



# The effects of community social capital on school performance: A spatial approach

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## ABSTRACT

The influence of social capital on economic activities has been a central theme in the literature for quite a long time, but the relationship between social connectedness and school choice has not been addressed. If the primary objective of social capital is to create cohesiveness through the connectivity of community members, then it is clear that parents' school choice decisions are influenced by the groups or organizations to which they belong. Ni (2007) argues that parents' decisions not only influence students' academic performance, but also affect school expenditures. Thus, it is worthwhile to investigate the effect of social capital on school performance. The measurement of social capital has been debated for a long time. In this paper we create a geographically bounded community around schools in Mississippi employing GIS instead of following the commonly used political boundaries such as school district or county to measure social capital. Then we estimate the social capital stock for each school to analyze the relationship between the school's performance and existing social capital. Data were collected from the Northeast Regional Center for Rural Development (NRCRD) and the Mississippi Department of Education for the academic year 2005–2006. We find that schools located in communities with a higher stock of social capital significantly outperform those with relatively low levels of social capital. The results also suggest that students' race and socio-economic status significantly reduce primary school performance, holding all else equal. This research helps to understand the importance of social capital from spatial perspectives and will guide policy makers in future resource allocations.

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## 1. Introduction

The United States is a world leader in educational investment. According to the U.S. Department of Education, total expenditures on elementary and secondary schools for the 2005–2006 academic year were \$558.3 billion. About 92% of this amount was spent on public elementary and secondary school systems (U.S. Department of Commerce, 2006). Moreover, public school expenditures nationwide increased almost 805 times in the past 30 years. In keeping with such a large educational investment, during the academic year 2003–2004, state and local governments in the state of Mississippi spent approximately \$3.4 billion dollars on

public schools.<sup>3</sup> Unfortunately, this investment has not significantly affected standardized student test scores (Lips, 2004), and the resulting widespread concerns about public school performance have led to a public debate regarding alternative educational reforms while ignoring the effects of school communities on student's academic, hence, school's overall performances.

In Mississippi, public schools are different from each other in many ways and one of the most striking differences is the place where the school is located. For example, an urban (rural) public school can be located in a very different community than other public schools although they are in the same urban (rural) area. Therefore, the school community not only varies between rural or urban areas, but it also varies within the same geographical area. Students from these schools vary in their academic performances for several reasons. Generally researchers and policy makers are

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<sup>3</sup> Source: U.S. Department of Commerce, Census Bureau, Governmental Finances. Retrieved on July 13, 2009, from: <http://www.census.gov/govs/www/estimate04.html>.

trying to minimize that gap by looking at various internal issues, such as teacher's quality, student's socio-economic or even school's political/geographical location (rural or urban) while ignoring some external factors. For example, social capital may have a significant impact on students' academic performance. In the next few paragraphs we will explore the linkage between social capital and students' academic performance.

Social capital is a measure of the connectivity between individuals in a community. In comparison to the location effect, which is inherently geographic, social capital in a community is derived from a connection between individuals and social networks. Coleman (1988), who developed the concept of social capital, argues that it is an equally important factor in personal development as is financial capital and human capital. Social capital plays a significant role in explaining student educational attainment.

Social capital in a community is created through connectedness among individuals through social organizations and clubs. There are different ways social capital can influence individual development, and the networking theory suggests one explanation. According to this theory, which is developed by Bryant and Norris (2002), there are three different aspects of social capital: bonding, bridging, and linking. Individuals optimize their relatedness with social organizations based on their personal goals, but all social organizations serve the common purpose of networking. One role of social networking is to inform community members about education and to provide ways to access and succeed in education.

The importance of social capital in the development of human capital (Coleman, 1988; Gregory, 2003; Putnam, 1993) and economic growth (Beugelsdijk and Smulders, 2009) is well established in the literature. Putman reports a growing disconnectedness in U.S. communities and believes that higher social capital improves student performance. More recent research shows that the accumulation of social capital positively influences the academic performance of students in a community (Meier, 2009). Evidence from some studies suggests that students obtain academic benefits from social capital (see Putman, 2000) while other authors such as (Meier, 2009) make the general argument that students' achievements are positively related to a school's overall performance. There are reasons to believe that the effects of social capital on students' academic achievement may differ from student to student.

Intuition suggests that social capital aids students in connecting with resources that enhance educational attainment. As a thought experiment, compare a student in a community with no social capital to a student surrounded by numerous social organizations. The former student is likely to be somewhat isolated outside the classroom and relegated to study largely on their own. The latter student can more readily learn about community learning resources and connect with group study options. On average, you might expect the student surrounded by more social capital to learn more and perform better in the classroom. This leads to the following null hypothesis:

**Hypothesis.** The degree of social capital available within a community will have no effect on student performance in local public schools, *ceteris paribus*.

A rejection of this null hypothesis would suggest that social capital is associated with greater student performance. This result could have policy implications as communities allocate resources. Both public and private sectors within a community have the capacity to increase social capital. In some cases social organizations may be directly funded by either or both sectors. There might also be more indirect means of support through community infrastructure that promotes social interaction. The analysis in this study should provide insight on the likely effectiveness of allocating resources to social organizations within a community.

The remainder of the paper proceeds as follows. Section 2 presents the background literature on social capital. Section 3 examines the methodology to measure social capital and explores the data used in the study, while Section 4 presents results. Section 5 concludes by synthesizing the key findings from the results.

## 2. Background and literature

The generally accepted definition of social capital is "the set of social resources of a community that increases the welfare of that community" (Glaeser, 2001). Various types of organizations, including religious, political, and social, foster social capital through norms and networks. Social capital has received a great deal of recent attention in the literature and is generally considered as an exogenous factor (Fukuyama, 1995; Putnam, 1993), endogenous influence (Knack and Keefer, 1997), or both an exogenous and endogenous factor (Radnitz et al., 2009). Although researchers often hold different views about social capital formation, they all agree about its direction of influence on other socio-economic factors.

Much research on public school performance attempts to address concerns, such as class size, teachers' training and salary, curriculum, and school productivity related programs. Generally, local and state policy makers focus only on school reform programs and resource allocation. The importance of social capital on public school performance and efficiency is often overlooked. Among the few studies available, Coleman (1988) and Putman (2000) show the existence of a positive relationship between social capital and economic activities. Glaeser (2001) argues that social capital can influence some unobserved characteristics that drive observed socio-economic factors in a community. For example, connectedness between child, family member, community member, and school enhance academic achievement (Coleman, 1988).

Following Coleman's initial investigation of social capital, economists and social scientists have studied the relationship between social capital and educational attainment or academic performance. Glaeser (2001) finds a robust direct relationship between social capital and individual schooling. Meier (2009) finds that social capital influences students' grade point average and student dropout rates. Meier uses parental involvement, participation in extracurricular activities, and family composition as his social capital variables when looking at grade point average; he finds a positive relationship. Hence, increasing social capital stock increases students' performance.

In an international setting, research in rural Bangladesh using micro-data shows that social capital, defined as parental sociability, Non-Government Organization (NGO) membership, and community work does not increase the probability of school attendance (Asadullah, 2008). To date, the literature in public school performance has given little importance to social capital, although a few studies find a significant positive relation between students' academic outcome and social capital. Thus, in the current investigation we will explore the social capital effect on public school performance.

## 3. Methodology

### 3.1. Measuring social capital

Measuring social capital is not straightforward. We need to know about the levels of social capital before measuring the stock of social capital in a community. The micro level, the meso level and the macro level are the three levels of social capital that can be analyzed in society (Hjellund and Svendsen, 2000). This paper analyzed

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