

How Do Rural Schools Fare Under a High Stakes Testing Regime?

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Analyses of data from the Illinois Standards Achievement Test (ISAT) show how strongly associated the socioeconomic characteristics of schools are with school outcomes. Factors such as the percentage of students who are poor, percentage black, and the property values within a district explain over 70% of the variance in school outcomes. However, the state has created a high-stakes designation system, using yearly test scores as a snapshot of school performance. Schools would be sanctioned or rewarded more on levels of poverty and racial characteristics than on gain scores. We extend this research by linking county level data to the 2000 ISAT data for Illinois' public schools. We examine the extent to which rurality matters for school outcomes and the extent to which the Illinois' school designation system unfairly targets poor rural schools. We find that rural schools in Illinois perform better than their suburban or urban counterparts on the state's standardized test. Despite this, the high stakes test and designation system being considered by the state will unfairly benefit suburban schools.

Introduction

Analyses of data from the Illinois Goals Assessment Program (IGAP) show how strongly associated the socioeconomic characteristics of schools are with school level outcomes (Rau, Shelley, & Beck, 2001). Factors beyond individual school control, such as the percentage of students who are poor, the percentage who are black, and the residential mobility of students' families explain up to 80% of the variance in school-level outcomes. However, the state has imposed a designation system that uses test scores as a one-time snapshot of school performance. The use of such test scores when they are so highly correlated with socioeconomic characteristics is problematic. Schools are sanctioned and rewarded more on their levels of poverty and racial

characteristics than they are on gain scores or performance indicators that take into account the characteristics of their students. We know, for instance, that schools labeled as "Exceeding Expectations" are, on average, 11% poor and 4.3% black while schools placed on "Academic Watch" are 95.1% poor and 90% black. The former are given an automatic waiver of mandates, high performance awards, and public recognition. The latter face targeted interventions, school and district audits, removal of the school board, and reassignment of administrators.

We extend this research by linking county-level controls for rural-urban difference to school-level data. Others have set student outcomes such as dropout rates and achievement, within the school, community, and family context (Israel, Beaulieu, & Hartless, 2001; Roscigno & Crowley, 2001). This previous work makes a convincing argument that rurality matters for educational outcomes, but less so than one may think. We also extend the work of Rau et al. (2001) on the School Designation System being implemented by the Illinois State Board of Education by examining how the system will affect rural schools in particular. Most importantly, however, we examine the extent to which the Illinois' school designation system unfairly targets poor rural schools.

In short, we attempt to answer two questions: (a) Does the rurality of Illinois junior high schools affect their student's test scores? and (b) How will schools in general and rural schools in particular fare under Illinois' new school designation system?

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Rural Schools and Educational Outcomes

There are discrepancies in the literature regarding whether the rurality of a school hurts the academic performance of its students. As Israel, Beaulieu, and Hartless (2001) indicate, there are a variety of reasons to think that rurality would negatively affect educational outcomes—e.g., socioeconomic disadvantage, increased inequality, physical and social isolation, and residential turnover. Though familial factors are more directly related to individual student outcomes, the effects of community structure and process on these outcomes were statistically significant, controlling for the more proximate family variables. Roscigno and Crowley (2001) found that rural schools and affiliated families suffer from lower socioeconomic opportunity and fewer school resources. However, the effect of being in a rural community disappeared once the more proximate determinants of students outcomes were held constant.

Further, some claim that “students living in rural areas of the United States achieve at lower levels . . . than do their nonrural counterparts” (Roscigno & Crowley, 2001, p. 268). Lower achievement, whether measured by standardized math/reading performance or by SAT/ACT scores, has been evident for nearly 30 years with very little change (College Entrance Examination Board, 1995; Roscigno & Crowley, 2001; U.S. Department of Education, 1992). We know that rural schools may suffer from some poor educational conditions (e.g., sparse population bases, isolation, limited economic development, and restricted educational opportunities) (Israel et al., 2001; McCombs & Bansberg, 1997; Roscigno & Crowley, 2001).

Yet, rural schools are often small enough and have other characteristics that offset these disadvantages (Langdon, 2000; Lee, 2001; Lee & McIntire, 1999). Other research indicates that among eighth graders nationally, the rural students outperformed nonrural students in math (Lee & McIntire, 2001). Lee and McIntire (1999) went further in finding that rural schools have the advantage of factors conducive to higher student performance (e.g., teacher training and a safe/orderly climate). Other national studies also found that performance in rural schools was similar to that of nonrural schools (Fan & Chen, 1999; Stern, 1994). These studies tend to find positive outcomes for rural schools after holding constant several socioeconomic characteristics for the student population they serve.

Thus, in order to correctly measure the impact of rural location, it is clear that factors known to affect student performance should be held constant.

Related to poverty, race, and rurality in Illinois is the level of funding schools receive. Illinois has been ranked 47th out of 50 states in funding equity across districts because of its high reliance on property taxes in the funding formula (Editorial Projects in Education, 1999). ISAT data

indicate that the most well-funded high schools in the state are suburban, nearly all-white, wealthy, and spend 5 times the amount per student per year than schools that are rural with depressed property values. Payne and Biddle (1999) argue that while some research has discovered a weak relationship between school funding and test scores, scholarship that measures the issue carefully has found a strong and positive relationship (see Dolan & Schmidt, 1987; Ferguson and Ladd, 1996; Sebold & Dato, 1981). For these reasons, and to isolate the effect of rurality on outcomes, we include a measure of property values in our models below.

As noted above, some research indicates that rural schools perform better than their urban or suburban counterparts. The reasons provided for this pattern are related to small school size, the orderly climate of the school, parental involvement, community support, teacher attentiveness, and more leadership opportunities for students (Illinois Institute for Rural Affairs, 2004; Raywid, 1999). Given the data we presently have access to, we can hold constant parental involvement and school size. Should rurality matter for school performance above and beyond parental involvement and school size, then some other unmeasured factors must be relevant in Illinois. As Rau et al. (2001) did in their analysis of educational outcomes in Illinois, we also hold constant the mobility of students into and out of the school (a problem for poor rural schools), percentage of students with limited English proficiency, and percentage of students with individualized education plans.

We now examine how the state of Illinois has been planning to use school test score outcomes to increase teacher and administrator accountability.

The Proposed Illinois School Designation System

For the past 5 years and prior to the federal No Child Left Behind (NCLB) legislation, Illinois moved toward an accountability/rating system for its public schools. The evolution of the proposed rating system is contained in Illinois State Board of Education (ISBE) documents (1999a, 1999b, 2000a). The board-approved plan creates six “performance-based” school designation categories that are tied directly to the percentage of students who meet or exceed standards for the state’s new achievement tests, collectively called the Illinois Standards Achievement Test (ISAT). The state began testing reading, mathematics, science, social studies, and writing in 1993 under the Illinois Goals Assessment program (IGAP). The ISAT is the revised version of the IGAP, set to the newly adopted Illinois Learning Standards. The current ISAT contains more complex or difficult subject matter—a greater challenge for students and teachers, especially if accompanied by high-stakes consequences.

As seen in Table 1, “successful” schools (those with a rating of “Exceeds” or “High Meets”) will be deregulated and receive public recognition and cash rewards. “Unsuc-

Table 1
School Designation System: Ratings, Criteria, Actions, and Sanctions (October 2000)

Rating	Criterion ^a	Action or Reward	Sanction
Exceeds	> 83%	Automatic waiver of mandates, high performance awards public recognition	
High Meets	67% to 89.2%	Automatic waiver of selected mandates, high performance rewards, public recognition	
Meets	50% to 66.9%	Quality assurance, state technical assistance, public recognition, high performance rewards	
Below Standards	33% to 49.9 %	Quality assurance, state technical assistance, improvement rewards, special endorsements	Public notification
Academic Distress	17% to 32.9%	On-site assistance and audits, district performance agreements, improvement rewards, special endorsements	Adequate yearly progress failure results in watch list placement
Academic Watch	0% to 16.9%	Targeted interventions: school and district audits, budget and SIP oversight, district performance agreements	Removal of school board, reassignment of administrators and/or students, dissolution

Note. SIP = School Improvement Plan.

^aPercentage of students who meet or exceeded state standards on the Illinois Standards Achievement Test.

cessful” or “failing” schools will face increasing pressure and intervention from the state: audits, ISBE coaches, and numerical performance targets. The “worst” schools (those with a rating of “Academic Watch”) will receive special treatment: state-appointed case managers or co-principals with various veto powers, performance contracts, and thus considerable ISBE control over their management. Over the long term (5 years), removal of administrators is a possibility.

The nature of centralized administrative control is articulated in an ISBE (1999a) staff document. The report sets forth the goal of improving student achievement on standardized tests by means of comprehensive information systems for evaluating the performance of schools and their principals, teachers, and students. Decisions will be driven by the analysis of ISAT data with numerical targets to emphasize the demand for increased scores. More specifically, the ISBE will “require school districts to include reading and math achievement targets in their school improvement plans” (p. 2-16). In turn, “school improvement planning

based on data analysis” will be “the primary mechanism to improve ‘agent capacity’” (p. 2-07). Additionally, the state will expand compliance monitoring” (p. 2-20) and create “multiple options for employing sanctions against districts/schools that do not have the will or capacity to make significant improvement” on their own (p. 2-28). The ultimate objective is to build a complete statehouse-to-schoolhouse system that “will operate like a well-crafted machine, with various components meshing smoothly” (p. 2-07).

There are both similarities and differences between the Illinois plan and NCLB. Regarding differences, Illinois assesses student and school performance across five subjects—reading and mathematics (as NCLB does), but science, social science, and writing as well. The Illinois law prior to NCLB did not sanction schools by allowing transfer of their students and their commensurate state dollars to another school or district. NCLB also sanctions schools if a specified percentage of their students in different subgroups (e.g., poor, black, special education) do not take the test. Illinois did not add this requirement until

NCLB was passed. Regarding Adequate Yearly Progress (AYP), Illinois has meshed their designation categories with the federal mandate. AYP in Illinois is judged by whether a school is on track to have 50% of their students meet or exceed state standards in the next 2 to 5 years. As per NCLB, after 2 years of not making AYP, parents may request that their students be transferred to another school. After 5 years, reorganization of a school or district is on the table. While NCLB did not provide funding for these transfer costs, it does provide some federal money for tutoring of poor and minority students. Illinois did not provide such funds, even prior to NCLB.

We want to emphasize that the ISAT (the Illinois learning standards that inform the tests) and NCLB could become constructive steps forward in Illinois public education, provided they are implemented with wisdom, compassion, and common sense. Unfortunately, the blueprint for school designations in Illinois seems foolish, cruel, and arbitrary. Though thousands of state educators helped develop the new Illinois Learning Standards, the designation system uses a set of destructive labels to force changes in classroom instruction.

Others have pointed out problems with assessing schools using student test scores. Theoretically, the method is suspect because you are rewarding or punishing a school based on a portion of the student population and that portion (or sample) changes from year to year, making generalizations impracticable (Hill & DePascale, 2003). The system would reward or punish schools based on a sample and thus imply that the same decision would be reached with a different cohort of students (Cronbach, Linn, Brennan, & Haertel, 1997). Rewarding or punishing schools and districts based on the aggregate results of student test scores has a major statistical problem as well—schools may be misclassified, especially smaller ones (Coladarci, 2003). Rau et al. (2001) found that 79% of the schools had confidence intervals around their aggregate scores that overlapped with the cut-off points for designation categories other than the one in which they were placed. Further, given the relationship between test scores, poverty, and race noted above, this regulatory turn might easily degenerate into a major policy disaster, including equal protection issues raised by the Fourteenth Amendment (see Rau et al., 2001 for an extended argument as to why this is so).

Method

Our analysis uses all junior high schools in Illinois that gave the respective reading, mathematics, science, social science, and writing exams to their seventh and eighth grade students. The total N is 1,342; a minimal number of cases were lost due to missing data. The school level measures are drawn from the 2000 ISAT test (ISBE, 2000b) and codes for a county's position on the rural-urban continuum

from the Economic Research Service (2002). Most of our predictors are from the 2000 ISAT data. From those data, we include variables found to be highly associated with school performance (percentage low income, percentage black, a measure of student turnover, percentage with limited English proficiency, local property values, and percentage of students with special education needs). Also from the ISAT data are two measures (school enrollment and parental involvement) thought to be related to why students in rural schools perform so well academically, despite other factors that function as a deficit (e.g., poverty). Definitions, means, and standard deviations are presented in Table 2.

We obtained commonly used nine category county-level codes measuring position on the rural-urban continuum from an Economic Research Service (2002) document. The county location of each school was determined using an ISBE (1993) document and GIS technology. We collapsed the nine category county codes into the same four employed by Israel et al. (2001): core of a 1,000,000 plus metropolitan area, suburbs and other metropolitan areas, rural and adjacent to a metropolitan area, and rural and nonadjacent to a metropolitan area.

Do Rural Schools Perform Worse on ISAT?

Table 3 tests for rural-urban differences in Illinois while holding constant some measures commonly thought to affect school performance (Models 2 and 3). First, in Model 1 we test differences in school outcomes across the four category rural-urban variable. With "other metro" schools as the reference group, the coefficients indicate that metro core schools in Illinois perform significantly more poorly on the ISAT test. No significant differences exist between other metro and rural adjacent or rural nonadjacent schools. However, once we control for other important predictors of school performance such as the percentage of students who are low-income, the rural nonadjacent coefficient turns positive and significant (Model 2). Schools in isolated and economically disadvantaged counties in the state have a greater percentage of students that meet or exceed state standards (see Israel et al. [2001] for discussion). They perform better than suburban schools. In order to further support this finding, it is necessary to hold constant some other factors thought to favor rural schools (Lee & McIntire, 1999; Raywid, 1999). We, therefore, go farther in Model 3 holding constant size of the school and parental involvement. The positive rural effect stands.

Other variables in the model perform as expected. The poverty rates of student bodies negatively affect ISAT test scores, and this variable is the most influential in the model. Test scores also drop as mobility rates increase. The returns on test scores are higher as property values and parental involvement increase. The main point to Table 3, though, is that schools in rural areas that are not proximate to cit-

Table 2
Variable Definitions, Sources for Analysis, and Descriptive Statistics of Rural Urban Differences of Illinois Junior High Schools in 2000

Variables	Definitions	<i>M</i>	<i>SD</i>
Meet or Exceed	Percentage of seventh and eighth grade students who met or exceeded state standards on respective exams in reading, math, science, social studies, and writing	60.17	19.60
Percent Low Income	Percentage of junior high students who qualify for free-or-reduced lunch	43.56	34.00
Percent Black	Percentage of students who are black	24.40	36.70
Percent Turnover	Percentage of students who left the school or arrived in the last year	17.92	12.08
Percent Limited English Proficiency	Percentage of students reported by the principal to have limited proficiency in English	5.24	10.86
Equalized Assessed Valuation of Property Per Student	Value of property within the district (in \$100,000s for analysis)	\$106,025	\$87,190
Percent IEP (Special Education)	Percentage of eighth grade students who have individualized education plans (ISBE 2000)	13.90	7.02
School Size	Enrollment of the school	518.12	316.27
Percent Parental Involvement	Percentage of parents who regularly participate in school activities	95.42	8.56
Source: ISBE, 2000b.			
Metro Core	School in central county of a population of a 1,000,000 + Metro Area (1 = Yes)	.60	.50
Other Metro	School in fringe county of a 1,000,000 + Metro Area, in a fringe county of a 250,000 to 1,000,000, or in a metro county or less than 250,000 (1 = Yes).	.15	.36
Rural Adjacent	School in a nonmetro county of any size that is adjacent to a metropolitan area (1 = 0)	.13	.34
Rural Nonadjacent	School in a nonmetro county of any size that is not adjacent to a metropolitan area (1 = 0)	.12	.32
Source: ERS, 2002.			

Table 3

Percentage of Students that Meet or Exceed State Standards Regressed on 4 Category Rural-Urban Measure and Other Correlates of School Performance^a (N = 1,287)

	(1)	(2)	(3)
Measures of Rural/Urban Difference			
Metro Core ^b	-12.56 (-.32)***	-.85 (-.02)	-.68 (-.02)
Rural Adjacent	2.18 (.04)	.88 (.02)	1.06 (.02)
Rural Nonadjacent	.78 (.01)	3.52 (.06)***	3.57 (.06)***
Controls and Correlates			
Percent Low Income		-.43 (-.75)***	-.43 (-.74)***
Percent Turnover		-.29 (-.18)***	-.28 (-.18)***
Percent Limited English Proficiency		.16 (.09)***	.15 (.09)***
Equalized Assessed Value of Property Per Student (in 100,000s)		.89 (.04)*	.73 (.03)*
Percent IEP		-.06 (-.02)	-.08 (-.03)
Average School Size			.00 (-.02)
Percent Parental Involvement			.16 (.07)***
<i>R</i> ²	.12	.78	.78

* $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed).

^aStandardized regression coefficients in parentheses.

^bOther Metro (Beale 1, 2, and 3) is reference group.

ies and are more isolated had higher scores on the ISAT exam once other school and socioeconomic characteristics are considered. We, therefore, conclude that if rural-urban differences exist among Illinois junior high schools, they are attributable to factors other than poverty and the other controls. There is something about a school serving students in rural Illinois that improves test score outcomes. We now examine the other predictors of school performance and outcomes within the Illinois' School Designation System more closely.

The Class and Race Correlates of School Performance

Just like the student tests on which they depend, school designations should be free of racial and class bias (Clotfelder & Ladd, 1996; Gruskey & Kifer, 1990; Heubert &

Hauser, 1999). In contrast, designations reward some schools and punish others primarily on the basis of their racial and socioeconomic compositions. The designation system punishes poor minority schools while deregulating and granting cash bonuses to rich, white, suburban schools. Designations will also label as "bad teachers" many dedicated professionals who work in contexts that make it exceedingly difficult to reach the high, absolute standards of the ISAT meets and exceeds categories (e.g., Bankston & Caldas, 1998; Bankston & Palmer, 1998; Brooks-Gunn, Klebanov, & Duncan, 1996; Caldas & Bankston, 1997; Kozol, 1991; Sammons, West, & Hind, 1997). Note that we are not advocating that minority students be held to a lower standard; to do so would be tantamount to the same ecological fallacy others commit by labeling students from certain schools as weaker simply because they are from those schools. As we

Table 4
School/Community Characteristics by Designation Ranks by Percentage Meeting or Exceeding State Standards on ISAT Tests

Label	% Low Income	% Black	% Turnover	% Latino	% LEP	EAVPP	N
Cook County							
Exceeds (more than 83%)	12.8	7.5	5.4	9.5	3.9	\$224,607	43
High Meets (67% to 82.9%)	24.7	16.2	12.1	14.1	7.6	\$173,444	99
Meets (50% to 66.9%)	59.1	30.1	19.5	31.8	13.0	\$108,983	102
Below Standards (33% to 49.9%)	85.7	53.8	27.6	37.6	15.0	\$88,855	162
Warning (17% to 32.9%)	94.4	83.4	30.9	15.3	6.8	\$89,132	145
Watch (0% to 16.9%)	97.6	92.0	36.0	7.4	3.5	\$90,863	10
Downstate Illinois							
Exceeds (more than 83%)	10.0	2.1	8.6	1.9	0.8	\$178,743	87
High Meets (67% to 82.9%)	19.5	3.1	11.9	2.8	0.6	\$98,410	377
Meets (50% to 66.9%)	32.7	6.6	17.3	3.6	0.9	\$69,409	219
Below Standards (33% to 49.9%)	57.6	31.4	24.8	17.3	5.4	\$65,204	46
Warning (17% to 32.9%)	75.4	70.6	35.2	17.8	5.1	\$54,238	9
Watch (0 to 16.9%)	83.7	76.9	24.6	2.8	3.6	\$49,406	2

Note. ISAT = Illinois Standards Achievement Test. LEP = limited English proficient. EAVPP = equalized assessed evaluation of property.

have been arguing, the problem is not standards or testing, the problem lies with the sanctions imposed by this system. We now examine why this is so.

Table 4 provides statistics for junior high schools in Cook County, which includes Chicago and some of its wealthiest suburbs, grouped into the six designation categories. The designations serve as little more than proxies for the racial and socioeconomic composition of the schools. We found that, on average, 7.5% of the students in the schools in the “Exceeds” category were black, compared with 92% of the students in schools in the “Academic Watch” category. Similarly 12.8% of the students in schools in the “Exceeds” category were low-income students, compared to the 97.6% of the students in schools in the “Academic Watch” category. Also the mobility rates of students in the top and bottom-ranked schools are 5.4% and 36% respectively. Finally,

schools in the top designation draws on taxpayer bases with assessed property values more than twice those of schools in the lower categories.

In order to show that this pattern applies to the entire state and not only Cook County, we present the same information for all other schools in the state (Table 4). The pattern remains similar but in some ways more troubling. Specifically, as we move from rewards and praise to punishment and blame, schools change from high-income, predominately white, affluent schools with stable student bodies to schools consisting of highly mobile, low-income, minority students from neighborhoods with sluggish economies. Property values of schools in the “Exceeds” category are more than 3 times those on “Academic Watch.”

The regression analysis presented in Table 5 reveals the combined effect of such school community characteristics

Table 5
Models Predicting Percent of Students that Meet or Exceed State Standards for Illinois Junior High Schools^a

	All Illinois Junior Highs	Illinois Junior Highs Excluding Chicago	
	(1)	(2)	(3)
Percent Low Income	-.45 (-.78)***	-.42 (-.62)***	-.33 (-.48)***
Percent Turnover	-.29 (-.18)***	-.20 (-.15)***	-.13 (-.09)***
Percent Limited English Proficiency	.14 (.08)***	-.25 (-.10)***	-.36 (-.14)***
Equalized Assessed Value of Property Per Student	.28 (.01)	1.03 (.08)**	1.68 (.13)***
Percent IEP (Special Education)	-.04 (-.01)	-.11 (-.05)*	-.17 (-.08)***
Percent Black			-.15 (-.24)***
R^2	.77	.64	.67
N	1,286	890	890

* $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed tests).

^aStandardized regression coefficients in parentheses.

on the percentage of students who meet or exceed state standards (the same measure used to categorize schools on the designation index) for the entire state and, lest a reader wonder if the results are being driven by the 396 schools in Chicago, without those schools. The percentage of students who are low income has the highest beta and is, therefore, the strongest predictor of school performance and where a school might end up in the designation system. Notice also that the R^2 reaches .77 for the entire state and .67 (when percent black is included) for downstate Illinois.

Based on these three simple models, a minimum of 64% of the variance in the percentage of students that meet or exceed state standards is explained by variables that cannot be altered by teachers or local administrators. Should the school designation system go into effect as it now stands, schools, principals, teachers, and their students will be rewarded or punished by a system driven by factors beyond their control.

Outcomes of the School Designation System

Table 6 presents the percentage of schools falling into each of the designation categories across dimensions of the rural-urban continuum. Chicago schools fare the worst. Notice that 58.7% of all Chicago junior high schools fall into the Academic Watch category. These are other people's

kids, mostly black and poor. Suburban schools will do just fine under the proposed system. In order to show this, we split the "other metro" category into those schools that make up the fringe of metro areas with 1,000,000+ people (this includes the suburbs of Chicago and St. Louis) and those in other metropolitan areas smaller than 1,000,000. Notice the low percentage of schools in the suburbs on Academic Watch. Notice also that the summed percentages of those in the Meets, High Meets, and Exceeds designations for the suburbs (75.6%) tops all other categories. The sum of those same percentages for schools in rural counties not adjacent to metropolitan areas is 46.3%.

While junior high schools in Chicago fare the worst under the proposed system, rural nonadjacent schools come in second—a distant second, but still second. Less than 50% of junior highs in these areas will receive any kind of reward for the percentage of students that meet or exceed state standards; over 50% will receive some form of punitive sanction.

We take this argument further with a discussion of the difference in regression residuals. Using Model 3 from Table 5 for Illinois Junior High Schools outside the Chicago metro area, we predict the percentage of students at each school that should meet or exceed expectations. The predicted values are plotted against the actual values in Figure 1. Each mark indicates one school; the tightness of

Table 6
Percent of Schools Falling in School Designation Categories by Position within Rural-Urban Continuum

Label	Chicago	Metro Core (w/o Chicago)	Suburbs of Core	Other Metro	Nonmetro Adjacent	Nonmetro Nonadjacent
Exceeds (equal or more than 83%)	1.3	5.9	8.1	4.9	1.1	3.2
High Meets (67% to 82.9%)	2.8	27.0	21.6	16.5	14.3	10.8
Meets (50% to 66.9%)	5.5	29.2	45.9	37.2	43.4	32.3
Below Standards (33% to 49.9%)	11.6	16.6	21.6	23.8	33.1	36.1
Warning (17% to 32.9%)	20.7	14.0	2.7	11.0	7.4	14.6
Watch (0 to 16.9%)	58.7	7.3	0.0	6.7	0.6	3.2
<i>N</i>	397	356	37	164	175	158

the cloud around the regression line is indicative of the .67 R^2 for the model. A quick look at the average residual value for the rural-urban variable used previously in the paper yields something quite intriguing and further evidence of how well rural schools are educating students in Illinois. The average residual for the 195 schools in the suburbs and other metro areas is -.38. The average residual for the 180 rural schools that are adjacent to metropolitan areas is -.52. Thus, on average, the schools in these two categories are not performing as well as the model would predict. However, the residual for the 154 rural schools that are in counties not adjacent to a metropolitan area is a positive 1.73. That is, the most rural of rural schools are performing better than the model would predict. Smaller metropolitan, suburban, and schools on the rural-urban fringe are performing worse than the model predicts. This is interesting insofar as these schools are more likely to receive rewards under the school designation scheme. The designation scheme, therefore, seems arbitrary and unfair.

Discussion

We conclude where we began: In Illinois, rural schools are performing better than nonrural schools. Junior high schools in major metropolitan areas performed the worst on the 2000 ISAT. This pattern persisted after controlling for other factors that could influence school success or failure (e.g., poverty, student turnover, property values). However, once holding these and other factors constant, rural nonadjacent schools perform as well as or better than any other category. This supports other work on rural/nonrural differences. The control measures behaved as expected, indicative of proper specification in the models.

It is intriguing, however, to note that the rural effect remains significant after holding constant some of the factors that would explain this difference in test score outcomes. It would be interesting to know if the rural effect persists after controlling for other “good” things rural schools are known to offer. If it does, then we would want to know what it is about rural places that makes for good schools.

We also conclude that the proposed Illinois school designation system is unfair for the following reasons. First, it is based on a snapshot of school performance rather than gain scores. It is strange that an entire system of rewards and punishments is based on whether or not a school meets certain standards at one time. There should be some consideration of improvement or decrease in test scores over time. Second, the state needs to take into account differences across schools that are not under teacher or administrator control (e.g., percentage low income and differentials in school funding). Something has gone awry when wealthy schools are able to spend more to educate each child, and then those differences in funding affect test scores, which are then used as a basis for rewards and sanctions that further affect the schools. Sociologists point to such a system as a re-creation of existing inequalities.

A fairer system for judging school performance would involve multiple measures and gains over time. Further, a fair system must take into account the socioeconomic characteristics of a school’s students, neighborhoods, and communities. Schools cannot be rewarded simply because they are wealthy and white.

At this point we know that, though rurality may be a positive for school performance once controlling for other factors, being a school in a rural area that is nonadjacent to a metropolitan area increases the chances of being sanctioned

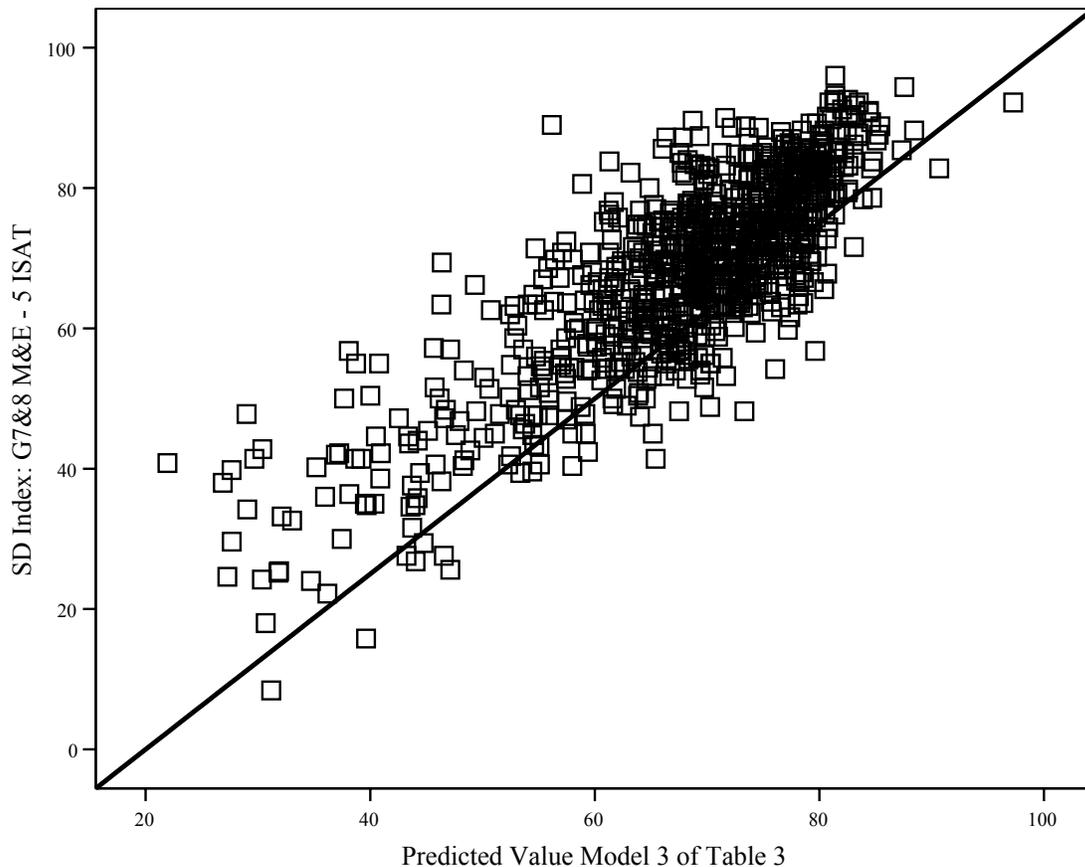


Figure 1. Scatterplot of actual percent of students who meet or exceed state standards for downstate Illinois Junior High schools against predicted percentage using Model 3 of Table 5 ($N = 890$)

for the percentage of students not meeting state standards. In short, this means being sanctioned for things beyond the school's control. Yet, the residual analysis above indicates that rural schools are performing the best, once taking these factors into account. A reward and sanction system should be aware of differences among schools: how these differences might affect test scores; and reward or sanction schools, teachers, and administrators based on how well they work with what they have. Of course, there is an extant literature on why test scores differ among schools in rural, isolated places and their metropolitan counterparts. And the interaction effects mentioned above and the positive residual for rural nonadjacent schools indicates that the "model" for them is different from the "model" for the rest of the state. This requires further examination not possible here. What would also be interesting would be to bring neighborhood and community characteristics into these models to see what role schools can play in affecting test score outcomes relative to the social context the school is within.

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