Do Standardized Test Scores
Influence Parental Choice of High School?

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W*hile the debate on school reform frequently has linked standardized testing and school choice, there is little empirical evidence that students or their parents use published test scores in choosing schools, especially in rural areas of the United States. Selected communities in Maine offer the opportunity to explore the relationship between testing and school choice because of the combination of town-tuitioned high school students, local control of schools, and published scores from the Maine Educational Assessment (MEA). On the basis of both bivariate and multivariate analyses, we conclude that published test scores influence school choice in rural Maine towns that tuition their students. However, our findings suggest that other factors also may influence school choice.*

Introduction

In the last decade, interest has grown in market-oriented school choice policies (Chubb & Moe, 1990). Across the political spectrum, advocates of school choice have maintained that allowing parents to choose schools will enhance the quality of education provided and improve student achievement.

Many reasons have been offered for the alleged achievement effects of school choice. Some advocates have focused on the role of parents, suggesting that school choice empowers parents to focus more on educational goals through the choice process, to become more involved with the schools they choose, and to work more closely with teachers to promote children's learning (Bush, 1989; Center for the Study of Public Policy, 1970; Coons & Sugarman, 1978; Reagan, 1989). Others have focused on the direct effects on students, arguing that school choice provides for better matches between educational programs and student need. It has been argued, moreover, that students who perceive increased curricular relevance will be more highly motivated, as will students who choose and are selected for competitive programs (Center for the Study of Public Policy, 1970; Fantini, 1973; Murnane, 1984; Perpich, 1989; Raywid, 1987; Smith, Barr, & Burke, 1976). Finally, some advocates focus on school staff, arguing that choice promotes greater autonomy for staff, eliminates bureaucratic and/or union constraints on the pursuit of

excellence, and more effectively emphasizes the delivery of high quality curriculum by bringing competitive market pressures to bear on administrators and teachers (Bush, 1989; Chubb & Moe, 1990; Clune, 1990; Friedman, 1962, 1973; Friedman & Friedman, 1980; Perpich, 1989; Raywid, 1987).

While school choice advocates have long argued that school choice would result in higher student achievement, business-oriented choice advocates see choice as a means of promoting economic competitiveness. Consequently, the latter camp has placed special emphasis on standardized testing. The business-oriented Committee for Economic Development (CED), for example, linked the issues of school choice and accountability for educational achievement in its report, *Investing in Our Children* (CED, 1985). This report recommends that public schools operate within regional or even statewide open enrollment systems. As Wells (1993) has pointed out, market-oriented reformers are most likely to advocate "a specialized set of national standards and tests to help parents and students evaluate schools—based not on a student's individual educational needs but rather on the ranking of the school within a competitive market" (p. 24).

In its 1986 report, *Time for Results*, the National Governors' Association (NGA) also came out strongly in favor of school choice and testing. Under the leadership of Tennessee's Republican Governor, Lamar Alexander, the NGA recommended state action to promote school choice, including testing students, reporting their progress to parents, and monitoring the effect of school choice plans on student achievement. In 1991, Alexander became U.S. Secretary of Education, and, shortly thereafter, the Bush administration announced its America 2000 education

reform strategy. Operating on the assumption that America's ability to compete in the global economy depended on improving educational outcomes, the Bush administration adopted a business-oriented model for educational reform: America 2000 proposed high standards for academic achievement, tests to evaluate progress toward those standards, reduced Federal government regulation, support for innovative schools, and opportunities for parents to choose among public and private schools. The Bush administration argued that, given the opportunity, parents would enroll their children in schools that produce relatively high schoolwide test scores: "If standards, tests and report cards tell parents and voters how their schools are doing, choice gives them the leverage to act" (U.S. Department of Education, 1991, p. 22).

While arguments for standardized testing and school choice abound, there is little empirical evidence suggesting that parents or students choose schools based on published schoolwide test scores. Numerous studies have indicated that parents believe quality of education is important, but such studies rarely attempt to determine what parents mean by "quality of education" or how they decide whether a given school provides this quality education.

The lack of empirical research on selection criteria employed by students and their parents is especially noteworthy with respect to school choice in rural areas. A few school choice studies have included rural areas along with urban and suburban areas (Darling-Hammond & Kirby, 1985; Nathan & Jennings, 1990; Williams, Hancher, & Hutner, 1983), but these studies did not report their results by area of residence; therefore, it is impossible to draw any conclusions about rural areas alone. Of the available research on school choice in general, few studies have focused on the role of school-wide achievement test scores as a factor in school choice, and no study to date has demonstrated that such scores are the primary factor in school choice.

Determinants of School Choice

Numerous studies have attempted to assess the effects of school choice programs on student academic achievement as measured by test scores, but very few studies have attempted to determine whether parents (or students) are influenced by test scores when choosing among schools. Indeed, there is much debate in the research literature over whether or not academic quality, however determined, is the most important factor in parents' choice of school. Research to date in the United States has produced numerous criteria used by parents in addition to academic quality (Maddaus, 1990). Other factors that have been cited as equally important or even more important to parents include location (Bridge & Blackman, 1978), moral and social environments (Maddaus, 1988), and the children's

self-esteem and social relationships with peers and adults (Newman, Booth, & Ebmeier, 1991; Slaughter & Schneider, 1986).

Nault and Uchitelle (1982), who conducted one of the few American studies that asked about schoolwide achievement levels, concluded that

> parents seemed most concerned about the general atmosphere in the school and they seemed to appraise the atmosphere largely on the basis of the instructional and managerial styles of . . . the principal and their child's prospective teacher— who were most likely to influence their child's early school experiences. . . . Though not unconcerned about achievement levels, most parents ranked this measure of school output as comparatively unimportant. (pp. 89-90)

These authors emphasized that their results may not be generalizable because of the high educational levels of the parents in the college community in which their study was conducted.

Similarly, research in Scotland and England has not shown that achievement levels predominate as factors in school choice. Education reform acts in 1980 and 1988 (England and Wales) and 1981 (Scotland), passed by Parliament under the leadership of Prime Minister Margaret Thatcher, expanded British parents' opportunities to choose schools for their children. Adler, Petch, and Tweedie (1989) surveyed parents with children entering secondary schools in four cities in Scotland under the 1981 act. They asked parents to select the four most important reasons for their choices from a list of 32 items. The four most frequently chosen items were: "we think our child would be happier there," "our child prefers the school," "the school has a reputation for better discipline," and "it is easier to get to school" (pp. 133-134). They concluded that parents were more concerned about their children's general happiness and well-being than about academic outcomes. Hughes, Wikeley, and Nash (1990) reached the same conclusion in studying English parents' choices of elementary schools during the first year of implementation of the 1988 act.

Another study from Scotland produced somewhat contradictory conclusions with respect to achievement test scores. Echols, McPherson, and Wilms (1990) found that choice within the state sector involved a net move toward older and more prestigious schools, and that "choosers were also found disproportionately in schools of above-average pupil SES and above-average attainment" (p. 215). However, Adler et al. (1989) found that the survey item "the school has a better examination record" ranked 4th in one city but was tied for 11th, 12th, and 13th in the other three cities. Adler et al. (1989) also noted that although school information booklets containing examination scores

were frequently cited as information sources, few parents (2% to 16%, depending on the city) obtained more than one booklet, and no more than 4% obtained three booklets or more. Even those parents obtaining more than one booklet did not seem to have compared examination results. Adler et al. (1989) concluded that their evidence provides "little support to exponents of a market ideology" (p. 134).

Some studies have concluded, however, that academic quality is the most important of criteria used by parents when choosing among schools (Convey, 1986; Darling-Hammond & Kirby, 1985; Gratiot, 1980; Nelson, 1988; Williams, Hancher, & Hutner, 1983; Witte, 1993). Four of these studies (Convey, Gratiot, Nelson, & Witte) dealt exclusively or primarily with choice of private schools, while the other two (Darling-Hammond & Kirby, & Williams et al.) based their conclusion on the responses of the minority of public school parents who made active choices at the time of enrollment.

Typically, these studies ask parents first to examine a list of possible criteria for choosing a school, and then to indicate how important each criterion was in making their decision and/or to select criteria that were most important in their decision. The lists include a variety of items, including "academic quality," along with other factors, such as distance and socioeconomic characteristics, which would seem to have at most an indirect relationship to academic outcomes. For example, Witte (1993) asked parents to "Please rate all of the following [eight] issues and their importance in your decision to participate in the Choice program" on a four-point scale, from "very important" to "not important." As with most other such studies, Witte found that "educational quality in the chosen school" was the factor ranked "very important" by the greatest percentage of parents. However, this study, like the other studies cited above, does not provide any information about the meaning of "educational quality" to parents or about how they concluded that one school's educational quality was superior to that of other schools. Parents were not specifically asked about test scores, nor is there any indication that parents were given an opportunity to say whether they had examined test scores or any other indicators of school quality.

The Present Study

In Maine, small towns commonly pay high school tuition to larger towns, or to nonsectarian private high schools, rather than maintain their own high schools (i.e., "town tuitioning")—a practice that sometimes functions as a limited form of school choice. Since the creation of a statewide testing program in 1984—the Maine Educational Assessment (MEA)—Maine parents and/or students have had the opportunity to use test scores as a basis for choosing schools. Below, we report analyses describing the relationship between publicly reported schoolwide MEA scores and high school choice in Maine. We attempted to determine statistically whether, when compared to pre-MEA years, high schools with relatively higher test scores in the first three years of statewide testing increased their proportion of students from tuitioning towns at the expense of high schools with relatively lower test scores. Further, in an effort to disentangle the effects of test scores from other related factors, we examined the relationship between state test scores and enrollment trends while statistically controlling for per-pupil expenditures, SES, and previous enrollment patterns.

Method

The Setting: Rural Maine

The State of Maine has a total population of about 1.2 million and an average population density of 38 residents per square mile. The largest city (Portland) has a population of about 65,000, and the state's four small metropolitan areas are home to just 36% of the state's people, leaving 64% of the population in rural areas (Palmer, Taylor, & LiBrizzi, 1992).

Of Maine's 491 organized municipalities (22 cities, 434 towns, 35 plantations), 7 inhabited unorganized territories, and 3 Indian reservations (all hereafter referred to as "towns"), 186 do not have their own high school, nor have they joined school administrative districts with district high schools. Instead, under state laws dating back to the late 19th century, these towns provide an education to their high-school-aged students by paying tuition, at rates set by the state, to public high schools or to nonsectarian private high schools.

A majority of these 186 towns are located in sparsely populated areas with few high schools. In many such cases, all students, either by contract or long-standing tradition, attend a single high school. However, about 5,000 high school students and their parents, residents of 75 towns, are not bound by contract to a single high school and live close enough to two or more high schools to be able to choose among them. At the time of the present study, the largest number of high school students from any of these towns was 280, while there were just 4 students from the town with the smallest high school enrollment. Most of these 5,000 students live in towns within commuting distance of the cities of Bangor, Auburn, Augusta, Bath, Ellsworth, or Calais. The largest of these cities (Bangor) has a population of about 40,000, while the smallest city (Calais) has a population under 5,000. Bangor and Auburn are located in areas designated as metropolitan areas by the U.S. Bureau of the Census, while the other

four cities are in nonmetropolitan areas. This study focuses on six regions, each of which includes one of these six cities as well as the surrounding towns.

It is important to note that individual high schools in Maine have a relatively high degree of control over their programs compared to high schools elsewhere in the United States. Most of Maine's public school districts are quite small, and their superintendents' offices operate with very small professional staffs. Only one municipality in the state (Portland) has more than one public high school. Therefore, in all other districts, local school board policies are made for a single high school. State-level policies, furthermore, are relatively nonrestrictive. For example, Maine law requires that high schools offer a minimum set of courses (e.g., 2 years of social studies, including 1 year of American history and government) and, further, state regulations implementing the education reform act passed in 1984 require that all school districts have written curricula, but the requirements regarding these curricula are very general. Similarly, all textbook selection is done entirely at the local level.

Nonsectarian private high schools, governed by boards of trustees, have even greater freedom from outside control. To be eligible to receive public funds for tuition purposes, a private high school must be nonsectarian and incorporated. It must also meet health and safety requirements, use English as the language of instruction, provide the same minimum course offerings as public schools, employ only certified teachers, operate for a minimum number of hours and days, have a student to teacher ratio of not more than 30 to 1, and conduct an annual audit. Otherwise, it is free to conduct its affairs in accordance with the wishes of the governing board, staff, parents, and students. Ten private high schools in Maine enroll mostly town tuitioned students: Four of these high schools have no contracts with towns to guarantee students and must compete with public high schools for students. These four high schools together have attracted about 1,400 students, while about 150-200 other students choose other private high schools. About 3,500 students chose to attend 30 public high schools.

Procedures

Maine Educational Assessment (MEA). Maine's Educational Reform Act of 1984 established the MEA, a set of achievement tests for students in grades 4, 8, and 11 in reading, writing, mathematics, science, social studies, and humanities. The MEA was intended to aid state educational policy development as well as to promote school improvement at the local level. Since 1985-1986, virtually all students in the designated grades in Maine public schools have taken the MEA each year. In addition, students in ten private high schools, each enrolling at least 60% of its students through town tuitioning, also take the 11th grade MEA. Schoolwide MEA scores for each participating school are reported annually in newspapers throughout Maine. (For more detailed descriptions of town tuitioning, enrollment patterns, local control and the MEAs, see Maddaus & Mirochnik, 1991, 1992; Maddaus, Mirochnik, & Marion, 1992).

Sample. We used 3-year averages for enrollment to reduce the impact of annual fluctuations, which could be especially wide because of the small numbers of students in most towns, and we used a 3-year average of the MEA to reduce the effect of any year-to-year fluctuations in test scores, especially for the smaller high schools. Specifically, we looked at MEA scores for high schools that were published each September in the years 1986, 1987, and 1988, and at October 1st enrollments of town tuitioned students for the 3-year periods 1975-1977, 1983-1985, and 1989-1991.

Of the 186 Maine towns that pay to send their students to public high schools in surrounding towns or to nonsectarian private high schools, 111 either had a contractual arrangement with a receiving school or were in such sparsely populated areas that parents and students essentially had only one school from which to choose. Eliminating such towns reduced the sample to 75 towns where real choice existed.

For the remaining 75 towns, we calculated the proportion of students from each town attending various high schools in each 3-year enrollment period. Since the number of high school students in different towns varied greatly—from a low of 4 to a high of 280—the proportional change associated with the enrollment of one student in one high school rather than another also varied greatly. To reduce this difference, we established a criterion that during the two 3-year enrollment periods used in these analyses (1983-1985; 1989-1991), a town needed to send an average of at least 15 students per year to receiving high schools. Sixty of the 75 sending towns met this criterion.

Finally, since we were dealing with proportions of students in different high schools, we could encounter "floor" and "ceiling" effects. A floor effect could occur when a high school in a region enrolled very few of the students from a given town before test scores became available and, therefore, could only change in the direction of attracting more students. Conversely, a ceiling effect could occur when a high school enrolled most of the students from a given town and, therefore, could only change in the direction of losing students. In an effort to minimize "ceiling" and "floor" effects, we required that no more than 90% of students from a town attend a single high school during 1975-1977 and 1983-1985. We recognize that even this level (90/10) might not prevent "ceiling" and "floor" effects from occurring, but further

restrictions (e.g., 75/25) would have severely diminished the external validity of our sample.

Applying these criteria left 43 geographically representative sending towns, which constituted the sample in the present study (see Figure 1). While we have included in our analysis a substantial number of Maine towns and school districts, which accounts for most of Maine's high school students (and their parents) who have a choice of schools through town tuitioning, this sample by no means is representative of all Maine parents and students. Only about 12% of Maine's high school students are tuitioned by their towns, and of these only about half (those deemed most likely to have a real choice of high schools) are included in our study. While the cases in our analyses provide a fairly good geographic representation of the state, they are limited to fairly small towns with high school enrollments of 15-300 students—those not big enough to support their own high school. But we are not interested in generalizing to the state of Maine; rather, we are seeking to understand how school choice decisions are made in the most rural areas. We believe our sample is representative of this target population.

Test cases and units of analysis. The patterns of high school attendance of students from the 43 sending towns were examined to derive "choice units," each consisting of one sending town and two or more of its geographically proximal receiving schools. For a sending town and a group of receiving high schools to be considered a choice unit, each of the receiving high schools had to enroll at least 10% of the students from that sending town. However, because each high school could have been involved in more than one choice unit (i.e., receiving students from more than one town) a total of 112 school-town relationships were identified. Of the 36 high schools in this study, 30 were public (accounting for 77 school-town relationships) and 6 were private (accounting for 35 school-town relationships).

Because each sending town in our analyses tuitioned at least 10% of its students to two or more high schools and high schools received students from as many as eight different towns, both sending towns and receiving high schools would be included in our full sample several times. Furthermore, in some regions, the same two or more high schools are competing for students from two or more towns. To control for this nonindependence in our data set, we also selected a subset of the choice units to minimize the number of times a single high school was included in the data set. This "select sample" of choice units represents, in our opinion, the best "test cases," and they essentially eliminate the problem of nonindependence. These cases were identified using the following criteria: (a) eliminating duplication among units having identical receiving high schools; (b) eliminating units (or portions of units) involving widely differing distances between a sending
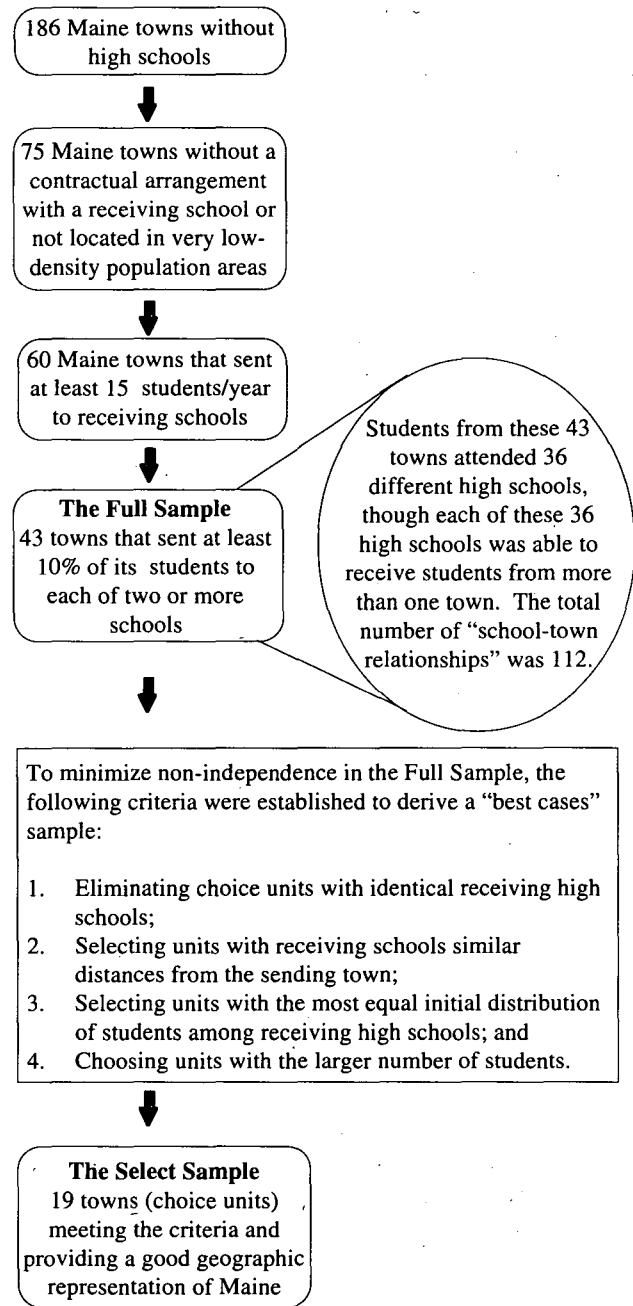

Figure 1. Flow chart depicting the sampling methodology.

town and its receiving high schools; (c) minimizing floor and ceiling effects by choosing the "choice units" with the most equal numerical distribution of students among receiving high schools in 1983-1985; and (d) choosing the unit with the larger number of students. This resulted in a sample of 19 choice units, generating 46 school-town relationships.

Variables. A 3-year (1986-1988) composite MEA score was computed for each receiving high school (i.e., an

average—equally weighted—of mathematics, writing, science, reading, social studies, and humanities scores for the first, second, and third years the test was administered). The composite MEA scores for all of the receiving high schools in each particular choice unit were then averaged. A difference score—the difference between the average MEA of the unit and each receiving high school's MEA composite score—was then calculated for each receiving school. We used this method of calculating our test score metric instead of simply using the average scaled score to simulate, as best as we could, the type of choice parents were able to exercise. In other words, parents are rarely choosing among schools at opposite ends of the state. Rather, they are generally selecting among schools in relatively close proximity to their home. Therefore, the importance of the MEA score, in our view, is in relationship to the scores of other area schools.

While we are aware of the threat to reliability posed by the use of difference scores as variables, we chose to conduct these analyses for two main reasons. The base variables (before computing deviations) were quite reliable, and although deriving deviation scores will reduce the reliability, we believe that the variables would still be reliable enough so they would not diminish the confidence in our results. Further, these difference scores were not true deviation or gain scores, where one measures the change in performance by subtracting a pretest from a posttest score. Rather, our difference scores were more like standardized scores where an individual's score is compared to the rest of cases in the sample (i.e., one scored above or below the mean). More importantly, we felt that these difference-scores best represented the true picture of the choice parents were making in these particular sending towns, in that parents—if they look at test scores at all—probably do not look at a test score in absolute terms but relative to other regional schools.

As we indicated above, enrollment data were collected for three separate 3-year periods, which permitted the calculation of two enrollment trends: 1975-1977 to 1983-1985 (prior to the inception of the MEA) and 1983-1985 to 1989-1991 (immediately prior to and 4-7 years after the inception of the MEA). Enrollment data were averaged for the 3-year time frames to produce a more stable measure of enrollment. Enrollment trends were calculated by subtracting the earlier enrollment time frame from the later one. Each receiving school, then, had two enrollment trend scores: Enrollment 1 (1983-1985 minus 1975-1977) and Enrollment 2 (1989-1991 minus 1983-1985). The time interval for *Enrollment 2* was chosen to bracket the institutionalization of the MEA, while *Enrollment 1* was used as a control or "check" on the later enrollment period. That is, we used *Enrollment 1* to establish whether or not the trends observed during *Enrollment 2* were merely a continuation of *Enrollment 1*. We rea-

soned that if *Enrollment 2* were simply a continuation of *Enrollment 1*, then the new condition that had been introduced—the published MEA results—would not have been the cause of *Enrollment 2*; rather, whatever conditions had been present earlier to cause *Enrollment 1* would probably cause *Enrollment 2* as well.

Previous research found that the SES of the receiving school may play a role in parents' choice of schools, so we included SES as a control variable. SES was computed from 1990 census data using the median family income and the percentage of citizens over 25 years old with 4-year college degrees in the town where the receiving school is located. Similar to the calculation of the MEA differences scores described above, difference scores were derived for both percentage of 4-year degrees and median family incomes. That is, a unit average was calculated and then the difference between each town (with a receiving school) and the region average was computed. The two values—percentage of 4-year degrees and median income—were then standardized and summed to arrive at the SES composite.

Lastly, we assumed that parents' school choice might be influenced by a perception that certain schools spend more money on each pupil. Using the 1991 per-pupil expenditures for each school, we computed an expenditure difference score for each receiving school. These were calculated in the same manner as the other differences variables.

Analyses. Bivariate correlations between the MEA difference scores and enrollment changes were computed to assess the simple relationship between these factors. In an effort to check that later enrollment trends were not just a continuation of previous trends prior to the use of the MEA, or related to other factors such as SES or school expenditures, we used multiple regression analyses to control for the effects of these other independent variables while examining the relationship between pre- and post-MEA enrollment trends and MEA scores. Specifically, we regressed *Enrollment 2* on MEA, *Enrollment 1*, SES, and per-pupil expenditures. Both types of analyses—bivariate and multivariate—were computed for both the full sample and the select, best test, sample.

Results

Descriptive Results

Full sample. The preliminary results indicate that students and/or their parents were somewhat more likely to choose a high school with relatively higher MEA scores than other high schools in its region (see Table 1). We obtained a correlation of $r = .37$ ($p < .05$) between high school enrollment trends and MEA scores. That is, schools scoring higher on the MEA tended to experience an in-

Table 1
Intercorrelations Among all Variables.[1]

	1	2	3	4	5
1. Enrollment 2**		-.19	.29	-.07	.03
2. Enrollment 1***	-.18		.16	.25	-.08
3. Achievement	.37*	.14		.41*	.01
4. SES	.11	.18	.38*		.06
5. Expenditures	-.07	-.01	.10	-.02	

[1]Full-sample results (N = 112) appear below the diagonal and select-sample results (N = 46) appear above the diagonal.
*Indicates statistically significant (α =. 05) correlations.
**Enrollment 2 is the change in average enrollment from 1985-1987 to 1989-1991.
***Enrollment 1 is the change in average enrollment from 1977-1979 to 1983-1985.

crease in enrollments 3-5 years after the introduction of the MEA when compared to their enrollment immediately prior to the use of the MEA. As expected, SES was significantly related to test scores (r = .38); no other correlations were statistically significant.

Select sample. The simple correlations among the variables in the select sample were similar to the correlation coefficients described for the full sample. However, the MEA score was not significantly related to the change in enrollment patterns in these analyses (r = .29, p > .05). The only significant correlation in this analysis was the relationship between MEA scores and SES (r = .41, p < .05).

Regression Results

Full sample. We questioned whether the enrollment trend between 1983-1985 and 1989-1991 was merely a continuation of a previous tendency to attend or leave a particular school. To address this question, regression analyses were used to control for the effect of prior enrollment trends and economic indicators on later enrollment (see Table 2). The linear combination of independent variables in this equation explained 20% of the variability in enrollment trends from 1983-1985 to 1989-1991 (p < .05). The results for the regression analyses mirrored the results from the simple correlational analyses discussed above. For the full sample, we obtained a standardized regression coefficient of β = .41 (p < .05) for the MEA variable. In other words, a one-standard deviation increase in MEA scores was associated with 41% of a standard deviation increase in enrollment while holding constant prior enrollment trends, SES, and per-pupil expenditures.

The prior enrollment trend had a significantly negative relationship (β = -.24) with the later enrollment trend. That is, with other independent variables controlled, an increasing trend in earlier enrollment tended to be associated with a decreasing trend during the later period and vice versa. This negative relationship may be due to the effect of a ceiling or floor effect in the enrollment data. SES had no relationship to enrollment trends with the other independent variables statistically controlled. Per-pupil expenditures had a small negative effect (β = -.12) on enrollment trends, although this partial regression coefficient was not statistically significant.

Select sample. While the linear combination of independent variables explained a similar percentage of variance (17%) in Enrollment 2 as in the previous analysis (20%), the former value was not statistically significant. Nonetheless, after controlling for all other variables, MEA scores were significantly associated with the change in enrollment from the time frame just prior to the onset of statewide achievement testing to the 3-year average several years after testing began (β = .39, p < .05). Earlier enrollment trend was still negatively associated with later enrollment (β = -.21). However, this effect was statistically nonsignificant, as was the effect of SES (β = -.18).

Conclusions

The results of this study support the notion that published test scores influence parental choice of school. High schools with relatively higher MEA test scores during the first 3 years of the test were the primary beneficiaries of enrollment shifts in the 43 towns selected for inclusion in this study. Since enrollment trends over the past decade were not simply a continuation of earlier enrollment trends, publication of the MEA scores may have had a direct impact on parents' and students' perceptions of high

Table 2
Multiple Regression Results: Predicting Enrollment Trends from Standardized Test Scores, Previous Enrollment Trends, SES, and Per-Pupil Expenditures

	Full Sample (N = 111)		Select Sample (N = 46)	
Independent Variables	b	β	b	β
Test Scores	.20*	.41*	.23*	.39*
Enrollment 1	-.23*	-.24*	-.16	-.21
SES	-.06	.00	-1.80	-.18
Expenditures	.00	-.12	.00	.02
R^2	.20		.17	
F-ratio	6.82*		2.11	

*p < .05.

schools. This finding is especially noteworthy because it is drawn from rural communities, where factors such as community ties, distance, and transportation tend to limit the impact of test score differences on enrollment patterns.

Enrollment data alone, however, cannot establish that students and/or their parents did in fact base their decisions upon test scores. As the studies reviewed earlier suggest (Adler, Petch, & Tweedie, 1989; Echols, McPherson, & Wilms, 1990; Hughes, Wikely, and Nash, 1990; Nault & Uchitelle, 1982), students and their parents may be attracted by a school's features and practices rather than by the test scores that result from those features and practices.This possibility is suggested by the results of other studies of school choice in several of the towns examined here. For example, when Maddaus (1994) interviewed 21 families of eighth-grade students on 3 small Indian reservations in eastern Maine, all of which were included as towns in the present study, he found that none of these families used MEA scores in choosing a high school; none of the families had even seen the scores when they were published, and most families were critical of the MEA in general because they did not accept the low scores reported for the reservation schools on the 4th- and 8th-grade MEAs. However, they did consider other academic factors in choosing a school, including the quality of students' and parents' relationships with teachers and other staff; willingness of teachers to provide extra help after school for Indian students who needed it; high academic expectations for Indian students; the availability and quality of college prep, vocational, and special education programs; and the graduation rate for Indian students. Nonacademic factors were also cited, including the presence or absence of stereotyping and discrimination, opportunities to attend school with friends and to participate in athletics, availability of transportation, and preferences for living at home or at a boarding school.

Nonschool factors that impact on test scores may also have affected school choice in other towns included in the present study. For example, when Hawes (1994) interviewed eighth-grade students from 2 of the 43 towns included in this study, three of the eight criteria the study identified as used by these students in choosing a high school included "the kinds of people in the high school," "friends," and "knowing people at the high school" (in the words of the students). These criteria might be interpreted as evidence of student SES as a factor in school choice. One of the results of the present study is a high and statistically significant correlation between SES and achievement (.38 for the full sample and .41 for the select sample).

Our results indicate that higher test scores are associated with higher levels of choice enrollments, although one must be cautious in concluding that higher test scores cause higher enrollments. Further, test scores explained only 20% of the variability in enrollment trends from 1983-1985 to 1989-1991, leaving 80% unexplained. Clearly, further study of the criteria being used by students and/or their parents in choosing high schools, using surveys or interviews, is required before any definitive conclusions can be drawn about the effects of statewide testing on school choice in rural areas.

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