mediamark analysts to indicate if they engaged in any of the above activities in the last six months. These measures of social capital tap the civic participation dimension of the concept.[5] These indicators of social capi-

5. Our measure of social capital bypasses the component of social trust. We do so for two reasons: one is pragmatic, and the other is conceptual. On the pragmatic reason, no comprehensive data on social trust are available at the county scale. Conceptually, the tight interrelationship between civic engagement and trust means that measurement of one is at least a partial measure of the other (though evidence on the temporal order of the relationship is unclear). Putnam (1995) argues that civic engagement and trust are interrelated: He writes: "the more we connect with other people, the more we trust them, and vice versa" (p. 665). For Putnam, trust and civic engagement are different, but "mutually reinforcing" phenomena. Brehm and Rahn (1997) discovered a tight reciprocity between trust and civic engagement, but findings indicate a stronger influence from civic engagement to trust than from trust to civic engagement. They argue: "it is probably easier for a community to generate greater levels of participation···than it is for that community to instill more trusting attitudes in others" (p. 1017). Similarly, Stolle (1998) argues that "membership in voluntary associations should increase face-to-face interactions between people and create a setting for the development of trust" (p. 500). Finally, Veenstra (2002) notes that "trust is seen to be a product of social interaction and social networks, resulting from social capital (a by-product of relationships) rather than forming a constituent part of social capital (a cause of certain kinds of

tal are sufficiently broad enough to encompass various domains of civic engagement (i.e., religious versus secular-based), correcting for possible political ideological and racial biases in measurement. The validity of our civic engagement measure is corroborated by a significant correlation ($r = .301$, $p < .01$) with the number of 501(c)(3) non-profit organizations in each county as measured by the National Center for Charitable Statistics, divided by the total number of adult residents. Overall, our constructed hybrid dataset contains 3000+ county variables.

Ⅳ. RESULTS

We begin the analysis with descriptive data on the top and bottom 50 counties of the United States on levels of social capital (or percentage of persons that report to engage in other-regarding behaviors). Next, we generate four maps at the county scale using a Geographic Information System to visualize the distribution of social capital, heavy television use, heavy newspaper use, and daily internet use. Next, to locate spatial hotspots of social capital, we calculate a local indicator of spatial autocorrelation (LISA). Such a calculation detects significant spatial clustering around individual locations and pinpoints areas that contribute most to an overall pattern of spatial dependence (Anselin, 1995). The LISA statistic is represented as a cluster map (see Map 5) identifying units that fall into two distinct categories: high values of social capital surrounded by high values (HH), and low values of social capital surrounded by low values (LL).

The LISA cluster map only includes observations which the statistic identifies as significant ($p < .05$, following 999 iterations of a randomization procedure). Significant HH clusters are used

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relationships), an approach that privileges (participation in) social networks over trust" (p. 553).

to indicate social capital hotspots, and significant LL clusters are used to indicate concentrations of low social capital. This initial analysis allowed us to identify and map the statistically significant clusters of social capital. Lastly, we conduct a spatial lag regression analysis using maximum likelihood estimation to explain variation in social capital at the county scale with media activity and socioeconomic predictors, while controlling for the presence of spatial autocorrelation.

Our ranking of the top 50 and bottom 50 counties in the United States on the civic engagement dimension of social capital is summarized in Table 2. Table 2 shows that, on a scale from 0-1, Daggett County, Utah (.18732), Lexington City, Virginia (.17363), and Williamsburg City, Virginia (.16501) score highest on our measure of the civic engagement dimension of social capital. Colorado leads all states in the number of counties appearing in the top 50 with 7. Gilpin County, Colorado in the Denver-Aurora metro area typifies a social capital rich area. Gilpin has a relatively small population (4,757 est. 2000), is racially homogenous (94.4 percent white), has a median family income above the national average ($61,859 versus $50, 046), with only 1 percent of families below or at the official poverty line (1 percent). According to Uniform Crime Reports data (2000), Gilpin had zero arrests for public order crimes like commercial vice and prostitution, motor vehicle theft, arson, drunkenness and vagrancy. On social capital predictors in our spatial lag model, Gilpin is higher than average in terms of heavy newspaper use (20.3), and way below the national average on television use, with only 11.1 percent of the population classified as heavy users. Gilpin County is routinely ranked as one of the most "livable" counties in the eight states Rocky Mountain region (The 2004 Colorado college state of the Rockies report card, 2004). Gilpin County is only one story taken at random but typifies counties at the top of the social capital hierarchy.

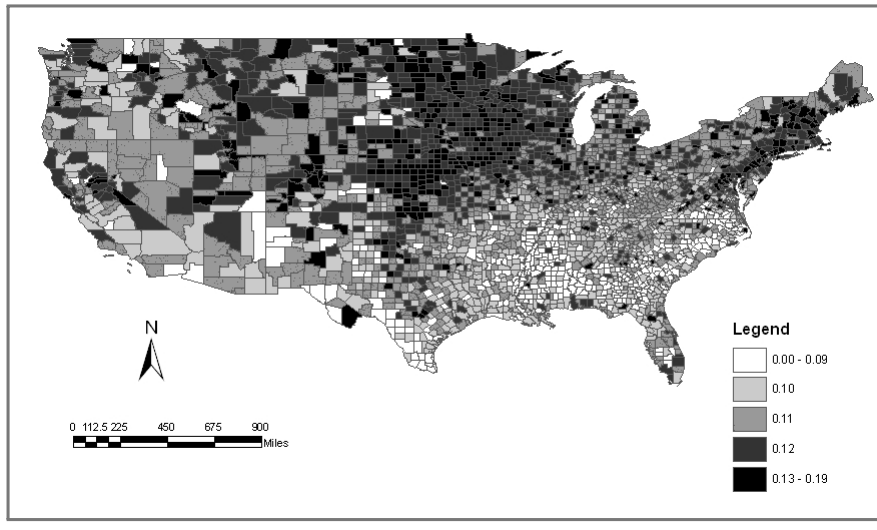
Table 2. The Top 50 and Bottom 50 Counties in Level of Social Capital

County, State	Rank	Social Capital	County, State	Rank	Social Capital
Daggett County, UT	1	.18732	Chattahoochee County, GA	3140	.02058
Lexington city, VA	2	.17363	Bronx County, NY	3139	.07208
Williamsburg city, VA	3	.16501	Vernon Parish, LA	3138	.07427
Forest County, PA	4	.16462	Jefferson County, MS	3137	.07506
Gosper County, NE	5	.16218	Hancock County, GA	3136	.07528
Bristol Bay Borough, AK	6	.16146	Liberty County, GA	3135	.07623
Radford city, VA	7	.15749	Pulaski County, MO	3134	.07624
Rich County, UT	8	.15656	Clay County, GA	3133	.07639
Custer County, CO	9	.15541	Bullock County, AL	3132	.07693
Gunnison County, CO	10	.15113	Noxubee County, MS	3131	.07709
Nantucket County, MA	11	.14808	New York County, NY	3130	.07821
Dukes County, MA	12	.14785	Loving County, TX	3129	.07843
Wayne County, NE	13	.14684	Lee County, SC	3128	.07843
Park County, CO	14	.14616	Perry County, AL	3127	.07844
Fayette County, GA	15	.14573	Christian County, KY	3126	.07864
Los Alamos County, NM	16	.14497	Calhoun County, GA	3125	.07920
Haines Borough, AK	17	.14489	Greene County, AL	3124	.07932
Ouray County, CO	18	.14485	Wilkinson County, MS	3123	.07950
Hinsdale County, CO	19	.14476	Holmes County, MS	3122	.07983
Falls Church city, VA	20	.14469	Hale County, AL	3121	.08007
Lewis County, MO	21	.14459	Tallahatchie County, MS	3120	.08010
Gilpin County, CO	22	.14432	Stewart County, GA	3119	.08050
Clay County, SD	23	.14429	Kings County, NY	3118	.08057
Whitman County, WA	24	.14390	Issaquena County, MS	3117	.08063
Yakutat City, AK	25	.14381	Warren County, GA	3116	.08063
Nemaha County, NE	26	.14239	Catron County, NM	3115	.08075
Athens County, OH	27	.14187	Baker County, GA	3114	.08094
San Juan County, WA	28	.14147	Conejos County, CO	3113	.08107
Tompkins County, NY	29	.14135	Kenedy County, TX	3112	.08114
Latah County, ID	30	.14088	Lowndes County, AL	3111	.08132
Loudoun County, VA	31	.14078	Mora County, NM	3110	.08138
Watauga County, NC	32	.14061	Brunswick County, VA	3109	.08141
Fauquier County, VA	33	.14048	Allendale County, SC	3108	.08148
Oconee County, GA	34	.14021	Marshall County, MS	3107	.08151
Dawes County, NE	35	.14018	Cheyenne County, CO	3106	.08157
Seward County, NE	36	.13999	Taliaferro County, GA	3105	.08159
Delaware County, OH	37	.13998	Kinney County, TX	3104	.08159
Marin County, CA	38	.13983	Talbot County, GA	3103	.08162
Story County, IA	39	.13972	Webster County, GA	3102	.08177
Winneshiek County, IA	40	.13972	Lake County, TN	3101	.08201
Washington County, RI	41	.13962	Chickasaw County, MS	3100	.08208
Dickey County, ND	42	.13960	Montgomery County, MS	3099	.08213
Clear Creek County, CO	43	.13928	Clinch County, GA	3098	.08220
Hunterdon County, NJ	44	.13919	Charles City County, VA	3097	.08222
Keweenaw County, MI	45	.13905	Wade Hampton, AK	3096	.08238
Rockwall County, TX	46	.13894	Shannon County, SD	3095	.08243
Jackson County, IL	47	.13894	Lake and Peninsula, AK	3094	.08252
Poquoson city, VA	48	.13787	Treutlen County, GA	3093	.08255
Hanover County, VA	49	.13762	Philips County, AR	3092	.08257
Woods County, OK	50	.13754	Menominee County, WI	3091	.08257

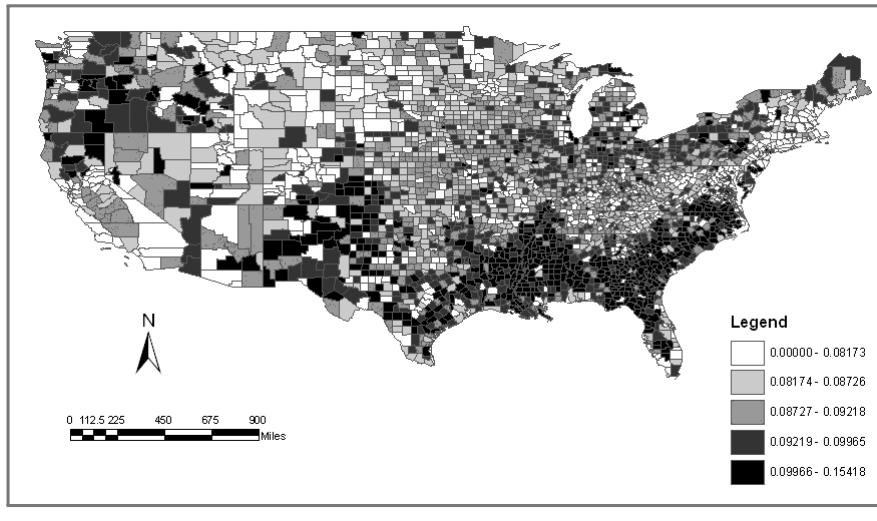
In contrast, the counties with the lowest levels of social capital are Chattahoochee County, Georgia (.02058), Bronx County, New York (.07208), and Vernon Parish, Louisiana (.07427). Counties at the bottom of the social capital hierarchy are predominantly Southern, with Georgia and Mississippi leading all states with 13 and 8 counties represented in the bottom 50. The lowest scoring county in Mississippi is Jefferson County. In many ways, Jefferson epitomizes a social capital impoverished county. On straight demographics, Jefferson is predominantly African-American (86.5 percent), has a median household income of $18,447, more than one-third of the population is below the poverty line, and almost 30 percent of households are female headed. According to Education Report Card data, Jefferson is among the worst performing districts in Mississippi, with some 95 percent of students in the district eligible for food assistance. On media activity variables, Jefferson is below average on percent of the population that are heavy newspaper users (.1447 versus .174), with a substantially higher than average percent of population categorized as heavy television users (23.7 percent versus 20.5 percent).

In the next phase of analysis, we examine the spatial distribution of social capital and media activities across all counties in the U.S (see Maps 1 to 4). For all maps, counties are divided into equal quintiles with higher values in darker colors and lower values in lighter colors. As shown in Map 1, lower values of social capital appear in the Southeast, Deep South, and Southwest regions of the United States. Alabama, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and West Virginia are almost fully within zones of social capital (a few metropolitan areas within these states contradict the regional pattern). Parts of other states such as South Illinois, South Missouri, and South Texas are also within in the low value zones of social capital. Generally, lower levels of other-regarding behavior conform to the “Black Belt” of America. The Black Belt is a

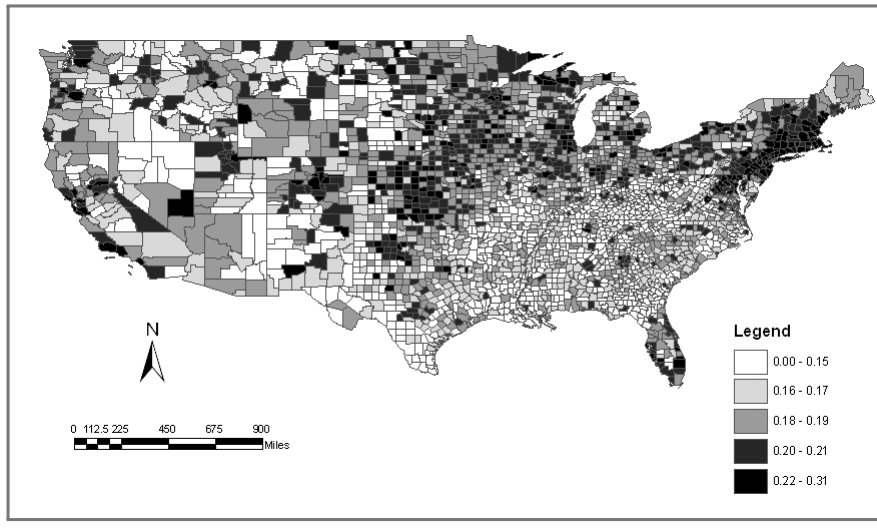
Map 1. Geography of Social Capital at the County Scale, 2003



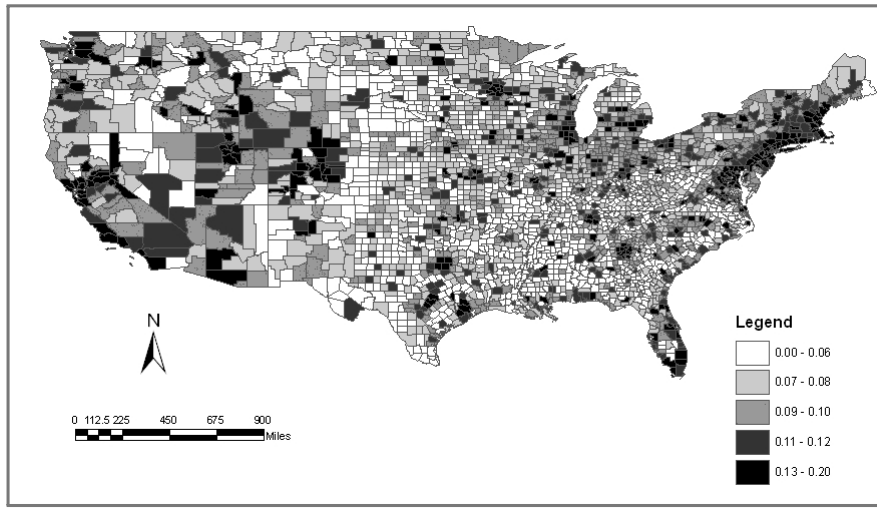
Map 2. Geography of Heavy Television Use at the County Scale, 2003



Map 3. Geography of Heavy Newspaper Use at the County Scale, 2003



Map 4. Geography of Heavy Internet Use at the County Scale, 2003



socio-demographic crescent of Southeastern geography. It is characterized by depressed quality of life, with higher than average rates of poverty and unemployment, and lower levels of educational attainment (Wimberley & Morris, 1997).

In contrast, the darker zones (or counties with comparatively higher levels of social capital) are located in the geographic Breadbasket, coastal Northeast, and Mountain West parts of the country. Interestingly, parts of California and Washington proximate to national parks like Yosemite and Olympic show clusters of high social capital. Maps 2, 3, and 4 reveal that counties in the coastal Northeast have higher percentages of heavy newspaper readers and Internet users, and lower percentages of heavy television viewers. The highly racially homogeneous Breadbasket states of Iowa, South Dakota, North Dakota, Minnesota, Nebraska, Wisconsin, and Kansas appear to have lower percentages of heavy television users, and lower levels of daily Internet use. Daily Internet use appears to be a coastal phenomenon, clustering in Southern Florida, the Bay Area of the West Coast and the Northeast. The daily internet use map (Map 4) captures hotbeds of computer and internet commerce in Austin, Texas and Denver, Colorado. Overall, our geographic analyses at the county scale agree with Putnam's (2000) results at the state level, showing considerable deficits of social capital in the Southern United States. However, our maps also clearly indicate that state level analyses mask significant within state clusters of low and high social capital.

To address our second objective — explain the spatial distribution of social capital — we perform a spatial lag regression with maximum likelihood estimation using GEODA software. We chose such a methodology because of the presence of significant autocorrelation in residuals for our dependent variable, as indicated by a global Moran's I test ($p < .001$). We include a spatially lagged social capital term in our estimation model to eliminate global autocorrelation by statistical means.

Table 3. Spatial Lag Regression Model of Social Capital with Maximum Likelihood Estimation

Variables	Coefficient	Std. Error	Coefficient	Std. Error
Constant	0.03373946	0.003460431	0.03622008	0.004099396
Spatial Lag Variable				
Social Capital	0.7070084	0.02672297	0.5065701	0.03043983
Media Variables				
Television use	-0.38657	0.01215597	-0.2453952	0.0142933
Newspaper use	0.1831094	0.00561103	0.1990636	0.006220121
Internet use	0.2422773	0.006446148	0.1096424	0.007846482
Control Variables				
Median age			6.459681e-005*	4.310045e-005
Percent urban population			-0.01068543	0.0006090852
Percent black			-0.0001446271	1.283978e-005
R-squared	0.681990		0.726854	
S.E. of Regression	0.00785746		0.00728213	
Log likelihood	10758.2		10999.1	
Akaike Information Criterion	-21506.4		-21982.2	
N	3140		3140	
Degrees of Freedom	3135		3132	

* Variable is not significant where the null hypothesis test of coefficient equal to zero, $p =< .05$

Table 3 presents results from our spatial lag regression analysis using maximum likelihood estimation. In the fully specified model, approximately 73 percent of variation in social capital is explained by our suite of media activity and socioeconomic control variables. Multicollinearity is not a serious problem, with variance inflation and tolerance statistics falling within acceptable standards (Chatterjee, Hadi, & Price, 2000). All variables in our estimation model (minus median age) are significant at the $p <$ .001 level. Our spatially lagged social capital term is positively associated with local social capital ($\beta = 0.5066$, $p < .001$) indicating that local social capital is partially explained by the level of social capital in neighboring counties. This contiguity suggests that social capital formation may operate at a larger spatial scale than the county unit of observation.

Media use variables behave as hypothesized. What social scientists have discovered at individual and cross-national levels of analysis on the relationship between media use and social capital are upheld at the county scale. Consistent with Putnam's (2000) claim on the effects of heavy television use, we find that the percentage of heavy television users in a county negatively predicts county social capital ($\beta = -.2454$, $p < .001$). Heavy television use is first among negative predictors in explanatory power, performing better than more traditional socioeconomic variables like race and urbanization. An increase in the percentage of heavy television users significantly decreases the volume of social capital in a county area.

Our newspaper use variable is also statistically significant. As the percentage of heavy newspaper users in a county increases, so too does the level of social capital ($\beta = .1991$, $p < .001$). The predictive power of our newspaper use variable is stronger than all predictors in our model. Consistent with utopian arguments on the positive effects of Internet technologies, daily Internet use may enhance levels offline social connectivity. Our Internet use variable is strongly positively associated with the level of social capital in a county area ($\beta = .1096$, $p < .001$) even when controlling for socioeconomic features of a locality. Interestingly, with the inclusion of socioeconomic control variables, the coefficient on daily interest use is more than halved in size. Overall, results on media variables indicate that rates of heavy media activity significantly predict local rates of other-regarding behaviors like fundraising, volunteering, and public involvement.

Statistical controls in our model are also significant predictors of social capital. Median age is not partially correlated with social capital. Results suggest that activities like volunteering, fundraising, and public involvement do not increase significantly as the median age of a locality increases. Consistent with established literature, percent urban ($\beta = -.01069$, $p < .001$)

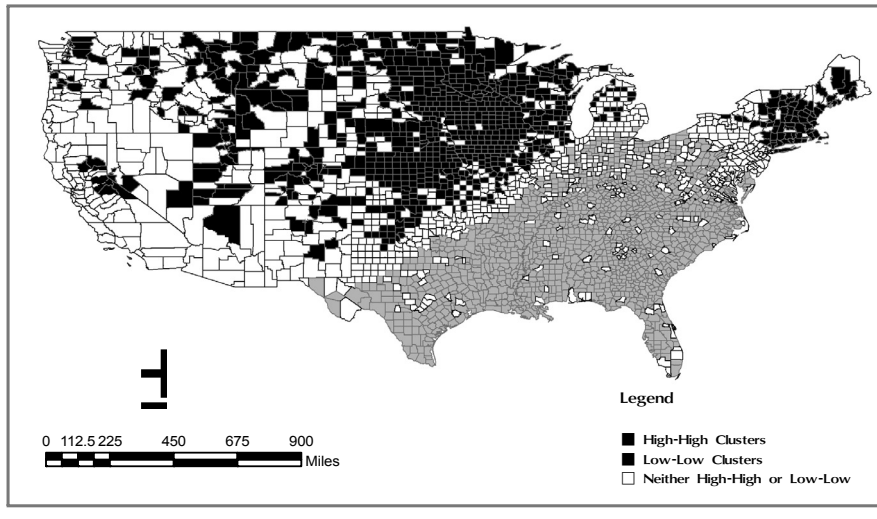
and percent African American ($\beta = -.0001$, $p < .001$) negatively predict county social capital. Taken with LISA results, social capital is significantly lower in Southern urbanized areas with higher African American composition. Overall, results indicate that the distribution of social capital has a spatial logic that can be partially explained by levels of media activity and socioeconomic characteristics.

V. CONCLUSION

In this paper we set two analytic objectives: 1) estimate the geographic distribution of social capital at the county scale for the United States; and 2) explain this spatial distribution of social capital by media activity and socio-demographic characteristics of a locality. On the first objective, we find that social capital clusters spatially. Maps 1 and 5 show that higher levels of social capital are found in the Northeast and the Breadbasket states of Iowa, Nebraska, Kansas, Minnesota, and the Dakota's. Lower values of social capital are found in the South. Map 5 reveals that a thin diagonal band of counties, extending from southern Michigan to west Texas, cleaves regional clusters of High-High (HH) and Low-Low (LL) social capital. Taken with the positive significance of our spatially lagged social capital term, it appears that social capital may operate at levels higher than the unit observed. Like externalities of industrial production, the effects of social capital do not fully obey local juridical boundaries.

In the language of human ecology, the thin diagonal band of nondescript (i.e., neither HH nor LL) social capital may constitute an "interstitial zone" of potential interest to communication scholars and policymakers. For a cost-effective spatial policy, interstitial zones are good areas to target public investment to both buffer the spatial spread of civic disengagement and enable the diffusion of other-regarding behaviors. Because the effects of ad

Map 5. National Cluster Map of Social Capital at the County Scale, 2003



jacency are significant, policy interventions in counties of nondescript social capital could benefit from a "spatial subsidy" effect. That is, a strategy of spatial targeting can allow policymakers to use the resources of neighboring counties with higher percentages of other-regarding behavior to boost social capital averages in targeted areas. We expect the costs of policy intervention to be lower, and the probabilities of policy success higher, in counties buttressed by clusters of HH social capital.

Robert Putnam (2000) finds that heavy users of television and electronic media are significantly less likely to participate in civic action. In fact, Putnam claims that significant variation in civic disengagement over the last three decades is attributable to excessive use of entertainment media. Numerous social scientific studies verify this claim, noting time, spatial and affective displacement effects as reasons for the negative direction of the relationship. Our spatial regression results indicate a significant negative relationship between the rate of heavy television use

and the rate of civic engagement in a locality. The rate of heavy television use has a relatively tight range and standard deviation as compared to social capital, suggesting that a relatively small change in the percent of heavy television users can produce comparatively larger change in social capital outcomes. Counties with higher rates of heavy television users are disproportionately African American in composition. This finding conforms to preventive medicine and physical activity studies on the higher use of television among African American households (e.g. Ford et al., 2002). In fact, the predictive power of percent African American on local social capital is cut by two-thirds with the inclusion of our television use variable. The bulk of race-based differences in social capital are explained away by the civic corrosiveness of high television use.

In the case of newspaper use, we find that heavy readership is positively associated with local civic engagement. As Tocqueville observed in the mid-1800s, newspaper use remains a sign of civic vitality. In fact, heavy newspaper readership is the strongest predictor of local social capital, doubling the combined explanatory power of median age and percent African American. Of all reasonable policy strategies to boost local social capital, increasing newspaper use is the most potentially effective. Newspapers are vehicles of social connectivity because they inform readers of opportunities for collective action, and engender interest in political, cultural and economic affairs before the country and in localities where citizens reside. Studies show that newspaper users are generally more knowledgeable of civic affairs and express greater concern for social welfare (e.g. Eveland and Scheufele, 2000). The social capital benefits of a news aware public are considerable.

Similar to newspaper use, the rate of daily Internet users in a locality is positively correlated with our social capital composite of fundraising, volunteering, and public involvement activities.

Much has been written about the Internet and civic participation. The literature is polarized. Some futurists warn of mass defection from civic life as Internet use generalizes in the population. Others claim that Internet use will enhance social connectivity and usher in a new civic renaissance. Our data suggest that Internet use contributes to building communities characterized by high levels of social capital. How Internet use intersects with the human life course will likely determine the long term resolution of the Internet effect debate. For example, scholars theorize that as persons age they accumulate social ties, become wise to how social life is organized, become more invested in political economic outcomes, and achieve budget and schedule flexibilities that increase propensities to engage in civic affairs. Insofar as Internet use increases the capacity of persons to form and accumulate (transportable) social relationships, we can expect a more utopian outcome as a generation of Internet savvy citizens travels the life-course.

As expected, percent African American is negatively associated with county-level measures of social capital. Alone, percent African American explains a considerable amount variation in local social capital. However, the size of the z-value for percent African American is reduced by three-fourths with the introduction of all media variables, again suggesting that observed differences between counties of varying racial composition in civic engagement may be explainable by differential rates of media use and exposure. Of course, differential media use — especially the considerably higher television use among African Americans and predominantly African American localities (e.g. Bales, 1986; Poindexter and Stroman, 1986) – may be governed by deeper social structural forces that discourage minority involvement in civic affairs. In this sense, excessive use of entertainment media in localities of higher minority composition may be an indictor of civic disenfranchisement and not a determinant of low civic par-

ticipation, or both.

In summary, our paper advances the literature on social capital in three ways. First, we produce a national portrait of social capital at the county scale — a level of geographic precision that more closely approximates the social scientific notion of locality, and the aggregate features of the concept of social capital (as formulated by Bourdieu, Coleman, and Putnam). Second, we show that high and low levels of social capital cluster spatially and may migrate across spatial boundaries with significant "contiguity" effects that rival traditional socioeconomic variables in predictive power. Third, we show that variation in our social capital composite is influenced by rates of media activity in a locality.

While our study provides important information on the spatial distribution of social capital at an aggregate level, it should be considered only a starting point for understanding the topic. First, our study examines a cross section of data related to the intensity and spatial variation of social capital. Future research should take a longitudinal approach and examine how behavior changes over time. Adding a temporal dimension will provide additional insights on possible spill-over effects of social capital into neighboring jurisdictions. It may also provide valuable information to policy makers interested in boosting the amount of social capital at the jurisdictional level by taking advantage of the clustering phenomena. Second, our study focuses on the county level as the aggregate unit of analysis. This jurisdictional unit allowed us to make use of existing data on social capital, but may not be the only spatial level on which social capital can be observed. Future research should compare multiple spatial scales to better understand at which aggregate level social capital and related media behavior can be most effectively described and explained. Third, our study examines secondary data to make broad statistical conclusions about the spatial pattern and intensity of social capital across the United States. Future work

should include case study analysis of specific counties displaying either high or low levels of social capital and media behavior. Such an approach should add a level of contextual detail and insight into the issue not attainable through quantitative analysis alone. No study is without flaws. One drawback is that social capital is measured by averaging three items of civic engagement or other-regarding behaviors — fundraising, volunteerism, and public group involvement, among other civic related behaviors. Future study could include more indicators for social capital to capture the depth of the concept.

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