

**Diversity, Representation & Performance:
Evidence about Race & Ethnicity in Public Organizations**

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Introduction

In the past twenty years, growing percentages of racial minorities in the United States have led scholars to pay increased attention to the issue of diversity. Public administration research has recently considered an abundance of diversity-related issues, including racial integration of federal agencies (Cornwell & Kellough 1994; Kellough 1990; Kellough & Elliott 1992), private vs. public sector diversity management initiatives (Dobbs 1996), and problems with diversity program implementation (Ricucci 1997; Von Bergen et al. 2002). Universities have created courses in diversity management, leading to a number of new textbooks in the past ten years (Chemers et al. 1995; Henderson 1994; Ricucci 2002).

Despite this increased attention, much of the work on diversity stems from a normative view that any diversity leads to positive consequences. With few exceptions (Wise & Tschirhart 2000), research has not attempted to assess the real value of diversity or diversity management. Many, if not most, articles on diversity that appear in the core public management journals are case studies of diversity programs, statistical analyses of workforce trends, or “best practices”-type studies. While case studies can be valuable tools through which to build theory, they should be supplemented by quantitative research. Work in social psychology and business administration has been using quantitative methods to test hypotheses connecting diversity and performance (Wise & Tschirhart 2000).

Demographic changes warrant the attention of further research. In 1980, whites made up 80% of the total U.S. population.¹ By 2000, that figure had decreased to only

¹ All of these population statistics can be located at www.censusscope.org/us/chart_race.html.

69%, while all other racial and ethnic groups in the U.S. had increased. This represents a substantial population shift in a relatively short period of time, and evidence suggests that diversity will continue to increase into the 21st century (Ricucci 2002). Globalization and related economic changes in the United States have combined to create unforeseen levels of racial and ethnic heterogeneity. Along these same lines, more people are speaking languages other than English at home, people with disabilities are becoming more functional with better technology and changing social attitudes, and the Baby Boom population has increased the number of retired, older citizens. The United States is becoming increasingly diverse on a number of dimensions.

The labor force is experiencing similar trends, and estimates project that white men will account for only 37% of the U.S. workforce by 2008 (Ricucci 2002). Studies have shown that U.S. workers are becoming older and more balanced with respect to gender and race, particularly in the public sector (Bond, et al., 1998; Johnston & Packer, 1990). This heterogeneity has created a serious, multidimensional challenge for government agencies responsible for offering public services.

The typical assumption is that these changes in the workforce and population require greater efforts toward hiring and retaining diverse employees. Some research argues that diversity is necessary in order for organizations to be “competitive” (see particularly Thomas 1991). However, whether diversity among agency employees results in increased organizational performance is an empirical question yet to be tested in the public administration literature.² This paper takes on three interrelated questions as its focus. Does racial diversity increase or decrease organizational performance? Does racial

representation – matching agency employees to characteristics of the target population – increase or decrease performance? Are these relationships different for street-level bureaucrat diversity and manager diversity? After reviewing the relevant literatures, I will examine the impact of racial diversity on a series of performance outcomes in one public policy setting.

Research on Diversity

Representative Bureaucracy

Three streams of research touch at least indirectly on the issue of public-sector organizational diversity: representative bureaucracy, research on inclusion and integration, and research on diversity effects. Representative bureaucracy considers whether a public organization employs a bureaucracy that matches the general population on salient indicators of diversity, such as race, ethnicity, or gender (Selden 1997). The theory holds that passive representation – the bureaucracy matching the general population on these indicators – will lead to active representation, which is the formulation of policies that will benefit the interests of diverse groups (Meier 1993a; Mosher 1968). The link between passive and active representation is premised on research showing that people from similar backgrounds – race, for example – will have similar values and beliefs (Selden 1997). For example, representative bureaucracy at its simplest suggests that, based on shared values and beliefs, a black bureaucrat will be more likely than a white bureaucrat to represent the policy preferences of black citizens. This notion was an early basis for affirmative action in the public sector (Selden & Selden 2001).

² Recruiting and retaining more diverse employees is a legitimate *normative* goal for government organizations, but it is nevertheless necessary to understand the impact of increased diversity such that

However, for active representation to occur, and for representative bureaucracy to make sense, bureaucrats must be afforded discretion in their jobs vis-à-vis policymaking or implementation, and the policy issue must be salient to the specific group being represented (Keiser et al. 2002; Meier 1993a; Selden 1997). Even if these criteria are met, passive representation does not always result in active representation, and ongoing research has attempted to identify factors that result in a link between the two (Keiser et al. 2002; Meier 1993b; Selden 1997). This line of research has shown the benefits of racial representation in the public education policy setting (Meier et al. 1999, 2001; but see Nielsen & Wolf 2001).

Inclusion & Integration

A line of work tangential to that on representative bureaucracy has explored issues of inclusion and integration, primarily in the U.S. federal workforce. Research on inclusion and integration of women and racial minorities in the public sector has focused primarily on the U.S. federal government, seeking to understand how well different groups have been able to move up the ranks. Some groups, particularly Hispanics, African-Americans, and Native Americans, have increased overall representation but still trail white employees in some areas, such as average GS grade, pay, and representation in senior pay levels (Aufrecht 1999; Page 1994; Sisneros 1993). Research has produced similar findings on women in the civil service, showing lower overall representation in the federal workforce than the civilian labor force (Bays 1991; Guy 1993; Mani 2001; Naff 1994; Saltzstein 1986). Other work has sought to understand the impact of sexual orientation and disabilities on integration (Lewis 1997a; Lewis & Allee 1992).

management strategies can be developed.

Doors are opening slowly to underrepresented groups, but there have been few attempts to develop causal models that effectively explain integration. Exceptions to this include Cornwell and Kellough (1994), who used fixed-effects regression to analyze a model of employment share for women and minorities, but few of the variables included were significantly related to integration.³ Evidence is slowly growing on the role of unions (Ricucci 1986), agency size (Grabosky & Rosenbloom 1975; Kellough 1990), performance ratings (Lewis 1997b), and hiring practices (Saltzstein 1986) as contributors to integration. Nevertheless, the only real conclusions that can be drawn from this line of research is that women and minorities tend to be over represented in clerical positions and underrepresented in professional positions (Cornwell & Kellough 1994; Kellough 1990; Kellough & Elliott 1992), although disparities may be less pronounced in the public sector than in the private sector (Lewis 1996; Wharton 1989). Other more conceptual research has found that attitudes toward integration and diversity vary along racial and gender lines (Soni 2000).

Diversity Effects

Very little research in public administration has sought to understand the impact of diversity on organizational outcomes. However, research in business management, psychology, and social psychology has considered the impact of different types of heterogeneity on performance outcomes (Willoughby & O'Reilly, 1998; Wise et al. 1997; Wise & Tschirhart 2000). This line of work relies more on positivist methods and hypothesis testing, using quantifiers of heterogeneity in order to explore the effects of the diversity present.

³ This is, however, not surprising, since using a fixed-effects model absorbs much of the explanatory power in the variables for time and unit, making it difficult for other exogenous variables to appear significant

Research specific to racial and ethnic diversity within organizations has been somewhat lacking in recent years (Milliken & Martins 1996; Williams & O'Reilly 1998). A large number of studies were conducted in the 1950s and 1960s, but these are now out of date and irrelevant, to a large extent, due to changing social values (Hoffman & Maier 1961; Katz et al. 1958; Levy 1964). The research that has been conducted more recently is split as to whether racial and ethnic diversity results in benefits or drawbacks to organizational performance. McLeod & Lobel (1992), in an experiment involving students, found that racially-heterogeneous groups produced higher-quality ideas in a brainstorming exercise than homogeneous groups. Watson et al. (1993) found that racially-heterogeneous groups of students performed better than homogeneous groups, but only after a sufficient amount of time had passed for those groups to work through process-oriented problems related to diversity. O'Reilly et al. (1997) conducted field research in an organization known for being a proponent of diversity, finding that creativity and implementation ability increased in groups with higher racial/ethnic heterogeneity.

Other studies temper the enthusiasm shown by the above research connecting diversity and performance. A series of studies found that diversity was unrelated to performance or was weakly related to performance in a negative direction (Pelled 1997; Pelled et al. 1997). Some research indicates that in heterogeneous work settings, members of one of the minorities are more likely to leave the organization and suffer from higher rates of absenteeism (Tsui et al. 1992). Members of minority racial and ethnic groups are less likely to receive a positive performance evaluation from supervisors (Greenhaus et al. 1990; Lefkowitz 1994; Sackett et al. 1991).

(Meier et al. 2001).

The applicability of this line of research to public organizations is questionable. A number of these studies were experiments in simulated environments involving students. Whether results from such experiments can be generalized to managers and employees in public agencies is for the reader to decide, but evidence from well-executed field research would clearly provide a better case for utilizable knowledge. Moreover, there could be sectoral differences that make diversity effects different in public agencies than in private organizations. The extent to which these problems hinder our understanding of diversity effects in public organizations may be small, but they do create a need to test diversity effects using public organizational data and a quasi-experimental design.

Methods and Measures

I examine the relationships between diversity, representation, and performance using the heterogeneous mix of races among teachers, administrators, and students in Texas public schools, with school districts as the unit of analysis.⁴ Race is undoubtedly a salient indicator of diversity, and some argue that research has ignored it in recent years (Cox, Lobel & McLeod 1991; but see Wise & Tschirhart 2000). Moreover, since other research has shown that American racial groups differ on a number of cultural values (Azevedo, Drost, & Mullen, 2002; Falicov, 2001; Ho, 1987; Triandis, 1988), the race variable will by its nature include variation on more than one diversity dimension.

Texas public schools provide an excellent opportunity for examining diversity. First, the schools included in this dataset range from the practical extremes of homogeneity and heterogeneity in regard to both the target population (students) and school employees (teachers and administrators). Second, one can be assured that the

⁴ Special thanks to Kenneth Meier and Laurence O'Toole for providing access to these data.

different races actually interact – in some studies, one cannot assume that diversity in the organization as a whole filters to all work groups, since the races may segregate into different work groups. However, it seems unlikely that among teachers, some races would segregate into math, others into science, etc. Among administrators – principals, assistant principals, superintendents, and assistant superintendents – interaction between races is crucial. Finally, while the generalizability of these results to other public agency settings may be questionable, public schools do provide a relatively straightforward definition of the target group – students – and a number of means by which to test organizational performance. Other research has applied diversity management concepts to the education setting, considering classrooms as “organizations” (Tschirhart & Wise 2002).

This study uses pooled data from school districts in the state of Texas between 1995 and 1999. All district superintendents were mailed a questionnaire on management and performance issues (response rate of 55%) that supplements existing data on performance, environmental influences, and demographics. I used the following measures of diversity, performance, and environmental forces in this analysis.

Diversity

In order to test for the effects of diversity, I use the Blau Index of Variability to compute the overall variation in racial makeup of both managers and teachers.⁵ The Blau index allows one to figure the level of racial diversity present among a group of individuals. A perfectly homogeneous group would receive a score of 0, while a perfectly heterogeneous group (with members spread evenly among an infinitesimal number of

⁵ $1 - \sum p_i^2$, where p is the proportion of group members in a given category and i is the number of different categories

categories) would receive a score of 1. To draw an example from this study, if all of the teachers in a given district were white, the Blau index would be 0, indicating perfect homogeneity. If 25% of the teachers were white, 25% were black, 25% were Latino/a, and 25% were Asian or Native-American (grouped as “other” for my purposes here), then the Blau index would be 0.75, indicating the highest level of heterogeneity achievable in a situation with four categories. As the number of categories increases, the highest possible Blau score increases.

For this sample, the average Blau index for managers is 0.109, with a low of 0 (perfect homogeneity) and a high of 0.64, only 0.11 below perfect heterogeneity. For teachers, the average Blau index is slightly higher – 0.139 – with a low of 0 and a high of 0.62.

Representation

While the Blau index is perhaps the simplest and most straightforward way of testing the impact of diversity on organizational performance, it is also relevant to understand whether representation explains performance as well, drawing comparisons between the models and their explanatory power. I created two variables that are designed to examine the effects of representation on performance: a Management Representation variable (R_1) and a Faculty Representation variable (R_2). The first of these involves the relationship between managers – principals, assistant principals, superintendents, and assistant superintendents – and students. I create a representation index using the following formula:

$$R_1 = \{ 1 - \sqrt{[(LS - LA)^2 + (WS - WA)^2 + (BS - BA)^2 + (OS - OA)^2]} \} * 100$$

where LS = Percent of Latino/a students in the district
 LA = Percent of Latino/a administrators in the district

WS = Percent of white students
 WA = Percent of white administrators
 BS = Percent of black students
 BA = Percent of black administrators
 OS = Percent of other students
 OA = Percent of other administrators

The R_1 variable, then, will consider how closely each racial group of students is matched by administrators of the same race. The product is a variable that cannot exceed a value of 100, where 100 represents a school district with perfectly matched racial groups. For example, consider a school district with 80% white students, 10% black students, and 10% Hispanic students. If that particular district employed a pool of administrators with the exact same racial mix, then the R_1 score would be 100. However, if that district employed 95% white administrators, 5% black administrators, and no Hispanic administrators, then the score would be 81.3.⁶ The R_2 variable will consider the relationship between teachers and students. The construction of the R_2 variable will be identical to that of the R_1 term, only teacher race percentages will be used in the place of administrator race percentages.

Performance Indicators

Public organizations often have multiple and conflicting goals (Rainey 1993, 1996), and this is particularly evident in the policy area of education, where schools must choose how to focus on college preparation, life skills, basic reading and writing skills, and in some areas bilingual education, all at the same time. The most solid research would therefore test numerous performance indicators – I have chosen to examine three. I will use the overall student pass rate on the Texas Assessment of Academic Skills (TAAS) test as the primary performance outcome. All Texas students in the eleventh

⁶ $R_1 = \{ 1 - \sqrt{[(0.10 - 0)^2 + (0.80 - 0.95)^2 + (0.10 - 0.05)^2 + (0 - 0)^2]} \} * 100 = 81.29$

grade must pass this exam in order to receive a regular high school diploma, and its results are used by the state to evaluate the performance of school districts. I will also consider the percentage of students earning above 1110 on the SAT and dropout rate for each school district. This gives me the opportunity to explore low (dropout rate), middle (TAAS pass rate), and high-end (SAT above 1110) indicators. I will test each model using a lagged version of the performance variable as an exogenous variable, since the model is by nature autoregressive.⁷

Environmental Forces

In order to control for environmental influences, I separated the potential contributors to performance into two categories: resources and constraints. To create a control variable for environmental resources, I conducted a factor analysis of the standardized values of eleven indicators: average salary for teachers, central administrators, campus administrators, and professional support staff; superintendent pay; staff-student and teacher-student ratios; and taxable property value, revenue, operating expenditures, and instructional expenditures, all per pupil.⁸ The factor analysis derived two factors, on which ten of the variables loaded (Table One). I call one the “staff spending” factor (eigenvalue = 2.775), which included all of the pay and salary indicators, and I term the other one the “student spending” factor (eigenvalue = 4.996), which included staff-student and teacher-student ratios, revenue per student, and

⁷ The autoregressive term is appropriate, given the inertial nature of the public organization (O’Toole and Meier 1999).

⁸ Some of these resources can also be constraints. However, I put the variable on the side of resources if the expected relationship was positive (i.e. increasing the value of the variable would be expected to increase performance) and on the side of constraints if the expected relationship was negative (i.e. increasing the value of the variable would be expected to decrease performance).

operating and instructional expenditures per student. I created a variable for each of these using the calculated factor scores.

[Table One here]

I constructed the control variable for environmental constraints by conducting a factor analysis of the standardized values of five indicators: the student dropout rate from the previous year; the percent of teachers with less than five years teaching experience; the percent of low income students in the district;⁹ the percent of non-certified teachers; and the teacher turnover rate from the previous year. Teachers, as employees in the organization and a form of street-level bureaucrat, are not explicitly part of the environment, but I include three teacher-based variables as part of this factor analysis. These three variables point specifically to the district's difficulty in obtaining and retaining quality teachers. As such, there is some underlying *environmental* factor causing the school district to rely on potentially-under qualified staff, and that factor likely relates negatively to performance. The factor analysis derived two factors, on which the five variables loaded differently (Table Two). I call one the "staff constraint" factor (eigenvalue = 1.765), which included the three teacher variables, and the other one the "student constraint" factor (eigenvalue = 1.179), which included the dropout and low-income rates. I created a variable for each of the factors using the factor scores.

[Table Two here]

Results

I test the impact of diversity and representation in separate models, and the results from the first three multivariate regressions for diversity are presented in Table Three.¹⁰ Using the TAAS pass rate for all students as the dependent variable, the model is significant and carries an adjusted-R² of 0.592, which compares favorably with other models and analyses along these lines (Meier & O'Toole 2001, 2003). Teacher diversity is statistically-significant and positively related to performance – the higher the variation in teacher race, the better students perform on the TAAS examination. Interestingly, manager diversity is not related to performance in a statistically-significant manner. Side by side in the model, these results would indicate that teachers – street-level bureaucrats in this policy setting – are much more relevant to organizational performance than managers. The autoregressive term was significant at the 0.001 level, as were the four control variables for environmental influences.

[Table Three here]

Using dropout rate as the dependent variable produced results slightly different from those from the TAAS pass rate model. Again, manager diversity is not significantly related to performance, but teacher diversity is statistically-significant at the 0.001 level, and positively so. In this case, however, teachers have a negative impact on performance, since more racial variation among them results in lower organizational performance (more students dropping out of school). Two of the four environmental control variables are statistically-significant, and the model as a whole explains about 33% of the variance. Finally, using the percentage of students scoring above 1110 on the SAT as the

⁹ Low income students are those who qualify for federally funded free or reduced lunch.

dependent variable, the impact of manager and teacher diversity is the same as with the model for dropout rate. Teachers again contribute negatively and significantly to the performance indicator, while manager diversity is again unrelated in a statistically-significant manner.

The second three regressions testing the relationship between representation and performance are presented in Table Four. Taking the TAAS pass rate as the dependent variable, the model is significant and carries an adjusted- R^2 of 0.811. The management representation term, R_1 , is significant at the 0.05 level and the direction is positive. Even in the presence of a lagged version of the dependent variable, this result indicates that racial diversity among management that meets or exceeds that of the target population corresponds positively and significantly to performance. Interestingly, however, teacher diversity was not significant in this regression. This was not expected, given that it was teachers, not managers, who were related in a statistically-significant manner to performance in the model testing diversity. While surprising, this is an important conclusion, since it shows that diversity and representation are two separate concepts that can have wholly different impacts on performance.

[Table Four here]

Not surprisingly, the autoregressive term was statistically significant at the 0.001 level. Among the environmental controls, both of the constraint terms were negatively signed and the resource terms were positively signed, as expected. Although both

¹⁰ Since these data are pooled, I include dummy variables for the years in order to prevent problems stemming from use of time-series data. The results for these variables are not included.

resources variables were significant at the 0.001 level, neither of the resource terms was significant.¹¹

Using dropout rate as the dependent variable produced similar results. Manager representation was again statistically related to the dropout rate, and this time the direction of impact, as expected, was negative. As with the model using TAAS scores, teacher representation was appropriately signed (negative), but not significant. The environmental control variables for constraints were both positively related to the dropout rate and statistically significant. As with the model using TAAS pass rate as the dependent variable, both of the variables for environmental resources were appropriately signed, but only one was statistically significant. The dropout rate for the previous year was significant at the 0.001 level, and the model as a whole was significant. However, the adjusted-R² was only 0.328 – quite a bit lower than the 0.811 registered for the model with TAAS pass rate as the dependent variable. It is unclear why so much less variation is explained in dropout rate than in the TAAS scores, despite using the same series of exogenous variables. Perhaps the decision of a student to drop out of school is more affected than the TAAS pass rate by forces outside of the school setting – parental influence, social influences, and other economic factors not considered by this study.

My third dependent variable was the percentage of students earning above 1110 on the SAT college entrance examination. This would reflect the impact of diversity on top performers and the results here were a mix of the expected and unexpected. For example, manager representation is positively and significantly related to students doing well on the SAT, as hypothesized. However, teacher representation is negatively related

¹¹ Student resources was marginally significant, at the 0.10 level.

to this dependent variable, a relationship that is marginally significant at the 0.10 level. All of the environmental variables are statistically significant at the 0.001 level, and three of the signs follow expectation, but staff resources are negatively related to performance in this model. Not surprisingly, the lagged dependent variable contributes positively and significantly to the performance outcome.

The model as a whole is weaker than the others – only 34% of the variation in the dependent variable is explained by the exogenous variables. As with dropout rate, it could be that the primary influences on a student doing very well on the SAT lie with the parents and socioeconomic background more than with the school itself. However, why would the results of this regression be different than that for which TAAS pass rate was used as the dependent variable? Both are standardized examinations. Fewer students take the SAT – this dependent variable deals with a particular subset of the student population, and perhaps this subset is specialized such that what explains the students as a whole – the TAAS pass rate – does not hold when the lower-achieving students are removed from the population.

Discussion & Conclusion

Given these results, what can we say about the impact of diversity on performance? Of the six relationships tested between diversity and performance, three were statistically significant (Table Five). Interestingly, all three significant relationships were between teacher diversity and performance. Manager diversity was unrelated to performance in all three cases. This demonstrates that, for racial diversity, the impact of street-level bureaucrats on performance could be stronger than the impact of management. What muddles these findings, however, is that the impact of these street-

level bureaucrats varied according to the performance outcome being measured. For the low-level indicator – dropout rate – we see a negative relationship between teacher diversity and performance. For the mid-level indicator – TAAS pass rate – we see a positive relationship, and for the high-level indicator – percent of students scoring above 1110 on the SAT – we again see a negative impact.

[Table Five here]

In this context – public education – one must wonder why high levels of teacher diversity are related to students dropping out of school, students not doing well on the SAT, *and* students *passing* the TAAS exam, all at the same time. The model contains extensive controls for student and community characteristics that would tend to correlate with lower achievement. Perhaps individual-level indicators play more of a role in dropping out of school and doing well on the SAT than in passing the TAAS exam. For example, the adjusted- R^2 for the model with dropout rate as the dependent variable is only 0.329 and for SAT is only 0.342. The explained variance jumps to almost 60% for the TAAS model. Perhaps schools have more control over whether a student passes the TAAS than whether he or she drops out or does well on the SAT. Alternatively, since the TAAS pass rate is unquestionably the most important performance indicator on which school districts are evaluated, it could be that teachers focus much more energy on TAAS preparation than on other factors. The coefficient for teacher diversity in the TAAS model is substantially larger than the coefficients for SAT and dropout rate, indicating that, positive or negative, the impact of teachers is greatest on the TAAS exam.

This raises another issue as to performance – the indicator used to gauge performance can affect conclusions drawn about how managers and employees contribute

to outcomes. Using only the TAAS exam as a performance indicator, this evidence would lead one to conclude that racial diversity among street-level bureaucrats contributed positively to organizational performance. However, adding two additional performance indicators permits one to paint a more complete picture, albeit one with more ambiguity. There is no consistent relationship here between racial diversity and performance.

The question then becomes whether a more consistent pattern can be shown between representation and performance. Of six relationships tested, four were statistically significant, indicating that racial representation is sometimes relevant and sometimes not. Unlike with the diversity models, we see that managerial representation is significant in all three cases, while teacher representation is significant in only one case. Interestingly, manager representation contributes positively to performance for all three indicators. When managers match the target population by race, or come close to matching it, the organization performs better. For teachers, we again see a negative relationship develop for the percentage of students scoring above 1110 on the SAT exam. For representation, as with diversity, there are no consistent conclusions to draw about the relationship between race and ethnicity and performance.

Wise & Tschirhart (2000) called for more attention to diversity in public management research, but their call has not been heeded. This represents an attempt to examine the effects of diversity and representation on performance outcomes in one of many policy settings. The field would benefit from much more attention to the impact of diversity on performance – my findings on race and ethnicity in public education do not necessarily inform the effects of other types of diversity on performance in other policy

settings. Conducting serious empirical inquiry into the nature of diversity in different settings would provide more answers and assist in building the literature.

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Table One: Factor Analysis of Environmental Resources

<i>Variables*</i>	<i>Factor</i>	
	Student Spending	Staff Spending
Teacher-student ratio	0.919	0.000
Operating expenditures per pupil	0.916	0.347
Staff-student ratio	0.900	0.004
Instructional expenditures per pupil	0.888	0.330
Revenue per pupil	0.886	0.341
Average teacher salary	-0.070	0.817
Average central administrator salary	-0.330	0.663
Average campus administrator salary	-0.388	0.642
Superintendent pay	-0.482	0.610
Average support staff salary	-0.413	0.561
Eigenvalue	4.996	2.775
Percent of variance	41.64%	23.13%

Extraction Method: Principal Component Analysis

* Standardized values were used in the factor analysis.

Table Two: Factor Analysis of Environmental Constraints

<i>Variables*</i>	<i>Factor</i>	
	Student Constraints	Staff Constraints
Drop out rate, previous year	0.425	0.170
Percent low income students	0.426	0.043
Percent teachers with <5 years experience	-0.197	0.605
Teacher turnover rate	-0.284	0.617
Percent of non-certified teachers	0.100	0.421
Eigenvalue	1.765	1.179
Percent of variance	35.30%	23.58%

Extraction Method: Principal Component Analysis

* Standardized values were used in the factor analysis.

Table Three: Diversity & Performance

	Dropout rate	TAAS pass rate	SAT above 1110
Manager diversity	-0.159 (0.109)	-0.873 (0.750)	0.839 (1.099)
Teacher diversity	0.692*** (0.170)	16.078*** (1.178)	-5.133** (1.757)
Student resources	-0.024*** (0.005)	0.113** (0.035)	-0.022 (0.056)
Teacher resources	0.001 (0.006)	0.267*** (0.047)	0.674*** (0.069)
Student constraints	0.127*** (0.025)	0.447*** (0.107)	-1.348*** (0.152)
Teacher constraints	-0.002 (0.010)	-0.481*** (0.070)	-0.291** (0.107)
Lagged dep. variable	0.353*** (0.029)	0.577*** (0.013)	0.402*** (0.020)
Adjusted R ²	0.329	0.592	0.342
Standard error	0.922	6.327	9.207
F	112.319	326.306	113.644
N of cases	2482	2482	2390

Significance: *** (0.001) ** (0.01) * (0.05) + (0.10)

Table Four: Representation and Performance

	Dropout rate	TAAS pass rate	SAT above 1110
Manager representation	-0.239** (0.088)	1.059* (0.485)	2.840*** (0.884)
Teacher representation	-0.121 (0.115)	0.815 (0.637)	-2.035+ (1.162)
Student resources	-0.016 (0.020)	0.201+ (0.121)	1.976*** (0.216)
Teacher resources	-0.109*** (0.020)	0.062 (0.108)	-0.965*** (0.217)
Student constraints	0.146*** (0.036)	-0.399*** (0.119)	-1.450*** (0.216)
Teacher constraints	0.095*** (0.024)	-0.876*** (0.120)	-1.717*** (0.219)
Lagged dep. variable	0.368*** (0.030)	0.747*** (0.010)	0.403*** (0.020)
Adjusted R ²	0.328	0.811	0.341
Standard error	0.923	5.133	9.218
F	111.502	970.682	112.881
N of cases	2482	2482	2390

Significance: *** (0.001) ** (0.01) * (0.05) + (0.10)

Table Five: Summary of Diversity Relationships

	Dropout rate	TAAS pass rate	SAT 1110+
Teacher diversity	▼	▲	▼
Teacher representation	=	=	▼
Manager diversity	=	=	=
Manager representation	▲	▲	▲

- ▲ Positive impact on performance
- ▼ Negative impact on performance
- = No relationship