

Demographic Diversity of Managers and Employee Job Satisfaction: Empirical Analysis of the Federal Case

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Abstract

As the proportion of racial/ethnic minorities and women in the workforce has increased, there has been the growing concern of integrating them into the mainstream of the organization. This study explores how demographic diversity (racial and gender diversity) of management influences job satisfaction of employees in public organizations. It contributes to our understanding of the role of demographically diverse managerial teams in managing the workforce by analyzing the recent data from 191 federal agencies collected in 2008 and by using a methodologically rigorous method (multilevel modeling). The results show that the higher proportion of racial/ethnic minorities and women in managerial positions is negatively related to employee job satisfaction. Racial/ethnic minorities are more satisfied with their job and organization when there are higher levels of racial/ethnic diversity in managerial positions. No significantly different impacts of gender diversity on job satisfaction of men and women were found. Diversity climate positively moderates the relationships between racial/ethnic and gender diversity of managers and job satisfaction of employees, whereas procedural justice and leadership negatively moderated the relationships.

Keywords

diversity, employee attitudes, behavior, and motivation, federal government HRM, gender and public personnel administration, human capital

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Introduction

As more women and racial/ethnic minorities hold managerial positions in the United States, growing attention has been paid to how managerial diversity influences organizational effectiveness in increasingly diversified work settings (Richard, Barnett, Dwyer, & Chadwick, 2004). Some research suggests that organizations may increase the demographic diversity of their upper management to improve their effectiveness (Cox, 1993; Gelfand, Nishii, Raver, & Schneider, 2004; Nishii, Gotte, & Raver, 2007). Managers' demographic characteristics that are associated with their values and perceptions are likely to affect their leadership, consequently affecting the organizations' outcomes (Hambrick & Mason 1984; Nishii et al., 2007). A diverse managerial team may help diversified workforces work together better and produce positive outcomes such as increased performance and higher job satisfaction of employees. Indeed, some empirical findings in business management support the positive impacts of upper management diversity on organizational effectiveness in highly diversified workforces (e.g., Nishii et al., 2007; Roberson & Park, 2006).

Managerial diversity and its impacts on organizational outcomes have also become critical concerns in government as the proportions of women (0.41)¹ and racial/ethnic minorities (0.22) in managerial positions have increased (Central Personnel Data File, 2009). Despite this fact, relatively less research has been performed to explore the role of managerial diversity in managing increasingly diversified public workforces effectively. Although more scholarly effort seems to have been invested in the research in business management, it is still questionable whether these findings can be directly applied to public management. Scholars in public management (e.g., Bozeman, 1987; Rainey, 2003) indicate environmental and structural differences between public and private organizations, which may affect the relationship between diversity and employee outcomes in public organizations in different ways.²

To address this concern, this study examines how racial/ethnic diversity and gender diversity in managerial positions affect job satisfaction of employees as a measure of organizational effectiveness in public organizations.³ Although research on the effect of job satisfaction on organizational effectiveness yielded inconsistent findings, there is the well-established argument that job satisfaction may positively affect organizational effectiveness by reducing the costs associated with absenteeism, turnover, and other organizational behaviors of employees (Harrison & Klein, 2006; Yang & Kassekert, 2006). Two streams of research—representative bureaucracy and upper echelon theory—provide the theoretical background of this study. This study contributes to the literature by analyzing recently collected data from federal agencies and by using a more sophisticated methodology. It will provide scholars and practitioners with important insights into the dynamics of heterogeneous workgroups, which will help them manage the increasingly diversified workforce more effectively. In the following section, the literature on the demographic diversity of management and its impacts on job satisfaction of employees will be reviewed to develop a theoretical

model. On the basis of the theoretical model, hypotheses will be developed and tested by data analysis. Finally, the findings and their implications will be discussed.

Literature Review

The representative bureaucracy literature notes that people will share similar attitudes, beliefs, and values if they have the same demographic and social backgrounds (Dolan, 2000; Selden, 1997). When diverse demographic and social groups are well represented in bureaucracy, their values and interests will be articulated and reflected in decisions and policies (Selden, 1997). Despite the symbolic commitment to equal access to power and administrative legitimacy of representative bureaucracy (Gallas, 1985; Kellough, 1990; Meier, 1993a; Mosher, 1982; Selden, 1997; Wise, 1990), very little evidence was reported that the numeric representation of diverse groups in bureaucracy (passive representation) is necessarily connected to decision-making that reflects the interests of all groups equally (active representation).

Scholars (e.g., Dolan, 2000; Meier, 1993a; Selden, 1997) have argued that some specific conditions facilitate the linkage of passive representation to active representation. If higher proportions of group members exist in the organization, active representation is more likely to occur (Bayes, 1991; Dolan, 2000; Hindera & Young, 1998; Meier, 1993a, 1993b; Nachmias & Rosenbloom, 1973; Thompson, 1976). It assumes that the existence of a larger proportion of one's own group members is likely to support representation of the group's values and interests in an organization. However, the relationship does not appear to be linear. Meier (1993b), in his study of Latino representation in Florida school districts, found that passive representation positively affected educational performance of Latino students only when the proportion of Latino students reached a critical point. Hindera and Young (1998) did not find a consistent relationship between the size of a group and active representation of the group within an organization. More importantly, political support and administrative leadership that promote representation of values and interests of a group in an organization will matter for active representation to occur in an organization. If administrators have significant influence over decision-making their personal values and attitudes are more likely to be reflected in decisions or policies made. Thus, the existence of a greater number of group members in decision-making positions will promote the interest and values of the group in being supported within the organization. This argument is empirically supported by quite a few studies. Meier (1993b) found that the existence of a critical mass of Latino principals or upper-level administrators was positively related to desirable results for Latino students. Dolan (2000) found that the higher proportion of female senior executive services (SES) was positively associated with more female-friendly policies within the organization, suggesting that more female leaders in policy-making positions might support the interests and values of their own group. Similarly, Wilkins and Keiser (2006) also found a positive relationship between the number of female supervisors and positive policy outcomes for women in Missouri counties. Goode and Baldwin (2005) add the further supportive finding that African

American personnel directors are more likely to promote the representation of African Americans in municipal government. Nishii et al. (2007), in their study of senior Human Resources (HR) officials from the private industries, demonstrated that the gender and racial/ethnic diversity of upper management are positively associated with the adoption of diversity management practices.

Another important theoretical contribution to the impacts of managerial diversity emerges from Hambrick and Mason's (1984) upper echelon theory. According to their argument, organizational outcomes reflect the values and cognitive bases of decision-makers in the organization (Hambrick & Mason, 1984; Smith et al., 1994). Because managers are likely to make their decisions based on their personal values and experiences, demographic characteristics that are associated with their values and experiences are also likely to affect their decisions (Hambrick & Mason, 1984; Nishii et al., 2007). For example, women and racial/ethnic minorities in upper management may promote the integration of these individuals throughout the organization and support their interests and values in the decision-making process (Dolan, 2000; Nishii, et al., 2007; Wilkins & Keiser, 2006). Some empirical studies support this argument on the impacts of managerial diversity (e.g., Baron, Mittman, & Newman, 1991; Dolan, 2000; Herdman & McMillan-Capehart, 2010; Nishii et al., 2007). Nishii et al. (2007) found that the management team diversity enhanced the access of women and racial/ethnic minorities to organizations and the fairness in treating these nontraditional employees. In a similar vein, Baron et al. (1991) reported that organizations led by female executives showed higher levels of gender integration throughout the organization than those led by male executives.

The increasing proportions of women and racial/ethnic minorities in managerial positions may have disparate impacts on subordinates with different demographics. The overcrowding theory argues that the influx of more women to the labor market will depress men economically and psychologically (Bergmann, 1971). In gender-integrated settings, men will experience greater psychological and social losses than women, leading them to be less happy with their jobs (e.g., Nilson, 1976; Wharton & Baron, 1987). Restricting women to female-dominated occupations or positions which generally pay less than male-dominated roles enables men to stay with higher wages and more cohesive relations among their male colleagues than gender-balanced settings (Kanter, 1977; Wharton & Baron, 1987).

Despite the significance of these findings, the implications are still limited because they analyzed limited samples such as specific types of private businesses and industries (e.g., Baron et al., 1991; Herdman & McMillan-Capehart, 2010; Nishii et al., 2007) and only female employees in the federal government (e.g., Dolan, 2000). As many researchers in organizational management (e.g., Bozeman, 1987; Rainey, 2003; Wamsley & Zald, 1973) indicate, sectoral distinctions might affect the relationship between managerial diversity and organizational effectiveness differently in different sectors. By testing the effects of the demographic diversity of managers on employees' job satisfaction using a large data set from 191 subagencies in the federal government, it will be an important addition to the literature.

Hypotheses

The Diversity of Managers and Employee Job Satisfaction

Researchers (e.g., Herdman & McMillan-Capehart, 2010; Nishii et al., 2007) contend that managerial diversity may be a critical factor that affects the effectiveness of management in heterogeneous organizations. Employees with managers who have different demographic attributes may perceive less support and more discrimination and conflict than those with demographically similar managers (Herdman & McMillan-Capehart 2010; Jackson & Joshi, 2004; Tsui & O'Reilly, 1989). In contrast, demographically diverse managerial teams are likely to be more strongly committed to help diverse employees to be successful in their organization than are homogenous managerial teams.

Demographic difference in manager--subordinate dyads may provoke animosity and disrupt interactions, consequently decreasing job satisfaction of employees (Avery, McKay, Wilson, & Tonidandel, 2007; Herman & McMillan-Capehart, 2010). The social integration perspective notes that members of a socially cohesive group will experience higher morale and satisfaction in their social interactions among group members (Shaw, 1981; McGrath, 1984; Smith et al., 1994). In contrast, demographically heterogeneous work groups may be more highly dependent upon impersonal bureaucratic controls such as rules and regulations than informal communication (Pfeffer, 1983; Smith et al., 1994), which may result in lower job satisfaction and decreased commitment of the group members. Homogeneous managerial teams dominated by White males may thus have negative impacts on their interactions with diverse subordinates. Diverse managers may influence job satisfaction of diverse subordinates positively because diversified managerial teams may emphasize respecting individual differences, promoting diversity and representation of work groups, and integrating individuals from different backgrounds in work groups. Employees who believe to be accepted and respected in the organization may have a higher degree of job satisfaction (Lawler, 1994; Roberts & O'Reilly, 1979) and commitment to the organization (O'Reilly, Caldwell, & Barnett, 1989). Indeed, Eisenberger, Fasolo, and Davis-LaMastro (1990), in their study of the impacts of attitudes on work outcomes, found that employees' perceptions of being valued by an organization had a significant effect on their job satisfaction, involvement, and innovativeness. In light of this argument, the following hypothesis is developed.

Hypothesis 1: The demographic diversity of managers in terms of race/ethnicity and gender will be positively related to employees' job satisfaction.

The Moderating Effect of Demographics

The diversity of managers is likely to contribute to creating a prodiversity climate within organizations, which will reinforce and strengthen the effectiveness of managing a highly diversified workforce. A homogeneous managerial team dominated by

White males may not be consistent and salient signals for the organization's support for diversity (Herman & McMillan-Capehart, 2010; Nishii et al. 2007). In contrast, higher proportions of women and racial/ethnic minorities in managerial positions may show that the organization has strong commitment to diversity initiatives, providing women and racial/ethnic minorities greater access to power and prestige in the organization. Moreover, the presence of more female and minority managers will help to change employees' perceptions of the relative lack of competence of these nontraditional employees, thus reducing biases against these minority employees within the organization (Morrison, 1992; Nishii et al. 2007; Perry, Davis-Blake, & Kulik, 1994).

The diversity of managers may have greater positive impacts on job satisfaction of women and racial/ethnic minorities because managerial positions tend to have been dominated by White males. Women and racial/ethnic minorities may feel higher satisfaction in their manager--subordinate relationships when they interact with people who have similar demographic characteristics. Some studies show that a minority female manager may experience difficulty in managing a work group dominated by men (e.g., Jackson & Joshi, 2004; Kirchmeyer, 1995; Tsui, Xin, & Egan, 1995). In the occupational segregation study by Wharton and Baron (1989), women in balanced work settings were more satisfied than men in similar settings, whereas men reported lower levels of satisfaction and self-esteem in balanced settings than in either male-dominated or female-dominated settings. Similarly, Tsui, Egan, and O'Reilly (1992) also found that men showed lower psychological attachment to their work groups in balanced settings, whereas women reported higher attachment to their work groups. Therefore, the following hypothesis is formulated.

Hypothesis 2: Racial/ethnic minorities and women are likely to be more satisfied with their job and organization than white males when there are higher levels of demographic diversity in managerial teams.

The Effects of Organizational Contexts

Diversity researchers have argued for the influence of various environmental factors on the relations between diversity and its consequences (Choi, 2009). This study focuses on the moderating effects of contextual factors such as diversity climate, fair treatment of employees, and managerial support for subordinates, which may affect the relationship between managerial diversity and employee job satisfaction.

Diversity climate, defined as "aggregate perceptions about the organization's diversity-related formal structure characteristics and informal values" (Gonzalez & DeNisi, 2009, p. 24), will change employees' perceptions of diversity and help them experience the organization's support for diversity (Herman & McMillan-Capehart, 2010). Research has shown that the development of a diversity climate is positively associated with organizational commitment, job satisfaction, and productivity of non-minority employees as well as minority employees (Avery et al., 2007). Diversity climate in the organization will also facilitate minority managers to advocate and promote

the values and interests of minority subordinates, otherwise minority managers would remain as tokens in the organization without discretionary power.

Hypothesis 3: Diversity climate will be positively associated with employee job satisfaction.

Hypothesis 4: When the diversity climate is greater, the relationship between managerial diversity and employee job satisfaction will be greater.

Perception of organizational justice has been viewed as “a source of both job satisfaction and positive evaluations of the organization” (Cohen-Charash & Spector, 2001; Lind & Tyler, 1988, p. 191). Some empirical studies have found that employees’ perceptions of just rules and procedures governing decisions are positively associated with organizational commitment, trust in supervisors, and job satisfaction (e.g., Alexander & Ruderman, 1987; Folger & Konovsky, 1989; Konovsky, Folger, & Cropanzano, 1987; Sweeny & McFarlin, 1993). Especially in highly diversified settings, managers’ strong commitment to justice (e.g., fair resolution of conflicts and disagreements) can help employees improve their attitudes toward their organizations and supervisors in organizations, positively affecting job satisfaction of employees.

Hypothesis 5: Perceived procedural justice will be positively associated with employee job satisfaction.

Hypothesis 6: In agencies in which the level of perceived procedural justice is higher, managerial diversity will be more strongly related to employee job satisfaction.

Supervisor behaviors and leadership style have been seen as important determinants of job satisfaction of subordinates in various work settings (Durham et al., 1997; Griffin, Patterson, & West, 2001; Yukl, 1989). Supportive behaviors of a supervisor—trusting subordinates; rewarding and recognizing performance; empowering subordinates; caring for the needs of subordinates; showing integrity and ability as a leader—are expected to improve subordinates’ satisfaction with their job and organization (Fernandez, 2008). Indeed, some empirical evidence (e.g., Fernandez, 2008) has shown that supportive leadership positively affects subordinates’ satisfaction with their job. Moreover, diverse managerial teams with supportive leadership are likely to be more understanding of diverse subordinates’ needs and concerns in the workplace and to be more strongly committed to help them to be successful in their job than are homogenous managerial teams. Figure 1 exhibits the hypothesized model.

Hypothesis 7: Supervisory support for employees will be positively associated with employee job satisfaction.

Hypothesis 8: In agencies in which employees perceive that managers are supportive, managerial diversity will be more strongly related to employee job satisfaction.

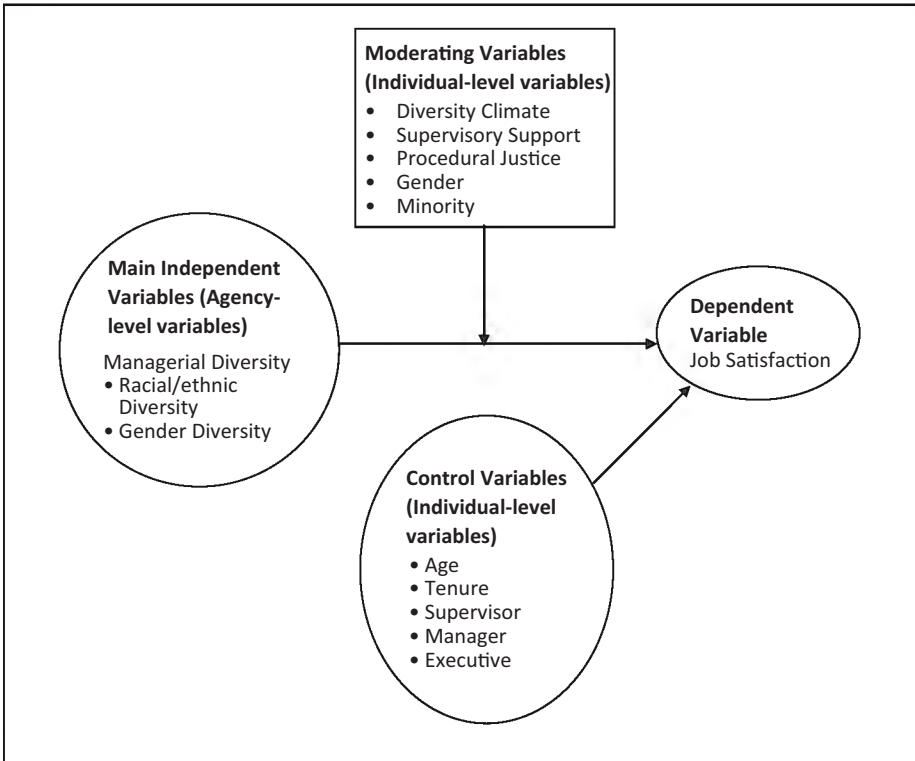


Figure 1. The hypothesized model.

Data and Method

Data Sources and Sample

This study uses data extracted from two major sources—the 2008 Central Personnel Data File (CPDF)⁴ and the 2008 Federal Human Capital Survey (FHCS), both of which were published by the US Office of Personnel Management (OPM). The diversity of management in federal agencies was measured using information from the CPDF for 2008. Individual-level variables such as demographics (e.g., sex, minority status, supervisory status), diversity management, perceived justice, supervisory support, and job satisfaction were developed using the questionnaire of the 2008 FHCS. The FHCS was administered to full-time, permanent employees of agencies listed on the President’s Management Council (PMC) and the small/independent agencies, which comprise approximately 97% of the executive branch workforce. A total of 212,223 out of 417,128 employees who were selected through the stratified random sampling method completed the survey, resulting in the response rate of 51%.

Method

This study employs multilevel modeling (MLM) to test how the diversity of managerial teams in federal agencies is associated with individual employee's job satisfaction. Multilevel models are frequently used when the data have a hierarchical structure, or units of analysis are nested within higher-level clusters or groups (Raudenbush & Bryk, 2002). The aggregation or disaggregation of observations into a higher or lower level of variables and the use of classical regressions may lead to misleading results because it ignores the variations associated with each level of the hierarchy (Raudenbush & Bryk, 2002). The federal government is hierarchically structured and individual employees are grouped into agencies or programs, which may lead to a natural clustering effect (e.g., sharing policies and procedures). Some previous studies (e.g., Choi, 2009; Choi & Rainey, 2010) did not take into consideration the hierarchical nature of the data from the federal government and employed OLS regressions, which possibly produced inaccurate results. To test the potential clustering effect of the data, the intraclass correlation coefficient (ICC) for each model was calculated. The ICC in this study refers to the proportion of variance in the outcome that is accounted for by agency-level characteristics. The ICC for each model is 0.023, which is small, but highly significant ($p < .01$). It indicates the nested nature of the data and that multilevel models are appropriate methods for analyzing the data. To deal with the potential bias and obtain more rigorous results, this study therefore develops multilevel models.

Dependent Variable

Job Satisfaction. Job satisfaction, which is an individual-level variable, is developed utilizing responses to two pertinent survey questions. These items capture the overall satisfaction of employees with their jobs and organizations. The Cornell Job Descriptive Index (JDI) recommends measuring five facets of job satisfaction—satisfaction with job itself, opportunities for recognition and advancement, pay, coworkers, and supervisors (Smith, Kendall, & Hulin, 1969). Although I acknowledge that the measure of this study may not cover all the aspects of job satisfaction, the measure that inquires overall job and organizational satisfaction has been frequently utilized in the literature (e.g., Pitts, 2009). The appendix shows specific questions for this measure. The measure of job satisfaction was also developed by principal factor analysis and varimax rotation methods. Factor loadings include 0.938. The initial eigenvalue of the scale was 1.759. The Cronbach's α was 0.923, which show the measure is highly reliable. The Appendix displays survey items that were selected for this analysis.

Main Independent Variables

The Diversity of Management. The diversity of managers, which is an agency-level variable, is the main independent variable of the models. The proportions of women

and racial/ethnic minorities⁵ in managerial positions (GS 13-GS 15) are used as the measure of managerial diversity. There has been great debate over the effectiveness of various diversity measures. Recently, three types of diversity measures have been used most frequently: the coefficient of variation, the Blau index of heterogeneity, and the entropy index of diversity. However, these measures gauge the relative proportions of subgroups, not the relative size of any particular subgroup, suggesting that the measures do not necessarily consider the representation of subgroups in the population (Rushton, 2008). An equal distribution of each racial/ethnic group is not the goal of representative bureaucracy given that the civilian workforce comprises different proportions of racial/ethnic groups. Thus, scholars (e.g., Harrison & Klein, 2007; Rushton, 2008) are concerned that use of these diversity measures may lose important information such as the actual compositions of racial/ethnic groups or gender by focusing on the general diversity of the population. To respond to this concern, the proportions of female managers and racial/ethnic minority managers are employed to measure the diversity of management.

Table 1 displays the proportion of racial/ethnic minorities and women in managerial positions in the executive branch departments and selected independent agencies in the federal government.⁶ The average proportion of racial/ethnic minorities in managerial positions is 0.22, whereas the median is 0.22. The average proportion of female managers is 0.41, whereas the median is 0.42. Given that the overall proportion of racial/minorities and women in the federal workforce is 0.33 and 0.44 respectively, racial/ethnic minorities and women in managerial positions are still underrepresented.

Control Variables

The models control for three organizational contextual factors—perceived fairness, diversity climate, and supervisory support and demographic variables. These three contextual variables and gender also moderate the relationship between managerial demographic diversity and job satisfaction. They are developed based on individual employees' responses to relevant questions.

Perceived Fairness. Treating all members fairly regardless of their differences may be a key determinant of successful human resource management. The measure of perceived fairness is included to control its impact on job satisfaction of employees. The measure is constructed by combining responses to four survey items: fair resolution of grievances, low tolerance on personal favoritism, prohibited personnel practices, and disclosure of violation of law without fear. The results of principal factor analysis and varimax rotation show that factor loadings range from 0.865 to 0.9 and the initial eigenvalue of the scale is 3.132. The Cronbach's α is 0.906.

Supervisor's Support. To control this variable, the measure of supervisor's support for subordinates is included in the models. The measure was developed by combining four survey questions through principal factor analysis and varimax rotation methods. The items inquire about supervisory competence in managing relationships,

Table 1. The Diversity of Management in the Federal Government.

Proportions of Women and Racial/Ethnic Minorities (GS13-GS15)	Racial/Ethnic Minorities	Women
Department of the Air Force	.1552	.2210
Department of the Army	.1963	.2557
Department of the Navy	.1494	.2126
Department of Defense	.1756	.2455
Department of Agriculture	.2177	.3657
Department of Commerce	.2727	.3262
Department of Justice	.2239	.3133
Department of Labor	.2780	.4258
Department of Energy	.2186	.3482
Department of Education	.3750	.5908
Department of Health and Human Services	.2921	.5503
Department of Homeland Security	.2643	.3085
Department of Housing and Urban Development	.4553	.5312
Department of Interior	.1880	.3435
Department of State	.2320	.4267
Department of Transportation	.2249	.2426
Department of Treasury	.3007	.4826
Department of Veterans Affairs	.2649	.4081
Equal Employment Opportunity Commission (EEOC)	.4892	.5795
Environmental Protection Agency (EPA)	.2522	.4554
Aeronautics and Space Administration (NASA)	.2175	.2878
Office of Personnel Management (OPM)	.3536	.5403
Social Security Administration	.3179	.5521
Merit Systems Protection Board (MSPB)	.2290	.4885
Office of Management and Budget (OMB)	.2151	.5458

supervisory support for employees' well-being, and opportunities for employee empowerment. Factor loadings range between 0.826 and 0.913 and the initial eigenvalue of the scale is 3.028. The Cronbach's α is 0.892.

Diversity Climate. Federal agencies' support for diversity was measured based on three relevant questions from the 2008 FHCS. These questions inquire about leaders' commitment to diversity and representation, managerial capacity to manage diversity, and policies and practices to promote diversity. The measure attempts to capture some important aspects of diversity support of an agency such as the impacts of managerial leadership and commitment that promote diversity in agencies and an organizational culture that values diversity properly. By using three relevant questions, an index variable was developed through factor analysis. Principal component factor analysis and varimax rotation produced a single factor on which these three items loaded. The

Table 2. Descriptive Statistics.

Variables	Mean	SD	Min	Max	Unit
Minority	0.28	0.449	0	1	Nonwhites = 1; Whites = 0
Sex	0.469	0.499	0	1	Female = 1; male = 0
Age	3.402	1.01	1	5	Year (29 and under = 1; 30-39 = 2; 40-49 = 3; 50-59 = 4; 60 or older = 5)
Organizational tenure	5.802	1.657	1	7	Year (less than 1 year = 1; 1-3 = 2; 4-5 = 3; 6-10 = 4; 11-20 = 5; more than 20 = 6)
Location	0.397	0.489	0	1	Headquarters = 1; field = 0
Supervisor	0.180	0.385	0	1	Supervisor = 1
Manager	0.101	0.302	0	1	Manager = 1
Executive	0.023	0.151	0	1	Executive = 1
Racial/ethnic diversity	0.221	0.131	0	0.777	Proportion of racial/ethnic minorities
Gender diversity	0.406	0.151	0	0.75	Proportion of females
Perceived fairness	0	1	-4.25	2.60	Factor score
Supervisory support	0	1	-3.57	3.08	Factor score
Diversity climate	0	1	-3.03	1.42	Factor score
Job satisfaction	0	1	-2.60	1.37	Factor score

initial eigenvalue of the scale was 2.369 and the Cronbach's α was 0.867. Factor loadings ranged between 0.883 and 0.896.

Demographic Variables. Demographic variables—sex, minority, age, tenure, location, and supervisory status—in the models were for controlling their effects on the dependent variables. The sex variable is recorded as a “1” for a female respondent and as a “0” for a male respondent. The minority variable is recorded as a “0” when a respondent was a non-Hispanic White male or a non-Hispanic White female and is recorded as a “1” when a respondent is neither a White male nor a White female. The supervisory status is classified into three types—supervisor, manager, and executive. Each of them is recoded as a dichotomous variable. The age variable is recorded as a five-scale ordinal variable, where 1 = 29 and under; 2 = 30-39; 3 = 40-49; 4 = 50-59; 5 = 60 or older. Organizational tenure is also recorded as an ordinal variable with six categories, where 1 = less than 1 year; 2 = 1-3 years; 3 = 4-5 years; 4 = 6-10 years; 5 = 11-20 years; 6 = more than 20 years. The location variable is a dichotomous variable, where 1 = headquarters and 0 = field. Table 2 provides the descriptive statistics of the variables.

Results

Tables 3 and 4 describe the results of the analysis. Model 1 tests the relationship between racial/ethnic diversity of managerial teams and job satisfaction, whereas model 2 tests the relationship between gender diversity of management and job satisfaction. Diagnostic tests for normality, multicollinearity, homoskedasticity, and the

Table 3. Multilevel Modeling (MLM) of Racial/Ethnic Diversity of Managers and Job Satisfaction (Model 1).

Independent Variables	Dependent Variable Job Satisfaction					
	Coefficient	SE	Coefficient	SE	Coefficient	SE
Gender	.060***	.006	.059***	.006	.058***	.006
Minority	.126***	.004	.072***	.009	.073***	.009
Age	.023***	.002	.023***	.002	.023***	.002
Tenure	-.022	.002	-.022***	.002	-.022***	.002
Supervisor	-.022***	.005	-.022***	.005	-.022***	.005
Manager	.002	.006	.002	.006	.001	.006
Executive	.108***	.012	.108***	.012	.108***	.012
Diversity climate	.220***	.003	.219***	.003	.195***	.005
Supervisory support	.407***	.002	.407***	.002	.441***	.005
Perceived fairness	.411***	.002	.411***	.002	.454***	.005
Racial/ethnic diversity	-.140***	.065	-.210***	.066	-.206***	.066
Racial/ethnic diversity*minority			.217***	.033	.214***	.033
Racial/ethnic diversity*diversity climate					.102***	.019
Racial/ethnic diversity*supervisory support					-.142***	.018
Racial/ethnic diversity*Perceived fairness					-.179***	.019
Intercept variance	.006		.006		.006	
Residual variance	.536		.536		.535	
Chi-square	144013.73***		144093***		144355.72***	
Number of groups	191		191		191	
Number of observations	175657		175657		175657	

Note. All the variables except racial/ethnic diversity and gender diversity as agency-level variables are individual-level variables; ***significant at .001 level.

existence of outliers did not indicate serious violations of the validity of multilevel models. To address the concern of the potential multicollinearity among the interaction terms, the continuous predictor and the polychotomous predictor were entered in the first step, and then the interaction terms were entered in the following steps (Aiken & West, 1991). The coefficients of the variables have not changed significantly even after the interaction terms were entered in the models, which shows that the multicollinearity is not a critical concern in the models. To deal with the missing responses in the data, I used the imputation by mean scores.

Hypothesis 1 proposes that the higher proportions of racial/ethnic minorities and women in managerial positions are positively related to employees' job satisfaction. As shown in Table 3, Hypothesis 1 is not supported and the relationship runs the opposite direction. As agencies have higher proportions of racial/ethnic minorities and women in managerial positions, employees tend to be less satisfied with their job

Table 4.. Multilevel Modeling (MLM) of Gender Diversity of Managers and Job Satisfaction (Model 2).

Independent Variables	Dependent Variable Job Satisfaction					
	Coefficient	SE	Coefficient	SE	Coefficient	SE
Gender	.060***	.006	.014***	.018	.042***	.018
Minority	.126***	.004	.127***	.004	.127***	.004
Age	.023***	.002	.023***	.002	.023***	.002
Tenure	-.022	.002	-.022***	.002	-.022***	.002
Supervisor	-.022***	.005	-.022***	.005	-.022***	.005
Manager	.002	.006	.002	.006	.002	.006
Executive	.106***	.012	.106***	.012	.106***	.012
Diversity climate	.220***	.003	.220***	.003	.186***	.007
Supervisory support	.407***	.002	.407***	.002	.447***	.007
Perceived fairness	.411***	.002	.411***	.002	.456***	.006
Gender diversity	-.141***	.045	-.163***	.050	-.157***	.050
Gender diversity*gender			.049	.043	.045	.043
Gender diversity* diversity climate					.090***	.017
Gender diversity* supervisory support					-.122***	.015
Gender diversity* Perceived fairness					-.108***	.016
Intercept variance	.004		.004		.004	
Residual variance	.536		.5356		.535	
Chi-square	144975.13***		144976.84***		145131.53***	
Number of groups	192		192		192	
Number of observations	176537		176537		176537	

Note. All the variables except racial/ethnic diversity and gender diversity as agency-level variables are individual-level variables; *** significant at .001 level.

and agency. Hypothesis 2 regarding the moderating effects of race/ethnicity and sex on the relationship between managerial diversity and job satisfaction is partially supported by the findings. Only the effect of racial/ethnic minority status is consistent with the expectation. Racial/ethnic minorities reported significantly higher job satisfaction than Whites when their agency has a higher proportion of racial/ethnic minority managers, whereas job satisfaction of female employees is not significantly different from that of their male colleagues regardless of the proportion of female managers in the agency.

Hypotheses 3, 5, and 7 postulate the relationship between contextual factors and job satisfaction, whereas Hypotheses 4, 6, and 8 hypothesize the moderating effects of the contextual factors on the relationship between managerial diversity and job

satisfaction. Hypotheses 3 and 4, which hypothesize the direct and moderating effect of diversity climate, are supported. The diversity climate is positively associated with job satisfaction of employees. In addition, the organizational climate favorable to diversity positively moderates the relationship between managerial diversity and job satisfaction, suggesting that in agencies that are highly supportive of diversity, managerial diversity is more strongly associated with job satisfaction of employees. The pattern was consistent over racial/ethnic and gender diversity of managerial teams. The effects of other contextual factors were partially supported. Only the direct effects of these factors (Hypotheses 5 and 7) are supported, suggesting that perceived fairness (Hypothesis 5) and supervisory support (Hypothesis 7) are positively associated with job satisfaction of employees. However, the moderating effects of these factors (Hypotheses 6 and H) turn out to be opposite to the expectation. Perceived fairness (Hypothesis 6) and supervisors' support (Hypothesis 8) actually moderated the relationship between managerial diversity and job satisfaction negatively, suggesting that in agencies that maintain higher fairness and greater support from supervisors, managerial diversity is less strongly related to job satisfaction of employees.

The findings concerning demographic variables show some interesting results. Racial/ethnic minority employees tend to be happier with their job and agency than Whites. Female employees reported slightly higher job satisfaction than their male counterparts. The relationship between supervisory status and job satisfaction varies by employees' supervisory positions. Although senior executives reported higher job satisfaction, supervisors reported lower job satisfaction than employees in other supervisory positions. Job satisfaction of managers was not significantly different from others. Younger employees and employees with a longer tenure were less satisfied with their jobs and organizations.

Discussion and Conclusion

As more women and racial/ethnic minorities have joined management teams in the federal government, there has been growing need for more research on how managerial diversity influences organizational outcomes (e.g., performance, job satisfaction, turnover). Previous studies (e.g., Dolan, 2000; Hambrick & Mason, 1984; Nishii et al., 2007) analyzed limited samples, making the external validity of the findings questionable. To overcome this limitation, this study explores the relationships between the diversity of managerial teams and employees' job satisfaction, using a large data set from U.S. federal government. In addition, this study has been methodologically more rigorous in analyzing the hierarchically structured data by adopting the multilevel method. The results of this study will help us understand of the role of demographically diverse managerial teams in managing diversity of the workforce and employees' psychological wellbeing in their workplace. It suggests the following conclusions: (a) the racial/ethnic diversity and gender diversity of managerial teams are negatively related to job satisfaction of employees; (b) racial/ethnic minorities in agencies with a higher proportion of racial/ethnic minority managers are more satisfied with their

job and organization; (c) the contextual factors—diversity climate, perceived fairness, supervisory support—are positively associated with job satisfaction of employees; (d) in agencies with a strong positive diversity climate, managerial diversity was more strongly related to employees' job satisfaction, whereas in agencies that maintain higher levels of justice and support for subordinates, managerial diversity was less strongly related to job satisfaction. These findings provide mixed support for previous research. The negative relationships between racial and gender diversity of managers and employees' job satisfaction and the negative moderating effects of justice and managerial support on the relationships between managers' demographic diversity and job satisfaction are found to be inconsistent with the findings of previous research.

The result reveals that the racial/ethnic diversity and gender diversity of managers are negatively related to job satisfaction of employees. It suggests that the job satisfaction of employees in agencies that have higher proportions of racial/ethnic minority and/or female managers is lower than that in others. The finding does not support the hypothesis about the relationship between demographic diversity of managers and employee job satisfaction. It may be attributed that demographic differences among employees may lead to detrimental impacts on interaction and communication between people from different social categories (Ancona & Caldwell, 1992; Choi, 2009; Ely, 2004; O'Reilly et al., 1989; Smith et al., 1994). The greater negative effect of differences on employees' job satisfaction may offset the positive influence of diverse managers on satisfaction of diverse subordinates, finally turning a positive relationship into a negative relationship. Another possible explanation is that racial/ethnic minority and/or female managers may not be able to advocate the interests of minority employees substantially for some reasons. They may remain as a token without any discretionary power of promoting minority employees' welfare. In addition, the token status can bring negative consequences to minority managers themselves such as isolation, negative self-image, and low job satisfaction (e.g., Cohen & Swin, 1995; Kanter, 1977). Highly formalized structure, strict rules and procedures, and centralized personnel policies in the federal government may also prohibit them to take actions to help minority employees. Organizational socialization explains that minority managers may put their organization's values and interests before those of minority employees (Dolan, 2000; Meier, 1993b; Sowa & Selden, 2003).⁷

This finding is contrary to that of prior research (e.g., Dolan 2000; Nishii et al., 2007), which indicates the potential critical role of the context in the relationship between managerial diversity and employee job satisfaction. As discussed earlier, managerial support and leadership will be necessary in order for active representation to occur in an agency. Indeed, some intriguing findings about the influence of the context shed light on the argument. A strong prodiversity climate had a positive association with job satisfaction of employees. More importantly, in agencies with a strong prodiversity climate, managerial diversity showed a much stronger positive association with job satisfaction of employees. Some previous research (e.g., Herdman & McMillan-Capehart, 2010; McKay & Avery, 2006; Nishii et al., 2007) reported the similar finding that a strong organizational climate of supporting interests and values

of diverse employees helps diverse managerial teams promote happiness of their subordinates. In turn, managerial diversity is also likely to reinforce and strengthen the effects of diversity climate by providing salient evidence of the overall support for diversity in an organization and consequently reinforcing employees' perception of effective diversity management (e.g., Bowen & Ostroff, 2004; Ross & Nisbett, 1991).

The effects of other contextual factors—perceived fairness and supervisory support—on the relationship between managerial diversity and job satisfaction are more difficult to interpret, requiring deeper consideration of the relationships. This study postulates that fair treatment and support from supervisors are positively associated with job satisfaction of employees. Overall, perceived fairness and supervisory support were positively related to job satisfaction of employees, in support of the hypotheses. The moderating effects, however, turned out to be inconsistent with the expectation, showing that in agencies that maintain higher levels of justice and support for subordinates, managerial diversity was actually less strongly related to job satisfaction. It suggests that the negative impacts or costs of demographic diversity of managerial teams on employee job satisfaction are greater than the benefits of perceived fairness and supervisory support. The costs of diversity of managers will offset the benefits of perceived fairness and supervisory support and eventually only the negative effects will remain, leading to decrease in job satisfaction of employees (Choi & Rainey, 2010). In fact, this finding highlights the critical role of diversity climate that is strong enough to turn the negative relationship between demographic differences in managerial teams and job satisfaction into the strong positive association. It implies that an organizational atmosphere that supports diversity plays an important role in facilitating the translation of passive representation into active representation of diverse interests in demographically heterogeneous organizations.

As expected, racial/ethnic minority employees reported that they are more satisfied with their job and organization when their agency has a higher proportion of racial/ethnic minorities in managerial positions. More racial/ethnic minority managers will provide employees with critical messages such as greater opportunities of career advances for racial/ethnic minority and their leadership attributes and competence that used to be associated with whites (Nishii et al., 2007; Perry et al., 1994). However, the impact of gender was not consistent with the hypothesis. No evidence was found that women are significantly happier with their job and organization than men when their agency has a higher proportion of female managers. Although previously managerial positions have been dominated by males, it is very recent that more female employees are promoted to managerial positions. In addition, there have been strong social norms or precepts that women are the weaker gender, thus in greater need of help across various settings (Piliavin & Unger, 1985). Such gender-role stereotypes can cause biased views on female managers' competence and attributes as leaders in organizations.

Some limitations of this study should be addressed. First, the cross-sectional data of this study may preclude causal inferences. Thus, the results do not guarantee the causal directions of the observed relations in this study. Some variables (e.g., diversity climate, perceived fairness, supervisory support) were measured by self-reported

responses from FHCS, thus resulting in mono-source biases in the results. However, the use of the objective measure of managerial diversity using CPDF can reduce the possibility of such bias. In addition, given that job satisfaction tends to be closely related to other work-related perceptions, it is important to include these perceptual variables in the models.

Appendix: Construction of Index Variables

Diversity Climate ($\alpha = .867$)

- Supervisors/team leaders in my work unit are committed to a workforce representative of all segments of society.
- Policies and programs promote diversity in the workplace (e.g., recruiting minorities and women, training in awareness of diversity issues, mentoring).
- Managers/supervisors/team leaders work well with employees of different backgrounds.

Job Satisfaction ($\alpha = .923$)

- Considering everything, how satisfied are you with your job?
- Considering everything, how satisfied are you with your organization?

Perceived Fairness ($\alpha = .906$)

- Complaints, disputes, or grievances are resolved fairly in my work unit.
- Arbitrary action, personal favoritism, and coercion for partisan political purposes are not tolerated.
- Prohibited personnel practices (e.g., illegally discriminating for or against any employee/applicant, obstructing a person's right to compete for employment, knowingly violating veterans' preference requirements) are not tolerated.
- I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.

Supervisory Supports ($\alpha = .892$)

- I have trust and confidence in my supervisor.
 - Overall, how good a job do you feel is being done by your immediate supervisor/team leader?
 - My supervisor supports my need to balance work and other life issues.
 - Supervisors/team leaders in my work unit provide employees with the opportunities to demonstrate their leadership skills.
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Notes

1. The preliminary analysis of 2008 CPDF shows that the average proportion of racial/ethnic minorities in managerial positions (GS13-GS15) is 0.22, whereas the median is 0.22. The average proportion of female managers is 0.41, whereas the median is 0.42. Despite the recent increase of demographic diversity in managerial positions, women and racial/ethnic minorities are still underrepresented given that the overall proportion of racial/minorities and women in the federal workforce is 0.33 and 0.44, respectively.
2. Some empirical studies in business management (e.g., Baron et al., 1991; Herdman & McMillan-Capehart, 2010; Nishii et al., 2007) show that racial/ethnic minority and women in managerial positions may promote the integration of these individuals throughout the organization, treating them fairly and advocating their interests and values. These findings suggest that managerial diversity may enhance the welfare of these nontraditional employees in their workplace. It is, however, possible that highly formalized rules and procedures in public organizations may restrict discretion of these nontraditional managers and hinder them from supporting the interests of employees from the same demographic group actively.
3. In recent years, scholars including Riccucci (2009) suggested that the “intersectionality” of identity categories such as race and gender should be considered as separate categories of diversity. The new perspective notes that the intersections of individual characteristics may bring disparate impacts on individuals with different sets of the characteristics.
4. The Central Personnel Data File (CPDF) is an information system to support statistical analysis of federal personnel management programs and is composed of two primary data files—status file and dynamics file. I extracted 2008 employees’ demographic data of the target agencies of the federal government from the dynamic file, which has information about personnel actions such as accessions, separations, and promotions over a period of time. CPDF is limited to federal civilian employees and covers all agencies under the executive branch except for the Board of Governors of the Federal Reserve, Central Intelligence Agency, Defense Intelligence Agency, National Imagery and Mapping Agency, National Security Agency, Office of the Vice President, Postal Rate Commission, Tennessee Valley Authority, U.S. Postal Service, and White House Office. The coverage of Federal Bureau of Investigation, the Legislative Branch, and the Judicial Branch is limited. All data of CPDF are submitted by the agencies from their own separate personnel systems quarterly (OPM 2008).

5. This study classifies federal employees into two racial/ethnic groups—Whites and Racial/ethnic minority (e.g., American Indians or Alaskan Natives, Asian or Pacific Islanders, African Americans, and Hispanics). The CPDF defines American Indian or Alaskan Native, Asian or Pacific Islander, Black (not of Hispanic origin), and Hispanic as the minority race/national origin groups for federal statistics and program administrative reporting (OPM 2008).
6. Table 1 shows the proportion of racial/ethnic minorities and women in managerial positions in the executive branch departments including 276 subagencies and selected independent agencies in the federal government. Only 191 of these agencies participated in the survey.
7. When employees have spent a certain amount of time and attained a powerful position in the organization, they “often have been subject to many years of organizational socialization designed to encourage employees to adopt agency-sanctioned attitudes” (Dolan & Rosenbloom, 2003; Meier, 1993a, p. 397). If those values do not support active representation of the interests of minority groups, minority employees who seek to represent the interest of their own social group may be pressured to give up such activity and follow the values of their organization (Dolan & Rosenbloom, 2003; Meier, 1993a). Some scholars (e.g., Meier, 1975; Meier & Nigro, 1976) found that the impacts of organizational socialization on bureaucratic attitudes were often greater than were those of social backgrounds of civil servants.

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