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Role of Social Capital in Economic and Community Development

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Numerous studies have examined factors associated with regional growth and community development. A review by Kusmin evaluating 35 empirical studies of factors affecting business location and regional economic growth focuses on many of the traditional tax factors, resource base, and workforce characteristics. A subsequent study by Deller et al. included many additional amenity and quality of life factors in affecting growth rates in areas. Until recently, economists have not devoted much attention to the role of social capital in affecting economic development outcomes at the local level.

Social capital can exhibit not only an independent effect, but also mediate its effect through human capital. According to Bourdieu and Coleman, social capital multiplies returns of human capital, i.e. there exists a type of interaction between human and social capital in the production of income. In this study, social capital is reviewed from rational choice, interactional, and the embeddedness perspectives. Dimensions of social capital considered include acquaintanceship networks and social trust. Social interaction between individuals, within and between communities influences community and economic development outcomes. This interaction affects the strategies for development, the productivity of economic assets, risk behavior and the capacity to make use of new opportunities. The major objective of this study is to evaluate whether the different dimensions and combinations of social capital in rural communities in conjunction with their economic characteristics can influence levels of community and economic development.

Literature Review

Until recently, social capital has often been overlooked as a factor affecting economic solutions to community problems. In a recent study Rupasingha, Goetz, and Freshwater included social capital measures to help explain personal income growth at a county level in a Barro-type growth model and found a significant and positive relationship. Another recent study by Robison et al. examines the relationships between social capital and household income at the community level. Their study found that higher levels of bonding social capital were associated with individuals who were less mobile and held lower paying jobs.

Social capital has increasingly become a topic of interest in economic and sociological literature. Although a fair amount of research has been published on the concept, considerable variation is noted in specific definitions, indicators, and measuring tools. Regardless of the variations and uses of social capital, most contemporary work is grounded in the theoretical perspectives of rational choice, embeddedness, or social interaction. Each theoretical perspective provides an alternative view of the relative importance of social capital to the individual, group, and community. To understand how social capital affects development it is important to understand that social capital operates at micro, meso and macro levels, and to know how it operates at these levels, it is important to understand the following theoretical perspectives.

Rational Choice Perspective

The rational choice perspective focuses on individuals' needs, interests, and desires. With emphasis placed on the individual, the personal utility of social interaction becomes prominent (Etzioni, 1988). The rational choice perspective describes networks of relations as a resource available for future actions (North, 1990). Rational choice theorists treat norms of trust and group reciprocity as influential input to individuals when making choices (Ritzer, 1996).

The rational choice perspective emphasizes the utility of social relations to the individual for achieving personal goals, social capital at the micro level. See Table 1.

Interactional Perspective

Within the context of the community, the main focus of the interactional perspective is on the depth and magnitude of community-wide solidarity or ties. Wilkinson (1991) contends that bonds/ties are created between citizens through social interactions, especially those arising out of the mutual interests of the local population. Thus it refers to the nature and extent of ties within communities. Coleman (1988) does not take social capital as a socio-psychological characteristic of an individual rather he treats it as a resource that an individual accesses via his/her membership in a group, association and organization etc. which is social capital at meso level. Thus at meso level, one of the basic propositions of the interactional perspective is that place-based social interaction helps build a community, which is fundamental to understanding social capital as a community-level phenomenon (Miller, 1992).

Embeddedness Perspective

In contrast the embeddedness perspective illustrates the significance of the social structures/institutions within which social interaction occurs. Thus the social capital emerges out of relationships embedded in ongoing structures of social interaction (Granovetter, 1985). For this reason, social capital is an emergent group property rather than an aggregation of individuals' levels of trust. The embeddedness approach refers to a macro level of social capital. The embedded nature of social capital as a structural attribute, however, also recognizes social behavior as the rational motivation of individual actions. Thus in a community development outcomes are affected by ties between local institutions, and between individuals and institutions via their membership in organizations.

These theoretical perspectives provide us with an integrative view of social capital which recognizes that micro, meso and macro level institutions co-exist and complement each other. Thus macro level provides an enabling environment within which micro level institutions develop; as a result of this association, groups and organizations in turn make sure that the macro level provides opportunities for growth and is held accountable for its actions. This shows the relationship of social capital to development and well-being.

Dimensions of Community Social Capital Considered

Putnam, Coleman, and Bourdieu all suggest that sustained social interactions and networks at the community level serve as a valuable resource. Community social capital is seldom assessed directly as a variable, but instead is operationalized into separate indicators along specific levels of analysis (Wall et al., 1998). Operationalizing community social capital generally includes three specific dimensions: acquaintanceship networks, social trust, and collective action as a consequence of norms of reciprocity. For the purpose of this study only social trust and acquaintanceship networks are measured. Indicators used to measure these reflect different elements of community structure.

Social Trust

To social exchange theorists, social trust appears when actors interact to fulfill mutual obligations (Blau, 1964). Norms of reciprocity are created when these interactions are repeated over time. The creation of such norms enhances future interaction and builds greater levels of social trust (Kollock, 1994). In sum, social trust includes obligations, expectations, and reciprocities.

Acquaintanceship Networks

Putnam and Coleman agree that acquaintanceship networks are a necessary ingredient of community social capital. Within social structure, networks and ties serve as the tools through

which essential information flows. This is critical since the "acquisition of information is costly and always in scarce supply" (Coleman, 1988). Ramsey (1996) noted that the structure, type and quality of networks create the character of the community.

There is a growing recognition that differences in individual, and community economic growth cannot be fully explained by differences in traditional economic input such as land, labor and capital. Economists use human capital theory to explain the earnings inequality among different social groups. The human capital framework focuses on education and work experience as the most influential factors of a person's earnings. However, it is suggested that, apart from human capital, social capital is also responsible for growth differential and social inequality, thus increasing attention is being focused on the growing role of social capital in affecting the well-being and development of communities. Theoretical perspectives of social capital discussed earlier suggest that acquisition of human capital and building physical infrastructure need to be complemented by appropriate institutional development and a cohesive relationship among them at macro, meso and micro levels to achieve economic growth.

Variables and Data Sources

Information on levels of social capital in rural Iowa communities was obtained from a major research effort in 1994 to assess the socioeconomic conditions of Iowa rural communities. Ninety-nine communities with a population of 500-10,000 residents were selected out of 408 rural communities. Three sampling stages were involved in the study design. First, one community per county was selected randomly. Second, from each county a random sample of 150 households (HH) was drawn from the local telephone directory. Third, from each HH, the head was asked to participate. Selected individuals were sent questionnaires in June 1994. Out of 14,850, 10,798 questionnaires were returned completed showing an average response rate of 72.7 percent.

For purposes of this research, the individual HH data was aggregated to the community level, allowing merging with other secondary data on community demographic and economic characteristics. The secondary data includes measures of community population levels, retail sales strength, expenditures on local services, distances to nearest metro areas, and county population, income and earnings data. Detailed definitions and sources for this data are presented in Table 1. The mean values and standard deviation of the dependent and independent variables used in this study for the 99 rural communities are presented in Table 2.

Model Specification

To determine the impact of social capital on income and community development levels in rural communities, we specify a model that includes human capital elements, social capital measures, regional and locational characteristics and community attributes. These elements are introduced sequentially into variations of the model. The starting element is the human capital components which focus on education and work experience as the most important factors of a person's earnings. The discussions of social capital suggest that acquisition of human capital and community development needs to be complemented by appropriate institutional development and a cohesive relationship among them to achieve economic growth.

Expansion of businesses in rural areas leading to higher wages and income growth are likely to be influenced by the availability of public services, productivity and quality of workers. Adjacency to metropolitan areas are also expected to be important in affecting quality of jobs and income levels because of providing access to business support services and higher order communication and transportation services.

Empirical Results

The regression results for models explaining quality the community development and economic development models are presented in Tables 3 and 4. The results are presented

sequentially starting with human capital characteristics, and then adding social capital measures, community attributes, spatial characteristics, and local area economic characteristics. Comparable models are used to evaluate economic development and community development attributes of these rural communities.

The results explaining economic development outcomes, presented in Table 3, show that social capital has a small positive, but not statistically significant association in explaining the differences in average community income growth. Human capital shows a positive association indicating that communities with higher averages of human capital as measured by education levels are likely to have higher average incomes. The coefficient for adjacency to a metropolitan is negative and significantly related to average income levels in the community. Thus communities farther from the metro areas are likely to have lower income levels. None of the community attribute indicators (population, public service expenditures, and retail sales performance) were significantly related to levels of income in rural communities.

In contrast, most of the county level indicators of economic and demographic performance, (changes in population, percapita income and earnings per job) were significantly related to levels of community income. The percentage change in county population levels and the percentage change in percapita income between 1990 and 1994 are positively related to average income levels in these rural communities in our sample. The negative relationship between the change in average earnings per job in the county and average income levels in our rural communities is unexpected. It may be the result that the newly created jobs during this period paid wages lower than the already existing jobs. Also, the average wages are reported for place of residence by respondents who may be commuting to higher wage jobs outside the county.

The models evaluating levels of community development, measured as satisfaction with quality of community services are presented in Table 4. In contrast to the economic development models, the social capital measures are significantly related to the level of community service satisfaction in the specifications tested. This result implies that communities having higher levels of social capital are more likely to provide a satisfactory level and quality of community services. The dependent variable only provides a subjective measure of community satisfaction with their local government services, so that the same level of service could receive different scores across communities.

In an interesting comparison, satisfaction with community services appears to have no relationship to the level of percapita spending on public services. Neither the variables measuring parks and recreation expenditures or the highway and wastewater treatment expenditures were significantly related to levels of satisfaction with community services.

Higher education levels are associated with higher satisfaction with community service provision. Human capital is associated with higher income so that these communities may be better able to achieve a satisfactory level of service provision.

Within the population size of our sample, larger cities had higher levels of satisfaction with services. This result suggests that a certain population threshold may be necessary to affect service provision quality. The drawing power of the community for retail sales as measured by a pull factor indicated no relationship with satisfaction scores for community services.

Changes in the county-wide economic and demographic conditions appear to have an influence on community satisfaction with quality of local services. The change in per capita income in the county was positively and significantly related to satisfaction with local services implying that growth in personal per capita income leads to increased satisfaction with local services. Again the relationship between the change in earnings per job was not anticipated. The

negative coefficient implies that the increased earnings per job leads to a lower level of satisfaction with local services. This outcome could be the result of changing expectations for services as earnings increase. Also, the earnings per job is measured for the place of work while the service satisfaction score was measured at the place of residence and extensive commuting in rural places may result in these differences.

Summary and Conclusions

In this paper we attempt to evaluate the role of acquaintanceship networks and social trust dimensions of social capital in affecting economic and community development outcomes for rural communities. The measure for acquaintanceship network was intended to indicate the ability to share essential information within a community that would help facilitate community and economic development efforts. The indicators for social trust include obligations, expectations, and reciprocities that accrue over time from repeated interactions. This interaction is more inwardly focused and may reduce openness to outside economic development efforts.

Regression techniques are used to evaluate community level economic development, measured as level of personal income, and community development outcomes, measured as satisfaction with local government services on the basis of human capital characteristics, social capital measures, community attributes, spatial characteristics, and local area economic characteristics. As expected, aggregate human capital attributes in the community were important in affecting economic development and community development outcomes. Adjacency to a metro area was important in affecting income levels, but not in affecting satisfaction with community services. Other community attributes that included population, retail sales pulling power and expenditure on roads and parks and recreation were not important in explaining community income levels. Population is important in explaining level of satisfaction with community services.

The social capital measures show a positive, but not significant, association with community income growth. The social trust and acquaintanceship network components of social capital were both significant factors in explaining levels of satisfaction with community services. Our results contrast with the work by Rupasingha et al. who found social capital to have a significant and positive impact on the rate of per-capita income growth.

These initial research results are more encouraging in identifying a positive influence of social capital factors in affecting community development outcomes. One reason for this non-result for economic development was the lack of a variable to measure economic change at the community level. Additional research needs to develop and test alternative indicators of economic development at the local community level. The 2000 Census information should provide additional community level measures as well as provide opportunities to examine other demographic change at the community level.

Table 1. Data Source and Definition of the Variables Used

Name	Definition	Source
Independent Variables		
EDUCA	Your highest level of formal education attained	Rural Development Initiative (RDI) Survey 1994.
ABELOW65	Percentage of Population Below Age 65	
NNACQUAN	Regression factor score (var. # 66, 59, 67) [a]	
NNTRUST	Regression factor score (var. # 77 79 83) [b]	
POP90	1990 census population (Community Level)	Census 1990
RPF94	Relative Pull Factor for 94 (Ratio of retail customers to population)	State Retail Census 1994
EDPERCAP	Expenditures/capita for libraries, parks & recreation	Census 1990
EDPHYSED	Expenditure/capita for highways, sewage, and solid waste mgmt	
GISMILES	Distance in Miles	GIS Lab, Iowa State University 1994
EPJCHG3	Change in Average Earnings/Job (1990-94)	Bureau of Economic Analysis, Iowa State University, 1994
PCICHG3	Change in Per-Capita Personal Income (1990-94)	
POPCHG	Percentage pop. change 1990-94	Census 1994 Estimates

a Q# 59. I usually find some to talk to in the community
Q# 66. What proportion of adults you know by name in the community
Q# 67. What proportion of all your friends live in the community

b Q# 77. Self perceived degree of friendliness
Q# 79. Self perceived degree of support
Q# 83. Self perceived degree of trust

Name	Definition	Source
Dependent Variables		
HHINCOM	Household income for 1993	Rural Development Initiative (RDI) Survey 1994.
NNQOL	Regression factor score for (var. 15 & var. 38)[c]	

c: Q# 15. Satisfaction with quality of services and facilities in the community
Q# 38. Satisfaction with quality of government services in your community

Table 2. Mean, Standard Deviation, and Definition of the Variables Used

	Independent Variables		
Name	**Mean**	**Std. Deviation**	**Definition**
EDUCA	3.668	0.302	Your highest level of formal education attained
ABELOW65	66.963	7.964	Percentage of Population Below Age 65
NNACQUAN	-0.048	0.305	Regression factor score (Q # 66, 59, 67) [a]
NNTRUST	0.070	0.233	Regression factor score (Q # 77 79 83) [b]
POP90	1823.135	1874.354	1990 census population (Community Level)
RPF94	0.828	0.564	Relative Pull Factor for 94
EDPERCAP	66.638	56.182	Expenditures/capita for libraries, parks & recreation
EDPHYSED	75.419	32.773	Expenditure/capita for highways, sewage, and solid waste
GISMILES	46.358	21.976	Distance in Miles
EPJCHG3	18.085	7.522	Change in Average Earnings/Job (1990-94)
PCICHG3	17.772	3.856	Change in Per-Capita Personal Income (1990-94)
POPCHG	0.485	2.461	Percentage pop. change 1990-94

a Q# 59. I usually find some to talk to in the community
Q# 66. What proportion of adults you know by name in the community
Q# 67. What proportion of all your friends live in the community

b Q# 77. Self perceived degree of friendliness
Q# 79. Self perceived degree of support
Q# 83. Self perceived degree of trust

	Dependent Variables		
Name	**Mean**	**Std. Deviation**	
HHINCOM	3.734	0.428	Household income for 1993
NNQOL	-0.001	0.994	Regression factor score for (Q15 & Q38)[c]

c: Q# 15. Satisfaction with quality of services and facilities in the community
Q# 38. Satisfaction with quality of government services in your community

Table 3. Average Community HH Income

Independent Variables	Model 1 (HC)		Model 2 (SC)		Model 3 (CA)		Model 4 (SE)		Model 5 (CE)	
	b	Se	b	Se	b	Se	b	Se	b	Se
Community (HC)										
Education	0.369**	0.102	0.347**	0.108	0.294**	0.124	0.324**	0.120	0.307**	0.121
Age (%<=65)	0.538**	0.004	0.496**	0.005	0.495**	0.005	0.415**	0.005	0.403**	0.005
Social Capital (SC)										
Acquaintance			-0.119	0.160	-0.162	0.166	-0.076	0.166	0.013	0.173
Trust within community			0.103	0.162	0.139	0.179	0.103	0.174	0.040	0.177
Community Attributes (CA)										
Pop. Size					0.102	0.000	0.120	0.000	0.134	0.000
Pull Factor					0.047	0.056	0.052	0.054	0.034	0.053
Exp. on Park Libraries and Rec.					0.016	0.001	0.037	0.001	0.012	0.001
Exp. on Hwgys, Sewage and W. Mgmt.					-0.039	0.001	-0.032	0.001	-0.019	0.001
Spatial Elements (SE)										
Distance to the nearest metro							-0.226*	0.002	-0.153**	0.002
County Level Effect (CE)										
% Δ in Avg. Earnings /job(90-94)									-0.183*	0.006
% Δ in per/capita income (90-94)									0.188***	0.011
% Δ in Pop. (90-94)									0.181***	0.015
Adjusted R-square	0.536		0.534		0.545		0.577		0.596	
R-Square D	0.565**		0.008		0.011		0.034**		0.030***	

*** p< 0.05, ** p<.01, ***p<0.10**

Table 4. Quality of Services

Independent Variables	Model 1 (HC)		Model 2 (SC)		Model 3 (CA)		Model 4 (SE)		Model 5 (CE)	
	b	Se	b	Se	b	Se	b	Se	b	Se
Community (HC)										
Education	0.350**	0.336	0.458**	0.288	0.288**	0.309	0.276**	0.312	0.226*	0.311
Age (%<=65)	-0.172**	0.013	0.112	0.013	0.119	0.012	0.150	0.013	0.151	0.013
Social Capital (SC)										
Acquaintance			0.343*	0.426	0.278*	0.415	0.245***	0.430	0.183	0.446
Trust within community			0.385**	0.432	0.523**	0.446	0.537**	0.451	0.554**	0.455
Community Attributes (CA)										
Pop. Size					0.327**	0.000	0.320**	0.000	0.310**	0.000
Pull Factor					-0.008	0.140	-0.010	0.140	-0.015	0.136
Exp. on Park Libraries and Rec.					0.056	0.001	0.048	0.001	0.040	0.001
Exp. on Hwgys, Sewage and W. Mgmt.					-0.049	0.002	-0.052	0.002	-0.052	0.002
Spatial Elements (SE)										
Distance to the nearest metro							0.086	0.004	0.034	0.004
County Level Effect (CE)										
% Δ in Avg. Earnings /job(90-94)									-0.207**	0.015
% Δ in per/capita income (90-94)									0.239**	0.029
% Δ in Pop. (90-94)									-0.147	0.039
Adjusted R-square	0.097		0.406		0.475		0.474		0.506	
R-Square D	0.112**		0.332**		0.076*		0.005		0.044*	

*** p< 0.05, ** p<.01, ***p<0.10**

Table 5: Correlation matrix for dependent and independent variables

	HHINCOM	NNQOL	EDUCA	ABELOW65	NNACQUAN	NNTRUST	POP90	RPF94	EDPERCAP	EDPHYSED	GISMILES	EPJCHG3	PCICHG3	POPCHG
HHINCOM	1.000	0.253*	0.532**	0.649**	-0.512**	-0.145	0.342**	-0.015	-0.113	-0.042	-0.461**	-0.040	0.134	0.406**
NNQOL		1.000	0.298*	-0.066	0.317**	0.499**	0.247*	0.013	-0.067	-0.100	0.166	0.051	0.233*	-0.247*
EDUCA			1.000	0.302*	-0.409**	-0.139	0.493**	-0.058	-0.089	-0.085	-0.086	0.104	0.248*	0.091
ABELOW65				1.000	-0.630**	-0.260*	0.210	-0.045	-0.152	0.026	-0.513**	-0.096	-0.033	0.421**
NNACQUAN					1.000	0.601*	-0.268*	0.129	0.045	0.037	0.446**	0.054	0.007	-0.454**
NNTRUST						1.000	-0.328*	0.053	-0.073	-0.008	0.087	-0.100	-0.052	-0.046**
POP90							1.000	-0.092	-0.131	-0.107	-0.004	0.192	0.219*	-0.053
RPF94								1.000	0.290**	0.126	0.095	-0.079	-0.013	-0.019
EDPERCAP									1.000	0.045	0.128	-0.093	-0.034	-0.006
EDPHYSED										1.000	-0.004	-0.082	-0.102	-0.051
GISMILES											1.000	0.136	0.104	-0.577**
EPJCHG3												1.000	0.743**	-0.051
PCICHG3													1.000	-0.093
POPCHG														1.000

*** Correlation is significant at p< 0.05 level**

**** Correlation is significant at p< 0.01 level**

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