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White and Black Teachers' Job Satisfaction: Does Relational Demography Matter?

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Abstract

Data on the impact of student, teacher, and principal racial and gender composition in urban schools on teacher work outcomes are limited. This study, a secondary data analysis of White and Black urban public school teachers using data taken from the restricted use 2003-04 Schools and Staffing Survey (SASS), examines the effects of relational demography on teacher job satisfaction adjusting for other known determinants of job satisfaction. Relational demography is conceptualized as a set of racial and gender congruency items between teachers and principals, teachers and teachers, and teachers and students. The results of the study show that some components of relational demography directly affect teacher job satisfaction, over and above the effects of work-related attitudes.

Keywords

diversity, principals, urban education, White teachers

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Data on professional teacher turnover show that between the 2003-04 and 2004-05 school years, 8.4% of the teacher workforce left the teaching profession and that this rate has been slowly rising for the past two decades (Luekens, Lyter, Fox, & Chandler, 2004; Marvel, Lyter, Peltola, Strizek, & Morton, 2007). Teacher turnover, particularly in urban schools where it is most pronounced, is of concern because of its negative effects on organizational functioning and quality of teachers (e.g., Hanson, 2001; Ingersoll, 2001a, 2001b; Kirby, Berends, & Naftel, 1999; Lankford, Loeb, & Wyckoff, 2002; Loeb, Darling-Hammond, & Luczak, 2005).

Organizational teacher turnover is also of concern and for related reasons. Between the 2003-2004 and 2004-2005 school years, 8% of the teacher workforce transferred to another school (Marvel et al., 2007), with a disproportionate number of these moving *from* high minority, urban school districts and not into them (Ingersoll, 2003; Strizek, Pittsonberger, Riordan, Lyter, & Orlofsky, 2006). Thus, of those teachers most likely to leave the profession or pursue employment in another district, the greater proportion will be taken from America's most challenged, urban school districts; this will happen even as those districts are experiencing a surge in the number of students (KewalRamani, Gilbertson, Fox, & Provasnik, 2007).

In addition to the perennial turnover of novice White teachers from urban school districts (Clotfelter, Ladd, Vigdor, & Wheeler, 2006; Kirby et al., 1999; Lankford et al., 2002), an experienced cohort of minority teachers is retiring (Luekens et al., 2004). This matters for four reasons: (a) minority teachers are more likely to teach in high-poverty, urban schools (Kirby et al., 1999); (b) minority teachers are more likely to persist in classroom teaching (Kirby et al., 1999; Murnane & Olsen, 1989); (c) minority student enrollments are increasing (KewalRamani et al., 2007); and (d) a growing body of evidence suggests minority teachers have a positive influence on minority learning (Dee, 2004, 2005; Ferguson, 1998; Hanushek, Kain, & Rivkin, 2004; Hudson & Holmes, 1994; Irvine, 1989; King, 1993; Quiocho & Rios, 2000).

Two important policy implications related to the shortfall of teachers in high-minority urban schools are (a) to increase the number of minority teachers within the teacher pipeline (increase supply) and (b) to identify factors that lead to turnover in the existing, predominately White, female teacher workforce (Futrell, 1999). While the former approach—recruiting more minority teachers—may provide a longer term solution, immediate school staffing needs in high-minority urban schools necessitate an urgent reexamination of those factors thought to precipitate turnover, that is job satisfaction, within the urban teacher workforce.

Although there are many reasons that motivate teachers to leave a given school or to abandon the teaching profession, a primary factor in both instances is job dissatisfaction (Ingersoll, 2001a, 2001b; Johnson, 2006; Marvel et al., 2007). Job satisfaction is a key mediating variable in all major models of voluntary turnover (e.g., Lee & Mitchell, 1994; March & Simon, 1958; Mobley, Griffeth, Hand, & Meglino, 1979; Price, 2001; Steers & Mowday, 1981). Research examining job satisfaction via models of voluntary turnover has primarily focused on the effect of economic factors (e.g., local and nonlocal job opportunities), work-related attitudes (e.g., autonomy, job stress, supervisor support), work attributes (e.g., pay, mandatory overtime), psychological factors (e.g., positive and negative affectivity), person demographics (e.g., age, gender), and workplace demographics (e.g., setting, size) on job satisfaction (Holtom, Mitchell, Lee, & Eberly, 2008; Kovner, Brewer, Greene, & Fairchild, 2009; Price, 2001; Steers & Mowday, 1981).

To extend the knowledge of the factors that affect teacher job satisfaction, this study examined the direct effect of *relational demography*, the interaction between organization and person characteristics (Pfeffer, 1983) on job satisfaction, adjusting for the effects of work attitudes, person demographics, and workplace demographics specified in a turnover model originally suggested by Price (2001) and extended by Kovner et al. (2009).

There are many racial and cultural interactions that manifest in diverse settings and are therefore frequently seen in urban, particularly high-minority, schools. These interactions (which potentially occur between teachers and principals, teachers and teachers, and teachers and students) are the inevitable result of bringing together individuals of diverse social, racial and economic backgrounds and are not to be regarded as negative phenomena per se. Nonetheless, such interactions may influence school environments and job satisfaction of educators. Based on the research in nonschool settings (e.g., Kanter, 1977; Kramer, 1991; Leonard & Levine, 2006; Pelled, 1996; Riordan & Shore, 1997; Sacco & Schmitt, 2005; Sackett, DuBois, & Noe, 1991; Zatzick, Elvira, & Cohen, 2003), increasing diversity, ceteris paribus, inadvertently may decrease satisfaction with supervisor support because of demographic differences between teachers and principals, may increase job stress because of demographic differences between teachers and teachers, and may impair classroom communications and relationships because of demographic differences between teachers and students. The purpose of this study is to reexamine the effects of relational demography in school settings. Testing the direct effects of relational demography on job satisfaction allows further examination of the impact of diversity in urban schools that suffer from high teacher turnover.

Literature Review

Evidence is mixed regarding how person (teacher) demographics (e.g., age, gender, teaching experience) and workplace (school) demographics (e.g., percent minority enrollment, secondary or primary school) contribute to teacher job satisfaction. Gender is either not associated with job satisfaction (Klecker, 1997; Lee, Dedrick, & Smith, 1991; Liu & Ramsey, 2008; Mertler, 2002; Stockard & Lehman, 2004) or women are found to be more satisfied with their jobs (Bogler, 2001; Culver, Wolfe, & Cross, 1990; Kearney, 2008; Ma & MacMillan, 1999) or with teaching as a career (Perie & Baker, 1997; Renzulli, MacPherson, & Beattie, 2007) than men. Younger teachers are more likely to be satisfied with their teaching jobs or teaching as a career than older teachers (Culver et al., 1990; Mertler, 2002; Perie & Baker, 1997) although Bogler (2001) found no significant association. Klecker (1997), Lee et al. (1991), Bogler (2001) and Culver et al. (1990) found that number of years teaching was not associated with job satisfaction, Renzulli et al. (2007) and Perie and Baker (1997) found that it was negatively associated with job satisfaction and Liu and Ramsey (2008) and Ma and MacMillan (1999) found that it was positively associated with job satisfaction. Teacher education was not associated with satisfaction with teaching as a career (Perie & Baker, 1997; Stockard & Lehman, 2004) or facets of job satisfaction (Kearney, 2008). However, Culver et al. found that lower academic achievement was positively associated with job satisfaction and higher academic achievement was negatively associated with job satisfaction.

Teachers who teach in schools where students have higher socioeconomic backgrounds are found to be more satisfied than teachers who work in schools where students have lower socioeconomic backgrounds (Lee et al., 1991; Perie & Baker, 1997; Stockard & Lehman, 2004). Teachers who teach in schools with high-minority student enrollment were more likely to express lower levels of satisfaction with teaching (Perie & Baker, 1997; Shann, 1998). Evidence generally supports the finding that teachers who work in elementary schools are more satisfied than teachers working in secondary or high school environments (Bogler, 2001; Kearney, 2008; Perie & Baker, 1997). However, Stockard and Lehman (2004) found that 1st-year teachers who taught in schools other than middle schools were more satisfied than those teaching in middle schools and Renzulli et al. (2007) found that high school teachers were more satisfied than either elementary or middle school teachers.

What is well established in the extant literature is a relationship between a number of work-related attitudes and teacher job satisfaction. Supervisor

support (Blase & Blase, 1994; Bogler, 2001; Evans, 1997; Lee et al., 1991; Ma & MacMillan, 1999; Perie & Baker, 1997; Weiss, 1999; Youngs, 2007), procedural justice (Imber, Neidt, & Reyes, 1990; Perie & Baker, 1997; Rice & Schneider, 1994; Rosenholtz, 1985; Shann, 1998), autonomy (Hall, Pearson, & Carroll, 1992; Ingersoll, 2003; Lee et al., 1991; Perie & Baker, 1997; Renzulli et al., 2007), job stress (Hounshell & Griffin, 1989; Ingersoll, 2001a, 2001b; Johnson & Birkeland, 2003; Lee et al., 1991; Liu & Ramsey, 2008; Pagano, Weiner, & Rand, 1997; Perie & Baker, 1997), and teacher–student relationships (Brunetti, 2006; Hounshell & Griffin, 1989; Ingersoll, 2001a, 2001b; Lee et al., 1991; Newberry & Davis, 2008; Perie & Baker, 1997; Shann, 1998) are associated with teacher job satisfaction.

What is less well understood is how the intersection of organizational and individual demographics influences teacher job satisfaction. To the extent that various distributions within an organization of age, race, gender, tenure, and educational attainment shape ensuing social interactions (and inform group processes that then influence individual attitudes), "demographic distributions have a theoretical and empirical reality" (Pfeffer, 1983, p. 303) that is more than the aggregation of individual demographics. When the demographic distribution of an organization intersects with individual characteristics, a pattern of effects emerges that may differentially influence attitudes and performance at the individual level.

Few studies have examined relational demography as it relates to teacher job satisfaction. Mueller, Finley, Iverson, and Price (1999) collected teacher and school-level data from 838 teachers working in a large, urban school system in the United States. As hypothesized, Mueller et al. (1999) found that racial congruence (at 40% and 50%) mattered for White teachers. White teachers in White teacher–student schools had higher job satisfaction and organizational commitment than White teachers in schools where the White teachers and/or the White students comprised the minority. The racial composition of teachers and students had no effect on Black teachers' job satisfaction or commitment to school.

Similarly, Renzulli et al. (2007) found that the racial congruence between teachers and students mattered in terms of teacher job satisfaction. Examining 31,848 White, Black, and Hispanic teachers in 1,948 public and charter schools from the 1999-2000 publicly available Schools and Staffing Survey (SASS) data set, they found that racial composition variables, demographic characteristics of the teacher, demographic characteristics of the school, and work-related attitudes were significantly associated with teacher satisfaction. They also found that being a Hispanic teacher with a majority of Asian

students and Black teacher with a majority of Asian students was associated with teacher dissatisfaction. Being a Black teacher with a majority of White students was weakly associated with teacher dissatisfaction. However, when satisfaction was regressed only on the teacher–student racial congruence items, the negative effects of racial mismatch on satisfaction were more pronounced. White teachers matched with White students were found to be more satisfied than White teachers who were not matched with White students. Black teachers matched with Black students were found to be less satisfied than White teachers who were matched with White students.

Because of their diverse demographic compositions, urban schools may be particularly susceptible to relational demography effects. Indeed, a growing body of literature addresses teacher–student racial congruence on student outcomes (e.g., Alexander, Entwisle, & Thompson, 1987; Dee, 2004, 2005; Ehrenberg, Goldhaber, & Brewer, 1995; Pigott & Cowen, 2000). However, relatively little literature exists regarding the demographic congruence between teachers and students, teachers and teachers, and teachers and principals on *teacher outcomes* such as a job satisfaction (Mueller et al., 1999; Renzulli et al., 2007).

Purpose Statement and Hypotheses

The specific aim of this study is to examine the direct effects of relational demography on job satisfaction adjusting for the known determinants of job satisfaction, including work-related attitudes specified by Price (2001) and workplace demographics and person demographic specified by Kovner et al. (2009). Determinants of job satisfaction are examined using two groups, namely, White and Black teachers.

Hypotheses

The main effects model with job satisfaction as the dependent variable assumes a direct effect of workplace demographics (principal age, principal race, principal gender, principal tenure, percentage of minority student enrollments, percentage of minority teachers in school, percentage of students on free lunch, school level), teacher demographics (age, race, gender, education, tenure at school, and teaching experience), teacher work-related attitudes (supervisor support, procedural justice, autonomy, job stress, and teacher–student relationships), and relational demography (teacher–principal racial congruence, teacher–principal gender congruence, teacher–student racial congruence, teacher–teacher racial congruence) on teacher job satisfaction.

Hypothesis 1: Teacher job satisfaction is related to workplace demographics.
Hypothesis 2: Teacher job satisfaction is related to person (teacher) demographics.
Hypothesis 3: Teacher job satisfaction is related to teacher work-related attitudes.
Hypothesis 4: Teacher job satisfaction is related to relational demography.

Method

This study is a secondary data analysis of a subset of teachers drawn from the private restricted use SASS Public School Teacher Questionnaire administered by the National Center for Educational Statistics (NCES) in 2003-04 (Strizek et al., 2006). The SASS uses a cross-sectional study design that collects extensive data on public and private elementary and secondary schools in the United States. Since its first administration in 1987, SASS has been conducted in 5 subsequent school years: 1990-91, 1993-94, 1999-2000, 2003-04, and 2007-08. SASS obtains data on the characteristics of teachers, principals, and other school conditions such as workplace climate, school safety and discipline, teacher hiring practices, computer usage and resources, and professional development (Tourkin et al., 2007).

Sample

Teachers who responded to the SASS Public School Teacher Questionnaire administered by the NCES in 2003-04 were the unit of analysis for this study. The sample was restricted to full-time, public school teachers who identified as White, non-Hispanic or Black, non-Hispanic working in an urban setting. These 8,665 teachers represent 1,992 schools and each of the 1,992 schools contributed between 1 and 15 teachers to the sample. Approximately, 49% (n = 971) of the schools in this sample contributed up to 3 teachers to this sample.

In addition, items from the SASS 2003-04 Principal Questionnaire (principal race, principal gender, principal age, years principal worked at current school, total years teaching experience) and the SASS 2003-04 Public School Questionnaire (total number of students at school, total number of White students at school, total number of Black students at school, total number of teachers at school, total number of White teachers at school, and total number of Black teachers at school) were merged into the SASS Public School Teacher analytic database. Principal data were missing for 547 teachers in

this sample. School data were missing for 596 teachers in this sample, and 242 cases were missing both school and principal data.

Instrumentation

The NCES's SASS: Public Teacher Questionnaire from the 2003-04 school year is the primary data source for this study. The survey contained 83 questions and 420 items, and it was organized into 11 sections: (a) General Information, (b) Class Organization, (c) Educational Background, (d) Certification and Training, (e) Professional Development, (f) Resources and Assessments of Students, (g) Working Conditions, (h) Decision Making, (i) Teacher Attitudes and School Climate, (j) General Employment Information, and (k) Contact Information.

The SASS Public Teacher Questionnaire is composed of items as opposed to validated scales. Thirty-four items from the two sections of the SASS survey instrument (a) Decision Making and (b) Teacher Attitudes and School Climate were submitted to a principal axis factoring for the total sample ($n = 8,665$) to create the scales used in this study. Based on the scree plot, six factors (27 items) accounting for 52% of the variance were retained and rotated using varimax rotation to achieve simple structure. The six factors with eigenvalues greater than 1.0 were identified for this study and included five work-related attitudes (supervisor support, procedural justice, autonomy, job stress, teacher–student relationships), and the dependent variable (job satisfaction; see Table 1). Factor loadings below 0.5 on a given factor were excluded from that factor. Scale reliability was determined using Cronbach's alpha. Alpha coefficients ranged from .87 to .71 for this sample.

Workplace Demographics

Dummy variables from the SASS Public Principal Questionnaire and SASS Public School Questionnaire were created for principal race (1 = *Black*), for principal gender (1 = *male*), for middle schools (1 = *middle school*, 0 = *all other*), high schools (1 = *high school*, 0 = *all other*), and combined schools (1 = *combined school*, 0 = *all other*). Principal age is a continuous variable and represents the principal's age in years. Amount of time working as a principal in the current school was dichotomized so that less than 5 years of experience working at the school was assigned a 1 and more than 5 years of experience working at the school was assigned a 0. The coding decision for tenure links the current study to a body of educational and occupational behavior literature. For instance, Pfeffer (1983) used a 5-year cutoff

Table 1. Work-Related Attitudes and Job Satisfaction Scales' Items

Scale	Item	Brief item description	Item range
Supervisor Support	T0330	The principal lets staff members know what is expected of them.	1-4 (0-3)
	T0331	The school administration's behavior toward the staff is supportive and encouraging.	1-4 (0-3)
	T0337	My principal enforces school rules for student conduct and backs me up when I need it.	1-4 (0-3)
	T0340	The principal knows what kind of school he or she wants and has communicated it to the staff.	1-4 (0-3)
	T0342	In this school, staff members are recognized for a job well done.	1-4 (0-3)
Procedural Justice	T0311	How much actual influence do you think teachers have over school policy at this school setting performance standards for students at this school?	1-4 (0-3)
	T0312	How much actual influence do you think teachers have over school policy at this school regarding establishing curriculum?	1-4 (0-3)
	T0313	How much actual influence do you think teachers have over school policy at this school determining the content of in-service professional development programs?	1-4 (0-3)
	T0314	How much actual influence do you think teachers have over school policy at this school regarding evaluating teachers?	1-4 (0-3)
	T0315	How much actual influence do you think teachers have over school policy at this school regarding hiring new full-time teachers?	1-4 (0-3)
	T0316	How much actual influence do you think teachers have over school policy at this school regarding setting discipline policy?	1-4 (0-3)
	T0317	How much actual influence do you think teachers have over school policy at this school regarding deciding how the school budget will be spent?	1-4 (0-3)
Autonomy	T0319	How much control do you think you have in your classroom at this school regarding selecting content, topics, and skills to be taught?	1-4 (0-3)
	T0320	How much control do you think you have in your classroom at this school regarding teaching techniques?	1-4 (0-3)

(continued)

Table 1. (continued)

Scale	Item	Brief item description	Item range
	T0321	How much control do you think you have in your classroom at this school regarding evaluating and grading students?	1-4 (0-3)
	T0323	How much control do you think you have in your classroom at this school regarding determining the amount of homework to be assigned?	1-4 (0-3)
Job Stress	T0364	To what extent is student tardiness a problem at this school?	1-4 (0-3)
	T0365	To what extent is student absenteeism a problem at this school?	1-4 (0-3)
	T0371	To what extent is lack of parental involvement a problem at this school?	1-4 (0-3)
	T0373	To what extent is students come to school unprepared to learn a problem at this school?	1-4 (0-3)
Teacher–Student Relations	T0360	How often does student verbal abuse of teachers occur with students at this school?	1-5 (0-4)
	T0361	How often does widespread disorder in classrooms occur with students at this school?	1-5 (0-4)
	T0362	How often do student acts of disrespect for teachers occur with students at this school?	1-5 (0-4)
Job Satisfaction	T0375	The stress and disappointments involved in teaching at this school aren't really worth it.	1-4 (0-3)
	T0376	The teachers at this school like being here; I would describe us as a very satisfied group. (reverse coded)	1-4 (0-3)
	T0377	I like the way things are run at this school. (reverse coded)	1-4 (0-3)
	T0379	I think about transferring to another school.	1-4 (0-3)

when examining tenure as a measure of relational demography. Percentage of minority students enrolled at school, percentage of minority teachers at school, and percentage of students approved for the National School Lunch Program are continuous variables ranging from 0% to 100%.

Teacher Demographics

Dummy variables from the SASS Public Teacher Questionnaire were created for teacher race (1 = *Black*), for teacher gender (1 = *male*), for new teacher (1 = *new teacher*), and for master's degree (1 = *obtained master's*). Amount of time working as a teacher in the current school (tenure) was dichotomized so that less than 5 years of experience working at the school was assigned a 1 and more than 5 years of experience working at the school was assigned a 0. The 5-year cutoff was used to be consistent with the coding for principal tenure. Age is a continuous variable and represents teacher's age in years.

Relational Demography

Relational demography is operationalized as racial and gender congruence between teachers and their principal, racial congruence between teachers and teachers, and racial congruence between teachers and students. A teacher and a principal are racially congruent if they share the same race. For instance, a White teacher and an Asian principal would not be racially congruent. A teacher and a principal are congruent with respect to gender if both share the same gender. Teacher–principal racial congruence was coded so that a 1 represented congruence and a 0 represented incongruence. Teacher–principal gender congruence was coded so that a 1 represented congruence and a 0 represented incongruence.

Teacher–teacher congruence was measured as the percentage of teachers within a school who shared the same race as the teacher. If the teacher was Black and the percentage of Black teachers teaching at that school was 20%, the measure for teacher–teacher congruence was 20%. Teacher–teacher congruence was then dichotomized into an indicator variable such that a 1 represents teacher–teacher congruence that is equal to or greater than 70% and a 0 represents congruence less than 70%. A 70% cutoff has theoretical underpinnings. When 70% of a group shares a single demographic characteristic (such as race), the group can then be categorized as "tilted" and individuals within the group who share this characteristic can be characterized as being part of a "majority" (Kanter, 1977). Relational demography suggests that proportions differentially influence behaviors. Thus, members of a majority group

are thought to have different attitudes than individuals who are not part of the majority.

Teacher–student congruence was measured as the percentage of students within a school who shared the same race as the teacher. If the teacher was Black and the percentage of Black students enrolled at the school was 20%, the measure for teacher–student congruence was 20%. Teacher–student congruence was then dichotomized into an indicator variable such that a 1 represented teacher–student congruence greater than 70% and a 0 represented congruence less than 70%.

Analysis

Ordinary least squares (OLS) modeling techniques were used with teacher job satisfaction as the dependent variable. A sequential model was specified such that teacher job satisfaction was regressed on four functional sets of predictor variables. The first block of the regression model represents workplace demographics. The second block entered into the regression model was the set of variables representing teacher demographics. The third block of the regression model represents teacher work–related attitudes. The fourth block entered into the regression model was the set of variables representing relational demography.

Set A = Workplace Demographics
Set B = Teacher Demographics
Set C = Teacher Work-Related Attitudes
Set D = Relational Demography

Results

Descriptive Statistics

Teacher demographics. In the urban teacher sample, 85% (n = 7,366) were White and 68% (n = 5,891) were female and, on average, were aged 43.4 years (SD = 11.26). Almost 99% (n = 8,539) of the sample had earned a bachelor's degree, and of those who did, 49% (n = 4,251) earned a master's degree. Approximately 84% (n = 7,235) of the total sample had 3 years or more teaching experience, and 56% (n = 4,849) had worked in their current school for 5 years or more. The main teaching assignment for 21.4% (n = 1,857) of the total sample was elementary. Almost 14% (n = 1,195) taught special education, 12.8% (n = 1,108) taught English/language arts, 9.5%

($n = 824$) taught math, 9.1% ($n = 790$) taught natural science, 8.6% ($n = 743$) taught social science, and 24.8% ($n = 2,148$) taught in some other field.

The percentage of female teachers in urban schools was higher for Black teachers (72.3%) than White teachers (67.2%). Also, a higher percentage of Black teachers had been working in the current school for less than 5 years (51.7%) and had been teaching for 3 years or less (22.6%) than White teachers (42.7%, 15.4%). There were no notable differences between White and Black teachers on age, education, or general field of main assignment.

Workplace demographics. Approximately 73% ($n = 5,885$) of the teachers in the sample worked in school in which the principal was White and 44.1% ($n = 3,581$) were female and, on average, were aged 50.7 years ($SD = 7.42$). Approximately 90% ($n = 7,284$) of the total teacher sample worked in schools in which the principal had 5 years or more teaching experience, and about 36% ($n = 2,889$) of the sample worked in a school where the principal had been employed in his or her current school for 5 years or more.

The average percentage of minority student enrollment at the schools where teachers in this sample worked was 53.1 ($SD = 33.17$). The average percentage of Black student enrollment was 27.6 ($SD = 31.00$), and the average percentage of White student enrollment was 50.3 ($SD = 31.76$). The average percentage of minority teachers employed at the schools where the teachers worked was 21.5 ($SD = 25.00$). The average percentage of Black teachers employed in the schools was 14.7 ($SD = 23.49$) and the average percentage of White teachers employed was 78.7 ($SD = 25.88$). The average percentage of enrolled students approved for the National School Lunch Program at schools where the teachers worked was 45.6 ($SD = 27.57$). A little more than 50% ($n = 4,418$) of the teachers in the sample taught in a high school, 28.4% ($n = 2,465$) in an elementary school, 13.9% ($n = 1,205$) in a middle school, and 6.7% ($n = 577$) in a combined school.

Relational Demography

Teacher–principal racial and gender congruence. In this sample, White teachers were more racially congruent with their principals (79.2%, $n = 5,500$) than were the Black teachers (60.8%, $n = 713$). Gender congruence between teachers and principals for both White teachers and Black teachers was close to 50% (51.7%, $n = 3,589$; 54.6%, $n = 640$; see Table 2).

Teacher–teacher racial congruence. White teachers in the sample were more likely to be racially congruent with the teachers at their schools than Black teachers. The average percentage of White teachers employed at the school for the White teacher sample was 84.8% ($SD = 19.58$). The average

Table 2. Relational Demography Congruence Items

	White teachers (n = 7,366)		Black teachers (n = 1,299)	
Variable	*n*	%	*n*	%
Teacher–principal racial congruence[a]				
Congruent	5,500	79.2	713	60.8
Not congruent	1,446	20.8	787	39.2
Teacher–principal gender congruence[a]				
Congruent	3,589	51.7	640	54.6
Not congruent	3,357	48.3	532	45.4
Teacher–teacher racial congruence[b]				
M	84.8		50.9	
SD	19.58		30.37	
Min	0		0	
Max	100		100	
Teacher–student racial congruence[b]				
M	55.9		67.8	
SD	29.47		32.56	
Min	0		0	
Max	100		100	

[a]Data on principals were missing for 547 cases.
[b]Data on schools were missing for 596 cases.

percentage of Black teachers employed at the school for the Black teacher sample was 50.9% (*SD* = 30.37; see Table 2).

Teacher–student racial congruence. Black teachers in the sample were more likely to be racially congruent with the students at their schools than White teachers. The average percentage of Black students enrolled at the school for the Black teachers in this sample was 67.8% (*SD* = 32.56). The average percentage of White students enrolled at the school for the White teacher sample was 55.9% (*SD* = 29.47; see Table 2).

Correlations

Statistically significant correlations between the variables in this study were observed; however, because of the large sample size, effect sizes were used as the criterion for magnitude. Cohen (1988) operationally defines effect sizes

for correlation coefficients as small, $r = .10$, medium, $r = .30$, and large, $r = .50$. The pairs of variables that had a large effect size include (a) percentage of minority teachers at the school and principal race ($r = .54$), (b) percentage of minority teachers at the school and percentage of minority student enrollment ($r = .67$), (c) percentage of minority student enrollment and percentage of students eligible for the National School Lunch Program ($r = .59$), (d) high schools and middle schools ($r = –.55$), (e) teacher race and percentage of minority teachers at the school ($r = .54$), (f) teacher job satisfaction and teacher perceptions of supervisor support ($r = .60$), and (g) teacher perceptions of job stress and teacher perceptions of teacher–student relationships ($r = .59$).

Ordinary Least Squares Regression

Generalized estimating equations (GEE) were run to adjust for nonindependence of observations due to the clustered nature of the data—multiple teachers within schools. An exchangeable covariance structure was specified. The off-diagonal correlation was 0.063 which is a weak correlation and suggests that the school effect is nominal. Furthermore, when compared with results from the regression analysis, GEE estimates were essentially the same. Thus, results from the regression analysis are reported here.

Based on the R^2 analysis, Model 4 explains that greatest amount of variance (47.4%) in job satisfaction (see Table 3). The addition of the set of relational demography variables to the model explain a small (0.1%) but significant amount of variance adjusting for the effects of workplace demographics, teacher demographics, and teacher work–related attitudes. Unstandardized coefficients from Model 4 are reported here (see Table 4).

Hypothesis 1a: Teacher job satisfaction is related to workplace demographics. Adjusting for all other variables in the model, working for a male principal was associated with a .124-unit increase in teacher job satisfaction ($t = 2.424$, $p = .015$) and working in a high school was associated with a .294-unit increase in teacher job satisfaction ($t = 4.504$, $p < .001$). A 10% increase in minority teachers employed at the school was associated with a .07-unit decrease in teacher job satisfaction ($t = –4.256$, $p < .001$) after adjusting the other variables in the model (see Table 4).

Hypothesis 1b: Teacher job satisfaction is related to teacher demographics. Teacher age was associated with a .010-unit increase ($t = 4.431$, $p < .001$) in teacher job satisfaction and being male was associated with a .140-unit decrease ($t = –2.713$, $p = .007$) in teacher job satisfaction after accounting for all other variables in the model (see Table 4).

Table 3. Summary of Change in Explained Variance in Teacher Job Satisfaction Regression Models (N = 8,665)

Model	R^2	R^2 change	F	F change	p
1. Workplace demographics	.054	.053	38.256	38.256	***
2. Workplace demographics Teacher demographics	.066	.012	29.581	14.359	***
3. Workplace demographics Teacher demographics Work-related attitudes	.473	.407	285.076	1029.769	***
4. Workplace demographics Teacher demographics Work-related attitudes Relational demography	.474	.001	240.731	4.648	***

*p < .05. **p < .01. ***p < .001 (refers to R^2 change).

Hypothesis 1c: Teacher job satisfaction is related to teacher work–related attitudes. Supervisor support was associated with a .353-unit increase in teacher job satisfaction (t = 45.373, p < .001); job stress was associated with a .101-unit decrease (t = –9.833, p < .001) in teacher job satisfaction; procedural justice was associated with a .055-unit increase (t = 9.277, p < .001) in teacher job satisfaction; autonomy was associated with a .072-unit increase (t = 6.151, p < .001) in teacher job satisfaction; and poor teacher–student relationships was associated with a .132-unit decrease (t = –15.787, p < .001) in teacher job satisfaction after adjusting for all other variables in the model (see Table 4).

Hypothesis 1d: Teacher job satisfaction is related to relational demography. The congruence between teacher–principal gender and teacher–student race had a direct effect on teacher job satisfaction. Teacher–principal gender congruence was associated with a .148-unit decrease (t = –2.990, p = .003) in teacher job satisfaction and teacher–student racial congruence was associated with a .140-unit increase (t = 2.253, p = .024) in teacher job satisfaction after adjusting for all variables in the model (see Table 4).

Discussion

Findings from this study are similar to those of other studies that found that teachers' work-related attitudes explain a greater amount of the variance related to job satisfaction than demographics (Lee et al., 1991; Perie & Baker, 1997; Stockard & Lehman, 2004). The results also support previous findings that

Table 4. Summary of Sequential Regression Analysis for Variables Predicting Teacher Satisfaction ($N = 8,665$)

	Model 1			Model 2			Model 3			Model 4		
Variable	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*
Constant	9.482	.25	***	8.634	.29	***	7.855	.22	***	7.717	.24	***
Step 1												
Principal age	−.004	.00		−.005	.00		.003	.00		.003	.00	
Principal race—non-Black ref group	−.318	.09	**	−.382	.09	***	−.112	.07		−.085	.08	
Principal gender—female ref group	.163	.06	*	.151	.06	*	.187	.05	***	.124	.05	*
Principal tenure—5+ years in school ref group	−.179	.07	**	−.183	.07	**	−.014	.05		−.019	.05	
Middle schools only	−.396	.09	***	−.378	.09	***	.042	.07		.032	.07	
High schools only	−.418	.08	***	−.399	.08	***	.294	.07	***	.294	.07	***
Combined schools only	.824	.29	**	.730	.29	*	.344	.22		.332	.22	
% minority student enrollment	−.007	.00	***	−.007	.00	***	−.002	.00		.000	.00	
% minority teachers	−.007	.00	***	−.011	.00	***	−.006	.00	***	−.007	.00	***
% students for the National School Lunch Program	−.005	.00	***	−.005	.00	***	.001	.00		.001	.00	
Step 2												
Teacher age				.021	.00	***	.010	.00	***	.010	.00	***
Teacher race—White ref group				.548	.10	***	−.055	.08		−.093	.09	
Teacher gender—female ref group				−.129	.07		−.172	.05	**	−.140	.05	**
Teacher education—non-MA ref group				−.056	.06		−.041	.05		−.038	.05	
New teacher—3+ years teaching ref group				−.003	.10		−.011	.07		−.012	.07	
Teacher tenure—5+ years in school ref group				.197	.07	**	−.087	.05		−.079	.05	

(continued)

Table 4. (continued)

Variable	Model 1			Model 2			Model 3			Model 4		
	B	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*
Step 3												
Supervisor support							.352	.01	***	.353	.01	***
Job stress							−.102	.01	***	−.101	.01	***
Procedural justice							.056	.01	***	.055	.01	***
Autonomy							.072	.012	***	.072	.01	***
Teacher–student relationships							−.132	.01	***	−.132	.01	***
Step 4												
T–P racial congruence										.072	.08	
T–P gender congruence										−.148	.05	**
T–T racial congruence										.046	.08	
T–S racial congruence										.140	.06	*

Note: $R^2 = .054$ for Step 1 ($p < .001$); $\Delta R^2 = .012$ ($p < .001$) for Step 2; $\Delta R^2 = .407$ ($p < .001$) for Step 3; $\Delta R^2 = .001$ ($p = .001$) for Step 4.
*$p < .05$. **$p < .01$. ***$p < .001$.

supervisor support (Lee et al., 1991; Liu & Ramsey, 2008; Perie & Baker, 1997; Stockard & Lehman, 2004), autonomy (Lee et al., 1991; Perie & Baker, 1997; Renzulli et al., 2007), and procedural justice (Imber et al., 1990; Perie & Baker, 1997; Rice & Schneider, 1994; Rosenholtz, 1985; Shann, 1998) are positively associated with job satisfaction. Experiences in the classroom are also linked to teacher job satisfaction. High job stress and poor teacher–student relationships were both associated with teacher dissatisfaction. These findings are similar to other studies that identify student discipline problems and lack of student motivation as a source of dissatisfaction for teachers (Ingersoll, 2001a, 2001b; Johnson & Birkeland, 2003; Lee et al., 1991; Liu & Ramsey, 2008; Perie & Baker, 1997).

Findings from this study are consistent with other findings that demonstrate male teachers are more dissatisfied than female teachers (Bogler, 2001; Culver et al., 1990; Kearney, 2008; Ma & MacMillan, 1999; Perie & Baker, 1997; Renzulli et al., 2007). Teachers in this sample are more satisfied working in high schools—a finding supported by the work of Renzulli et al. (2007).

Although the set of relational demography variables accounted for a small amount of the overall variance in the regression model after adjusting for teacher demographics, workplace demographics, and work-related attitudes, its direct effect on job satisfaction was significant. Teacher–student racial congruence and teacher–principal gender congruence influence teacher job satisfaction. Teacher–student racial congruence findings from this study are mixed in terms of their consistency with those of Mueller et al. (1999) and Renzulli et al. (2007). Different cutoffs were implemented in each of the three studies on relational demography and teacher job satisfaction. For example, Muller et al. categorized a school as "racially matched" when at least 40% of the teachers and students were of the same race. They found similar findings at 50% but no significant findings at 60%. Renzulli et al. defined a school as "racially homogeneous" at 60%. This study defined a school as "racially homogeneous" at 70% and used Kanter's (1977) work with women as the theoretical rational for selecting the cutoff.

Teacher–student racial congruence is positively associated with job satisfaction. When the racial composition of students is equal to or exceeds 70% of the entire student population (what Kanter, 1977, refers to as a *majority*), and the teacher shares the same race with the majority of students at the school, this racial congruency was positively associated with job satisfaction. Mueller et al. (1999) found this same pattern at 40% and 50%, and Renzulli et al. (2007) found this pattern at 60%.

Findings from this study suggest that the gender congruence between teachers and principals should be further examined. Gender *incongruence*

(female teacher/male principal; male teacher/female principal) has a positive effect on job satisfaction for teachers compared with gender congruence (female teacher/female principal; male teacher/male principal)—and the negative effect of teacher–principal gender congruence is more pronounced for female teachers and female principals. Deeper understanding of the female teacher/female principal relationship is particularly germane, not only because the principalship is becoming a more feminized profession (Mertz & McNeely, 1994; U.S. Department of Education, National Center for Education Statistics, 2007) but also because of the well-established relationship between supervisor support and job satisfaction. The effects of relational demography, if not addressed, may negatively interact with supervisor support. The principal, often at the center of successful school initiatives, can create opportunities within the school for professional development and can help facilitate a collaborative environment for teachers. To the extent that principals are more aware of the potential negative effects of relational demography, they can better navigate staff through conflict thereby reaching the known benefits of diversity.

Furthermore, the negative relationship between teacher–principal gender congruence on job satisfaction may support the argument that female principals are held to different standards than male principals (Mertz & McNeely, 1994; Pollard, 1997). Though, as Addi-Raccah (2006) suggests, female principals who work in schools where they have diminished social power may have fewer resources at their disposal to extend to teachers.

Implications

Relational demography highlights the unique demographic makeup inherent to all organizations and has implications for increasing the effectiveness of programs and interventions. Understanding the effects of relational demography has the potential to improve teacher job satisfaction by helping to locate conflict. That is, relational demography helps to identify sources of conflict and tension within and between groups and brings into focus misunderstandings that are rooted in social or cultural differences.

Thus, mapping the demographic terrain of organizations has important implications for the manner in which interventions are implemented at schools. Glasgow, Lichtenstein, and Marcus (2003) discuss the differences between efficacy and effectiveness trials and note the gap between research and practice. They suggest that generalization is compromised in efficacy studies because they are designed around a “homogeneous, highly motivated sample”

and exclude those with complicating factors (p. 1262). Thus, the effectiveness of programs should be reexamined across schools with varying demographic makeup.

The findings from this study also point to the continued and urgent need to rethink teacher education programs. Programs such as the Urban Teacher Residency (UTR) movement are emerging as unique, innovative teacher education programs designed to bridge the gap between academic preparation and on-the-ground realities of teaching in urban schools (Berry, Montgomery, & Snyder, 2008). UTRs differ from other alternative pathways to certification; in many respects, the relational demography findings surfaced in this study are inherently addressed in UTR programs. UTRs fuse education theory and classroom practice over the course of 14 months. Residents learn alongside an experienced mentor-teacher and receive ongoing support for multiple years once they become teachers of record. Candidates are prepared in cohorts to facilitate learning communities (Berry et al., 2008). Communities of practice and deep mentor–resident relationships provide different levels of support for new teachers and help root them more firmly in urban schools. Negative effects of relational demography may have less relevance for those teachers who are well trained in urban schools to begin with and who have access to a network of supportive colleagues.

Study Limitations

This study has certain limitations. First, the data examined in this study were cross-sectional. Cross-sectional data are measured at one point in time and offer a partial representation of the phenomenon under consideration. A cross-sectional design does not capture the phenomenon as it unfolds. The advantage of a longitudinal or panel design, on the other hand, affords greater perspective—illustrating how the effects of relational demography expand or diminish as the work environment changes. It may also be the case that the effects of relational demography are less relevant at different points in a teacher's career. Furthermore, teachers whose job satisfaction may have been strongly and negatively influenced by relational demography may have left the school or the field of teaching prior to the administration of the study. Teachers who fall within this category may potentially be underrepresented in a cross-sectional study design.

Second, only the structural determinants, the workplace demographic variables in this study, of job satisfaction model suggested by Price (2001) were tested. It is possible that relational demography will affect the psychological

and economic components of the model that were not tested here. Inclusion of these determinants may influence the association between relational demography and job satisfaction.

Finally, demography, itself, is a blunt instrument used to make comparisons within and across groups based on visible and identifiable characteristics. Although relational demography is a slightly more subtle tool, it too lacks precision. In this study, the construction of a set of congruency items represents relational demography. Racial congruence among teachers and teachers, teachers and students, and teachers and principals and gender congruence between teachers and principals each have different social and cultural weight. Relational demography does not assign different weight to gender or race—though, arguably, different contexts would afford greater importance to one over the other. Rather, relational demography serves as a marker that locates and flags potential conflict. In this respect, relational demography is a unique tool that may help guide the implementation of educational interventions and programs. Future studies should continue to examine the relationship between female teachers and female principals and how the context of the school may influence female principals' responsiveness to teachers. Future studies should also examine relational demography with more precise measures of relational demography.

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