Representative Bureaucracy, Ethnicity, and Public Schools:
Examining the Link Between Representation and Performance

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Abstract

Demographic changes in the United States have led to challenges for public organizations that are tasked to serve shifting target populations. Many arguments exist for including greater numbers of ethnic minorities among an organization's personnel, under the guise that greater ethnic representation will result in greater competitiveness in the market or effectiveness in governance. This paper tests this proposition empirically, using data from the public education policy setting. Results show that representativeness along ethnic lines leads to gains for the organization as a whole, but some segments of the target population appear to respond more positively to representativeness than others.

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Introduction

Demographic changes in the United States have led to challenges for public organizations that are tasked to serve shifting target populations. As the United States becomes increasingly diverse along ethnic lines, many government and non-profit organizations are seeing drastic changes to the ethnic makeup of the individuals that they serve, making affirmative action programs and other means of diversifying personnel more important than ever. For public administration scholars, a number of issues related to ethnicity have arisen in the research literature. As ethnic diversity increases, it is important to understand whether public organizations are keeping up by hiring and promoting ethnic minorities, whether such increased ethnic representation has positive or negative consequences with regard to performance, and whether certain groups within the target population benefit more from representation than others.

Many arguments for including greater numbers of ethnic minorities among an organization's personnel stem from the belief that greater representation (ethnic or otherwise) will result in greater competitiveness in the market or effectiveness in governance (see, e.g., Thomas, 1990). However, very little empirical research has connected high levels of ethnic representation to high levels of organizational performance using public sector data (Pitts, in press; Wise and Tschirhart, 2000). This paper will help to fill a gap in the literature by looking at ethnic representation and its impact on organizational performance. I will construct a model connecting ethnic representation and a series of performance outcomes, testing it using data from the public education policy setting. In the next section, I will outline the theoretical base for the

study, followed by a discussion of the methods and measures that I plan to use. I will conclude by considering the results.

Representative Bureaucracy Theory

The notion of a representative bureaucracy was first articulated by Donald Kingsley in 1944. Kingsley coined the term "representative bureaucracy" in response to what he observed in the British civil service during World War II (Kingsley, 1944). He argued that the British civil service was effective in implementing the policies of the political party in power because they both shared a middle-class economic orientation. This common economic background, Kinsley argued, led to shared values and norms, and such similarities made it more likely that those working in bureaucracy would naturally agree with, and implement, the ideas of those working in elected offices.

In the United States context, two studies followed Kingsley relatively quickly, both arguing that representation can be a means of controlling bureaucratic discretion. In 1946, David Levitan argued that external controls on bureaucrats were relatively useless, that *ex ante* means of ensuring bureaucratic accountability were likely to be ineffective, and that the only way to ensure that bureaucrats used discretion appropriately was to make them representative of the people they served. That way, Levitan argued, they would be similar to an elected body, since they would reflect the wants and needs of the people by proxy. Soon after, Norton Long (1952) expanded Levitan's argument, writing that bureaucracy can actually be even more representative than Congress and, as a result, has greater capacity to promote democratic values. Long wrote,

> Given the system of parties and primaries, rural overrepresentation, seniority rule,
> interest-dominated committees, and all the devices that give potent minorities a

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disproportionate say, it should occasion no surprise if Congress' claim exclusively to voice what the people want be taken with reservations. The rich diversity that makes up the United States is better represented in its civil service than anywhere else (Long, 1952, 814-815).

Long paints a stark picture, one of elected institutions that are run poorly and generally unresponsive to citizens. Long, and Van Riper (1958) soon after him, viewed the U.S. bureaucracy as being largely representative of the people. Later research would echo the position that the elected bodies in the United States are to blame for problems that are perceived as stemming from bureaucracy (see, e.g., Goodsell, 2003; Meier, 1997), but many took issue with the assessment that the U.S. bureaucracy was indeed representative (see, e.g., Meier, 1975).

Later research worked to refine the causal theory underlying the notion of representation. Krislov (1974) articulated that socialization processes resulted in active representation. Individuals who shared demographic backgrounds, whether they be ethnicity, gender, socioeconomic status, or something else, came to share experiences, cultural norms, and worldviews. As a result, Krislov argued that bureaucrats were more likely to fight for the rights and needs of those from similar backgrounds, since they would innately understand them better than bureaucrats who do not have shared values and norms. If bureaucrats are assumed to be individuals with a goal to maximize their own utility, and bureaucrats are afforded the discretion to make decisions about policy and public service delivery, then it makes sense that bureaucrats will use their discretion in order to make decisions that reflect their own values and norms (Meier et al., 1999). Their own values and norms reflect the demographic background(s) from which the individual bureaucrat hails, and so that individual's discretion will ultimately reflect the values and norms of those he or she represents.

Empirical Research on Representation

Most of the recent research on representative bureaucracy deals with ethnic and racial representation.[1] Meier and Stewart (1992) undertook to explain the relationship between representation and target population outcomes, specifically in the public education policy setting. They found that active representation does occur at the street level in public schools. African-American teachers held a statistically-significant influence on African-American student outcomes. African-American students scored higher on standardized achievement tests in the presence of African-American teachers. Interestingly, however, that relationship did not hold true for the presence of African-American principals. At the managerial level, representation did not affect student outcomes at all. Meier & Stewart conjecture that socialization processes "streamlines" principals into a single group that identified more on professional norms than cultural (ethnic) ones, erasing any suggestion of active representation.

Meier (1993b) undertook to explain why principal representation might not matter in regard to student outcomes, this time using data for Hispanic students. He specifically tested hypotheses forwarded by Henderson (1979) and Thompson (1976) that a critical mass of managers of color is necessary for representation to occur. His results showed that active representation was more likely to occur when a critical mass of Hispanic administrators were present in the organization. The relationship was nonlinear – if few Hispanic administrators were present, students did not benefit from representation. Meier's work reaffirmed that the link between passive and active representation is more likely to occur at the street-level.

Hindera (1993a) examined representation of African-Americans in EEOC district offices. In that policy context, active representation is said to occur if the number of complaints filed on

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[1] Gender issues are also frequently considered in studies of representative bureaucracy. I do not outline that literature here, but one might begin with Dolan (2002) or Keiser et al. (2002) for a review.

behalf of a given group (here, African Americans) increases with increased levels of passive representation. Hindera found that complaints did increase as levels of African-Americans increased, providing evidence for active representation by ethnicity. Hindera (1993b) also tested representation for both African-Americans and Hispanics, this time including variables for other ethnicities present in the organization. Not only did he find that active representation for African-Americans and Hispanics occurred (i.e., more complaints being filed on behalf of those groups), he also found that the percentage of whites in the organization was negatively related to complaint filings. He interpreted this to mean that "one group might act contrary to another group's interests in a constrained resource environment" (Hindera, 1993b, 427).

Selden (1997) found that passive representation in the Farmers Home Administration led to active representation for minority ethnic interests. Regional offices that employed larger percentages of ethnic minorities were more likely to award grant loans to minority clientele than offices that were relatively homogeneous. Selden found that socialization within the agency did not temper the role of the employee's demographic background in shaping his or her values. The extent to which the individual employee saw him or herself as an advocate of minority rights or needs was significantly related to the number of grant loans awarded to minority applicants. Indeed, studies of representative bureaucracy have consistently shown links between passive and active representation, specifically in the context of ethnicity.

The above studies all link representation with outcomes specific to groups being represented – for example, the concern is with whether African-American representation translates into African-American target population benefit, Hispanic representation translates into Hispanic target population benefit, and so on. Few studies have sought to understand whether representation can provide benefits across the board. If minority interests are benefited

by representation in an agency, do those benefits come at the expense of others? Are there redistributive effects?

Meier et al. (1999) used Substantively Weighted Least Squares (SWLS) to study outcomes for students of different backgrounds in the presence of a representative teacher corps. Their findings showed that both minority students and Anglo students benefited from higher levels of minority representation of street-level bureaucrats (teachers). Not only were there no redistributive effects, but Anglo students actually saw outcomes improve in the face of representation. Insofar as student outcomes can be considered "performance" for an educational organization, this provides evidence in support of the idea that representation can lead to increased organizational performance.

A second study provides a counterpoint to Meier et al.'s (1999) finding that representation can increase performance. Andrews et al. (in press) studied the relationship between ethnic diversity and citizen satisfaction with government-provided services in English local governments. In organizations where the ethnic diversity in the workforce matched (or came close to matching) the level of diversity in the target population, citizen satisfaction levels actually decreased. The authors conjecture that there was a level of racism involved that depressed the reported satisfaction levels reported by citizens. Unfortunately, data were not available to test the results further, but the point remains that, even in the face of extensive control variables, representation led to decreased citizen satisfaction. If citizen satisfaction is one measure of performance[2], this study provides evidence that representation may not lead to gains, as Meier et al. (1999) had suggested in another policy context.

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[2] Citizen satisfaction might be considered a "subjective" measure of performance, while profits or student test outcomes might be considered "objective" measures of performance. It is possible that ethnicity could lead to gains for objective indicators and losses for subjective indicators.

Education Policy Research on Ethnicity

A significant amount of research has considered the relationship between ethnicity and education policy, with much of the focus on matching (or mismatching) the ethnicity of a teacher to his or her students. Much of the education policy literature adopts a representative bureaucracy-like frame, focusing on whether minority students benefit from minority teachers. Meier et al. (1999) identify three reasons why minority teachers can lead to better outcomes for minority students: (1) they are simply better at educating minority students, (2) they can serve as role models for minority students, and (3) they can alleviate the negative consequences of grouping, tracking, and discipline. Studies have shown a link between levels of Latino teachers and Latino behavior and test scores, suggesting that Latino teachers may be better educators of Latino students (Fraga et al., 1986; Meier, 1993a; Polinard et al., 1990). Others have been more cautious, arguing that more empirical evidence is needed to claim that minority teachers are better educators of minority students (Cizek, 1995; Hess & Leal, 1997; King, 1993). Limited evidence even suggests that minority teachers are less prepared and could have a negative impact on student performance (Robertson et al., 1983; Smith, 1989).

The role-modeling hypothesis sets aside the issue of teaching quality, conjecturing that minority teachers can lead to better minority student outcomes because they can serve as role models (Adair, 1984; Graham, 1987; Hess & Leal, 1997; Stewart et al., 1989). This supposition stems from evidence illustrating the impact of teachers on student outcomes (Hawley & Roseholtz 1984; Holliday 1985). Stewart et al. (1989) note that black teachers may be more empathetic toward black students, since they share ethnic experiences with them, as well as provide an example to black students of a successful adult. Aaron and Powell (1982) found that while black teachers were no more likely to praise young black students than white teachers, they

were much less likely to respond negatively to them than the white teachers. This provides further evidence that black teachers may be more empathetic toward black students than white teachers, potentially leading to better outcomes for those students. Interviews with black teachers who grew up during the desegregation era indicate a strong willingness to provide opportunities to African-American students that were previously unavailable (Foster, 1990).

Minority teachers may also negate the consequences of tracking. Some schools group students by ability or perceived intellectual capacity into different tracks. The practical consequence of this practice is that many minority students are placed in lower-level courses (special education or "basic" tracks), while majority students are more likely to be placed in honors or Advanced Placement (AP) courses (Fraga et al,. 1986; Lucas, 1999; McConahay, 1981; Perlmann, 1985). As a result, there is segregation within what may be an otherwise integrated school. Research has shown this type of segregation to be detrimental to the minority students placed in the lower tracks, while providing inconclusive benefits to the majority students placed in the higher tracks (Fraga et al., 1986; Lucas, 1999; Rosenbaum, 1976). Minority students placed in lower tracks may suffer from low expectations and a general sentiment of giving up, but the presence of minority teachers who show a special interest in them could lead to better outcomes.

There are also cultural issues to consider in examining the role of race in student outcomes. Some research indicates that minority students fare worse in schools with mostly white students, since the culture of learning tends to favor those in the majority (Cummins, 1986; Deyhle, 1995; Dworkin et al., 1998; Stanton-Salazer, 1997; Weiher, 2000). Research has noted the cultural differences between minority groups in the United States on a number of dimensions (Azevedo et al., 2002; Falicov, 2001; Ho, 1987; Triandis, 1988). African-Americans, Native

Americans, and Latinos tend to be much more collectivist than whites, who tend toward individualism. These value differences produce different learning styles, and it may be difficult to marry collectivist and individualist teaching methods in the same classroom. The implication, then, could be that students in the minority of any given school will be forced to learn in a manner different from their ideal, leading to lower performance for those groups.

Hypotheses

What hypotheses might be driven by these lines of research? There are only two studies linking ethnic representation to performance, and they provide results in opposing directions. On the one hand, Meier et al. (1999) argue quite clearly that organizations that do not discriminate in the hiring process – and thus are more representative of the population that they serve – will perform better, since they have access to a larger share of the labor pool than those organizations that exclude groups on criteria such as ethnicity. They provide results in line with this argument, showing that students from all backgrounds benefit from proportional representation among teachers. On the other hand, Andrews et al. (in press) reject their hypothesis linking representation positively to performance, noting that it is possible that racist attitudes lead citizens to be less satisfied with representative groups.

It seems necessary to consider the type of performance in developing hypotheses. Since I will be looking at student outcomes as a measure of performance in schools, it seems that the Meier et al. (1999) findings would be brought to bear more strongly on this study than the Andrews et al. (in press) research, which is based more on citizen satisfaction and perceptions. As a result, I hypothesize the following:

> H_1: *Higher ethnic representation among public managers, street-level bureaucrats, and the organization's target population will lead to <u>higher</u> organizational performance.*

As noted above, several representative bureaucracy studies have also tested differences between front-line representation and managerial representation. These studies tend to find that, for ethnic representation, street-level bureaucrats are more likely to have an impact on the target population than managers. As a result, I make a second hypothesis:

> H_2:   *The impact of representation on organizational performance will be stronger at the street level than at the managerial level.*

Much of the research on street-level bureaucracy focuses on minority groups, their representation in the organization, and whether they gain from it. Limited research has shown that white students benefit from proportional representation as well, but the literature in representative bureaucracy and education policy seems to have best formulated the mechanisms behind benefits for students of color. It indeed seems logical that, even if all students benefit from representation, students of color will benefit more. As such, I make a third hypothesis:

> H_3:   *Higher ethnic representation among public managers, street-level bureaucrats, and the organization's target population will lead to <u>more positive</u> target population outcomes for people of color than for whites.*

Data

I will consider the relationship between ethnicity and organizational performance in the context of public schools. In order to do so, I will use data from all public school districts in the state of Texas collected between 1995 and 2002. This provides an excellent opportunity for examining the impact of representation in the public sector for several reasons. First, public education is the most prominent type of bureaucracy in the United States, and the state of Texas contains one out of every 14 school districts in the country. As a result, this data set contains a not insignificant share of all public organizations in the U.S. context, at least by comparison to

other available data. Second, the public education policy setting is an area in which it is relatively easy to operationalize key variables. For example, the target population is easily identified – students – and data on them are readily available. Street-level bureaucrats are, of course, teachers, and these teachers have a significant amount of discretion and power over organizational outcomes. Managers consist of assistant principals, principals, centrally-located administrators, and superintendents. Representation variables are easily constructed at the organizational level for all of these groups, since the state of Texas requires districts to report the data. Performance in the context of public education is fairly straightforward as well – all school districts answer to political overseers (school boards) that establish performance criteria that are, for the most part, consistent across the state of Texas. Data are available for a host of control variables that help to account for environmental influences that might confuse the relationship between ethnicity and performance.

Models

I will employ two sets of models (Figure 1). First, in order to test the relationship between ethnic representation and organizational performance, I use three different measures of performance as dependent variables (see variable operationalization below). Each model will also include a lagged version of the dependent variable and a series of dichotomous variables for each of the years of data that I use; these are two precautions taken against the serial correlation that can result from pooled cross-sectional data. Each model will include a variable measuring ethnic representation among managers, as well as a separate variable measuring ethnic representation among teachers. Finally, I will include a vector of control variables to account for the environmental influences that tend to predict student outcomes. All of these variables are

described in detail in the sections below. For the hypotheses linking target population response to representation, I will use a series of dependent variables that test how specific subsets of the target population respond to representation. All independent variables on those models are the same as in the representation model.

[Insert Figure 1 about here]

I will test these models using Ordinary Least Squares (OLS) regression. The dependent variables that I will employ are all continuous, so it will not be necessary to use a more advanced technique. Moreover, the relevant theory does not suggest non-linear relationships between the independent variables of interest and the dependent variables. Since the data themselves do not exhibit non-linearity either (scatterplots do not reveal anything other than linear relationships between the independent and dependent variables), I do not include any transformations or multiplicative terms in the models. Other research using these data has shown that non-linearities do not exist (Nielsen & Wolf, 2001).

Variables

In the following section, I will operationalize all of the variables that I will use in this study. First, I will operationalize the main independent variable of interest – manager and teacher representation. Next, I will discuss the seven dependent variables that will be used across the different models. Third, I will outline the different environmental factors included in the vector of control variables. Finally, I will discuss the two variables used to counteract the negative

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impact of serial correlation: the lagged dependent variable and the dichotomous variables for the years of data.

Ethnic Representation

I will create two variables that are designed to examine the effects of ethnic representation on performance: a manager representation variable and a teacher representation variable (Figure 2). The first of these involves the relationship between managers – principals, assistant principals, superintendents, and assistant superintendents – and students. The representation variable yields a score ranging from 0 to 1, where 0 represents an organization with a perfect mismatch between manager ethnicity and ethnicity in the target population, and a 1 represents an organization with a perfect match between manager ethnicity and ethnicity in the target population. For example, an organization with all Latino managers that served a target population of all white students would receive a score of 0. An organization with all white managers that served a target population of all white students would receive a score of 1.

[Insert Figure 2 about here]

All others will score in between 0 and 1. For example, suppose that an organization serves a target population that is comprised of 75% whites, 15% African-Americans, 5% Hispanics, and 5% from all other categories. The organization itself employs 70% whites, 10% African-Americans, 10% Hispanics, and 10% from all other categories. As a result, $R = \{ 1 - \sqrt{[(0.05 – 0.10)2 + (0.75 – 0.70)2 + (0.15 – 0.10)2 + (0.10 – 0.05)2]} \}$, or 0.9 (Figure 3.3). This organization is fairly well balanced with regard to representation. The same calculation will be

performed for teacher ethnicity, such that two separate variables – one tracking how closely teachers match the target population, and another tracking how closely managers match the target population – will be constructed.

Performance Indicators

Public organizations often have multiple and conflicting goals (Rainey 1993, 2003), and this is particularly evident in the policy area of education, where schools must choose the extent to which they 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. In order to test the relationship between representation and performance in a general sense, I use three indicators (Figure 3). I will use the overall student pass rate on the Texas Assessment of Academic Skills (TAAS)[3] test as the primary performance outcome. Until 2003, all Texas students in the eleventh grade had to pass this exam in order to receive a regular high school diploma, and its results were used by the state to evaluate the performance of school districts.[4] 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.

[Insert Figure 3 about here]

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[3] The TAAS exam has recently been dropped in favor of a different standardized test, the Texas Assessment of Knowledge and Skills (TAKS).

[4] The TAAS exam is by its nature a graduation exam, and as such can serve as a rough proxy for a district's graduation rate, especially given the lack of reliability of district-reported graduation rates.

In order to test hypothesis 3, I will use three different performance indicators as dependent variables: the TAAS pass rate for white students, African-American students, and Latino students, taken separately (Figure 3). These variables, taken with the three variables used to test Hypotheses 1 and 2, do not necessarily represent the best means of testing whether students have learned the material in their courses, whether they are well equipped to enter college, or whether these schools have been successful in any particular sense. This study takes no stance as to the validity of these indicators as measures of learning – there is a vast literature that explores testing and the issues and problems associated with standardized tests, a literature that is too peripheral for this study to consider.

As public organizations, these school districts must perform as their political overseers deem fit. That is, the political overseers in this case, the school boards, give the school districts goals that they expect the districts to achieve. It is irrelevant whether the goals are worthwhile – they are required by the political overseers, and public organizations in every other policy context must also attempt to satisfy mandates that may or may not be realistic or appropriate. This is one way in which this study contributes much better to the literature on public organizations than the literature on education policy – in education policy circles, these outcomes might be considered too arbitrary or error-prone for this study to make a real contribution. On the other hand, for public management scholars, the need to satisfy a mandate that might present conflicting or invalid goals to public organizations is understood quite well. In that sense, this is indeed a study of organizations more than a study of student outcomes.

Environmental Control Variables

In order to control for environmental influences, I separated the potential contributors to performance into two categories: resources and constraints (Tables 1 and 2).[5] 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; student-staff and student-teacher ratios; and taxable property value, revenue, operating expenditures, and instructional expenditures, all per pupil. Much of the education policy literature would consider the percentage of white students in the district to be a "resource" as well, but I do not include this variable in the analysis, given its close relationship with the main independent variables of interest. The factor analysis derived two factors, on which ten of the variables loaded (Table 1). I call one the "staff spending" factor (eigenvalue = 3.014), which included all of the pay and salary indicators, and I term the other one the "student spending" factor (eigenvalue = 4.457), which included student-staff and student-teacher ratios, revenue per student, and operating and instructional expenditures per student. I created a variable for each of these using the calculated factor scores.[6]

[Insert Table 1 about 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

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[5] A vast literature links resources and constraints in the environment to student outcomes (Burtless, 1996; Fuller et al., 1996; Necochea & Cune, 1996).

[6] I will also include all of these variables separately in a different version of each model, in order to ensure that combining them into factor variables does not bias the results. Ultimately, it does not matter whether they are included separately or in clusters – the other results do not change.

income students in the district; 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. However, I include three teacher-based

variables as part of this factor analysis, since these variables point specifically to the district's

difficulty in obtaining and retaining quality teachers. As such, there is some underlying

environmental factor causing the 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 2). I call one the "staff constraint" factor (eigenvalue

= 1.810), which included the three teacher variables, and the other one the "student constraint"

factor (eigenvalue = 1.181), which included the dropout and low-income rates. I created a

variable for each of the factors using the factor scores.

[Insert Table 2 about here]

Other Variables

Each model will also include an independent variable that represents the previous year's

performance on the same indicator being used for the dependent variable. This lagged dependent

variable creates a set of fixed effects that permits the model to take into account everything that

went into predicting performance during the previous year. As such, the model necessarily

includes any time-constant phenomenon that might play a role in any given district and whose

impact might otherwise show up in one of the independent variables of interest, creating bias.

The lagged dependent variable is also important to the model from a theoretical standpoint, since

bureaucracy is known to be fairly inertial, and organizational performance in a bureaucratic

organization is based strongly on performance during previous years or cycles. Given how much

such a variable tends to predict, inclusion of the lagged dependent variables creates a tough test

for the other independent variables and makes it difficult for them to achieve statistical

significance. I include it nevertheless, as both a methodological precaution and theoretical

necessity.

I also include a series of four dichotomous variables in each model in order to account for

any time-varying influences that might bias the other independent variables. For example, I use

data from 1995-2002. As a result, I will include a dichotomous variable for 1995 (1995=1, all

others=0), 1996 (1996=1, all others=0), 1997, 1998, 1999, 2000, and 2001, for a total of seven. It

is unnecessary to include a variable for 2002, since it will be represented by values of zero across

the other four variables. I am not interested in the substantive impact of these variables on the

dependent variable or whether they reach a given level of statistical significance. They are

included strictly as control variables.[7]

Findings: Representation and Performance

Hypothesis 1 predicted that high levels of representation between public managers, street-

level bureaucrats, and the organization's target population would lead to higher organizational

performance. These results both reject and support this hypothesis (Table 3). For managers, there

is no statistically-significant link between representation and performance, at least in the

presence of the lagged dependent variable. It might seem that matching the target population by

ethnicity would lead to a bundle of policies and programs that would benefit the specific ethnic

mix the organization served. However, managers do not seem to be linked in a statistically-

significant way for any of the models tested. In a sense, this should not be surprising, since there

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[7] The trend, however, may be substantively interesting, but I will not address those results in this study.

is indeed very little to go on when formulating hypotheses linking representation to performance. The literature is sparse on this topic, and this study relies on a mere handful of studies in order to form a theoretical base for quantitative exploration. Whether or not specific subsets of the target population benefit from manager representation will be discussed in a moment, but there are no overarching, organization-wide performance increases that are linked to manager representation for this study.

[Insert Table 3 about here]

Teacher representation, on the other hand, is related to performance in a statistically-significant manner for two of the three models that were tested. Teacher representation corresponds to fewer students dropping out of school and more students passing the TAAS graduation examination, a finding that does not reject the third hypothesis. There is, then, limited evidence that representation does correspond to better organizational performance, but this tends to take place at the street level, not at the managerial level.

Indeed, these results support the second hypothesis of this study: that representation will be linked to organizational performance most strongly at the street level. Teacher representation was positively and significantly related to organizational performance for two of three indicators, while manager representation was unrelated to any of the indicators in a significant manner. For each of the three models, teacher representation had larger coefficients. Even in the model predicting college attendance, where neither teacher nor manager representation was statistically significant, teacher representation was *more* significant and had an impact in the sample that is estimated at fifteen times greater than that of manager representation.

Why might teacher representation be a positive force in organizational performance, while manager representation simply does not matter? There is evidence in this study that street-level bureaucrats are much more influential than managers in the public education policy setting. Since these performance variables are all driven by the target population, it could be that teachers are simply most influential over students. They are, of course, the segment of the organization that has the most face time with the target population, and students interact much, much more with teachers than with managers. These results would seem to suggest that managers might formulate policy and program recommendations, but teachers have considerable discretion in how to implement them, leading to some evidence that bottom-up implementation seems to prevail.[8] Of course, this study considers influence only in the context of ethnicity, so it might be the case that other dimensions of diversity – gender, for example – see managers having more influence. It is also possible that managers do influence students as much as teachers, but this influence is simply channeled through the teachers, causing the manager variables to be less powerful in these models.

There is some literature in the education policy stream of research suggesting that students of color benefit from having teachers of color as role models and mentors. Students are looking for mentors and role models who "look like them" and will seek out teachers of the same ethnic background. It makes sense that school districts where ethnicities match between teachers and students would see the students performing best. If ethnic backgrounds match perfectly, then all students, in theory, have the opportunity to seek out mentors of the same ethnicity. As those backgrounds start to match less perfectly, then fewer students have the option of working with

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[8] This study is not one of policy implementation, and it includes no review of the relevant literature on top-down and bottom-up theories of implementation. However, these results do provide an interesting insight into where the influence lies in public education organizations, given evidence suggesting that teachers make a bigger difference in outcomes than managers do, at least with regard to representation. Further research might use these data in order to more systematically and thoroughly test implementation questions.

teachers of the same ethnicity, leading to fewer students getting the experience that they need in order to stay in school, graduate, or go to college. It seems that this kind of mentoring and role-modeling takes place between students and teachers much more than between students and managers, which explains why we see results for the teacher variables and not for the manager variables. However, this is an empirical question that does not seem to have an answer in the education policy literature, so this discussion is limited to conjecture and inference from the results.

Findings: Target Population Response to Representation

These results provide partial support for hypothesis 3, that people of color will benefit more from proportional ethnic representation than those in the majority. Both Hispanic and African-American students benefit from teacher representation, and the substantive impact is not insignificant (Table 4). These results provide evidence in favor of the role-model hypothesis. Minority students, in this case African-American and Hispanic students, do better when there are more minority teachers. When the ethnic composition of teachers matches that of the students, African-American and Hispanic students seem to do better on the TAAS exam, which is an important finding. What makes this evidence particularly supportive of the role-modeling hypothesis is the significance of teachers but lack of significance for administrators. Since it is the teachers who are making the difference with African-American and Hispanic students, it seems much more likely that this difference stems from phenomenon related to being a role model than other representational actions that might be more driven by administrators, such as policy and curricular decisions.

[Insert Table 4 about here]

Or, alternatively, it could be that minority teachers are simply better educators of minority students. Whether they serve as role models or not, they may bring to the classroom cultural assumptions and ideas about learning that result in a better environment for learning for minority students. If this finding reflects a preference of black and Hispanic students for collectivist teaching methods, it would not matter if the teachers were black, Hispanic, or Native American – all of these minority groups are associated with collectivism. This would, in part, reject the role-modeling hypothesis, since the primary contributor to black students doing well on the TAAS examination would be cultural ideas about learning. It is impossible to disentangle the role-modeling hypothesis from a culture-based hypothesis in this study, since we do not have data telling us what is happening at an individual level. It is perhaps most reasonable to conclude that both culture and role-modeling are each having *some* impact on black and Hispanic student success.

However, not only do white students respond less positively to representation than black and Hispanic students, there is actually a negative relationship between ethnic representation and white student performance. White students respond negatively – strongly – to teacher representation. Their response to manager diversity is inconclusive. As with black and Hispanic students, it would seem that the most important influence on student performance is in teachers, not administrators. Why, though, would white students respond so negatively to diversity among their teachers? At its base, this tells us that white students fare worse on the TAAS exam when the mix of races among teachers matches the mix of races among students.

One explanation for this is that schools that do not match student heterogeneity with teacher heterogeneity typically have an excess number of white teachers, not minority teachers, that pulls down their heterogeneity index. For the state of Texas as a whole, the percentage of teachers and administrators who are white exceeds the percentage of white students.[9] If these schools are not making an effort to attract and hire talented minority personnel, then it is possible that they are also not making an effort to attend to the different learning and communication styles associated with different minority groups. In other words, the school teaches to the "norm" (white students), and the white students enjoy a distinct advantage, one that they probably do not have in a school where student heterogeneity is appropriately matched by teacher heterogeneity and, by consequence, different attitudes toward teaching. This explanation would reinforce the cultural basis for blacks and Hispanics responding positively to diversity.

Again, there is evidence that most of the representational influence over student outcomes and, by extension, organizational performance is taking place at the street level. Manager representation is related to outcomes in a statistically significant manner for only one of the three groups – African-American students. Teachers, on the other hand, are related to outcomes for all three groups, and strongly so. In the public education setting, it seems that, at least for ethnicity, the classroom is where most of the influence lies. It is possible that gender might be more important at the managerial level, or that other management practices could affect student outcomes more strongly than teachers (see, e.g., Keiser et al., 2002). In one sense, this is a very narrowly-tailored analysis, since it looks at only one dimension of teacher and manager influence over students, so one must be cautious not to extend these results too far. Future research should consider teachers and managers and how they influence student outcomes in different ways. If teachers have as much discretion in fashioning student outcomes as these

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[9] White students make up only 64.5% of all students, while whites comprise about 81% of all teachers.

results suggest they might, there are a number of normative and practical issues surrounding bureaucratic discretion that might warrant further inquiry.

Conclusion

Does representation lead to increased organizational performance? The answer is "sometimes," depending on the level of analysis and the type of performance being analyzed. Of six relationships tested between representation and performance, two are statistically significant and in a positive direction. Does representation at the street level lead to better performance than representation at the managerial level? Yes, for all three indicators tested. As a result, evidence is provided that supports the first two hypotheses – the first hypothesis to a limited extent, and the second hypothesis fairly soundly.

The relationships tested here are, in a sense, exploratory, since there is not a well-developed literature in place that links ethnic representation to performance outcomes. That said, this study provides strong support for the notion that representation is important at the street-level. Teacher representation matters, in a statistically-significant manner. The organization as a whole benefits from representation, not just students from one or two ethnic groups. These results provide support for the argument that school districts should recruit and employ a set of teachers that matches the district's students by ethnicity. Of course, a number of convincing normative arguments exist for increasing teacher diversity, and many would agree that diversity will help students to gain a broader worldview and more complete set of knowledge and skills for when they go on to college or employment. These results provide a good complement to those lines of thought by adding a more *pragmatic* argument for making teachers look like the students they serve.

Whether the role-modeling and mentoring explanation is at work in this relationship is difficult to say. Further study should include a qualitative component designed to uncover the causal mechanisms at work behind the findings presented in this chapter. Interviews with teachers, students, and managers might help to tease out how the three groups of individuals are interacting at school, and how this interaction benefits (or suffers) from proportional representation. It is also important to point out that this study does not explicitly test representative bureaucracy theory. There is no attempt made here to ensure that links between passive and active representation are credibly made. Rather, I am testing the relationship between representation and *performance*, at least partially in order to show that representation and diversity are two separate concepts that will affect performance in different ways. Finally, it is important to point out that these results may be policy context-specific. For policy areas where street-level bureaucrats enjoy much less discretion, it could be that representation does not matter at all at the street level or less than at the managerial level.

These results also show that proportional representation can lead to positive consequences, but not for everybody, and research should seek to understand how the negative reaction among white students to diversity can be alleviated. The answer to the problem for white students is not to hire only white teachers. Changes in the workforce make this impossible, even if it were normatively an acceptable solution. Instead, districts would benefit from considering diversity among teachers and students as something to be *managed*. If there are cultural differences in teaching methods, then how can those be integrated such that everyone benefits? If minority students benefit from having minority teachers as role models, then how can minority teachers serve as role models to white students and increase their performance as well?

In addition, if different subsets of students respond differently to diversity among teachers and administrators, then it is logical to assume that the same scenario would appear in other policy settings. Research should seek to understand how different factions of an agency's target population respond differently to diversity among agency personnel. It seems particularly likely that this would hold true in social service organizations, which typically serve a highly diverse clientele. Does diversity among agency personnel in such agencies lead to better outcomes for minority clients and worse outcomes for majority clients? If so, agencies must find a way to respond to target population needs in a manner that benefits everyone, even if those benefits come in different ways.

Research should also seek to understand why minority students respond positively to proportional representation. Is it the availability of minority role models, different cultural assumptions about learning, or a mix of both? In order to answer this question, research might benefit from studying these issues with a smaller unit of analysis, such as a classroom or grade level. Qualitative research might strengthen what we find quantitatively by providing more complete information about student-teacher and student-administrator interaction. Talking to students and finding out more about their relationship with teachers, classmates, and administrators would supplement the information that is presently only available in the aggregate at the school district level of analysis.

This study's practical implications are clear. Minority students benefit from representation, and in school districts where minority students are particularly likely to drop out of school or do poorly on standardized examinations, a concerted effort to hire and retain qualified teachers of color might improve these outcomes. Will such a policy choice have a negative impact on white students? This research suggests that it could, but such negative

consequences might be negated by special attention to diversity, the impact it has on outcomes, and how to manage it. In short, management is the answer to the apparent redistributional problem shown by these results. This is another example of where information at a lower level – students or the schools they attend – would help to clarify what is really going on. Better information about efforts undertaken by schools to manage diversity among students and teacher would assist substantially in informing practice.

The next step, then, for both research and practice is to better understand the role of management and what it can do for diversity. Research can improve by including management variables in studies connecting ethnic diversity and student-based performance outcomes. For example, surveys might tap into whether managers actively manage diversity, whether they have a diversity management program in place for their district, or whether they have engaged in or initiated diversity training for staff. Practitioners can emphasize the management of ethnic (and other) diversity among students, teachers, and administrators. In the face of significant demographic changes in the United States, it is vital for both sides to better understand what diversity means, how it operates, and how it can be beneficial.

References

Aaron, R. & Powell, G. (1982). Feedback practices as a function of teacher and pupil race during
    reading group instruction. *Journal of Negro Education, 51*(1), 50-59.

Adair, A. (1984). *Desegregation: The illusion of black progress.* Lanham, MD: University Press
    of America.

Andrews, R., Boyne, G., Meier, K. J., O'Toole, L. J., & Walker, R. (in press). Representative
    bureaucracy, organizational strategy, and public service performance: An empirical
    analysis of English local government. *Journal of Public Administration Research and
    Theory.*

Azevedo, A, Drost, E. A., & Mullen, M. R. (2002). Individualism and collectivism: Toward a
    strategy for testing measurement equivalence across culturally diverse groups. *Cross
    Cultural Management, 9*(1), 19-29.

Burtless, G. (1996). *Does money matter? The effect of school resources on student achievement
    and adult success.* Washington, DC: Brookings Institution.

Cizek, G. (1995). On the limited presence of African-American teachers: An assessment of
    research, synthesis, and policy implications. *Review of Education Research, 65*(1), 78-92.

Cummins, J. (1986). Empowering minority students: A framework for intervention. *Harvard
    Education Review, 56*(1), 18-36.

Deyhle, D. (1995). Navajo youth and Anglo racism: Cultural integrity and resistance. *Harvard
    Education Review, 65*(3), 403-432.

Dolan, J. (2002). Representative bureaucracy in the federal executive: Gender and spending
    priorities. *Journal of Public Administration Research & Theory, 12*(3), 353-376.

Dworkin, G., Toenges, L., Purser, M., & Sheikh-Hussein, A. (1998). Modeling the effects of

    changing demography on student learning: Applications designed to change school

    district practices. In T. Mitchell & C. A. Torres (eds.), *Urban education: Challenges for*

    the sociology of education. Greenwich, CT: JAI Press.

Falicov, C. J. (2001). The cultural meaning of money. *American Behavioral Scientist, 45*(2),

    313-328.

Foster, M. (1990). The politics of race: Through the eyes of African-American teachers. *Journal*

    of Education, 172(3), 123-121.

Fraga, L. R., Meier, K. J., & England, R. (1986). Hispanic Americans and educational policy.

    Journal of Politics, 48(3), 850-876.

Fuller, B., Eggers-Pierola, C., Holloway, S. D., Liang, X., & Rambaud, M. F. (1996). Rich

    culture, poor markets: Why do Latino parents forego preschooling? *Teachers College*

    Record, 97(2), 400-418.

Goodsell, C. T. (2003). *The case for bureaucracy: A public administration polemic* (4th ed.).

    Chatham, NJ: Chatham House.

Graham, P. (1987). Black teachers: A drastically scarce resource. *Phi Delta Kappan, 68*(4), 598-

    605.

Hess, F. & Leal, D. (1997). Minority teachers, minority students, & college matriculation: A new

    Look at the role-modeling hypothesis. *Policy Studies Journal, 25*(2), 235-248.

Hindera, J. J. (1993a). Representative bureaucracy: Imprimis evidence of active representation in

    the EEOC district offices. *Social Science Quarterly, 74*(2), 95-108.

_____. (1993b). Representative bureaucracy: Further evidence of active representation in the EEOC district offices. *Journal of Public Administration Research and Theory, 3*(3), 415-429.

Ho, M. K. (1987). *Family therapy with ethnic minorities.* Newbury Park, CA: Sage.

Keiser, L. R., Wilkins, V. M., Meier, K. J., & Holland, C. A. (2002). Lipstick and logarithms: Gender, institutional context, and representative bureaucracy. *American Political Science Review, 96*(3), 553-564.

King, S. (1993). The limited presence of African-American teachers. *Review of Education Research, 63*(1), 115-149.

Kingsley, J. D. (1944). *Representative bureaucracy: An interpretation of the British civil service.* Yellow Springs, OH: The Antioch Press.

Krislov, S. J. (1974). *Representative bureaucracy.* Englewood Cliffs, NJ: Prentice Hall.

Levitan, D. M. (1946). The responsibility of administrative officials in a democratic society. *Political Science Quarterly, 61*(4), 562-598.

Long, N. E. (1952). Bureaucracy and constitutionalism. *American Political Science Review, 46*(3), 808-818.

Lucas, S. (1999). *Tracking inequality: Stratification and mobility in American high schools.* New York: Teachers College Press.

McConahay, J. (1981). Reducing racial prejudice in desegregated schools. In W. Hawley (ed.), *Effective school desegregation: Equity, quality, and feasibility.* Beverly Hills, CA: Sage.

Meier, K. J. (1975). Representative bureaucracy: An empirical assessment. *American Political Science Review, 69*(2), 526-542.

_____. (1993a). Representative bureaucracy: A theoretical and empirical exposition. In J. L. Perry (ed.), *Research in public administration.* Greenwich, CT: JAI Press, pp. 1-35.

_____. (1993b). Latinos and representative bureaucracy: Testing the Thompson and Henderson hypotheses. *Journal of Public Administration Research and Theory, 3*(3), 393-414.

_____. (1997). Bureaucracy and democracy: The case for less democracy and more bureaucracy. *Public Administration Review, 67*(3), 193-199.

Meier, K. J. & Nigro, L. (1976). Representative bureaucracy and policy preferences: A study in the attitudes of federal executives. *Public Administration Review, 36*(4), 458-469.

Meier, K. J. & Stewart, J. S. (1992). The impact of representative bureaucracies: Educational systems and public policies. *American Review of Public Administration, 22*(3), 157-171.

Meier, K. J., Wrinkle, R. D., & Polinard, J. L. (1999). Representative bureaucracy and distributional equity: Addressing the hard question. *Journal of Politics, 61*(4), 1025-1039.

Mosher, F. (1982). *Democracy and the public service* (2nd ed.). New York: Oxford University Press.

Necochea, J., & Cune, Z. (1996). A case study of within district school funding inequities. *Equity and Excellence in Education, 29*(3), 69-77.

Nielsen, L. B., & Wolf, P. J. (2001). Representative bureaucracy and harder questions: A response to Meier, Wrinkle, and Polinard. *Journal of Politics, 63*(2), 598-615.

Perlmann, J. (1985). Curriculum and tracking in the transformation of the American high school. *Journal of Social History, 19*(1), 29-55.

Pitkin, H. (1967). *The concept of representation.* Berkeley: University of California Press.

Pitts, D. W. (in press). Diversity, representation, and performance: Evidence about ethnicity in public organizations. *Journal of Public Administration Research and Theory.*

Polinard, J.L., Wrinkle, R., & Longoria, T. (1990). Education & governance: Representational links to second generational discrimination. *Western Politics Quarterly, 43*(6), 314-347.

Rainey, H. G. (1993). Toward a theory of goal ambiguity in public organizations. In J. L. Perry (ed.), *Research in public administration* 2. Greenwich, Conn.: JAI Press.

Rainey, H. G. (2003). *Understanding and managing public organizations.* (3rd ed.). San Francisco: Jossey-Bass.

Robertson, S., Keith, T., & Page, E. (1983). Now who aspires to teach? *Educational Researcher, 12*(1), 13-21.

Romzek, B. S. & Hendricks, J. S. (1982). Organizational involvement and representative bureaucracy: Can we have it both ways? *American Political Science Review, 76*(1), 75-82.

Rosenbaum, J. (1976). *Making inequality: The hidden curriculum of high school tracking.* New York: John Wiley.

Selden, S. C. (1997). *The promise of representative bureaucracy: Diversity and responsiveness in a government agency.* Armonk, NY: ME Sharpe.

Smith, G. (1989). *Increasing the number of minority students: Recommendations and a call for action.* Boston: Massachusetts Institute of Technology, Quality Education for Minorities Project.

Stanton-Salazar, R. (1997). A social capital framework for understanding the socialization of racial minority children and youths. *Harvard Education Review, 67*(1), 1-40.

Stewart, J., Meier, K. J., & England, R. (1989). In quest of role models: Change in black teacher

    representation in urban school districts, 1968-1986. *Journal of Negro Education, 58*(2),

    140-152.

Thomas, R. R. (1990). From affirmative action to affirming diversity. *Harvard Business Review,*

    68, 107-117.

Triandis, H. (1988). Collectivism vs. individualism. In G.K. Vernma & H. Triandis (eds.),

    Personality, attitudes, and values. London: Macmillan.

Van Riper, P. P. (1958). *History of the United States Civil Service.* Evanston, IL: Row, Peterson

    & Company.

Weiher, G. (2000). Minority student achievement: Passive representation and social context in

    schools. *Journal of Politics, 62*(3), 886-895.

Wise, L. R. & Tschirhart, M. (2000). Examining empirical evidence of diversity effects: How

    useful is diversity research for public sector managers? *Public Administration Review,*

    60(5), 386-394.

Figure 1: Model Specification

$$P_t = \alpha + P_{t\text{-}1} + R_t + S_t + X_t + Y_t + \varepsilon_t$$

where P_t = Performance outcome
$P_{t\text{-}1}$ = Autoregressive term
R_t = Manager representation
S_t = Teacher representation
X_t = Vector of environmental control variables
Y_t = Vector of dichotomous variables for years of data
ε_t = Error term

Figure 2: Representation Variable Operationalization

$$R = \{\ 1 - \sqrt{[\ (HS - HA)^2 + (WS - WA)^2 + (AS - AA)^2 + (OS - OA)^2\ ]}\ \}$$

Where
HS = Proportion of Hispanics in the target population
HA = Proportion of Hispanics in the organization
WS = Proportion of whites in the target population
WA = Proportion of whites in the organization
AS = Proportion of African-Americans in the target population
AA = Proportion of African-Americans in the organization
OS = Proportion of other ethnicities in the target population
OA = Proportion of other ethnicities in the organization

Example
An organization serves a target population that is comprised of 75% whites, 15% African-Americans, 5% Hispanics, and 5% from all other categories. The organization itself employs 70% whites, 10% African-Americans, 10% Hispanics, and 10% from all other categories. As a result, $R = \{\ 1 - \sqrt{[\ (0.05 - 0.10)^2 + (0.75 - 0.70)^2 + (0.15 - 0.10)^2 + (0.10 - 0.05)^2\ ]}\ \}$, or **0.9**. The values of the variable range from 0 (perfect misrepresentation) to 1 (perfect representation).

Figure 3: Performance Variables

Hypotheses 1-2

- **Student drop-out rate:** Percentage of students in the school district who dropped out of school that particular year
- **TASS pass rate:** Percentage of students in the school district who passed the Texas Assessment of Academic Skills (TAAS) exam that particular year
- **College bound students:** Percentage of students in the school district who scored above 1110 on the SAT or the ACT equivalent

Hypothesis 3

- **African-American TAAS pass rate:** Percentage of African-American students in the school district who passed the Texas Assessment of Academic Skills (TASS) exam that particular year
- **White TAAS pass rate:** Percentage of white students in the school district who passed the TAAS exam that particular year
- **Latino TAAS pass rate:** Percentage of Latino students in the school district who passed the TAAS exam that particular year

Table 1: Factor Analysis of Environmental Resource Variables

Variables	Factor	
	Student Spending	Staff Spending
Student-teacher ratio	**-0.864**	0.139
Operating expenditures per pupil	**0.890**	0.317
Student-staff ratio	**-0.834**	0.060
Instructional expenditures per pupil	**0.890**	0.304
Revenue per pupil	**0.829**	0.327
Average teacher salary	0.088	**0.832**
Average central administrator salary	-0.251	**0.748**
Average campus administrator salary	-0.275	**0.678**
Superintendent pay	-0.416	**0.718**
Average support staff salary	-0.328	**0.627**
Eigenvalue	4.457	3.014
Percent of variance	40.52%	27.40%

Table 2: Factor Analysis of Environmental Constraints

Variables	Factor	
	Student Constraints	Staff Constraints
Drop out rate, previous year	**0.803**	0.240
Percent low income students	**0.576**	0.518
Percent teachers with <5 years experience	-0.297	**0.732**
Teacher turnover rate	-0.338	**0.722**
Percent of non-certified teachers	-0.044	**0.653**
Eigenvalue	1.181	1.810
Percent of variance	23.62%	36.20%

Table 3: Representation and Performance

	Dropout rate	TAAS pass rate	College bound rate
Manager representation	0.072	0.155	0.056
	(0.056)	(0.279)	(0.625)
Teacher representation	-0.113+	0.950**	0.792
	(0.069)	(0.346)	(0.771)
Student constraints^	0.027**	-0.643***	-0.865***
	(0.012)	(0.062)	(0.134)
Teacher constraints	0.281***	-0.676***	-1.248***
	(0.024)	(0.071)	(0.139)
Student resources	-0.070***	0.299***	0.127
	(0.016)	(0.077)	(0.183)
Teacher resources	0.051***	0.207**	1.107***
	(0.015)	(0.076)	(0.170)
Lagged dep. variable	0.262***	0.762***	0.500***
	(0.020)	(0.007)	(0.011)
Adjusted R^2	0.299	0.858	0.357
Standard error	0.882	4.567	9.519
F	205.489	3026.703	248.258
N of cases	6692	6994	6226

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

^ The variable for student constraints does not include the previous year's dropout rate in the model where dropout rate is the dependent variable.

Table 4: Target Population Response to Representation

	White TAAS pass rate	Black TAAS pass rate	Hispanic TAAS pass rate
Manager representation	-0.288	2.463*	-0.281
	(0.313)	(0.881)	(0.879)
Teacher representation	-2.196***	3.483***	1.760**
	(0.069)	(1.117)	(0.725)
Student constraints^	-0.781***	-0.910***	-1.100***
	(0.067)	(0.204)	(0.129)
Teacher constraints	-0.642***	-0.799***	-1.252***
	(0.074)	(0.201)	(0.133)
Student resources	0.311***	0.420	0.862***
	(0.084)	(0.337)	(0.178)
Teacher resources	0.514***	1.159***	0.547***
	(0.083)	(0.227)	(0.159)
Lagged dep. variable	0.651***	0.597***	0.543***
	(0.008)	(0.012)	(0.010)
Adjusted R^2	0.746	0.682	0.651
Standard error	4.949	10.390	9.109
F	1453.621	661.852	847.602
N of cases	6899	4309	6342

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