DIVERSITY, REPRESENTATION & PERFORMANCE:

EVIDENCE ABOUT ETHNICITY IN PUBLIC ORGANIZATIONS

by

DAVID W. PITTS

(Under the Direction of Laurence J. O'Toole, Jr.)

ABSTRACT

In the past twenty years, growing percentages of ethnic minorities in the United States have led scholars to pay increased attention to the issue of diversity. While a number of convincing normative arguments for inclusion and integration have been advanced in the literature, very little research using public organizations as the unit of analysis has sought to understand the empirical impact of workforce diversity on work-related outcomes. Much of the public administration research on diversity stems from the normative view that any diversity leads to positive consequences, but theory from social psychology and organizational behavior research suggests that diversity can result in either positive *or* negative consequences, depending on the task at hand.

This study contributes to the literature on diversity in public organizations by testing the impact of ethnic diversity and representation on a series of performance outcomes. I use data from the public education policy setting to test hypotheses linking ethnic diversity and representation among both public managers and street-level bureaucrats to organizational performance. The data

consist of all Texas public school districts for each year between 1995 and 1999, and the models control for a number of environmental resources and constraints that tend to correspond to performance in public schools.

The results of the study indicate that ethnic diversity among street-level bureaucrats corresponds to lower organizational performance, while ethnic representation among street-level bureaucrats corresponds to higher organizational performance. That is, the more ethnic variation among teachers, the lower the performance in the school district, but if that variation simply matches the variation of the students in the district, the schools perform better. Manager diversity and representation were unrelated to organizational outcomes across the board, leading to the conclusion that, when it comes to representational impacts, street-level bureaucrats are much more influential than managers.

INDEX WORDS:    Diversity, Representative Bureaucracy, Ethnicity, Public management, Education policy, Organizational performance

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DAVID W. PITTS

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|---|---|
| Major Professor: | Laurence J. O'Toole, Jr. |
| Committee: | J. Edward Kellough |
| | Kenneth J. Meier |
| | Hal G. Rainey |
| | Vicky M. Wilkins |

Electronic Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
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**CHAPTER ONE**

**A CLIMATE OF DIVERSITY**

In the past twenty years, increasing ethnic heterogeneity in the United States has summoned the need to pay greater attention to diversity. Public administration research has recently considered an abundance of diversity-related issues, including ethnic integration of federal agencies (Cornwell & Kellough, 1994; Kellough, 1990; Kellough & Elliott, 1992), private vs. public sector diversity management initiatives (Dobbs, 1998), and problems with diversity program implementation (Riccucci, 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; Riccucci, 2002).

As this study will discuss, theory suggests that diversity might result in positive consequences for an organization, depending on how it is managed and whether the members of the organization can work through process-oriented difficulties (Adler, 2003). However, much of the work on diversity stems from a normative view that *any* diversity leads to positive consequences (Wise & Tschirhart, 2002). With few exceptions (Wise & Tschirhart, 2000), research has not attempted to assess the empirical effects of diversity through systematic, social science research. 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. Although case studies can be valuable tools through which to build theory, it is often difficult to know whether lessons learned from them can be generalized to other settings. As a result, such studies should be supplemented by systematic, quantitative research that better ensures external validity. Work in social psychology and organizational behavior has been using quantitative methods to test hypotheses connecting diversity and performance (Wise & Tschirhart, 2000). In the public sector, however, there is a dearth of research on some seemingly important questions. What is the impact of diversity on organizational performance? Do public programs or organizations with relatively little diversity among their personnel perform better or worse than those with more diversity? Does diversity lead to gains or losses when it comes to efficiency, creativity, or financial productivity? All of these questions, and more, await answers.

This study will examine the impact of ethnic diversity and representation on work-related outcomes in public organizations.[1] This first chapter will build a foundation on which the remainder of the study will rest. First, I will discuss trends in the workforce related to ethnicity and review evidence behind the claim that a "climate of diversity" exists in public organizations. Next, I will consider whether or not ethnic differences matter with regard to work-related outcomes and provide some theoretical bases for expecting ethnic diversity to be a relevant contributor to organizational performance. I will then provide working definitions for two of the core concepts considered in this

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[1] I will specifically examine white, African-American, Hispanic, and "other" groups. Throughout the study, I will refer to these categorizations as "ethnicities," since I am primarily interested in the cultural and social commonalities that individuals in these groups share. Of course, "white" and "black" are also categories of race, a concept that overlaps considerably with ethnicity. This study will not treat the distinction between race and ethnicity in detail, but rather use the term "ethnicity" consistently in order to avoid confusion or suggest that "Hispanic" is a category of race.

study: diversity and representation. I will close the chapter with a discussion of the research approach that this study will take.

## Ethnicity Trends in the Workforce

In 1980, whites made up 80% of the total U.S. population.[2] By 2000, that figure had decreased to only 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 (Johnston & Packer, 1990). 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 U.S. is becoming increasingly diverse on a number of dimensions, to the point that many would characterize "diversity" as the most important or socially-salient characteristic of the United States at the turn of the century. The speed at which the U.S. is becoming diverse, specifically along ethnic lines, constitutes a change that some might even consider a "shock" to the system in which public organizations operate.

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.[3] Other research has

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[2] All of these population statistics can be located at http://www.censusscope.org/us/chart_race.html. Website accessed June 9, 2005.
[3] Workforce projection statistics are available from the Bureau of Labor Statistics at http://stats.bls.gov. Website accessed June 9, 2005.

projected that the share of jobs held by whites will decrease from 76 percent in 1994 to 68 percent in 2020 (Judy and D'Amico, 1997). 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). Workforce participation among members of all ethnic minority groups is increasing, with the distance between whites and people of color shrinking. The Bureau of Labor Statistics (BLS) estimates that by the year 2008, white workforce participation will amount to 67.9 percent, followed closely by Hispanics at 67.7 percent, Asian-Americans at 66.9 percent, and African-Americans at 66.3 percent.

On the other hand, increases in workforce heterogeneity may not reach the levels predicted by BLS. The U.S. Merit Systems Protection Board (MSPB) has found that changes in workforce diversity have been much slower than the above studies would suggest (U.S. Merit Systems Protection Board, 1993). However, even if the rapidity of the change is not as stark as some might believe, there is widespread understanding, particularly at the federal level of the U.S. government, that diversity is a top issue for recruitment, retention, and management. The MSPB has noted that "the federal government needs to give unfaltering attention to programs that foster minority intake and advancement and promote good human relations" (U.S. Merit Systems Protection Board, 1993, 21, cited in Naff, 2001). Agencies appear to be paying attention, promoting increased representation of minorities at all levels, particularly management-level positions. Since 1976, the percentage of white women in federal-level management jobs (GS 13-15) has increased from 4.34 percent to 16.77 percent in 1996. The percentage of women of color has increased from 0.82 percent to 5.40

percent during that same period; men of color have increased their share from 5.65 percent to 8.94 percent. In all, these groups have increased federal sector, management-level representation from 182,734 in 1976 to 288,914 in 1996 (Naff, 2001, 41). The extent to which these changes represent a "shock" to the system in which public sector organizations operate is a question of opinion and perception. Nevertheless, the bottom line is that the public sector is becoming increasingly diverse along ethnic lines, to the extent that the MSPB, the arm of the federal government responsible for protecting the integrity of the merit system in federal employment, reiterates diversity as an important area of agency emphasis.

## Do Ethnic Differences Matter?

Attitudes and opinions about ethnic differences run the gamut between "there are significant differences" and "there are no differences at all." Some individuals, in an effort to unite people of different ethnicities and promote notions of harmony, downplay cultural differences between ethnic groups and emphasize similarities. Von Bergen et al. (2002) point out that many diversity training programs reinforce negative or outdated stereotypes about differences between ethnic groups. Delikat (1995) argues that much of the literature on diversity emphasizes incorrect generalizations, such as the notion of the self-deprecating, demure Asian, or the hierarchical, authoritarian White. Bond and Pyle (1998) note that being different is often associated with being "wrong, pathological, unknown, and scary" (p. 266). Indeed, if one is discussing ethnic differences, one might use generalizations in order to understand differences, and often generalizations become pejoratively cast as "stereotypes." There exists a social norm against

stereotyping in the United States, leading many to form an opinion that ethnic differences do not matter (MacDonald, 1993).

Despite an effort to erase or downplay ethnic differences, research has shown that one should expect differences according to ethnicity, with two prominent theories underpinning empirical efforts. The first is cultural identity theory. According to cultural identity research, one identifies with a certain culture, developing his or her "cultural identity," on the basis of socioculturally distinct characteristics. These characteristics might be immediately obvious, such as skin color, sex-specific anatomy, or other physical traits, or more subtle, such as speech pattern, vocabulary, or mannerisms (Ely & Thomas, 2001). Research shows that members of a given cultural identity group tend to share worldviews (Alderfer & Smith, 1982), norms, values, and common heritage (Cox, 1993). These shared cultural phenomena are communicated between members of a common cultural identity through spoken and written contact, rules, and language (Larkey, 1996). While research indicates that any given person might vary in the degree to which he or she shares a specific value with others of the same cultural identity (Ely, 1995; Ely & Thomas, 2001; Larkey, 1996), cultural identity theory has been a successful means of explaining why differences between ethnic groups persist, despite a changing social and political climate *vis-à-vis* race in the United States.

A second relevant theory relates to status and power. Some argue that status and power differentials in work groups explain much of the differences between majority and minority employee behaviors (Nkomo, 1992; Ragins, 1997). Alderfer (1987) theorizes that power is distributed among a series of cultural identity groups, and the result of that power distribution has important consequences for how individuals behave

at work. Ely and Thomas (2001) note, for example, that certain groups in Western society tend to be more powerful than others: men tend to occupy more positions of political and economic influence than women, whites more than minorities, the rich more than the poor, and so on. Research has shown that individuals behave differently depending on whether they perceive other actors as having more or less power and status (Ridgeway, 1991). Since individuals frequently evaluate the power of other actors on the basis of ethnicity, it is logical to expect that groups with ethnically-diverse actors will see different behaviors than groups with ethnically-homogenous actors.

## Defining Diversity

This study will consider diversity as a social-psychological phenomenon based in a sense of "likeness" and "otherness." In a group of two or more people, diversity refers to the ways in which the individuals vary on some dimension (Ely & Thomas, 2001). Research has established that humans tend to be ethnocentric, such that intergroup relationships tend to involve categorization based on available attributes, no matter how seemingly minor. As such, members of a group tend to categorize all of the other members of the group in different ways – by sex, by ethnicity, by physical attraction, and many other dimensions. This process of categorization results in behaviors that are modified, depending on the level of diversity present among the categories. That is, social categorization theory tells us that individuals will act differently in the presence of a homogenous group than they would in the presence of a heterogeneous group (Turner, 1987).

In addition to process-oriented changes in behavior, diversity can result in some substantive changes in group outcomes. Simply put, the more differences present in a group of people, the more ideas that group will have to solve a problem, create a product, or serve a population of people (Adler, 2003). The "cultural synergy" definition of diversity claims that heterogeneity within a group, when managed well, can result in contributions by each member that produce an end-result that is greater than the sum of the parts. This approach to diversity provides the theoretical lens through which the "business case" for diversity is articulated. The business case refers to the position taken by a number of management consultants and pracademics who argue that organizational diversity is important in order to serve the client of the 21$^{st}$ century (see, e.g., Thomas, 1990). These authors note that the more creative solutions present in an organization, the more likely the business will be to succeed.

Both of these foundations – social categorization theory and cultural synergy theory – are based in an idea of diversity as a number of variations among parts of a whole. This is important, since a number of definitions of diversity are more limited. For example, when people hear the word "diversity" they often think of dyads: majority vs. minority, black vs. white, or domestic vs. foreign. However, diversity is much more nuanced, since differences can exist, for example, between "minority" groups. Operationalizing diversity as the percent of minorities in a sample misses the key differences that might exist between those who come from minority backgrounds. This study will formulate a quantifier of diversity that taps into the fact that differences exist between all ethnic groups, not just between whites and minorities. This study will not, however, consider other dimensions of diversity besides ethnicity. Research shows that

the relationship between one dimension of diversity and work-related outcomes is not generalizable to other dimensions of diversity (Wise et al., 1997), so the results of this study should not be taken as evidence for the relationship between sex, disability status, or any other dimension of diversity, and performance.

**Defining Representation**

A related but clearly different concept is that of representation. 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.

This basic idea was expounded upon throughout the following 60 years, thus leading to a fruitful research literature seeking to understand whether bureaucracies that "looked like" those they served would be more effective than those that did not. This literature generally separates representation into two types: passive and active. Passive representation refers to the case where bureaucrats *match* the target population they serve on some dimension of diversity. For example, if a target population is comprised of 25% each whites, African-Americans, Hispanics, and Asian-Americans, and the corps of bureaucrats serving those citizens is also comprised of 25% each whites, African-

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Americans, Hispanics, and Asian-Americans, then the agency is said to be passively representative.[4]

Active representation, on the other hand, considers whether an individual working in government will advocate for the rights and needs of those he or she "looks like" or represents. For example, a school district might employ the same proportion of black teachers as the proportion of black students that it educates (passive representation), but active representation would consider whether those teachers advocated for black student rights, worked to ensure the black students succeeded, and brought shared cultural values to bear on the students' education. Research has sought to understand what is necessary to translate passive representation into active representation; that literature is reviewed in Chapter Two.

The question of whether representativeness drives performance impacts is also under scrutiny in this study. However, I do not consider the mechanisms necessary for translating passive into active representation. Rather, I seek to understand whether the relationship between ethnic representation and performance is similar to the relationship between ethnic diversity and performance. My main goal is to illustrate that representation and diversity, two concepts that often are not clearly differentiated by those working in the public management literature, are in fact two discrete ideas about workforce composition. Diversity refers to variation among parts of a whole, wherein the composition of the target population is wholly irrelevant. Representation refers to whether the bureaucrats match the target population on some dimension of diversity, wherein the overall variation along that dimension is wholly irrelevant. The two concepts

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[4] The concept of representation ignores the distribution of different groups both within the organization and within the groups formed. These issues are relevant to the study of representative bureaucracy, but I am unable to treat them in a meaningful way in this study.

are, however, somewhat related. For example, as diversity increases, presumably representation increases as well. However, if diversity increases past the point of proportional representation, then representation will become unbalanced again, leading to a curvilinear relationship. A question for the field is whether diversity that goes beyond representation is a good or bad thing *vis-à-vis* performance, and while this study is not in a position to investigate that specific issue, it will test the relationships between diversity, representation, and organizational performance, using quantitative data.

**Approach of the Study**

This study will undertake to answer three sets of research questions, the hypotheses for which will be generated at the end of the next chapter. The first set of questions relates to the impact of ethnic diversity on performance outcomes. Does ethnic diversity affect organizational performance? If so, does greater diversity lead to better or worse performance? Does diversity among street-level bureaucrats and executive-level managers affect performance in different ways? The second set of questions relates to the impact of ethnic representation on performance outcomes. Does ethnic representation affect organizational performance? If so, does accurate representation result in better or worse performance? Does representation among street-level bureaucrats and managers affect performance in different ways? Do diversity and representation affect performance differently? The third set of research questions relates to how different subsets of the target population respond to organizational diversity and representation. For example, do whites in the target

population respond to diversity and representation more or less strongly than minorities in the target population?

In the next chapter, I will review three relevant literatures: research from organizational behavior and social psychology on diversity effects, research from public administration and political science on representative bureaucracy, and research from education, economics, and public policy on education policy. In Chapter Three, I will discuss the methodology that I plan to use in order to investigate the above-mentioned research questions, including formulation of the model and operationalization of the variables. The following three chapters will all consider the results of the empirical analysis. In Chapter Four, I will discuss the relationship between ethnic diversity and performance, in Chapter Five, I will discuss the relationship between ethnic representation and performance, and in Chapter Six, I will discuss how different subsets of the target population respond differently to ethnic representation. Chapter Seven offers conclusions and recommendations.

**CHAPTER TWO**

**WHAT DO PEOPLE TALK ABOUT WHEN THEY TALK ABOUT DIVERSITY?**

**REINING IN SOCIAL SCIENCE RESEARCH ON ETHNICITY**


Research on ethnicity crosses all major social science disciplines. Specialists in sociology, psychology, political science, and economics focus their research on questions of ethnicity, and subfields relating to diversity flourish in interdisciplinary and applied areas like business administration, public administration, social work, and education. It is indeed difficult to pinpoint the research necessary (and sufficient) to include in a review of the literature for a study linking ethnicity and organizational performance. I have chosen three broadly-configured areas of research that are arguably most applicable to this specific research topic. First, I will discuss the literature on "diversity effects" that is drawn primarily from organizational behavior and social psychology. Then, I will outline the history of research on representative bureaucracy, an area of research conducted almost exclusively in the realms of political science and public administration. Finally, I will discuss the education policy research on ethnicity, a loosely-configured stream of work drawn from economics, social work, and education. Within each section, I will identify the hypotheses that the literature suggests (see Table 2.1). These will then be connected to a research design for systematic analysis in Chapter Three.

**Diversity Effects**

No research using public sector organizational data has assessed the impact of diversity on performance outcomes (Wise & Tschirhart, 2000). With regard to ethnicity as a social phenomenon, the bulk of research comes from psychologists, sociologists, and those interested in education policy (see, e.g., Blau, 1977; Hallinan & Smith, 1985; Phinney, 1996). Many characterize research on ethnic diversity in organizations as being relatively lacking, although it is much more prevalent in organizational behavior or "generic management" research than in the public sector literature (see, e.g., Alderfer & Thomas, 1988; Cox & Nkomo, 1990; Nkomo, 1992;). Some researchers have characterized research on diversity as moving away from a focus on ethnicity and closer to interest in functional and educational diversity (Williams & O'Reilly, 1998), but a recent meta-analysis found that performance studies using an ethnicity variable outnumbered studies of any other diversity dimension (Wise & Tschirhart, 2002). It remains clear, however, that there is much to be understood about how diversity operates specifically in the public-sector context. The following section will review both the theoretical and empirical literature relating ethnicity to performance in the work setting.

*Theories of Diversity*

A large share of the theoretical underpinnings relating diversity to performance stems from basic in-group/out-group psychology. Three general clusters of theory exist: social identification and categorization theory, similarity/attraction theory, and information and decision-making theory. These three sets of theory are almost always

used as foundations for studies linking ethnic diversity and some measure of group/organizational outcomes. Unfortunately, these theories do not line up consistently with each other on one hypothesis. Rather, two of the theories (social identification and categorization theory, similary/attraction) predict that ethnic diversity will have a negative impact on outcomes, while the third (information and decision-making) predicts a positive relationship. I will review the basic tenets of each theory below.

### Social Identification & Categorization Theory

Much of the research on diversity effects, if not the majority, predicts a negative relationship between diversity and performance that is premised on faulty work processes. As a group becomes more and more diverse, breakdowns in communication, coordination, and cohesion make it harder for members to work together effectively. These process-oriented difficulties prevent the group from producing a final product, solution, or idea that is on par with one that would be produced by a group that did not fall prey to the same procedural difficulties (see, e.g., Tajfel, 1981; Turner, 1982, 1987).

Social identification begins with the assumption that each individual wishes to maximize his or her self-esteem. In order to ensure high self-esteem, individuals engage in a series of social comparisons with others. These self-comparisons involve individuals placing themselves, and others, into a series of categories along organizational, religious, gender, ethnic, and socioeconomic lines, among others. This process leads each individual to establish his or her social identity, with that identity defined as one's membership in a given group of different categories. Given the initial

assumption – that an individual does all of this in order to maintain a high level of self-esteem – it follows that individuals will deem the categories in which they belong as "good" (often called the in-group) and the categories in which others belong as "bad" (the out-group). Empirical research has shown that individuals often (falsely) attribute negative characteristics to out-group members as part of this process, believing the out-group to be comprised of individuals who are less trustworthy, honest, cooperative, or intelligent (Brewer, 1982; Stephan, 1985; Tajfel, 1982).

The process of categorization often involves physical traits such as gender, ethnicity, and age (Messick & Massie, 1989). Given that membership in the out-group is seen as a deficiency, this classification often results in individuals assuming those from different ethnic backgrounds are either inherently "worse" than they are, or at the very least, untrustworthy (Loden & Rosener, 1991). Social identification and categorization theory, then, assumes that individuals quickly stereotype and make judgments about those from other groups. In a diverse work team or organization, there are many more out groups than in groups, a pattern which is expected to cause heightened problems with trust, communication, and cooperation. As a result, work processes will be made much more difficult, thus causing the final product, idea, or solution to be weaker. This theory, then, suggests a negative relationship between organizational diversity and work-related outcomes.

<u>Similarity/Attraction Theory</u>

The similarity/attraction stream of research is predicated on the notion that similarity in attributes, particularly demographic variables, increases interpersonal

attraction and liking (Byrne et al., 1966). Individuals with similar backgrounds may find that they have more in common with each other than with others from different backgrounds, making it more comfortable for them to work together and collaborate toward producing a product or solving a problem. Similarity allows one to have his or her values and ideas reinforced, whereas dissimilarity causes one to question his or her values and ideas, a process that is likely to be unsettling. Research has shown that in a situation where an individual has the opportunity to interact with one of a number of different people, he or she is most likely to select a person who is similar (Burt & Regans, 1997; Lincoln & Miller, 1979).

That one is likely to be most attracted to those with similar attributes yields clear predictions for the relationship between organizational diversity and work-related outcomes. Early research using the similarity/attraction concept found that dissimilarity led to a lack of "attraction" to others that manifested itself through decreased communication, message distortion, and communication error (Barnlund & Harland, 1963; Triandis, 1960). As with social identification and categorization theory, similarity/attraction research would predict that high levels of diversity in an organization or on a work group are likely to lead to faulty work processes. These faulty work processes will, in turn, lead to weaker performance.

<u>Information & Decision-Making Theory</u>

The stream of research on information and decision-making in groups is predicated on the notion that the composition of the work group will affect how the group processes information, communicates, and makes decisions (Gruenfield et al., 1996;

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Wittenbaum & Stasser, 1996). One might expect, given the orientation of the first two theories of group interaction, that this theory would also predict a negative relationship between diversity and outcomes. If similarity/attraction theory and theories of social identification and categorization tend to argue that diversity will cause breakdowns in collaboration and communication, then it would seem to follow that diversity would specifically cause problems in information generation and decision-making.

However, the literature on information and decision-making in groups tends to show that, for these two specific functions (producing information and making decisions), the faulty processes that result from high levels of heterogeneity are overcome by benefits gained by more creativity, a larger number of ideas, and a larger pool of knowledge (Tziner & Eden, 1985). Research has shown that, even in situations where diversity has a clearly negative impact on work processes, the increase in information available to the group that comes from diversity is enough to offset process problems (Ancona & Caldwell, 1992; Jehn et al., 1997; Zenger & Lawrence, 1989). The idea that diversity brings a number of new perspectives to the table, making it possible for an organization to be more effective, has served as the basis for a number of claims that diversity is a strength and resource for organizations (see, e.g., Adler, 2003; Dobbs, 1998; Thomas, 1990).

The theory is not quite so straightforward, however, and it is important to consider the type of task when determining whether one might rely on information and decision-making research to predict a positive relationship between diversity and outcomes. For example, a routinized task that involves little discretion or group interaction is likely not to benefit from diversity (Adler, 2003). Since more information,

knowledge, and creativity are likely to be of little use for such a task, it seems most probable that these substantive benefits will not be enough to offset the faulty work processes that will result from group heterogeneity. Rather, diversity is most likely to provide positive results when the task is to solve a complex problem, generate a set of creative ideas or innovations, or produce a new product. In these cases, the more information and viewpoints that are present, the more likely the group will be to come to an optimal solution.

A second caveat, and one that applies directly to this study, is that most of the research on information and decision-making in groups is based on diversity of education and function, not ethnicity (Ancona & Caldwell, 1992; Bantel & Jackson, 1989; Pelled et al., 1997). In fact, there is very little work that uses information and decision-making theory to produce a positive hypothesis for ethnic diversity and performance. Cox et al. (1991) use the individualism/collectivism value divide to suggest that ethnic diversity creates a variety of perspectives that will benefit organizations and produce synergies. A handful of other studies use the same framework – differences in values that run along ethnic lines – to test hypotheses related to information and decision-making, but the literature is fairly shallow in this area (McLeod & Lobel, 1992; Watson et al., 1993). While this theoretical stream does suggest a positive relationship between diversity and performance, it is a weak hypothesis and one that should be approached with caution.

*Empirical Research on Diversity Effects*

Perhaps the earliest study on record that examined ethnicity and work-related outcomes was conducted in 1958. Katz et al. studied the interpersonal relations between blacks and whites in a laboratory study comprised of 18 four-person teams. Each team included two white students and two black students. The study used open and positive communication as the outcome of interest. Not surprisingly, white students were more likely than blacks to communicate, and when they did communicate, they tended to direct their comments to each other, not to the black students in their team. These results likely reflect the status differences between blacks and whites during the 1950s, something that makes any older study relating ethnicity to work-related outcomes questionable. Other early studies (Hoffman et al., 1962; Hoffman & Maier, 1961; Levy, 1964) suffer from the same generalizability issue. When considering a diversity dimension like ethnicity that is so politically and socially-charged, it is important to consider the social context when determining whether any given study remains relevant.

More recent research on diversity effects has found mixed results – some studies show a positive relationship between ethnic diversity and performance, while others show a negative relationship. Studies showing a positive relationship have come from both laboratory and field experiments. For example, Watson et al. (1993) created 36 groups of students in a management course and asked them to engage in a series of case studies. Groups with high levels of diversity tended to consider a wider range of perspectives and alternatives than groups that were relatively homogeneous. McLeod and Lobel (1992) gave a brainstorming exercise to a large sample of college students,

both graduate and undergraduate, organized into groups. While the diverse groups did not tend to produce a larger number of ideas or solutions, the ideas and solutions they produced were of higher quality than those generated by homogeneous groups. Two recent field studies provide evidence for a positive relationship between diversity and performance as well. Mullen & Cooper (1994) found that in-groups and out-groups changed over the course of the task, such that the initially-created groups, based on task-irrelevant issues, disappeared, and new groups arose that were more task-specific. They found that in-groups and out-groups that were specifically related to the task were not detrimental to the organization in achieving positive outcomes. O'Reilley et al. (1997) studied an organization with a reputation for valuing employee diversity, finding that, within the organization's work teams, diversity created positive, performance-related results.

Other studies have shown a negative relationship between diversity and performance. Many of these studies use individual performance evaluations as the outcome of interest, and the bulk of the studies show that, in diverse units or organizations, employees are less likely to receive positive performance evaluations from supervisors (Greenhaus et al., 1990; Lefkowitz, 1994; Sackett et al., 1991). Greenhaus et al. (1990) also found a relationship between organizational diversity and lower career satisfaction, lower organizational commitment, and employee perceptions of unlikely promotion. Tsui et al. (1992) found that, in diverse work teams, members of the minority, or the primary out-group, were less committed to the organization, more likely to be absent from work, and more likely to be in active search of other employment.  Kizilos et al. (1996) found that diverse groups exhibited less prosocial

behavior than homogeneous groups, and Pelled et al. (1997) provide evidence that high levels of ethnic diversity are related to more emotional conflict in work teams. Riordan & Shore (1997) found that, in diverse work groups, employees are less likely to be committed or perceive that they are likely to advance in the organization. Studies showing a negative relationship between ethnic diversity and performance seem to be just as prevalent as those showing a positive relationship, causing the literature to sprout out in two different directions and making it difficult to articulate hypotheses.

*Hypotheses*

Given the above research on diversity effects, it is difficult to formulate credible hypotheses relating diversity to performance outcomes. Two streams of theory suggest diversity will harm organizations, while a third suggests it will create benefits. The empirical research shows both positive and negative relationships. The bottom line is that diversity makes it difficult for people to work effectively together. If a performance outcome requires employees to work extensively with one another, then that situation is perhaps <u>more</u> likely than others to see a negative diversity effect. If a performance outcome requires employees to work relatively independently, then it is <u>more</u> likely than others to see a positive effect, since the benefits of increased knowledge and information will not be outweighed by process difficulties.

It seems most likely, given the above literature review, that one would hypothesize a negative relationship for tasks requiring collaboration and coordination. As mentioned previously, most of the research on information and decision-making theory is based on functional and education diversity, not ethnicity. That makes it a

weak theory on which to rest a study of this size, especially given that two other more prominent theories (similarity/attraction and social categorization and identification) suggest a different (negative) relationship. Furthermore, while I have not engaged in formal meta-analysis, it appears that the majority of empirical studies linking ethnic diversity to performance show a negative, not positive relationship. However, if the task itself requires little to no coordination, there is no reason to expect a negative relationship, since the theoretical perspectives outlined above are based explicitly in process-oriented difficulties. As a result, I frame the following hypotheses relating ethnic diversity to performance (Table 2.1):

$H_1$:    Greater levels of ethnic diversity among public managers and street-level bureaucrats will lead to <u>lower</u> organizational performance, when the task requires significant coordination and collaboration.

$H_2$:    Greater levels of ethnic diversity among public managers and street-level bureaucrats will lead to <u>higher</u> organizational performance, when the task does not require significant coordination and collaboration.

## Representative Bureaucracy

As mentioned briefly in Chapter One, the representative bureaucracy stream of research was born in 1944, when Donald Kingsley coined the term in reference to the British civil service during World War II. Kingsley observed that the British civil service had been particularly responsive to the political party in power at the time, and Kingsley argued that this was a result of shared economic background – both groups came predominantly from the middle class. The root of his argument was that there were

psychological similarities and processes that led the civil service to be more agreeable and cooperative than might have been the case had the civil service come from a different economic background. Kingsley did not address whether this theory could be expanded to apply in other parts of the world, nor was his argument particularly well-conceived (Krislov, 1974; Meier, 1975), but he did call into relevance the human composition of the bureaucracy, which at that time had not been considered a particularly relevant or important piece of the governance puzzle.

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 would be 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 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 the entire group of people.

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*Passive and Active Representation*

Mosher (1982) identified representativeness as consisting of two parts: passive, or descriptive, representation, and active, or substantive, representation. Pitkin (1967, 67) describes passive representation as "being something rather than doing something," or defining representation as bureaucrats reflecting generally the composition of the people that they serve. Passive representation is easy to study and quantify; either the people who work for government "match" the target population on key demographic variables, or they do not. By contrast, active representation refers to bureaucrats using their discretion toward more representative and equitable outcomes for those they represent. Pitkin (1967, cited in Keiser et al., 2002) distinguishes the two by asking when bureaucrats might "stand for" their demographic group, and when bureaucrats might "act for" their demographic group.

Some early scholars assumed that passive representation would naturally lead to active representation, but later work would be skeptical of such a tidy linkage, seeking to understand the factors and processes that would lead to passive representation being translated into active representation. Several requirements have been identified. First, bureaucrats must have discretion in order to act on a given policy issue. If the structure of work is so prescribed as to afford little actual decision-making by the bureaucrat, it is impossible that he or she would have occasion to act in the best interests of a specific group in the first place (Meier, 1993a). Second, the policy area or decision must be salient to the demographic group in question (Meier, 1993a; Selden, 1997). For example, if the policy area is one that relates explicitly to women, such as

reproductive rights, then it does not matter if a bureaucrat is African-American, because the policy area does not delve into needs that are particular to African-Americans.

Other factors make it more likely that passive representation will be translated into active representation. For example, if an organization's mission relates explicitly to a given group – reference the above example of women and reproductive rights – then active representation should straightforwardly occur (Keiser et al. 2002). In addition, if the mission puts bureaucrats in the role of advocates, then active representation is likely to occur regardless of the level of passive representation, since all of the employees will be socialized to fight for the rights of the specific target population that the agency is mandated to serve (Meier & Nigro, 1976; Romzek & Hendricks, 1982; Selden, 1997). It may also be necessary for a specific group to gain a critical mass in an organization before active representation can occur (Meier, 1993a). For minority bureaucrats to have the power to take on an advocacy role for their group, they must be present in large enough numbers to do so without risk of marginalization. Other research has shown that presence of the minority group in the upper levels of the organization and professionalization can lead to active representation as well (Keiser et al., 2002).

*Empirical Findings*

Most of the recent research on representative bureaucracy deals with ethnic and racial representation.[5] 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

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[5] 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.

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 a hypothesis forwarded by 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 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.

*Redistributive Effects & Performance*

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[6], this study provides evidence that representation may not lead to gains, as Meier et al. (1999) had suggested in another policy context.

Unfortunately, there is very little theory to guide research attempting to link representation with outcomes or performance measures. Note that, for diversity, social psychologists and organization theorists have formulated well-conceived and tested theories that link diversity in organizations with performance fairly solidly. For representation, there is much less to go on. It seems intuitive that organizations might have a level of practical need for diversity, and matching that would lead to positive outcomes. For example, organizations with relatively little heterogeneity in the target population might see little pragmatic need to make themselves diverse. Organizations with higher levels of heterogeneity in the target population, however, might see a larger need to make their employees diverse in order to effectively respond to the needs of citizens. A variable constructed for representation allows one to test this hypothesis, based as it is on common sense instead of well-established theory.

*Hypotheses*

Given that the field has seen only two studies linking representation to performance, it is difficult to accurately and confidently frame hypotheses for testing. However, it seems logical that representation would lead to higher performance, since matching the diversity in the target population with diversity in the organization would allow the organization to most efficiently respond to citizen concerns. Moreover, there is limited evidence that all members of the target population benefit from representation

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[6] 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.

(Meier et al., 1999), and substantial evidence that individual subgroups benefit from representation (Meier, 1993b; Meier & Stewart, 1992; Hindera, 1993a, 1993b; Selden, 1997). Only one study (Andrews et al., in press) finds a negative relationship between representation and performance, but the measure of performance (citizen satisfaction) is somewhat questionable, and that study could not parse out whether it was racism or more substantive dissatisfaction that led to the negative relationship. As a result, it seems most reasonable to expect that representation will lead to positive consequences for groups taken as a whole, and the impact of street-level bureaucrats to be stronger than the impact of managers (Meier & Stewart, 1992; Meier, 1993b). For groups individually, following Meier et al. (1999), I do not expect positive relationships for minority groups to come at the expense of Anglo students. However, it seems reasonable that gains for minority groups will be higher than gains for Anglo students. I frame the following hypotheses from the representative bureaucracy literature:

$H_3$: Higher ethnic representation among public managers, street-level bureaucrats, and the organization's target population will lead to <u>higher</u> organizational performance.

$H_4$: The impact of representation on organizational performance will be stronger at the street level than at the managerial level.

$H_5$: 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.

**Ethnicity and Education Policy**

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. This study is not meant to contribute explicitly to the literature on ethnicity in schools. Rather, it is meant to contribute to the public management literature on diversity in organizations, with schools as the data source being used to test some theoretical propositions. As such, I have spent the bulk of the literature review considering the literature on representative bureaucracy and diversity effects, since it is toward those literatures that I see this study contributing. However, I will briefly outline some of the recent research on ethnicity in the public school setting, in order to provide some context for this study. This literature will not be used to develop any hypotheses.

Much of the education policy literature adopts a representative bureaucracy-like frame, focuses 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.

While, for my study, this literature does not generate any hypotheses on its own, it does provide further rationale for the idea that minority groups are *more* likely than white students to benefit from proportional representation, even if the white students benefit as well. That is, even if Meier et al. (1999) are correct that there are no

redistributional effects that stem from proportional representation, one should expect the minority students to benefit more than the majority students (see Hypothesis 5).

## Conclusion

In seeking to understand what people talk about when they talk about diversity, I have outlined three distinct streams of research from several overlapping and interdisciplinary areas of study. The hypotheses formulated above that appear in Table 2.1 are not as tidy and straightforward as might be ideal, but that is one reason why ethnicity is such an interesting area in which to conduct research – there are simply many more questions than answers. In the following chapter, I will outline the research design for this study and provide a blueprint for the analyses that will appear in Chapters Four, Five, and Six.

**Table 2.1 Hypotheses**

$H_1$:     Greater levels of ethnic diversity among public managers and street-level bureaucrats will lead to <u>lower</u> organizational performance, when tasks require extensive coordination and collaboration.

$H_2$:     Greater levels of ethnic diversity among public managers and street-level bureaucrats will lead to <u>higher</u> organizational performance, when tasks do not require extensive coordination and collaboration.

$H_3$:     Higher ethnic representation among public managers, street-level bureaucrats, and the organization's target population will lead to <u>higher</u> organizational performance.

$H_4$:     The impact of representation on organizational performance will be stronger at the street level than at the managerial level.

$H_5$:     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.

# CHAPTER THREE

# DATA, MODEL, AND MEASURES

In this section, I will outline the models through which I will systematically test the hypotheses derived from the literature in Chapter Two. First, I will discuss the data that I will use to quantitatively test the hypotheses. Second, I will explain the statistical models and methods that I will use, followed by operationalization of all of the variables that I will use in the analyses.

## 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 diversity effects 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 consist, of

course, of 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. Ethnicity 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.

There are also some indications that results from this study should be taken with caution. First, the public education policy setting is one in which street-level bureaucrats have considerable discretion. It may not be possible to generalize these findings to policy settings that are more routinized and where street-level bureaucrats simply process forms or operate in ways that it would be impossible for them to alter their behavior based on what they believe might benefit members of the target population. Second, public education is a heavily professionalized area. Employees at all levels of public schools – teachers through superintendents – must be certified and, in some cases, pass examinations in order to be employed. Other policy settings with looser regulations or without certification requirements might see different results.

In addition, the unit of analysis in this study is the school district, not the school, which necessarily introduces some amount of measurement error. These data would ideally be available at the school level, since that is where almost all of the interaction

between the relevant groups takes place, and by using data at the district level, it is possible that there is an overaggregation problem. The measurement error that results from this, however, is error that would cause results *not* to be significant. That is, if schools within a district segregate by ethnicity, forming a district that looks diverse but is actually homogeneous in each of its communities, then there will be behavior that reflects homogeneity, but measurement that reflects heterogeneity. This would tend to bias the results *against* being statistically significant, so it actually creates a tough test for my main independent variables.

Finally, there is some question as to whether teachers and managers in this context interact to the extent that they constitute a "work group" in the tradition of the organizational behavior and social psychology literature on which this study is based. There has been no research, qualitative or quantitative, that has examined the specifics of interaction between teachers and managers. Anecdotal evidence suggests that, for managers, interaction across schools and between managers within schools is fairly significant. Centrally-located administrators, such as superintendents and assistant superintendents, interact substantially over the course of the work week, working together on curricular issues, budgetary issues, and human resources matters.

For teachers, it is less clear that there is enough interaction to warrant classifying them as a "work group," although it seems reasonable that their interaction would rise to a level where ethnic diversity might have an impact. For example, teachers interact both informally and formally during their work day. Teachers might converse in the teacher's lounge before school, after school, and during their preparation periods. Teachers are likely to talk to one another while eating together at lunch, and teachers who work

together to supervise extracurricular activities might also interact informally in those duties. Teachers with classrooms next to one another might talk while students are changing classes. During this time together, conversation might naturally steer toward topics related to work, since that is what all of the teachers would have in common. Teachers might then have an opportunity to talk about teaching techniques, innovations in the classroom, problems they might have with specific students or groups, or ways in which they might help the students to perform well on standardized tests.

The ways in which teachers might interact in a formal manner go beyond this.[7] For example, teachers often meet as departments, either once monthly or more, during which teacher needs, ideas, and problems are discussed. Teachers frequently meet together as a faculty to discuss school-wide issues. Principals often appoint groups of teachers to task forces and committees aimed to solve particularly difficult school problems, such as dropouts, low test scores, or low college attendance rates. While some teachers might participate more than others in such meetings, and such meetings might be more prevalent in some schools than in others, it seems reasonable to conclude that teachers do not operate in a vacuum – they do not go from their car to their classroom in the morning, and then directly back to their car in the afternoon, without communicating and collaborating with other teachers. Again, the extent to which teachers interact is an empirical question to which there has been no answer in the research literature, but anecdotal evidence suggests interaction that would indicate that

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[7] A significant amount of qualitative information about different school initiatives can be found on the Texas Education Agency website (http://www.tea.state.tx.us, accessed June 9, 2005). While this study cannot identify and analyze the different programs in a systematic manner, a glance through the website does provide significant evidence that both high and low-performing schools engage in a number of programs, many driven by grants, that require teachers to serve together on committees and task forces.

teachers constitute a form of "work group" akin to those described and analyzed in the literature presented in Chapter Two.

**The Models**

In order to test hypotheses linking ethnic diversity, representation, and performance, I will use three sets of models (Figure 3.1). First, in order to test the relationship between ethnic diversity and organizational performance, I use three different measures of performance as dependent variables (see 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 diversity among managers, as well as a separate variable measuring ethnic diversity 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.

In order to test the relationship between ethic representation and organizational performance, I will use the same three measures of organizational performance. The representation models will be almost identical to the diversity models; the only difference will be that the variables measuring ethnic diversity among managers and teachers will be replaced by variables measuring ethnic representation among those two groups. All other independent variables remain the same. Finally, for the hypotheses linking target population response to diversity, I will use a series of

dependent variables that test how specific subsets of the target population respond to diversity. All independent variables on those models are the same as in the diversity models.

It might have been interesting to include diversity and representation in the same model, particularly since one of the goals of this study is to compare the impacts of diversity and representation on performance. However, two issues prevent this from being a possibility. First, theory simply does not suggest that diversity and representation should be side by side in explanatory models like the ones that I am creating, and doing so would raise questions about whether the model was accurately specified. Second, the variables innately include the same concepts – manager and teacher ethnicity – and including both diversity and representation in the same model is somewhat duplicative. Indeed, the ethnicity variables tend to be correlated at moderate levels, and exploratory analyses including both diversity and representation in the same model tended to show multicollinearity and repressed significance levels. As a result, I have chosen to create separate models for diversity and representation.

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. The results of the models will be presented in Chapters Four, Five, and Six.

**The Variables**

In the following sections, I will operationalize all of the variables that I will use in this study. First, I will operationalize the two main independent variables of interest – manager and teacher diversity, and 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 impact of serial correlation: the lagged dependent variable and the dichotomous variables for the years of data.

<u>Ethnic Diversity</u>

In order to test for the effects of diversity, I use the Blau (1977) Index of Variability, a common means of measuring variation in categorical data, to compute the overall variation in ethnic makeup of both managers and street-level bureaucrats (Figure 3.2). The Blau index allows one to figure the level of ethnic 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 infinite number of categories) would receive a score of 1.[8] This variable deals explicitly with variation among the ethnic groups in the organization; the characteristics of the target population are not considered in this measure, nor should they be. This variable operationalizes diversity as a concept of variation that could make processes in work groups more difficult. As mentioned in the last chapter, variation in work groups of the

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[8] The upper limit for my data would be 0.75, since there are only four categories.

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sort that this variable will measure tends to make it harder for group members to communicate effectively, trust one another, and make effective decisions. This variable, by tapping into the extent to which the group is "varied" or diverse, will get at the likelihood that such problems inherent in the work process (as opposed to the substance of the work the group might produce) are brought to bear.

In this sample, the diversity measure for managers varies from perfect homogeneity (0) to 0.70, with a mean of 0.35 and a standard deviation of 0.18 (Figure 3.2). This indicates that ethnic diversity tends to be moderate on the average, with cases that extend almost to the practical extremes of the variable. To illustrate, an organization that scored at the mean for this sample (0.350) might employ 80% whites, 10% African-Americans, 5% Hispanics, and 5% from all other categories (Figure 3.2). For the street-level bureaucrats in this sample, the diversity measure varies from 0 to 0.64, with a mean of 0.14 and a standard deviation of 0.14. It is not surprising that ethnic diversity is lower among street-level bureaucrats. The organizations in my sample employ many more teachers than managers, so targeted recruitment of qualified members of underrepresented groups is much more easily accomplished for managers.

While I include separate variables for managers and street-level bureaucrats in each model, this does not necessarily mean that the impacts of each are limited to those shown by their respective variables. There has been an interesting line of research in recent years on multilevel governance (see, e.g., Meier et al., 2004), and this research tends to show that actors at one level of the governance structure have an effect on (and are affected by) actors at other levels, For example, managers likely

affect what teachers do in the public education setting, through formulating policies, choosing whom to hire, and choosing faculty to lead special initiatives. The results in the following chapters, then, should be taken with some caution, since I have not set up multilayered models that would permit one to tidily disentangle the impacts of each group.

<div align="center">Ethnic Representation</div>

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 manager representation variable (R) and a teacher representation variable (S) (Figure 3.3). The first of these involves the relationship between managers – principals, assistant principals, superintendents, and assistant superintendents – and students. Like the Blau Index, 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.

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 - √ [ (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.

<u>Performance Indicators</u>

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 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. In order to test the relationship between diversity, representation, and performance in a general sense, I use three indicators. I will use the overall student pass rate on the Texas Assessment of Academic Skills (TAAS)[9] 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

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

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.

In order to test hypothesis 5, I will use four different performance indicators as dependent variables: the TAAS pass rate for white students, African-American students, Latino students, and all other students, taken separately (Figure 3.4). These variables, taken with the three variables used to test Hypotheses 1-4, 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 them 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

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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.

In Chapter Two, I framed hypotheses relating diversity and performance as being dependent upon whether the performance indicator reflected a process that was relatively routine or dependent upon collaboration and coordination. Of the three performance indicators used to test diversity questions, I classify two of them as being "collaboration and coordination intensive" and one as being more routine. For the TAAS graduation exam, the process leading up to the outcome is not one that requires substantial coordination and collaboration. While schools may choose to engage in workshops or professional development activities specifically related to the TAAS exam, the work involved in preparing students for it takes place primarily in the classroom. As such, teachers do not have to work together to coordinate programs or activities, or even communicate back and forth. Rather, they simply do the best they can to prepare students for the TAAS exam while in their class.

On the other hand, the other two performance indicators reflect more substantial coordination and communication. There is an emphasis in Texas on keeping students from dropping out of school, so much that the Texas Education Agency publishes a quarterly newsletter with "best practices" for dropout prevention programs. A glance through these programs reveals that a number of schools sponsor supplementary programs for at-risk students that involve teachers serving on task forces, committees, or "leadership teams." Almost all of these programs tend to involve teachers being as

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creative as possible to formulate strategies for keeping students in school – the bottom line is that teachers are working together, not separately, on the issue of dropouts.

The story is similar for college-bound students. Getting students prepared for the SAT and ready to go to college involves extracurricular programs that require teachers to work together. I have decided to classify this performance indicator, along with the dropout rate, as coordination and collaboration intensive, and therefore of use for Hypothesis 2. I have decided to classify the TAAS pass rate as relatively routine and of use for Hypothesis 1. I will discuss more about the different processes involved for each performance indicator in the results sections that follow in Chapters Four, Five, and Six.

<p align="center">Environmental Control Variables</p>

In order to control for environmental influences, I separated the potential contributors to performance into two categories: resources and constraints (Figure 3.5).[10] 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. The factor analysis derived two factors, on which ten of the variables loaded (Table 3.1). 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,

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

and operating and instructional expenditures per student. I created a variable for each of these using the calculated factor scores.[11]

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; 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 3.2). 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.

<u>Other Variables</u>

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

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[11] 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.

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.[12]

The following three chapters will describe the results from testing the above models. In Chapter Four, I will discuss the impact of ethnic diversity on performance outcomes. In Chapter Five, I will discuss the impact of ethnic representation on

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

performance outcomes. In Chapter Six, I will discuss how different subsets of the target

population respond to ethnicity among managers and street-level bureaucrats. I will

conclude the study in Chapter Seven.

**Figure 3.1 Model Specification**

*Diversity Model (Hypotheses 1 and 2)*

$$P_t = \alpha + P_{t-1} + M_t + T_t + X_t + Y_t + \varepsilon_t$$

*where* $\quad$ $P_t =$ $\quad$ Performance outcome
$\quad$ $P_{t-1} =$ $\quad$ Autoregressive term
$\quad$ $M_t =$ $\quad$ Manager diversity
$\quad$ $T_t =$ $\quad$ Teacher diversity
$\quad$ $X_t =$ $\quad$ Vector of environmental control variables
$\quad$ $Y_t =$ $\quad$ Vector of dichotomous variables for years of data
$\quad$ $\varepsilon_t =$ $\quad$ Error term

*Representation & Target Population Models (Hypotheses 3, 4, & 5)*

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

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

**Figure 3.2 Diversity Variable Operationalization**

$$D = 1 - \Sigma p_i^2$$

<u>Where</u>
p = Proportion of managers or street-level bureaucrats in each ethnic group
i = The number of different ethnic categories

<u>Example</u>
An organization is comprised of 80% whites, 10% African-Americans, 5% Hispanics, and 5% from all other categories. As a result, $D = 1 - [(0.80)^2 + (0.10)^2 + (0.05)^2 + (0.05)^2]$, or **0.345**. When four categories of ethnicity are used, the values of the variable range from 0 (perfect homogeneity) to 0.75 (perfect heterogeneity).

**Figure 3.3 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 3.4 Performance Variables**

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**Hypotheses 1-4**

- **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 5**

- **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

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**Figure 3.5 Environmental Control Variables**

**Environmental Resources**

- Average teacher salary
- Average central administrator salary
- Average campus administrator (principal, assistant principal) salary
- Average salary for professional support staff
- Superintendent salary
- Student-staff ratio
- Student-teacher ratio
- Taxable property value per student
- Total revenue per student
- Operating expenditures per student
- Instructional expenditures per student

**Environmental Constraints**

- Student dropout rate (previous year)
- Percentage of teachers with less than five years of experience
- Percentage of low income students in the district
- Percentage of non-certified teachers in the district
- Teacher turnover rate (previous year)

**Table 3.1 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 3.2 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% |

# CHAPTER FOUR

# RESULTS: DIVERSITY AND PERFORMANCE

In this chapter, I will outline the results of the model testing the relationship between ethnic diversity and organizational performance. In the first section, I will discuss diversity and school dropouts, followed by a discussion of diversity and TAAS scores, and then diversity and students who are college bound. I will close with a larger discussion of the findings taken as a whole, specifically in the context of the hypotheses formulated in Chapter Two:

$H_1$: Greater levels of ethnic diversity among public managers and street-level bureaucrats will lead to <u>lower</u> organizational performance, when the task requires significant coordination and collaboration.

$H_2$: Greater levels of ethnic diversity among public managers and street-level bureaucrats will lead to <u>higher</u> organizational performance, when the task does not require significant coordination and collaboration.

## Diversity and Dropout Rate

The first relationship tested was that between ethnic diversity and the percent of students in the school district who drop out of school. The results for this model are presented in Table 4.1. The independent variables used in this model include the two main independent variables of interest, manager diversity and teacher diversity. I also

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use a series of five control variables to account for environmental influences: two variables to account for resources, two variables to account for constraints, and a student diversity variable. I include seven dummy variables and a lagged dependent variable (last year's dropout rate) as a means of controlling for serial correlation. There are 6,691 cases in the sample used for this model. Some districts did not report the dropout rate, did not report the previous year's dropout rate, or were missing ethnicity data. Instead of attributing average values to those cases, they were dropped from the analysis altogether, given the size of the dataset. There did not appear to be systematic differences between those districts included in this analysis and those that were not.

These independent variables are statistically-significant taken as a whole, with an F-statistic of 193.837. They predict roughly 30% of the variance in the dependent variable, which is not an insignificant amount, given the factors that enter into a student's decision to drop out of school. Since these data are at the district level, it is impossible to take into account each individual student's situation, which would be informed by a complex set of family, neighborhood, peer, and school effects. The environmental control variables used here serve as good proxies for many of these effects taken in the aggregate, but there is much that cannot be explained by data that are not individual-level data. That these variables are able to explain 30% of the variation in school dropouts seems more than reasonable, given these data limitations.

Manager diversity does not affect the student dropout rate in a statistically significant manner. The coefficient of 0.047 indicates that manager diversity leads to slightly more dropout rates in *this* sample of school districts, but the relationship is not statistically significant, so it is impossible to assume that this finding could be

generalized to any other settings. Teacher diversity, on the other hand, is related to students dropping out. The coefficient for teacher diversity is 0.474 and statistically significant at the 0.001 level. As teacher diversity increases, the percent of students who drop out of school also increases, meaning that teacher diversity leads to lower overall organizational performance, at least on this indicator. Substantively speaking, the effect is not enormous, but bears discussion. Suppose that a district's teacher diversity index increased by 0.1 – a change that would not be surprising in smaller districts or districts experiencing significant growth. That change corresponds to an increase in dropouts of 0.05% for one given year. In an average school district of around 3,000 students, that would correspond to roughly one and a half additional students dropping out per year, or twelve over the eight year period for which these data are available. While twelve students may not constitute a crisis, it does illustrate that the impact here is not limited to mere percentages of a person. In addition, since the lagged dependent variable takes into account the previous year's performance, and thereby the impact of teacher diversity on the previous year's performance, the impact is actually even greater than this, since the lagged dependent variable is such a strong predictor of performance.

Two of the environmental control variables are statistically significant. On the resources side, student resources are statistically significant at the 0.001 level, with a coefficient of -0.062. This indicates, not surprisingly, that more student resources lead to fewer students dropping out of school. Teacher resources are not statistically significant, however, and the coefficient is slightly positive (0.015). For this sample, teacher resources actually lead to slightly more students dropping out of school, but this

is not particularly troubling, given that the variable is not significant and is included strictly for control purposes. As for constraints, teacher constraints are statistically significant at the 0.001 level, with a coefficient of 0.222. Student constraints, while not statistically significant, carry a coefficient of 0.016, in the expected direction. Finally, student diversity, while not statistically significant, leads to fewer students dropping out in this particular sample (-0.016). When including all of the environmental control variables separately, instead of reduced into factors, the results for the model as a whole and the main variables of interest change only very slightly.

The variable with the highest t-score is, not surprisingly, the lagged dependent variable.[13] Last year's dropout rate has a coefficient of 0.292 and is statistically significant at the 0.001 level. This means that last year's performance – and, by extension, all of the factors that contributed to it – is a large predictor of this year's performance. Since all of the independent variables in my model from the previous year are ultimately included in the current model, in addition to effects for which there are no data available, the dependent variable is actually showing incremental performance over the previous year. That makes it particularly difficult for other variables to reach statistical significance, but as noted in Chapter Three, it is important to include the lagged variable for both theoretical and methodological purposes.

In terms of substantive significance, the lagged dependent variable seems to have the largest impact on the dependent variable, with a standardized coefficient of 0.309. The impact of the environmental control variables varies. For example, the

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[13] All of the models in this study use a lagged dependent variable, but for each model, I conducted a separate analysis without including the lagged variable. Those analyses found that the other variables in the model tended to gain higher statistical significance and their coefficients tended to increase in magnitude.

variable for staff constraints has a very high standardized coefficient – 0.209 – but the

other three are either fairly low (student constraints at 0.015, staff resources at 0.014) or

moderate (student resources at -0.045). Teacher diversity's standardized coefficient

(0.065) is much higher than the standardized coefficient for either manager diversity

(0.009) or student diversity (-0.003), indicating that ethnicity among street-level

bureaucrats is a much larger contributor to performance than ethnicity among managers

or in the target population.[14]

Several precautions were taken to rule out methodological errors. Plotting

residuals against predicted values does not indicate any non-linearity in this model.

Tolerance values were computed for each of the independent variables in order to test

for multicollinearity. All of the values were in the normal (>0.4) range except for two: the

dichotomous variables for 1995 and 1996. Since 1995 is statistically significant anyway,

and those variables are included strictly as controls, there was no reason to take action.

A Durbin-Watson h test was conducted in order to test for autocorrelation.[15] The result

was 2.344, suggesting no serial correlation. Finally, I tested for endogeneity using a

Durbin-Hausman-Wu test. This method for testing for endogeneity involves selecting

those independent variables with which one might expect the dependent variable to be

endogenous. One then constructs models to predict those independent variables, runs

a regression, and saves the residuals as a variable. This new variable is then included

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[14] One must keep in mind, however, that managers do affect student outcomes *through* teachers, and while this model does not take into account such multilevel, indirect influences, they almost certainly occur to some extent.

[15] The Durbin-Watson h statistic is computed directly from the d statistic that most statistical packages yield with regression results. h = 1 – ( 0.5 * d ) sqrt [ n / ( 1 – n * std. error ) ]. The h statistic is better equipped to deal with the bias that results with the d statistic when using pooled time series data.

in the original model, and if it fails to reach statistical significance, one can rule out endogeneity.

One might assume that teacher ethnicity and manager ethnicity are endogenous with performance variables. Since white students tend to perform better on the criteria I use to measure performance, and teachers and managers can choose where they work, the white teachers and managers might choose to work in predominantly-white districts where students perform better and are considered "easier" to educate. Teachers and managers of color might choose to work in districts with more minority students, perhaps because they are more likely to live in those geographical areas, perhaps because they have more motivation to work with students of color, or also perhaps because those districts might more strategically recruit from people of color in hiring. As a result, performance might influence ethnicity, just as ethnicity influences performance, leading to causal paths that run both ways.

Running the Durbin-Hausman-Wu test, however, shows no endogeneity for this model. I ran regressions predicting both teacher diversity and manager diversity and included the residual variables from those regressions in the model predicting dropouts. The statistical significance of those variables was only 0.165 for managers and 0.341 for teachers, indicating that endogeneity is not an issue in the model. Despite a good theoretical argument for endogeneity in the model, this test seems to rule it out as an influence over the results.

**Diversity and TAAS Pass Rate**

The second relationship tested was that between ethnic diversity and the percentage of students in each school district who passed the TAAS graduation examination. The results from this model are displayed in Table 4.2. This model is almost identical to that used to predict the dropout rate in the previous section – I use the same main independent variables, the same set of dichotomous variables to control for time influences, and the same environmental control variables. The only difference is that the lagged dependent variable in this case is the previous year's TAAS pass rate, not the previous year's dropout rate. There were 6,993 cases included in this analysis, with no apparent differences detected between cases included and excluded from the regression.

As with dropout rate, these variables are statistically significant taken as a whole, with an F-statistic of 2845.100. They predict roughly 86% of the variation in the dependent variable, which is quite high for analyses involving social phenomena and almost triple the causal power of the model using dropout rate as the dependent variable. In a sense this should not be surprising, since teachers and managers have much more influence over whether a student passes a standardized graduation examination than whether he or she chooses to drop out of school. Teachers might "teach to the test" and drill students on material known to have been included in the TAAS exam in previous years, managers might initiate special programs aimed at students who typically test poorly, and the relationship is simply much less complex between the school and the TAAS exam than between the school and dropouts.

The results for this model are similar to the model predicting dropouts. Manager diversity is not related to students passing the TAAS exam in a manner that is statistically significant. In this sample, managers lead to slightly fewer students passing the exam, but this result cannot be used to make suggestions about any other organizations or time periods. On the other hand, teacher diversity leads to fewer students passing the TAAS exam, and that relationship is statistically significant at the 0.001 level. As teacher ethnicity becomes more diverse, fewer students pass the exam, and this occurs at a rate that is not insignificant. For example, if teacher diversity increases on the index that I have created by 0.1, the TAAS pass rate will decrease by 0.349 percentage points per year. In the average school district (roughly 3,000 students), this corresponds to 10.47 students failing the exam per year, or 84 students over the course of the years for which I have data available. That increasing teacher diversity corresponds to graduation exam results for close to 100 students in the average case illustrates the power that ethnic diversity holds over performance outcomes, and this does not even take into account the impact of the lagged dependent variable, which necessarily includes the impact of teacher diversity the previous year.

Four of the five environmental control variables are statistically significant, and all correspond to the dependent variable in the expected direction. Student resources have a coefficient of 0.255 and are statistically significant at the 0.001 level, while student constraints carry a coefficient of -0.614 and are statistically significant at the 0.001 level as well. Teacher resources have a coefficient of 0.446, while teacher constraints have a coefficient of -0.592. Both are significant at the 0.001 level. Interestingly, student diversity is not statistically significant here (sig.=0.139), although diversity among

students does lead to a lower TAAS pass rate in this particular sample. As with the model for dropouts, including these variables in the model separately does not yield even marginally different results for any of the independent variables of interest.

The lagged dependent variable is statistically significant at the 0.001 level and carries a coefficient of 0.749. As last year's TAAS pass rate increases by one percentage point, this year's TAAS pass rate increases by almost an entire percentage point. This is also the variable with the largest standardized coefficient (0.841). The environmental constraint variables, teacher resources, and teacher diversity all had moderate impacts on the dependent variable, with standardized coefficients in the +/-0.030 to +/-0.040 range. Student resources, student diversity, and manager diversity had relatively small impacts, with standardized coefficients all at 0.17 or below. This serves as further evidence that street-level bureaucrats are having a stronger impact on target population outcomes than both the managers and the target population itself.

The same precautions were taken with this model in order to protect against inappropriate influences on the results. Plotting residuals against predicted values showed no lack of linearity. Testing for multicollinearity showed that four of the variables had tolerance values that were problematic: dichotomous variables for 1995 (0.266), 1996 (0.329), and 1997 (0.386), and the lagged dependent variable (0.312). However, the lagged dependent variable, 1995, and 1997 are statistically significant anyway, and since I am not interested substantively in the results for the year variables, there is no reason to make any changes to the model. The Durbin-Watson h statistic is 2.350, which suggests no serial correlation, and the residual variables in the Durbin-Hausman-

Wu test for endogeneity are not significant for manager diversity (0.097)[16] or teacher

diversity (0.303). As with the model predicting dropouts, despite a good theoretical

reason for endogeneity, the results seem to rule it out as a factor.

**Diversity and College Bound Rate**

The third relationship tested was between diversity and the percentage of

students in the school district who are college-bound.[17] The results from this analysis

appear in Table 4.3. This model is identical to the two others discussed in this chapter,

with the exception of the lagged dependent variable, which in this case is the previous

year's percentage of college-bound students. There are 6,225 cases included in this

analysis. As with the other models, I ascertained that no systematic differences

appeared to exist between the cases chosen for analysis and those that were missing

data on key variables.

The independent variables taken collectively are statistically significant, with an F

statistic of 234.611. They explain roughly 36% of the variation in the dependent

variable, which is more along the lines of the model explaining dropout rate than the one

explaining TAAS scores. One might expect that the models for TAAS scores and

college bound students might be similar in their predictive power, given that college

bound students are operationalized as those earning a certain score on a standardized

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[16] Some might consider a significance level of 0.10 "marginally" significant, which could be problematic for the Durbin-Hausman-Wu test. However, given that the dataset contains almost 7,000 cases, it is not difficult for variables to reach significance at the 0.10 level. Since I would not put any stock into any of my independent variables of interest being significant at that level, I am not concerned about this result illustrating any sort of problematic endogeneity.

[17] These data do not go beyond a student's graduation from high school, so it is impossible to verify what percentage of students actually go to college. The state of Texas identifies those earning above an 1110 on the SAT as "college-bound," and I have chosen to use that proxy as well. More information about this performance indicator can be found in Chapter Three.

exam much like the TAAS. However, it seems logical, in a sense, that this model would more resemble dropouts, since going to college and dropping out of high school are both very complex decisions that involve a number of factors at the individual, peer group, school, and community levels. Anecdotal evidence suggests that preparation for the SAT takes place almost entirely outside the school setting, and scoring well on it involves studying vocabulary, brushing up on mathematics skills, and other functions that serve as a strong complement to what the students are learning in their current classes. Since a number of factors that are difficult to measure go into whether a student chooses to engage in this type of outside preparation, it makes sense that this model would not predict as much variation in the dependent variable as the TAAS model.

Results for the main independent variables mirror those from the other two models. Manager diversity does not relate to performance in a statistically-significant manner. Teacher diversity, on the other hand, is statistically significant at the 0.001 level, with a coefficient of -5.579. This means that increasing teacher diversity corresponds to fewer students being college bound, and substantively-speaking, the impact is worth discussion. For an increase of 0.1 in the teacher diversity index, the percentage of students in the district who score above 1110 on the SAT decreases by 0.056 percentage points per year. In the average district of around 3,000 students, this corresponds to 17 fewer college-bound students per year, or a total of 134 over the course of eight years. Teacher diversity seems, then, to have the most negative impact on college attendance, followed by passing the TAAS exam, and then dropout rates.

Four of the five environmental control variables are statistically significant. On the resources side, staff resources were statistically significant at the 0.001 level, with an unstandardized coefficient of 1.376. Student resources, on the other hand, were not significant, although the coefficient was signed in the appropriate direction. As for constraints, both staff and student constraints were statistically significant at the 0.001 level, with coefficients of -0.733 and -0.991, respectively. All of these results follow expectation. The fifth control variable – student diversity – was statistically significant at the 0.01 level, with a coefficient of 2.081. This result indicates that the higher the student diversity of the school district, the more likely students are to be college bound. This is an interesting and important result, particularly given arguments made before the Supreme Court in recent Affirmative Action cases claiming that diversity benefits student development at college.[18] Such a discussion is tangential to this study and goes beyond the literature developed here, but this does signify the relevance of ethnic diversity at a level other than street-level bureaucrat and manager.

The lagged dependent variable is statistically significant at the 0.001 level and has a coefficient of 0.493. An increase in last year's performance of one percentage point corresponds to an increase in the current year's performance by almost a half percentage point. This variable also has the largest standardized coefficient in the model (0.484), which appears to be the case across the board in this study. Two of the environmental control variables – teacher resources (0.111) and teacher constraints (-0.082) – have the next highest standardized coefficients, followed by teacher diversity (-0.067). As with the other models, the substantive significance of teacher diversity strongly outweighs that of manager diversity, which in this case has a standardized

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[18] See, for example, *Gratz v. Bollinger* and *Grutter v. Bollinger*.

coefficient of only 0.001. A clear message exists here: when it comes to ethnic diversity, street-level bureaucrats seem to have a much larger influence over outcomes than do managers.

There were no indications that methodological problems were influencing these results. Scatterplotting the residuals against the predicted values revealed no irregularities. Only three of the tolerance values were in the range that might suggest multicollinearity, and these were all dichotomous variables for years (1995, 1996, and 1997). Since it is irrelevant whether they are statistically significant (although all three are anyway), multicollinearity is not a concern. The Durbin-Watson h statistic was 2.126, suggesting no problem with serial correlation. In the Durbin-Hausman-Wu test for endogeneity, the statistical significance of the residual variables for manager diversity (0.221) and teacher diversity (0.448) suggested that there was no endogenous relationship at work.

## Discussion

The results in this chapter stem from analyses aimed to address two hypotheses formulated in Chapter Two:

$H_1$:    Greater levels of ethnic diversity among public managers and street-level bureaucrats will lead to <u>lower</u> organizational performance, when tasks require extensive coordination and collaboration.

$H_2$:    Greater levels of ethnic diversity among public managers and street-level bureaucrats will lead to <u>higher</u> organizational performance, when tasks do <u>not</u> require extensive coordination and collaboration.

In Chapter Two, I outlined the different performance indicators chosen for this study and classified them as either "coordination and collaboration extensive" or not. Of the three indicators used in models relating diversity to performance, two of them test the first hypothesis, and one of them tests the second hypothesis. Dropout rate and college attendance rate reflect processes that involve extensive coordination and collaboration, so they test the first hypothesis, whereas the TAAS examination does not involve as much coordination and collaboration, so it tests the second hypothesis. The next sections will address each hypothesis.

*Hypothesis 1*

Results provide limited support for the first hypothesis, that greater levels of ethnic diversity among managers and street-level bureaucrats will lead to higher organizational performance. As noted in the results, manager diversity was not related to performance in a statistically significant manner for either of the two outcomes being predicted. Ethnic diversity, at least among managers, does not seem to affect performance in either a positive or negative way. This is an interesting result, since it counteracts two major arguments in public administration research – that management matters, and that diversity matters. When combining the two, at least in these models, it would seem that *neither* matters, although these models do not explicitly operationalize a management function, so the results must be taken with some amount of caution.

When examining street-level bureaucrats, however, there is a statistically-significant relationship present in each of the two models, and a negative one at that. When it comes to teacher diversity, increases lead to lower organizational performance,

a finding that is consistent with the literature reviewed in Chapter Two. These results suggest that when teachers have to coordinate, communicate, and collaborate in ways that go beyond the classroom, they will fall prey to the difficulties involved in work processes for diverse work groups. Whereas there may be a number of reasons for an organization to encourage or embrace diversity, and a number of convincing normative arguments on its behalf, this study offers no performance-based support for a pro-diversity argument.

These results speak pretty clearly about the impact of ethnic diversity on outcomes, especially given the large number of control variables included in the models and the diagnostic tests conducted to ensure that there were no methodological interferences. These results exist in the face of control variables for manager and student ethnicity and a host of control variables that take into account, either directly or by rough proxy, school resources, teacher quality and experience, district socio-economic characteristics, and student quality. Variables that could not be measured, but affected performance during the previous year, are also included in the model by virtue of the lagged dependent variable. That ethnic diversity among teachers could reach statistical significance and produce a coefficient noting a fairly important substantive effect, at least for college preparation, indicates how strong the impact really is. As mentioned in previous sections, the presence of the lagged dependent variable produces a "tough test" for the rest of the independent variables, one that is met by the negative impact teacher diversity has on performance.

Why, then, would teacher diversity be so strongly related to outcomes, while manager diversity is unrelated in any way? One explanation is that bureaucrats at the

street level in public education simply have much more impact over target population outcomes than do managers. If managers are responsible for setting policies and creating programs, and teachers are responsible for implementing those policies and programs alongside their teaching duties, it would appear that the influence is in implementation, not at the formulation stage. Teachers do enjoy substantial discretion in their work, which is one of the reasons that representative bureaucracy studies so frequently use public education as a policy context for testing representation. At least in public education, this study provides support for the notion that those closest to the target population are those most likely to influence results. Another explanation, or at least a partial one, is that most of the managerial influence is filtered down *through* the teachers. Managers influence student outcomes by hiring certain teachers, encouraging them to engage in certain programs, and overseeing teacher interaction. It could be that the direct influence from managers is simply less visible than the indirect influence that results in larger coefficients and statistical significance for the teacher variables.

*Hypothesis 2*

Results for the second hypothesis reiterate those from models testing the first. The TAAS pass rate is the culmination of a process that does not involve much coordination or collaboration, so research suggests that diversity would result in a positive relationship. However, for managers, there is no relationship between diversity and outcomes at all, and for teachers, the relationship is negative. There is some consistency here, since teachers related to performance in a negative manner for the other hypothesis, but the outcomes being measured (TAAS pass rate vs. dropout rate

and college preparation) are very different. These results do not support the second hypothesis.

Why, then, might teacher diversity lead to negative student outcomes? It is difficult to suggest that omitted variables bias is really at play here, since there are so many control variables in the model. All of the things that tend to go along with both teacher diversity and lower student outcomes – student diversity, large numbers of poor students, large numbers of dropouts, lower expectations for student achievement, and teacher quality – are included in the model. Perhaps there is more coordination and collaboration involved in preparing students for the TAAS than was originally thought. While it might seem at first glance that teachers find out what is on the test and then prepare students on those topics, it could be that there is much more in the way of planning curricular enhancements to boost student performance, and that type of planning would involve coordination and implementation by teachers as a group.

Alternatively, it could also be the case that the TAAS exam is biased toward majority students, and students who are taught by majority teachers are more likely to get the skills and concepts better than those who are taught by a wider variety of perspectives. While it could be the case that students who have a diverse cadre of teachers will learn more, gain a larger set of cultural and social skills, and be better-rounded, if the TAAS examination measures only a narrow set of skills, then that learning will not be reflected in the examination. This speaks more to whether the TAAS examination is a valid measure of learning than whether it is a valid measure of organizational performance, and that is a question that this study is not prepared to answer. As a measure of performance, particularly for public organizations, the TAAS

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examination is valid because it is held in such high regard by the political overseers responsible for school district management. There is, on the other hand, a substantial literature in the education policy arena that seeks to understand whether certain outcomes really reflect learning. This dataset might be a useful way to address some of those questions, but this study cannot inform that literature as it is currently formulated.

Two additional findings warrant particular mention. First, as was mentioned for the first hypothesis, we see a significantly larger impact by ethnicity among street-level bureaucrats than among managers. In the public education context, teachers clearly enjoy a strong amount of discretion and influence student outcomes much more than managers, at least as far as these results can show. Second, in a larger sense, this difference between managers and street-level bureaucrats illustrates that studies of diversity should look at different layers of the organization separately. One cannot assume that mid-level manager diversity will affect performance in the same ways as street-level diversity, and future studies linking diversity to work-related outcomes should explicitly control for the level of employees in the organization.

## Conclusion

Does this study show definitively that ethnic diversity causes process problems that lead to weaker performance? No. This is a large-N study that uses data and results to infer what is going on inside the "black box" of a Texas school district. There are no direct observations here, and there are no survey questions that ask specifically about process-oriented difficulties in work groups. Ideally, this study would be paired with a qualitative study that included information direct from teachers and managers about

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their experiences with diversity. However, I am confident that these results can be taken with more than a grain of salt for several reasons. First, there is a large and well-developed literature linking ethnic diversity and performance, and it finds consistently that process-oriented difficulties in diverse work groups lead to performance issues. The hypotheses in Chapter Two are well-formulated and theoretically-driven. Second, there is a multitude of control variables in the model, and these account for a number of other explanations. While I have not measured work process directly, it is evident for these two reasons that one might reasonably infer that process is the driver behind the ethnicity-performance link in this study.

The next step for research is to look into these process issues directly. Work process can be measured and observed, and the link between ethnicity and performance might be more solid if multiple methods were used in research. This is the first public administration study to use large-N data to link a measure of diversity to organizational performance, but the field is still waiting on the first study to use qualitative data to achieve the same goal. It will also be important to consider the diversity-performance link in other policy contexts. For example, in policy areas where street-level bureaucrats have less discretion, is it manager diversity that seems to have a larger impact on performance? What about policy areas where street-level bureaucrats are less educated and do not have to go through the same certification mechanisms? Third, research should consider the diversity-performance relationship for other dimensions of diversity. As noted in Chapter One, different dimensions of diversity affect performance differently, and it is important not to use findings about ethnicity to inform research on other dimension. The diversity research agenda in public

administration would benefit from expansion on a number of fronts; those will be

discussed in detail in Chapter Seven.

**Table 4.1 OLS Regression Results[19]**

**Dependent Variable: Student Dropout Rate**

| Variables | Unstandardized Coefficients | | Standardized Coefficients | |
| --- | --- | --- | --- | --- |
| | B | Std. Error | Beta | t-score |
| Manager diversity | 0.047 | 0.060 | 0.009 | 0.784 |
| Teacher diversity | 0.474 | 0.105 | 0.065 | 4.501*** |
| Student diversity | -0.016 | 0.063 | -0.003 | -0.260 |
| Student constraints | 0.016 | 0.012 | 0.015 | 1.390 |
| Staff constraints | 0.222 | 0.024 | 0.209 | 9.152*** |
| Student resources | -0.062 | 0.016 | -0.045 | -3.895*** |
| Staff resources | 0.015 | 0.017 | 0.014 | 0.894 |
| Lagged dropout rate | 0.292 | 0.020 | 0.309 | 14.775*** |

Adjusted $R^2$: 0.301   Standard Error: 0.880   F: 193.837  N: 6,691
Statistical significance (one-tailed): *** 0.001 ** 0.01 * 0.05

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[19] The tables include results for all of the independent variables except for the dichotomous variables included in the model to account for time-related influences. Statistical significance is based on one-tailed tests.

**Table 4.2 OLS Regression Results**
**Dependent Variable: TAAS Pass Rate**

| Variables | Unstandardized Coefficients | | Standardized Coefficients | |
| --- | --- | --- | --- | --- |
| | B | Std. Error | Beta | t-score |
| Manager diversity | -0.369 | 0.302 | -0.006 | -1.222 |
| Teacher diversity | -3.469 | 0.523 | -0.041 | -6.628*** |
| Student diversity | -0.471 | 0.319 | -0.007 | -1.478 |
| Student constraints | -0.614 | 0.062 | -0.049 | -9.896*** |
| Staff constraints | -0.592 | 0.071 | -0.048 | -8.358*** |
| Student resources | 0.255 | 0.075 | 0.017 | 3.379*** |
| Staff resources | 0.446 | 0.083 | 0.036 | 5.361*** |
| Lagged TAAS pass rate | 0.749 | 0.007 | 0.841 | 104.652*** |

Adjusted $R^2$: 0.859   Standard Error: 4.553   F: 2,845.100   N: 6,993
Statistical significance (one-tailed): *** 0.001 ** 0.01 * 0.05

**Table 4.3 OLS Regression Results**
**Dependent Variable: College Bound Rate**

| Variables | Unstandardized Coefficients | | Standardized Coefficients | |
|---|---|---|---|---|
| | B | Std. Error | Beta | t-score |
| Manager diversity | 0.088 | 0.673 | 0.001 | 0.131 |
| Teacher diversity | -5.579 | 1.139 | -0.067 | -4.897*** |
| Student diversity | 2.081 | 0.706 | 0.031 | 2.949** |
| Student constraints | -0.733 | 0.136 | -0.058 | -5.397*** |
| Staff constraints | -0.991 | 0.146 | -0.082 | -6.781*** |
| Student resources | 0.014 | 0.181 | 0.001 | 0.076 |
| Staff resources | 1.376 | 0.186 | 0.110 | 7.411*** |
| Lagged college bound rate | 0.493 | 0.011 | 0.484 | 42.863*** |

Adjusted $R^2$: 0.360   Standard Error: 9.498   F: 234.611   N: 6,225
Statistical significance (one-tailed): *** 0.001 ** 0.01 * 0.05

**CHAPTER FIVE**

**RESULTS: REPRESENTATION AND PERFORMANCE**

In this chapter, I will outline the results of the model testing the relationship between ethnic representation and organizational performance. In the first section, I will discuss representation and school dropouts, followed by a discussion of representation and TAAS scores, and then representation and students who are college bound. I will close with a larger discussion of the findings taken as a whole, specifically in the context of the hypotheses formulated in Chapter Two:

$H_3$:  Higher ethnic representation among public managers, street-level bureaucrats, and the organization's target population will lead to <u>higher</u> organizational performance.

$H_4$:  The impact of representation on organizational performance will be stronger at the street level than at the managerial level.

**Representation and Dropout Rate**

The first relationship tested was that between ethnic representation and the percent of students in the school district who drop out of school. The results for this model are shown in Table 5.1. The independent variables used in this model include the two main independent variables of interest, manager representation and teacher representation. I also use a series of control variables to account for environmental

influences: two variables to account for resources and two variables to account for constraints. I include seven dummy variables and a lagged dependent variable (last year's dropout rate) as a means of controlling for serial correlation. There are 6,692 cases in the sample used for this model. Some districts did not report the dropout rate, did not report the previous year's dropout rate, or were missing ethnicity data. Instead of attributing average values to those cases, they were dropped from the analysis altogether, given the size of the dataset. There did not appear to be systematic differences between those cases included in this analysis and those that were not.

Manager representation was unrelated to the dropout rate in a statistically-significant manner. For this sample, manager representation actually is associated with an increase in the percentage of students who drop out of school, but the result is not statistically-significant. This finding echoes those from the previous chapter: managers seem to have no impact on student outcomes, at least with regard to ethnicity.

Teachers, on the other hand, do have an impact on student outcomes – in a positive direction. More front-line representativeness is related to lower dropout rates. Teacher representation was statistically significant at the 0.10 level, just missing significance at the 0.05 level, carrying a coefficient of -0.113. Unlike with teacher diversity, teacher representation actually aids in keeping students in school. The substantive impact is not particularly large, but worth brief mention. For each increase in the teacher representation index of 0.1 – easily achievable, even likely, in cases experiencing significant change – the percent of students who drop out of school decreases by 0.001 percentage points. This means that, in an average district of around 3,000 students, an increase in teacher representation of 0.1 corresponds to one more

student staying in school every three years or so, or a couple to three students total over the course of the eight years for which these data are available. Add the impact of the lagged dependent variable into the equation, and we see an even stronger effect. Unlike the findings for teacher diversity, teacher representation actually improves student outcomes, indicating that overall diversity may be a problem, but *matching* diversity levels can lead to gains.

All of the environmental control variables are statistically significant. Student constraints have an unstandardized coefficient of 0.027 and are significant at the 0.01 level, while staff constraints have a coefficient of 0.281 and are significant at the 0.001 level. Both of those coefficients are in the anticipated direction – constraints lead to more students choosing to drop out of school. Student resources, on the other hand, have a coefficient of -0.070 and are significant at the 0.001 level, again indicating what is expected – resources lead to fewer students dropping out of school. Interestingly, staff resources carry a coefficient of 0.051 and are statistically significant at the 0.001 level. As staff resources increase (factor score with teacher, staff, and manager income variables), dropouts actually go *up*, not down, and this relationship is statistically significant. I am not too concerned about this relationship, given the focus of this study, but it is still an interesting result that might warrant further inquiry.

The lagged dependent variable, or last year's dropout rate, has an unstandardized coefficient of 0.262 and is statistically significant at the 0.001 level. If last year's dropout rate increases by one percentage point, this year's rate will increase by 0.262 percentage points. The lagged dependent variable also has the largest standardized coefficient (0.278), indicating that it has the largest substantive impact on

the dependent variable.[20] Student constraints also have a large standardized coefficient (0.265), which is not surprising, given that low income students are included in the factor analysis used to construct that variable, and low income students are much more likely than others to drop out of school. The other environmental control variables have the next three largest standardized coefficients, though none of them is particularly noteworthy (ranging from +/-0.025 to +/-0.051). For this model, teacher and manager representation seem to have the smallest impact of any of the independent variables, with standardized coefficients of -0.024 and 0.019, respectively.

Several precautions were taken to rule out methodological interference with the results. Nonlinearity was ruled out through scatterplotting the residuals against the predicted values. Tolerance values were computed to test for multicollinearity. All of the values were in the normal (>0.4) range except for two: the dichotomous variables for 1995 and 1996. Since both are statistically significant anyway, and those variables are included strictly as controls, there was no reason to take action. The Durbin-Watson h statistic (2.350) indicates that there is no serial correlation. I also ran a Durbin-Hausman-Wu test to ensure that there was no endogeneity present. Unlike for the diversity models, it seems unlikely that representation would be endogenous with performance. Indeed, the Durbin-Hausman-Wu results indicate that endogeneity is not a problem for this model (residual variable for manager representation is significant only at the 0.097 level, teacher representation at the 0.304 level). As a result, one can be more confident that causality is not multidirectional.

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[20] The model was also run without the lagged dependent variable. Manager representation's coefficient increased slightly and became statistically significant at the 0.001 level, while teacher representation's coefficient increased a small amount and became statistically significant at the 0.01 level. The direction of impact remained the same for both managers and teachers. The explanatory power of the model dropped to about 28% of the variation in the dependent variable.

## Representation and TAAS Pass Rate

The second model tests the relationship between ethnic representation and the percentage of students who pass the TAAS graduation exam, and the results for that model are shown in Table 5.2. The list of independent variables is the same as for the model testing the relationship between representation and dropouts, with the exception of the lagged dependent variable, which in this case is last year's TAAS pass rate. There are 6,994 cases included in the analysis, with no apparent differences between those included and excluded from the study.

The independent variables in this model are significant when taken as a whole, with an F statistic of 3,026.703. They predict a very large percentage of the variation in the dependent variable – 85.8%. The pattern for the $R^2$ values in the representation models is similar to that of the diversity models, in that the TAAS models explain much more variation than the dropout or college bound models. This makes sense, given the reasons laid out in Chapter Four - teachers and managers have much more influence over whether a student passes a standardized graduation examination than whether he or she chooses to drop out of school. Teachers are likely to "teach to the test" and drill students on material known to have been included in the TAAS exam in previous years. The relationship is simply much less complex between the school and the TAAS exam than between the school and dropouts.

As with all of the other models discussed in this study so far, manager representation is unrelated to the percentage of students who pass the TAAS examination. In this sample, manager representation does lead to more students

passing the TAAS exam, but the result is not statistically significant. Teacher representation, on the other hand, is statistically significant and improves student outcomes. It has an unstandardized coefficient of 0.950 and is significant at the 0.01 level. Substantively, the impact is worth discussion. In the average school district of 3,000 students, if the teacher representation index increased by 0.1, the corresponding TAAS pass increase would be almost an additional tenth of a percentage point. This means that three more students would pass the TAAS exam per year, or roughly 24 over the course of the eight years for which these data are available. The relationship between ethnic representation and the TAAS pass rate shows once again that it is teachers, not managers, who are making the difference when it comes to ethnic influence.

All four of the environmental control variables are statistically significant. On the constraints side, there is a negative relationship for both the student (-0.643) and staff (-0.676) variables, and both are statistically significant at the 0.001 level. On the resources side, there is a positive relationship for both the student (0.299) and staff (0.207) variables, and both are significant at the 0.01 or 0.001 level. All of these relationships are in the expected direction, showing that the model is performing nicely when it comes to controlling for relevant environmental influences.

The lagged dependent variable has a coefficient of 0.762 and is statistically significant at the 0.001 level, with a monstrous t-score of 110.287.[21] Its substantive impact on the dependent variable dwarfs all others, with a standardized coefficient of

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[21] The model was run without the lagged dependent variable, resulting in slightly larger coefficients for both manager and teacher representation, and statistical significance at the 0.001 level for both. Directions of impact remained unchanged for either of those variables. The model's explanatory power dropped to about 61% of the variation in TAAS pass rates, which one would expect when the lagged dependent variable was removed.

0.855. The two constraint variables have the next highest standardized coefficients (-0.052 for students, -0.055 for staff), followed by the student resources (0.020) variable. Teacher (0.018) and manager (0.004) representation do not seem to contribute very strongly in a substantive sense, although it is important to note that teacher representation has an impact on TAAS scores that is four times that of manager representation. Such standardized coefficients are not surprising in the presence of the lagged dependent variable.

The same precautions were taken with this model in order to protect against inappropriate influences on the results. Plotting residuals against predicted values showed no lack of linearity. Testing for multicollinearity showed that four of the variables had tolerance values that were problematic: dichotomous variables for 1995 (0.266), 1997 (0.327), and 1998 (0.385), and the lagged dependent variable (0.337). However, the lagged dependent variable, 1995, and 1997 are statistically significant anyway, and since I am not interested substantively in the results for the year variables, there is no reason to make any changes to the model. The Durbin-Watson h statistic is 3.428, which suggests no serial correlation, and the residual variables in the Durbin-Hausman-Wu test for endogeneity are not significant for manager representation (0.154) or teacher diversity (0.253). As a result, one can be confident that methodological errors are not causing bias in these results.

**Representation and College Bound Rate**

The third relationship tested was between ethnic representation and the

percentage of students in the school district who are classified as college-bound.[22] The

results from this analysis appear in Table 5.3. This model is identical to the two others

discussed in this chapter, with the exception of the lagged dependent variable, which in

this case is the previous year's percentage of college-bound students. There are 6,226

cases included in this analysis. As with the other models, I ascertained that no

systematic differences appeared to exist between the cases chosen for analysis and

those that were missing data on key variables.

The independent variables taken collectively are statistically significant, with an F

statistic of 248.258. They explain about 36% of the variation in the dependent variable,

which is more along the lines of the model explaining dropout rate than the one

explaining TAAS scores. As I discussed in Chapter Four, one might think that the

models for TAAS scores and college bound students would be similar in their predictive

power, since college bound students are operationalized as those earning a given score

on an exam like the TAAS. However, it also seems logical that this model would more

resemble dropouts, since going to college and dropping out of high school are both

complex decisions that involve a number of factors at the individual, peer group, school,

and community levels. Anecdotal evidence suggests that preparation for the SAT takes

place almost entirely outside the school setting, and scoring well on it involves studying

vocabulary, brushing up on mathematics skills, and other functions that serve as a

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[22] These data do not go beyond a student's graduation from high school, so it is impossible to verify what percentage of students actually go to college. The state of Texas identifies those earning above an 1110 on the SAT as "college-bound," and I have chosen to use that proxy as well. More information about this performance indicator can be found in Chapter Three.

strong complement to what the students are learning in their current classes. Since a number of factors that are difficult to measure go into whether a student chooses to engage in this type of outside preparation, it makes sense that this model would not predict as much variation in the dependent variable as the TAAS model.

Results from the main independent variables illustrate no statistically significant relationship. Manager representation has a coefficient of 0.056 but is not significant, while teacher representation has a coefficient of 0.792, but not significant. In each of these cases, increasing representation leads to more students going to college for this particular sample, but this finding cannot be generalized to any other population or time period. These results do not provide support for any of the hypotheses formulated in Chapter Two, and the result for teacher representation is a departure from the results shown for the dropout and TAAS models. Of course, teacher representation is closer to statistical significance than manager representation – by a longshot – and the standardized coefficient for teacher representation (0.015) is fifteen times larger than that for manager representation (0.001). This serves as further evidence that street-level bureaucrats are influencing target population outcomes much more strongly than managers, even when neither group seems to have much influence in the context of other environmental factors.

Three of the four environmental control variables are statistically significant. Student constraints have a coefficient of -0.865 and are significant at the 0.001 level, while staff constraints have a coefficient of -1.248 and are also significant at the 0.001 level. Both of these relationships follow expectation. Staff resources carry a coefficient of 1.107 and are significant at the 0.001 level, while student resources, with a coefficient

of 0.127, are not significant. Despite the lack of statistical significance for student resources, both of these control variables follow expectation and thereby serve their purpose in the model.

The lagged dependent variable has a coefficient of 0.500 and is statistically significant at the 0.001 level.[23] This means that increasing the percentage of students who were college-bound last year by one percentage point corresponds to an increase in this year's percentage of 0.5 percentage points. The lagged dependent variable, as has been the case for all of the models used in this study, has the largest substantive impact on the dependent variable, with a standardized coefficient of 0.491. Three of the environmental control variables – student constraints (-0.069), staff constraints (-0.103), and staff resources (0.088) have the next highest standardized coefficients, followed by teacher representation (0.015) and manager representation (0.001), which seem to have very little influence over college preparation at all.

There were no indications that methodological problems were influencing these results. Scatterplotting the residuals against the predicted values revealed no irregularities. Only three of the tolerance values were in the range that might suggest multicollinearity, and these were all dichotomous variables for years (1995, 1996, and 1997). Since it is irrelevant whether they are statistically significant, multicollinearity is not a concern. The Durbin-Watson h statistic was 2.126, suggesting no problem with serial correlation. In the Durbin-Hausman-Wu test for endogeneity, the statistical significance of the residual variables for manager diversity (0.779) and teacher diversity (0.227) suggested that there was no endogenous relationship at work.

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[23] Running the model without the lagged dependent variable seems to have very little impact – neither teacher nor manager representation becomes statistically significant, and the model's explanatory power drops to about 16%. The coefficients remain about the same size and in the same direction.

**Discussion**

Once again, the results from this chapter stem from analyses aimed to address two hypotheses formulated in Chapter Two:

$H_3$: Higher ethnic representation between public managers, street-level bureaucrats, and the organization's target population will lead to <u>higher</u> organizational performance.

$H_4$: The impact of representation on organizational performance will be stronger at the street level than at the managerial level.

I will address each hypothesis separately, followed by a general conclusion for the results taken as a whole.

*Hypothesis 3*

Hypothesis 3 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. 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 might lead to a bundle of policies and programs that would benefit the specific ethnic mix the organization served. However, as with the models linking diversity and performance, 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 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 explored in Chapter Six, but there are no overarching, organization-wide performance increases that are linked to manager representation for this study.

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. This leads naturally to a discussion of Hypothesis 4.

*Hypothesis 4*

These results support the fourth hypothesis of this study: that representation will be linked to organizational performance most strongly at the street level. Indeed, 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, both standardized and unstandardized. 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 overwhelming evidence in this study that street-level bureaucrats are much more influential than managers in the public education policy setting. For all six models tested in Chapters Four and Five, manager variables are unrelated to performance, while teacher variables have been related to performance in five of the six models. 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.[24] 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, as I have noted in Chapters Three and Four, 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.

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[24] 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.

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 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.

## Conclusion

There are two general results that warrant emphasis in this chapter. 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 both hypotheses – the third hypothesis to a limited extent, and the fourth hypothesis fairly soundly.

This chapter is limited in its ability to contribute too strongly to theory, given the lack of a sound theoretical base for hypothesis-building. 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 is not a study explicitly testing 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. Further ideas about expanding research on diversity in different contexts will be explored in Chapter Seven.

**Table 5.1 OLS Regression Results[25]**
**Dependent Variable: Student Dropout Rate**

| Variables | Unstandardized Coefficients | | Standardized Coefficients | |
| | B | Std. Error | Beta | t-score |
| --- | --- | --- | --- | --- |
| Manager representation | 0.072 | 0.056 | 0.019 | 1.288 |
| Teacher representation | -0.113 | 0.069 | -0.024 | -1.631+ |
| Student constraints | 0.027 | 0.012 | 0.025 | 2.291** |
| Staff constraints | 0.281 | 0.024 | 0.265 | 11.827*** |
| Student resources | -0.070 | 0.016 | -0.051 | -4.373*** |
| Staff resources | 0.051 | 0.015 | 0.047 | 3.297*** |
| Lagged dropout rate | 0.262 | 0.020 | 0.278 | 13.225*** |

Adjusted $R^2$: 0.299   Standard Error: 0.882   F: 205.489   N: 6,692
Significance (one-tailed): *** 0.001  ** 0.01  * 0.05 + 0.10

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[25] The tables include results for all of the independent variables except for the dichotomous variables included in the model to account for time-related influences. Statistical significance is based on one-tailed tests.

**Table 5.2 OLS Regression Results**
**Dependent Variable: TAAS Pass Rate**

| Variables | Unstandardized Coefficients | | Standardized Coefficients | |
|---|---|---|---|---|
| | B | Std. Error | Beta | t-score |
| Manager representation | 0.155 | 0.279 | 0.004 | 0.556 |
| Teacher representation | 0.950 | 0.346 | 0.018 | 2.747** |
| Student constraints | -0.643 | 0.062 | -0.052 | -10.369*** |
| Staff constraints | -0.676 | 0.071 | -0.055 | -9.534*** |
| Student resources | 0.299 | 0.077 | 0.020 | 3.912*** |
| Staff resources | 0.207 | 0.076 | 0.017 | 2.734** |
| Lagged TAAS pass rate | 0.762 | 0.007 | 0.855 | 110.287*** |

Adjusted $R^2$: 0.858   Standard Error: 4.567   F: 3,026.703   N: 6,994
Significance (one-tailed): *** 0.001  ** 0.01 * 0.05

**Table 5.3 OLS Regression Results**
**Dependent Variable: College Bound Rate**

| Variables | Unstandardized Coefficients | | Standardized Coefficients | |
|---|---|---|---|---|
| | B | Std. Error | Beta | t-score |
| Manager representation | 0.056 | 0.625 | 0.001 | 0.090 |
| Teacher representation | 0.792 | 0.771 | 0.015 | 1.028 |
| Student constraints | -0.865 | 0.134 | -0.069 | -6.475*** |
| Staff constraints | -1.248 | 0.139 | -0.103 | -8.952*** |
| Student resources | 0.127 | 0.183 | 0.008 | 0.695 |
| Staff resources | 1.107 | 0.170 | 0.088 | 6.508*** |
| Lagged college bound rate | 0.500 | 0.011 | 0.491 | 43.636*** |

Adjusted $R^2$: 0.357   Standard Error: 9.519   F: 248.258   N: 6,226
Significance (one-tailed): *** 0.001  ** 0.01  * 0.05

**CHAPTER SIX**

**RESULTS: REPRESENTATION AND TARGET POPULATION OUTCOMES**

In this chapter, I will outline the results of the models testing the relationship between ethnic representation and specific student group outcomes. In the first section, I will discuss representation and the percent of white students who pass the TAAS exam, followed by a discussion of representation and the black student pass rate, and then representation and the Hispanic student pass rate.[26] I will close with a larger discussion of the findings taken as a whole, specifically in the context of a hypothesis formulated in Chapter Two:

$H_5$: Higher ethnic representation among public managers, street-level bureaucrats, and the organization's target population will lead to *more positive* target population outcomes for people of color than for whites.

**Representation and White Student TAAS Pass Rate**

The first relationship tested was that between ethnic representation and the percent of white students in the school district who pass the TAAS graduation exam. The results for this model are shown in Table 6.1. The independent variables used in

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[26] Data are also available for the percentage of Asian-American and Native American students who pass the TAAS exam each year. However, those groups are either very small or non-existent in many school districts, making it possible to test them only by lumping the groups together into an "other" group. Since the cultural differences between Asian-American and Native American students are so large, not to mention the variance within these populations, and it would be impossible to know whether matching "other" students with "other" teachers was really a match at all, I have chosen to focus on the three most populous ethnic groups in Texas.

this model include the two main independent variables of interest, manager representation and teacher representation. I also use a series of control variables to account for environmental influences: two variables to account for resources and two variables to account for constraints. I include seven dummy variables and a lagged dependent variable (last year's percent of white students who passed the TAAS exam) as a means of controlling for serial correlation.

There are 6,899 cases in the sample used for this model. Some districts did not report the percent of white students who passed the exam, did not report the previous year's pass rate, or were missing ethnicity data. Instead of attributing average values to those cases, I dropped the cases from the analysis altogether, given the size of the dataset. There did not appear to be significant differences between those cases included in this analysis and those that were not. The independent variables in this model are statistically significant when taken as a whole, with an F-statistic of 1,453.621. They explain roughly 75% of the variation in the dependent variable, which is not as high as the amount of variation explained for the overall TAAS pass rate, but remains high compared to the dropout rate and college bound rate models.

Manager representation was not related to the dependent variable in a statistically significant manner. For this sample, manager representation was related to fewer white students passing the TAAS exam, but that relationship cannot be generalized to other time periods or populations. This follows a trend developed in Chapters Four and Five: managers simply do not seem to affect student outcomes when it comes to their ethnic mix. On the other hand, teacher representation is related to student outcomes in a statistically significant way, and negatively so. Teacher

representation has a coefficient of -2.196 and is significant at the 0.001 level. Substantively speaking, this is a result that warrants discussion and carries real ramifications. If the teacher representation ratio increases by 0.1, the percent of white students who pass the TAAS exam decreases by 0.2 percentage points. In the average school district of around 3,000 students, this corresponds to six students per year, or some 48 students over the course of the eight years for which these data are available. The impact is actually even greater, since white students do not comprise 100% of those enrolled in most districts, so the percentage would be greater than first meets the eye, not to mention the added impact of the lagged dependent variable, which includes the contribution of representation toward the previous year's performance. Teacher representation, then, is not linked to performance in a positive way, at least for white students.

All four of the environmental control variables are statistically significant, and all correspond to the dependent variable in the expected direction. Student resources have a coefficient of 0.311 and are statistically significant at the 0.001 level, while student constraints carry a coefficient of –0.781 and are statistically significant at the 0.001 level as well. Teacher resources have a coefficient of 0.514, while teacher constraints have a coefficient of -0.642. Both are significant at the 0.001 level. In districts where students are easier to educate and teachers and staff are paid well, more white students pass the TAAS exam, while in districts with more difficult-to-educate students and fewer staff resources, fewer white students pass the TAAS. That all four of these variables are statistically significant and in the expected direction indicates that the model is performing well at controlling for relevant environmental factors. These composite

variables were also broken down into their constituent parts and included separately in the model for a different analysis, but the results did not differ in any meaningful way from those presented here.

The lagged dependent variable has a coefficient of 0.651 and is statistically significant at the 0.001 level.[27] This indicates that increasing the percentage of white students who passed the TAAS last year by one percentage point corresponds to an increase of 0.65% in this year's pass rate. The lagged dependent variable has a very large standardized coefficient (0.753) and has a larger impact on the dependent variable than any other independent variable. Three of the environmental control variables – student constraints (-0.077), staff constraints (-0.063), and staff resources (0.051) – have the next three highest standardized coefficients, followed by teacher representation (-0.050). As has been the case in many of the models tested in this study, managers seem to have little impact on the dependent variable (-0.008).

Some methodological precautions were taken to ensure that these results do not reflect inappropriate influence. While theory does not suggest non-linear relationships, I tested for them by scatterplotting residuals against predicted values, but there is no evidence that the model should be specified differently. Only two of the variables had tolerance values that suggested possible multicollinearity, but these were not only just the dichotomous variables for two of years, but they were also significant anyway. The Durbin-Watson h statistic for this sample is 2.344, suggesting no problem with serial correlation. The Durbin-Hausman-Wu test for endogeneity yielded results for the

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[27] The model was run without the lagged dependent variable. Both manager and teacher representation are statistically significant in this underspecified model, with negative coefficients that are slightly higher than in this model. The explanatory power dips to about 40% of the variation in the dependent variable. All of these results follow expectation: that removing the lagged dependent variable will decrease the explanatory power and increase coefficient size and statistical significance for the remaining variables.

residual variables for manager representation (0.364) and teacher representation (0.182) that were not statistically significant. As a result, one can be confident that these results do not reflect bias introduced by methodological errors.

**Representation and Black Student TAAS Pass Rate**

The next relationship tested was that between ethnic representation and the percentage of black students in each school district who passed the TAAS examination. The results from this model are displayed in Table 6.2. This model is almost identical to that used to predict the white student pass rate in the previous section – I use the same main independent variables, the same set of dichotomous variables to control for time influences, and the same environmental control variables. The only difference is that the lagged dependent variable in this case is the previous year's black TAAS pass rate, not the previous year's white pass rate.

There were 4,309 cases included in this analysis, which is substantially fewer than for white or Hispanic students. However, the analysis had to drop all of the cases that had fewer than five black students, leading to a much smaller number than the previous analysis, where I dropped all of the cases that had no white students. The model is statistically significant when taken as a whole, with an F-statistic of 661.852. These variables explain roughly 68% of the variation in the dependent variable, which is slightly less than the explanatory power of the model predicting the white student pass rate. However, given that the number of cases is also lower, one might expect fewer significant relationships and slightly less causal power.

In this model, for the first time, there is a statistically significant relationship between manager ethnicity and organizational performance. When managers tend to match the students for whom they are responsible, black students respond positively – the unstandardized coefficient for this model is 2.463, which is statistically significant at the 0.01 level. If the manager representation index is increased by 0.1, the black student pass rate increases by 0.25 percentage points. In the average school district of about 3,000 students, this corresponds to roughly 7.5 students per year, or 60 students over the course of the eight years for which these data are available. The impact, as mentioned earlier for white students, is actually greater than this, since black students comprise far fewer than the 3,000 students in the average district, and the lagged dependent variable contains influence carrying over from the previous year. Manager representation, then, is both substantively and statistically significant for black students passing the TAAS exam.

Teacher representation is also statistically significant, but at the 0.001 level, and has a coefficient of 3.483. This indicates that as teacher representation increases, or the match increases between teachers and students, the percentage of black students who pass the TAAS exam also increases. If the teacher representation index increases by 0.1 points, the percentage of black students who pass the TAAS exam increases by 0.35 percentage points. In the average school district of 3,000 students, this corresponds to 10.5 students per year, or some 84 students over the course of the eight year time period used in this study. Again, the impact is even greater than it might appear, since black students usually do not make up the entirety of the student

population. This finding is, substantively, the most significant of any thus far in the study.

Three of the four environmental control variables are statistically significant. On the constraints side, student constraints have a coefficient of -0.910 and are statistically significant at the 0.001 level, while staff constraints have a coefficient of -0.799 and are also significant at the 0.001 level. Staff resources have a coefficient of 1.159 and are statistically significant at the 0.001 level, while student resources, with a coefficient of 0.420, did not reach statistical significance. All of these variables have coefficients in the expected direction. As with the model predicting the white student pass rate, I conducted a separate analysis that included all of the control variables instead of these composite variables, but the results were almost identical for the main independent variables.

The lagged dependent variable has an unstandardized coefficient of 0.597, which is statistically significant at the 0.001 level.[28] This means that increasing the percentage of black students who passed the TAAS exam last year corresponds to an increase in this year's pass rate of about six tenths of a percentage point. The lagged dependent variable also has the largest standardized coefficient (0.637), indicating that it has the largest substantive impact on the dependent variable. The next largest standardized coefficients, and by extension, substantive impacts, were environmental control variables for staff resources (0.060), student constraints (-0.040), and staff constraints (-

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[28] The model was also run without the lagged dependent variable included. Following expectation, both manager and teacher representation remained statistically significant, and the coefficients for both increased slightly. The causal power of the model decreased to about 58% of the variation in the dependent variable.

0.040). Close behind were the standardized coefficients for teacher (0.039) and manager (0.034) representation.

Several diagnostic tests were conducted to ensure that the results were sound. Scatterplots reveal no irregularities when it comes to linearity. Three variables have tolerance values less than 0.40, but all three are statistically-significant anyway (and dichotomous control variables for years), so it is not a concern. The Durbin-Watson h statistic is 2.762, which indicates that there is no problem with serial correlation in this analysis. The Durbin-Hausman-Wu test for endogeneity shows that residual variables for manager (0.283) and teacher (0.198) diversity are not statistically significant, so endogeneity should not be affecting these results.

### Representation and Hispanic Student TAAS Pass Rate

The third relationship tested was between ethnic representation and the percentage of Hispanic students in the school district who pass the TAAS graduation examination. The results from this analysis appear in Table 6.3. This model is identical to the two others discussed in this chapter, with the exception of the lagged dependent variable, which in this case is the previous year's percentage of Hispanic students who passed the TAAS exam.

There are 6,328 cases included in this analysis. This sample is smaller than the model predicting the white student pass rate and larger than the model predicting the black student pass rate. As noted in the section above, it is necessary to drop from the analysis any district that does not have Hispanic students taking the TAAS exam, which resulted in the number of cases ultimately used here. The variables taken as a group

are statistically significant, with an F statistic of 847.602. They explain roughly 65% of the variation in the dependent variable, which is slightly lower than the explanatory power of the model predicting the white student pass rate but comparable to that of the model predicting the black student pass rate.

Manager representation is not related to the dependent variable in a statistically significant manner. It has a coefficient of -0.281, but its t-score is only -0.482. For this sample, manager representation actually leads to fewer Hispanic students passing the TAAS exam, but that finding cannot be generalized outside of these data. It is not surprising that manager representation does not affect Hispanic student outcomes, since only one of the eight relationships tested in this study thus far has seen a statistically-significant result for managers. On the other hand, teacher representation is statistically significant at the 0.01 level and has a coefficient of 1.760. This means that increasing teacher representation leads to more Hispanic students passing the TAAS graduation exam. Substantively, the impact is worth discussion. If one were to increase the teacher representation index by 0.1, then the percentage of Hispanic students passing the TAAS exam would increase by 0.18 percentage points. In the average school district of about 3,000 students, this would mean about five and a half students per year, or a total of 44 students over the course of the eight year time period. Again, as noted before, the impact is even greater than it might seem, since Hispanic students typically do not make up the entirety of the school district, and the lagged dependent variable also includes some representational impacts that remain from the previous year.

All four environmental control variables are statistically-significant at the 0.001 level. Coefficients were all in the expected direction: student resources carry a coefficient of 0.862, staff resources have a coefficient of 0.547, student constraints have a coefficient of -1.100, and staff constraints carry a coefficient of -1.252. The lagged dependent variable has a coefficient of 0.543 and is statistically significant at the 0.001 level.[29] Increasing the percentage of Hispanic students who passed the TAAS exam last year by one percentage point corresponds to an increase in this year's pass rate of about a half percentage point. The standardized coefficient for the lagged dependent variable is quite large – 0.596. The standardized coefficients for the environmental control variables are the next largest, although they pale in comparison: student resources is 0.042, staff resources is 0.034, student constraints is -0.067, and staff constraints is -0.081. Teacher representation (0.026) and manager representation (-0.005) have the lowest standardized coefficients of any of the independent variables.

Several diagnostic tests were conducted to ensure the reliability of these results. Scatterplots of residuals against predicted values revealed only linearity in the model. Tests for multicollinearity resulted in tolerance values of less than 0.40 for only three variables, but these were all statistically significant anyway, so there is no concern there. The Durbin-Watson h statistic for this analysis is 2.575, indicating no problem with serial correlation. The Durbin-Hausman-Wu test for endogeneity yielded results for the manager (0.188) and teacher (0.321) residual variables that were not statistically significant, ruling out endogeneity as an interference with these results.

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[29] The model was also run without the lagged dependent variable. Not surprisingly, both manager and teacher representation remained statistically significant, and the coefficients for both increased slightly. The causal power of the model decreased to about 44% of the variation in the dependent variable.

**Discussion**

Again, the results presented in this chapter stem from analyses aimed to address one of the hypotheses formulated in Chapter Two:

$H_5$: Higher ethnic representation between public managers, street-level bureaucrats, and the organization's target population will lead to *more positive* target population outcomes for people of color than for whites.

These results provide partial support for the hypothesis 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. 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 black 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.

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.

Not only do white students respond less positively to proportional 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.[30] 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

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

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

## Conclusion

This chapter presents empirical evidence about how different subsets of students respond to representation among teachers and managers in public schools. While the literature has focused mostly on how minority students respond to diversity, very few studies have examined the response of white students to diversity, and this is one of the first studies showing that there are real differences between groups in their responses. These findings produce several important implications for both theory and practice.

First, these results 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?

Second, 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 serious 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.

**Table 6.1 OLS Regression Results**
**Dependent Variable: White Student TAAS Pass Rate**

| Variables | Unstandardized Coefficients | | Standardized Coefficients | t-score |
|---|---|---|---|---|
| | B | Std. Error | Beta | |
| Manager representation | -0.288 | 0.313 | -0.008 | -0.921 |
| Teacher representation | -2.196 | 0.395 | -0.050 | -5.561*** |
| Student constraints | -0.781 | 0.067 | -0.077 | -11.680*** |
| Staff constraints | -0.642 | 0.074 | -0.063 | -8.710*** |
| Student resources | 0.311 | 0.084 | 0.025 | 3.717*** |
| Staff resources | 0.514 | 0.083 | 0.051 | 6.179*** |
| Lagged white pass rate | 0.651 | 0.008 | 0.753 | 81.147*** |

Adjusted $R^2$: 0.746 Standard Error: 4.949 F: 1,453.621 N: 6,899
Significance (one-tailed): *** 0.001  ** 0.01  * 0.05

**Table 6.2 OLS Regression Results**
**Dependent Variable: Black Student TAAS Pass Rate**

| Variables | Unstandardized Coefficients | | Standardized Coefficients | |
|---|---|---|---|---|
| | B | Std. Error | Beta | t-score |
| Manager representation | 2.463 | 0.881 | 0.034 | 2.796* |
| Teacher representation | 3.483 | 1.117 | 0.039 | 3.117*** |
| Student constraints | -0.910 | 0.204 | -0.040 | -4.460*** |
| Staff constraints | -0.799 | 0.201 | -0.040 | -3.969*** |
| Student resources | 0.420 | 0.337 | 0.014 | 1.247 |
| Staff resources | 1.159 | 0.227 | 0.060 | 5.103*** |
| Lagged black pass rate | 0.597 | 0.012 | 0.637 | 50.457*** |

Adjusted $R^2$: 0.682   Standard Error: 10.390   F: 661.852   N: 4,309
Significance (one-tailed): *** 0.001  ** 0.01  * 0.05

**Table 6.3 OLS Regression Results**
**Dependent Variable: Hispanic Student TAAS Pass Rate**

| Variables | Unstandardized Coefficients | | Standardized Coefficients | |
| --- | --- | --- | --- | --- |
| | B | Std. Error | Beta | t-score |
| Manager representation | -0.281 | 0.879 | -0.005 | -0.482 |
| Teacher representation | 1.760 | 0.725 | 0.026 | 2.427** |
| Student constraints | -1.100 | 0.129 | -0.067 | -8.559*** |
| Staff constraints | -1.252 | 0.133 | -0.081 | -9.421*** |
| Student resources | 0.862 | 0.178 | 0.042 | 4.853*** |
| Staff resources | 0.547 | 0.159 | 0.034 | 3.439*** |
| Lagged Hispanic pass rate | 0.543 | 0.010 | 0.596 | 55.157*** |

Adjusted $R^2$: 0.651   Standard Error: 9.109   F: 847.602   N: 6,342
Significance (one-tailed):   *** 0.001  ** 0.01  * 0.05

# CHAPTER SEVEN

# PUSHING THE FRONTIERS OF RESEARCH ON DIVERSITY

Demographic trends in the workforce have made diversity something that public organizations cannot ignore and expect to go away. The field of public administration has embraced diversity as a topic warranting research and attention, but there remains much to be done before the research community can come to sound, systematic conclusions about the nature and impacts of diversity in public organizations. This study represents one attempt to initiate a new type of research agenda on diversity in the public sector, and I am hopeful that it will spark the interest of other researchers who would like to push beyond what is known about diversity at present. In this last chapter, I will highlight some of the major findings of this study, followed by a discussion of its strengths and weaknesses. I will then discuss the practical implications of the findings, following by some recommendations for further research.

## Findings and Conclusions

This study set out to make a contribution to the literature on ethnicity in public organizations by systematically testing hypotheses relating diversity and representation to organizational performance. Using theories of diversity drawn from social psychology and organizational behavior, I hypothesized that ethnic diversity among teachers and managers could lead to either positive or negative outcomes, depending on the nature

of the task. The representative bureaucracy literature led to the formulation of three additional hypotheses: that ethnic representation would lead to increased organizational performance, that minority groups in the target population would see more benefit than members of the majority, and that the impact of street-level bureaucrats would be greater than that of managers. I tested these hypotheses using data drawn from the public education policy setting, specifically all Texas public school districts from 1995 to 2002.

Perhaps the most striking finding from the study is the systematic way in which street-level bureaucrats' ethnic diversity is related to lower organizational performance. Even controlling for a number of other potential explanations, teacher diversity seems to result in more students dropping out, fewer students passing the TAAS graduation examination, and fewer students being college bound. Hypotheses based on the extant literature suggested such a relationship for two of these performance indicators, given that they are collaboration and cooperation intensive, but the negative relationship for the TAAS examination refuted the theory and research used to formulate the second hypothesis. The most likely explanation is that the process-oriented difficulties involved in diverse individuals working together may be making it tough for teachers to encourage student development and achievement, thus leading to lower organizational performance as diversity increases.

On the other hand, teacher *representation* is positively related to organizational performance for two of the three indicators tested. Even though the previous negative finding related to diversity and performance might suggest that having a large number of teachers of color would correspond to lower performance, the findings on representation

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at the front lines suggest that matching teacher ethnicity to student ethnicity can result in performance gains for the organizations. This pattern makes sense, since an organization might be said to have a pragmatic level of need for diversity, given the level of diversity in the target population. That is, if the organization's target population is relatively homogeneous, there may be less practical benefit in increasing diversity within the organization than if the target population were relatively heterogeneous. It is possible that simply matching the level of ethnicity to that in the target population will "get done" what an organization needs in order to perform well. These findings, then, are not necessarily irreconcilable; in fact, it is quite the opposite. It makes sense that matching student and teacher diversity could result in the ideal bundle of mentors, role models, and programs for the varied groups of students in the district's target population. Of course, this is a practical angle to be considered alongside normative arguments for inclusion of people of color, regardless of the makeup of the target population. One might argue that life skills, cultural literacy, and more global perspectives might be encouraged by diversity among teachers, even if gaining competencies in these areas relate to losing ground with regard to standardized testing. The bottom line is that there is a policy recommendation here to recruit and hire teachers that look like the students they serve, but it should be taken into account alongside other normative considerations that do not involve performance as I have defined it in this study.

Despite statistically significant, if opposing, relationships for both teacher representation and teacher diversity with performance, manager ethnicity (both diversity and representation) had no effect whatsoever on eight of nine performance indicators

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tested. Only black student TAAS scores benefit from overall proportional manager representation. This does not mean that management does not matter. For example, there are many other aspects of management that might have an impact on outcomes, and manager behavior almost certainly affects what happens at the street level. Managers choose which teachers to hire, consult on which curricular innovations to introduce, and supervise special programs. There are most certainly multilevel impacts present, and future research should work to disentangle how different levels of the organization affect each other and work together to affect performance. Even given all of this, the results certainly provide some evidence that, at least in terms of ethnicity, managers are not influencing outcomes as much as street-level bureaucrats. Public education is a policy setting in which street-level bureaucrats enjoy a significant amount of discretion, and so it makes sense that the effect of diversity would be larger at the street level than among managers, since street-level bureaucrats use their discretion every day in ways that no doubt reflect their ethnic heritage. Studies linking diversity to performance should consider the different levels of the organization and attempt to take this into account. Findings at one level may not be generalizable to findings at another level. In the public sector, it might be interesting to consider differences between career bureaucrats and political appointees, differences between ranges of GS levels, and differences between those classified as white collar and blue collar.

In addition to differences between managers and teachers, this study shows that there are differences between the concepts of "diversity" and "representation." These concepts have been muddled in the public administration literature for years, with measures of "matching" labeled as diversity, and measures of variation labeled as

representation. Some researchers do not even differentiate between the two, assuming that they are more or less the same thing. At the outset, I explained that the current study was not one of representative bureaucracy. Instead, I wanted to test separately for representation and diversity, and in particular to determine the differences in impacts between the two. Indeed, teachers were related to performance in a negative direction for diversity, but a positive direction for representation. These concepts are separate phenomena with different theoretical bases, and this study has shown that they also have quite different impacts. The field should ensure that inquiry related to one does not falsely inform, or find its base in, inquiry related to the other.

Finally, this study provides evidence that there is some amount of redistribution when students of color benefit from representation. Whereas both black and Hispanic students pass the TAAS exam in greater numbers when teachers match students by ethnicity in the school district, fewer white students pass the exam, thus raising questions about whether all groups benefit from a proportionally representative educational bureaucracy. It would be interesting to see if this finding played out for other student outcomes, like college attendance or dropout rates, as well as whether similar impacts could be found outside of public education. If there is truth to the assertion that standardized tests like the TAAS exam are biased toward the majority, then it would make sense that white students would do best with the most white teachers, since they would be using the cultural notions and skills that the TAAS would cover. Clarifying this link, of course, would impel a reform of the standardized testing process, not constitute an argument for white-on-white teacher assignment. Whatever the explanation, if white students are responding negatively to teacher representation, then it is important for

schools to understand why, and this is an area in which qualitative research would be helpful.

**Strengths and Limitations of the Study**

There are several ways in which this study contributes to the literature on diversity. First, it is the first systematic study of diversity effects on performance in public organizations, at least in the U.S. context. No other study using public sector data has analyzed the impact of ethnic diversity on performance outcomes, and this study initiates a research agenda that will hopefully extend beyond the immediate analysis and into other policy contexts. Secondly, I have operationalized diversity in a new way. Most of the public sector literature on diversity operationalizes it as the percent of minorities in an organization or some type of representation index. I have used a Blau index of variability, similar to that used in social psychology and organizational behavior studies on ethnic diversity. The Blau index permits one to understand differences *between* minority groups, not just differences between the majority and everyone else, grouped together. As such, important differences between Hispanics and African-Americans, for example, are not erased by combining them unnecessarily into a "minority" group.

This study is also one of the first to link representation to a performance outcome. Most of the studies that analyze representation seek to understand whether a specific subset of the target population benefits from representation in public organizations. While this is implicitly a measure of performance, I have chosen to use large-scale performance measures that explain whether the target population as a

whole is benefiting from representation, not just specific groups. That is, do benefits go beyond gains for minority groups? Research on the representation-performance link is limited, but this study provides evidence that representation can actually lead to better organizational performance, particularly representation at the street level. As mentioned above, this study is also innovative in that it is the first to take diversity and representation as separate concepts and compare them, head to head. It is my hope that future research linking diversity to work-related outcomes will keep this distinction in mind and seek to further understand how the two concepts operate in shaping the results of public programs – especially since they clearly have different kinds of impacts.

A final strength of this study is in its ability to tap into such a rich dataset for quantitative analysis. Much has been made in the public administration community of the abundance of studies that have been crafted from the data available on Texas public school districts, and much of the conversation has been negative. No research design, and no dataset, is perfect. However, this dataset has permitted me to use almost 7,000 cases in order to test these hypotheses, and the variables available have allowed the findings in this study to be developed with controls for a multitude of potentially confounding influences. It is rare to find such an easily identifiable set of managers, street-level bureaucrats, and target populations, with ethnicity information for all of them, and be able to identify several of the most important performance outcomes for the organization. Even if one might believe these results should not be generalized outside the public education policy setting, this study's internal validity remains quite high.

Several limitations warrant discussion as well. The most significant limitation is that there is no qualitative component to this research. It would have been exceedingly valuable to have qualitative data from interviews with students, teachers, and managers about their experiences in the school setting with regard to ethnicity. Time and resource limitations prevented gathering this type of data, and that omission makes it harder to be sure of the causal mechanisms that operate here. Since I am reporting only quantitative results from a large-N study, it is necessary to infer what the results mean, using theory and previous research as a guide. For example, it seems, given the large number of control variables, tightness of the model, and previous research and theory on diversity effects, that teachers may be constrained by work-related process problems that prevent diverse groups from performing as well as they might. However, this study has not directly tapped aspects of work process, and there are no data to specifically back or rebut this claim. Future research should include a qualitative component, or be based in systematically collected qualitative data, in order to complete the picture presented here.

In addition, data and space limitations have prevented me from considering other dimensions of diversity and how they might affect performance. It is likely that different dimensions of diversity beyond ethnicity, such as education and gender, might interact in interesting ways with ethnicity to affect outcomes, but it is not possible for me to include those factors in the present investigation. While it seems unlikely that ignoring gender and other diversity dimensions results in a severely or fatally underspecified set of models, it would be reasonable to assume that they would have some impact that would warrant careful analysis.

A third primary limitation of this study is in my inability to operationalize management in a meaningful way. Organizations can "manage" their diversity in creative ways that tend to buffer the process-oriented problems related to diversity. For example, if there are problems between ethnic groups in garnering trust and communicating effectively, organizations might employ some carefully developed "values training" exercise in order to acquaint different groups with one another. While the effectiveness of this type of training varies, employing such a tool is still one way the organization might respond to diversity-related difficulties, and it seems logical that such organizations might see fewer process problems than those that chose to ignore diversity complications altogether. If management *of* diversity (rather than merely management's demographic contributions *to* diversity) is one solution to challenges stemming from diversity, it would be ideal to include that variable or set of variables in the model, and future research should find ways to operationalize management and use it to assist in explaining work-related outcomes. Rather than finding that management does not matter regarding diversity results, this study points to the kinds of managerial impacts that might produce tangible results.

It is worth mentioning a feature of this study that can be viewed as a strength or a weakness: the data. There are almost always limitations to how far one might generalize results, and this study is no exception. For example, the public education policy setting is one in which street-level bureaucrats have an enormous amount of discretion, to a degree unmatched in most other types of public organizations. There are also extensive certification procedures for those working in public schools, making them a very professionalized type of organization, so the results may not be applicable to

organizations where there is less in the way of certification. Finally, the state of Texas is a very diverse state, and these school districts show the practical extremes of homogeneity and heterogeneity. For states where there is much less diversity, it may be that these results simply do not hold. It could also hold true that states with less ethnic diversity might see other dimensions, such as gender or functional background, have much more influence than ethnicity on organizational outcomes. While most quantitative studies in public administration are based in one policy context or another, it is always wise to be aware of the peculiarities of the policy arena in which one is working before making generalizations to other sorts of organizations.

## Implications for Practice

This study is, of course, one that should be followed by qualitative research and work from other policy contexts. However, managers in public organizations can draw several practical implications from the findings. First, diverse groups may need additional time to get beyond process-oriented difficulties in order to perform well. If street-level bureaucrat diversity is consistently related to negative performance, and the cause of that relationship lies in process issues, then monitoring the process and giving the group time to get beyond initial trust and communication issues is one way to turn the negative relationship around. Managers should make sure that they are aware of how the group or committee is functioning, either through direct observation or by regular communication with members of the group. As problems are discovered, managers should find ways to encourage trust between employees from different

backgrounds, encourage open and effective communication between individuals, and give incentives for effective collaboration.

The bottom line is that managers must find a way to "manage" the diversity that is present in the organization. Principals and superintendents should consider the differences present in work groups and schools to be something that requires management. This is easier said than done, however, since there is very little in the public management literature as to what constitutes effective diversity management. When it comes to work group behavior, managers might draw from the organizational behavior literature on groups and assume that diverse groups will simply be more likely than others to have particular problems. If research shows that diverse groups are more likely to experience trust and conflict issues, communication breakdowns, and difficulties in processing information and implementing decisions, then managers can draw from the literature on conflict, communication, and implementation. Those streams of research offer a plethora of prescriptions for practicing managers and can be especially useful to those managers with work groups that experience heightened levels of those issues.

It is possible, although not necessarily likely, that focusing on the process issues themselves, and not the diversity *per se*, will yield the most positive results. For example, it could be that bringing in a diversity specialist and engaging in diversity training might make matters worse for the group, since attention will be called to the physical or surface manifestation of the problems, not the problems themselves. Managers who work to ensure that employees work well together and collaborate effectively may be more likely than those who focus specifically on ethnic differences to

effect positive work-group performance. These are, of course, empirical questions that have not been answered in the literature, but it seems reasonable that a practicing manager might at least try both approaches before assuming that one is better than the other.

In terms of recruitment, these results indicate that matching students to teachers will result in the most positive performance outcomes for organizations. There is, as a result, a pragmatic reason for public organizations to consider hiring street-level bureaucrats who look like the people they serve. This is not a new idea at all, but rather one that has been appearing in representative bureaucracy research for at least thirty years. Nevertheless, these findings show that not only do individual groups benefit from proportional representation, but also that organizations as a whole can benefit from proportional representation. This is one argument (among many) in favor of affirmative action programs – that there are performance-oriented benefits to having a representative organization.

## Implications for Research

Much more remains to be done with regard to research on diversity in public organizations. As I have mentioned throughout this study, these findings cannot be generalized to any other dimension of diversity. Just because ethnic diversity among teachers is related to negative outcomes for the organization, and ethnic representation among teachers is related to positive ones, it cannot be assumed that gender diversity/representation, regional diversity/representation, language diversity/representation, or any other type of diversity or representation will have the

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same effects. The diversity that matters most in any given context varies, and it is important from a managerial standpoint to identify the most salient dimension of diversity and manage it. Public administration research might move to build on this study by examining other dimensions of diversity and how they affect performance. As a field, we have done a much better job at formulating effective normative arguments for inclusion and representation than at examining how diversity affects day-to-day life in an organization. This is the next step for our field, and it should be taken for a variety of different dimensions of diversity.

I touched on the issue of policy context in other chapters, and here I reiterate that it is important to understand the nature of diversity in different types of organizations. While there are strong arguments to be made that public education organizations are similar to other policy contexts, there are also arguments to be made that street-level bureaucrats in education (teachers) have much more discretion than those in most other policy areas.[31] If valid, this point would mean that these findings would be of limited use. As with most things, the truth likely lies somewhere in between, but this research area would most assuredly be strengthened by other studies linking ethnicity to performance were conducted in other policy contexts. Then, if results tended to converge, one might be more confident that the context did not matter enough to offset the strength of the findings. If results tended to diverge, then it would be interesting to understand what particular aspects of the policy area caused results to differ. As mentioned earlier, much has been made of the strengths and weaknesses of the dataset used in this study. The field should, bluntly, put its money where its mouth is

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[31] For a thorough treatment of discretion among street-level bureaucrats in different policy areas, see Maynard-Moody & Musheno, 2003.

and collect data from other places in order to either confirm or challenge the results shown here. Theory on diversity in the public sector would benefit substantially from this next step.

It would be helpful for scholars to devote further attention to the multilevel impacts that are related to diversity and representation. It seems reasonable to expect that managers influence students through teachers, and also possible that teachers influence students through managers. If ethnicity is working down (or up) the chain in this manner, then models that explicitly control for multiple levels of impact would be ideal. The results in this study are fairly unambiguous that teachers have the largest *direct* impact on student outcomes, but it is important for the field to understand whether managerial influences that are *indirect* comprise an appreciable portion of the effect that I attribute to teachers here.

Collecting data and testing propositions linking diversity to performance are important, but it is perhaps even more vital in an applied field like public administration that we work toward a better understanding of what *managers* can do. The field needs to think about what it means to manage diversity, and whether such a management mechanism can lead to increased performance in the first place. If managers choose to engage in diversity (read: sensitivity) training, is this really more effective than simply focusing on the basics, such as communication and conflict? Is diversity management something that happens at the individual manager level, or is it more of an organizational program or practice? If the latter, what does that challenge entail – recruitment, retention, and promotion of underrepresented groups? Promotion of

awareness of different groups? Pragmatic policies and programs aimed to help everyone in the organization succeed?

Research has been sparse as to what real organizations do to manage diversity (Kellough & Naff, 2004, is one notable exception). It is important that the field make attempts to understand what organizations are doing, whether what they are doing is actually increasing performance or improving the experiences of underrepresented groups, and whether diversity management programs can be transferred from one organization to another. Despite the results of this study showing that managers do not have as large an impact as street-level bureaucrats when it comes to diversity, managers do play a vital role in formulating and implementing diversity management programs. With all of the programs that are being created in recent years, it is becoming increasingly important that the field offer them some practical information and advice about how to manage diversity.

## Final Thoughts

It is difficult to conduct research in a topical area that is so politically charged. Many of us in public administration believe strongly in Affirmative Action programs that aim to include underrepresented groups. Most of us would probably agree with the statement, "There is strength in diversity," and while there are no data on this particular point, most of us in the academy seem to be sensitive to including people of color and women in our faculties and among our students. All of this is a means of illustrating that there is a strong normative notion about diversity among many public administration scholars, and few of us want to offer up data to our naysayers that might encourage

them to hire fewer women and minorities and ignore the diversity among the individuals with whom they currently work. I suspect that this is one reason that systematic empirical work is sparse on the impact of diversity on outcomes like organizational performance. The field has formulated a number of effective normative arguments for inclusion, but it should not shy away from the important task of explaining with careful evidence what happens as an organization becomes diverse. In particular, the performance questions – both short-term and over the long haul – deserve similar attention from researchers in the field. Indeed, only by understanding the performance aspects of the subject can scholars and practitioners most fully and effectively engage the subject of diversity to productive ends.

It is thus important to understand what diversity does to an organization's performance, if for no other reason than to find a way for the organization to fix any problems encountered. The results presented in this study may not be easily embraced, in that they show that teacher diversity seems to lead to decreased organizational performance, but they could catalyze a research agenda that can uncover exactly why street-level bureaucrat diversity is not the obvious "strength" that many of us would like for it to be. If there are process problems at play, then research needs to understand why ethnicity tends to create them. As answers to that question become clear, it will be possible for managers to "manage" the problems and help ethnically-diverse organizations to capitalize on the multiple viewpoints and ideas present. As I said at the outset of this study, if organizations are sinking millions of dollars into diversity management programs, should we not try to understand what needs to be managed in the first place? At present, diversity management programs are, in a sense, chasing a

ghost of a concept for which there is very little empirical research. This study, with the aid of others to come, can help to give practicing managers an understanding of what diversity does in organizations and help them to formulate effective programs and techniques with which to manage it. I am hopeful that others in the field will accept this challenge and join these efforts in an attempt to better explain the phenomenon of diversity and its management.

# 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.

Adler, N. J. (2003). *International dimensions of organizational behavior* (4$^{rd}$ ed.).

Cincinnati, OH: South-Western.

Alderfer, C. P. (1987). An intergroup perspective on group dynamics. In J. Lorsch (Ed.),

Handbook on organizational behavior (pp. 190–222). Englewood Cliffs, NJ:

Prentice Hall.

Alderfer, C., & Smith, K. K. (1982). Studying intergroup relations embedded in

organizations. *Administrative Science Quarterly, 27,* 35-65.

Alderfer, C., & Thomas, D. (1988). The significance of race and ethnicity for

understanding organizational behavior. In C. Cooper & I. Robertson (Eds.),

*International review of industrial and organizational psychology.* Chichester,

England: Wiley.

Ancona, D. & Caldwell, D. (1992). Demography and design: Predictors of new product

team performance. *Organization Science, 3,* 321-341.

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.

Bantel, K., & Jackson, S. (1989). Top management and innovations in banking: Does the composition of the team make a difference? *Strategic Management Journal, 10,* 107-124.

Barnlund, D., & Harland, C. (1963). Propinquity and prestige as determinants of communication networks. *Sociometry, 26,* 467-479.

Blau, P. M. (1977). *Inequality and heterogeneity.* New York: The Free Press.

Bond, J. T., Galinsky, E., & Swanberg, J. E. (1998). *The 1997 National Study of the Changing Workforce.* New York: Families and Work Institute.

Bond, M. A., & Pyle, J. L. (1998). Diversity dilemmas at work. *Journal of Management Inquiry, 7,* 252-270.

Brewer, M. (1979). Ingroup bias in the minimal intergroup situation: A cognitive-motivational analysis. *Psychological Bulletin, 86,* 307-324.

Burt, R., & Regans, R. (1997). Homophily, legitimacy, and competition: Bias in manager peer evaluations. Working Paper, Graduate School of Business, University of Chicago.

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

Byrne, D., Clore, G., & Worchel, P. (1966). The effect of economic similarity-dissimilarity as determinants of attraction. *Journal of Personality and Social Psychology, 4,* 220-224.

Chemers, M. M., Oskamp, S., & Costanzo, M.A. (eds.). (1995). *Diversity in organizations.* Thousand Oaks, CA: Sage.

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.

Cornwell, C. & Kellough, J. E. (1994). Women and minorities in federal agencies: Examining new evidence from panel data. *Public Administration Review, 54*(3), 265-270.

Cox, T. (1993). *Cultural diversity in organizations.* San Francisco, CA: Berrett-Koehler.

Cox, T., & Nkomo, S. M. (1990). Invisible men and women: A status report on race as a variable in organizational behavior research. *Journal of Organizational Behavior, 11*(6)*,* 419-431.

Cox, T. H., Lobel, S. A., & McLeod, P. L. (1991). Effects of ethnic and group cultural differences on cooperative and competitive behavior on a group task. *Academy of Management Journal, 34*(4), 827-847.

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

Delikat, M. (1995). The legal dangers in diversity. *The Corporate Board, 169,* 11-17.

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

Dobbs, M. (1998). Managing diversity: Lessons from the private sector. *Public Personnel Management, 25*(3), 351-367.

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.

Ely, R. (1994). The effects of organizational demographics and social identity on relationships among professional women. *Administrative Science Quarterly, 39,* 203-238.

_____. (1995). Managing diversity for organizational effectiveness. Working Paper, John F. Kennedy School of Government, Harvard University.

Ely, R., & Thomas, D. (2001). Cultural diversity at work: The effects of diversity perspectives on work group processes and outcomes. *Administrative Science Quarterly, 46*(2), 229-273.

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.

Greenhaus, J., Parasuraman, S., & Wormley, W. (1990). Effects of race on

    organizational experiences, job performance evaluations, and career outcomes.

    *Academy of Management Journal, 33*(1), 64-86.

Gruenfield, D., Mannix, E., Williams, K., & Neale, M. (1996). Group composition and

    decision making: How member familiarity and information distribution affect

    process and performance. *Organizational Behavior and Human Decision*

    *Processes, 67,* 1-15.

Hallinan, M., & Smith, S. (1985). The effects of classroom racial composition on

    students' interracial friendliness. *Social Psychology Quarterly, 48*(1), 3-16.

Hawley, W. D., & Rosenholtz, S. J. (1984). Good schools: What research says about

    improving student achievement. *Peabody Journal of Education, 61*(4), 11-19.

Henderson, G. (1994). *Cultural diversity in the workplace: Issues and strategies.*

    Westport, CT: Praeger Press.

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.

Hoffman, L., Harburg, E., & Maier, N. (1962). Differences and disagreement as factors in creative group problem solving. *Journal of Abnormal and Social Psychology, 64,* 206-214.

Hoffman, L., & Maier, N. (1961). Quality and acceptance of solutions by members of homogeneous and heterogeneous groups. *Journal of Abnormal and Social Psychology, 62,* 401-407.

Holliday, G. (1985). Addressing the concerns of returning women students. *New Directions for Student Services, 29,* 61-73.

Jehn, K., Northcraft, G., & Neale, M. (1997). Opening Pandora's box: A field study of diversity, conflict, and performance in work groups. Working paper, Wharton School, University of Pennsylvania.

Johnston, W. B. & Packer, A. H. (1990). *Workforce 2000 – Work and workers for the 21st century.* Washington, DC: U.S. Department of Labor.

Judy, R. W. & D'Amico, C. (1997). *Workforce 2020.* Indianapolis, IN: Hudson Institute.

Katz, I., Goldstein, J., & Benjamin, L. (1958). Behavior and productivity in biracial work groups. *Human Relations, 11,* 123-141.

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.

Kellough, J. E. (1990). Integration in the public workplace: Determinants of female and

    minority representation in federal agencies. *Public Administration Review, 50*(4),

    557-566.

Kellough, J. E., & Elliott, E. (1992). Demographic and organizational influences on

    racial/ethnic and gender integration in federal agencies. *Social Science*

    *Quarterly, 73*(1), 1-13.

Kellough, J. E., & Naff, K. C. (2004). Responding to a wake-up call: An examination of

    federal agency diversity management programs. *Administration & Society, 36*(1),

    62-90.

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.

Kizilos, M., Pelled, L., & Cummings, T. (1996). Organizational demography and

    prosocial organizational behavior. Working paper, University of Southern

    California.

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

Larkey, L. K. (1996). Toward a theory of communicative interactions in culturally diverse

    work groups. *Academy of Management Review, 21*(2), 463-491.

Leftkowitz, J. (1994). Race as a factor in job placement: Serendipitous findings of ethnic drift. *Personnel Psychology, 47*(4), 497-513.

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

Levy, L. (1964). Group variance and group attractiveness. *Journal of Abnormal and Social Psychology, 68,* 661-664.

Lincoln, J., & Miller, J. (1979). Work and friendship ties in organizations: A comparative analysis of relational networks. *Administrative Science Quarterly, 24,* 181-199.

Loden, M., & Rosener, J. (1991). *Workforce America! Managing employee diversity as a vital resource.* Homewood, IL: Irwin.

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.

MacDonald, H. (1993). Cashing in on affirmative action: The diversity industry. *The New Republic, 229,* 22-25.

Maynard-Moody, S., & Musheno, M. (2003). *Cops, teachers, counselors: Stories from the front lines of public service.* Ann Arbor: University of Michigan 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.

McLeod, P. & Lobel, S. (1992). The effects of ethnic diversity on idea generation in

    small groups. Paper presented at the Annual Meeting of the Academy of

    Management, Las Vegas, Nevada.

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., O'Toole, L. J., & Nicholson-Crotty, S. (2004). Multilevel governance and

    organizational performance: Investigating the political-bureaucratic labyrinth.

    *Journal of Policy Analysis & Management, 23*(1), 31-47.

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.

Messick, D., & Massie, D. (1989). Intergroup relations. *Annual Review of Psychology, 40,* 45-81.

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

Mullen, B., & Cooper, C. (1994). The relation between group cohesiveness and performance: An integration. *Journal of Personality and Social Psychology, 48,* 1173-1190.

Naff, K. C. (2001). *To look like America: Dismantling barriers for women and minorities in government.* Boulder, CO: Westview Press.

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

Nkomo, S. M. (1992). The emperor has no clothes: Rewriting "race in organizations." *Academy of Management Review, 17*(3)*,* 487-513.

O'Reilley, C., Williams, K., & Barsade, S. (1997). Group demography and innovation: Does diversity help? In G. Huber & W. Glick (eds.), *Organizational change and redesign* (pp. 147-175). Oxford: Oxford University Press.

Pelled, L. (1997). Relational demography and perceptions of group conflict and performance: A field investigation. *International Journal of Conflict Resolution, 22*(1), 54-67.

Pelled, L., Eisenhart, K., & Xin, K. (1999). Exploring the black box: An analysis of work group diversity, conflict, and performance. *Administrative Science Quarterly, 44*(1), 1-27.

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

Phinney, J. (1996). When we talk about American ethnic groups, what do we mean? *American Psychologist, 51,* 918-927.

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

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

Ragins, B. R. (1997). Diversified mentoring relations in organizations: A power perspective. *Academy of Management Review, 22,* 482-521.

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.

Riccucci, N. M. 1997. Cultural diversity programs to prepare for Work Force 2000: What's gone wrong? *Public Personnel Management, 26*(1), 35-41.

Riccucci, N. M. 2002. *Managing diversity in public sector workforces.* Boulder, CO: Westview Press.

Ridgeway, C. (1991). The social construction of status value: Gender and other nominal

characteristics. *Social Forces, 70,* 367-386.

Riordan, C., & Shore, L. (1997). Demographic diversity and employee attitudes:

Examination of relational demography within work units. *Journal of Applied*

*Psychology, 82,* 342-358.

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.

Sackett, P., Dubois, C., & Noe, A. (1991). Tokenism in performance evaluation: The

effects of work representation on male-female and black-white differences in

performance ratings. *Journal of Applied Psychology, 76*(3), 263-267.

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.

Stephan, W. (1985). Intergroup relations. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (pp. 599-658). New York: Random House.

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.

Tajfel, H. (1982). *Social identity and intergroup relations.* Cambridge: Cambridge University Press.

Thomas, R. R. (1990). From affirmative action to affirming diversity. *Harvard Business Review, 68,* 107-117.

Thompson, F. J. (1976). Minority groups in public bureaucracies. *Administration and Society, 8,* 201-226.

Triandis, H. (1960). Cognitive similarity and communication in a dyad. *Human Relations, 13,* 279-287.

_____. (1988). Collectivism vs. individualism. In G.K. Vernma & H. Triandis (eds.), *Personality, attitudes, and values.* London: Macmillan.

Tsui, A., Egan, T., & O'Reilly, C. (1992). Being different: Relational demography and organizational attachment. *Administrative Science Quarterly, 37,* 549-579.

Turner, J. (1982). Toward a cognitive definition of the group. In H. Tajfel (Ed.), *Social identity and intergroup relations.* Cambridge: Cambridge University Press.

_____. (1987). *Rediscovering the social group: A social categorization theory.* Oxford: B. Blackwell.

Tziner, A., & Eden, D. (1985). Effects of crew composition on crew performance: Does the whole equal the sum of the parts? *Journal of Applied Psychology, 70,* 85-93.

U.S. Merit Systems Protection Board. (1993). *Evolving workforce demographics: Federal agency action and reaction.* Washington, DC: U.S. Merit Systems Protection Board.

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

_____. (1966). The senior civil service and the career service. In C. E. Hawley & R. G. Weintraub (eds.), *Administrative Questions & Political Answers.* New York: Van Nostrand, pp. 342-353.

Von Bergen, C. W., Soper, B., & Foster, T. (2002). Unintended negative effects of diversity management. *Public Personnel Management, 31*(2), 239-251.

Watson, W., Kumar, K., & Michaelson, L. (1993). Cultural diversity's impact on interaction process and performance: Comparing homogeneous and diverse task groups. *Academy of Management Journal, 36*(4), 590-602.

Weiher, G. (2000). Minority student achievement: Passive representation and social context in schools. *Journal of Politics, 62*(3), 886-895.

Willoughby, K. & O'Reilley, C. (1998). Demography and diversity in organizations: A Review of forty years of research. In *Research in organizational behavior, vol. 20.* Greenwich, CT: JAI Press, 77-140.

Wise, L. R., Tschirhart, M., Hosinski, D. K., & Bandy, L. (1997). *Diversity research: A meta-analysis.* Stockholm, Sweden: Institute for Future Studies.

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.

_____. (2002). The relationship between diversity and work performance: Lessons for the public service about the consequences of heterogeneity. Paper presented at the National Conference of the American Society for Public Administration, Phoenix, AZ, March 23.

Wittenbaum, G., & Stasser, G. (1996). Management of information in small groups. In J. Nye & M. Brower (Eds.), *What's social about social cognition? Social cognition research in small groups* (pp. 3-28). Thousand Oaks, CA: Sage.

Zenger, T., & Lawrence, B. (1989). Organizational demography: The differential effects of age and tenure distributions on technical communications. *Academy of Management Journal, 32,* 353-376.