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ABSTRACT

Building on diversity literature, the present study examines the distinct effects of workforce diversity in various attributes on internal processes and performance at the organization level. Focusing on the status-relatedness of diversity dimensions, we propose the negative effects of diversity in hierarchical position, and the positive effects of diversity in gender, age and education. We further identify innovative climate, employee competence, and employee satisfaction as the mediating mechanisms that account for the relationships between workforce diversity and organizational performance. The present hypotheses were empirically validated using time-lagged, multi-source data collected from 256 Korean manufacturing companies at two time points over a two-year period. Hierarchical position diversity was negatively related to employee competence and satisfaction, thus negatively affecting operational performance. Education diversity showed positive effects on innovative climate, employee competence, and employee satisfaction, which in turn increased the innovation and operational efficiency of the organization. A series of structural equation models also confirmed the negative direct effect of age diversity and the positive direct effect of education diversity on innovative performance. The present study elaborated the distinct implications of diversity dimensions with different levels of status-relatedness, and offered empirical contributions that highlight mediating mechanisms between workforce diversity and performance at the organization level.

Keywords: workforce diversity, status-relatedness, innovative climate, employee competence, employee satisfaction, innovative performance, operational performance

With increasing workforce diversity and prevailing endorsement of the value of diversity in organizational performance (Chatman, Polzer, Barsade, & Neale, 1998), many organizations shift their human resource strategy to entail greater diversity among their employees (Kossek, Markel, & McHugh, 2003). Although the issue of diversity bears significance for the entire organization, existing studies have been dominated by analyses at lower levels of analysis focusing on phenomena such as group diversity and relational demography (Jackson, Joshi, & Erhardt, 2003). Empirical findings at group and dyadic levels of analysis have implications for understanding the roles of workforce diversity regarding organization-level processes and outcomes. Nevertheless, it is unreasonable to assume a multilevel homology between groups and organizations concerning the implications of diversity (McDonald, 2003). The reason is that the phenomenon of organization-level diversity is partly based on distinct social interactions among members similar to group-level diversity, but it also initiates purely symbolic and institutional dynamics related to the entire organization. Considering that employees' actual social interactions are limited to a very small portion of the entire workforce in the organization, organization-level diversity affects organizational performance mostly by creating a corporate work environment that operates as a macro-level institutional context for employees (McDonald, 2003). Given different functional mechanisms and discontinuity of diversity at different levels, the conceptual and empirical investigations regarding the process and performance implications of workforce diversity at the organization level is deemed necessary.

Drawing on prior literature (Jackson et al., 2003; Joshi & Roh, 2009), we define organizational diversity as an aggregated organization-level construct that represents the differences among employees with respect to a specific individual attribute. The self-categorization theory denotes that diversity creates social division and interpersonal conflict that have negative implications for various outcomes (Riordan & Shore, 1997; Van der Vegt, 2002). In contrast, the information processing theory endorses that, by supplying informational cues and diverse cognitive resources, diversity can promote creativity,

innovation, and performance (Wu, Wei, & Lau, 2010). Employing these two distinct perspectives, prior studies have differentiated the roles of social-category or relational diversity from informational or task-related diversity (Choi, 2007a). Nevertheless, several meta-analytic reviews of empirical studies on diversity do not provide a clear pattern regarding performance implications of diversity in different personal attributes (e.g., Webber & Donahue, 2001). This happens because typical social-category variables, such as gender and age, also implicate informational diversity based on distinct experiences and views (Ali, Kulik, & Metz, 2011; Vendramin, 2009). Similarly, typical task-related variables, such as tenure and functional background, also activate social categorization processes and stereotyping based on in-group and out-group perceptions (Knight et al., 1999; Van der Vegt, Vliert, & Oosterhof, 2003).

To complement the existing focus on the two functions involving either social categorization or information processing, we attend to status-related implications of diversity. The status characteristics theory (SCT) highlights the role of status disparity among individuals, which engenders interpersonal undermining, often leading to lower performance (Berger, Fişek, Norman, & Zelditch, 1977). The social categorization process may determine individual behavior more strongly when the social category clearly implicates status differential. Diversity researchers have only recently started to adopt SCT as a core theoretical ground that provides complementary explanations for the effects of diversity at the group level of analysis (Chatman & O'Reilly, 2004; Chattopadhyay, George, & Lawrence, 2004; Choi, 2007a). The status-related process seems particularly critical at the organization level because it may engender the overall climate for employee interactions, and convey an institutional signal regarding the social structure of the organization. Drawing on extant studies, the present study identified various types of diversity based on status differentials, directly and indirectly related to prestige and power within organizations.

As many researchers maintained (Harrison, Price, Gavin, & Florey, 2002; Wu et al., 2010), the effect of diversity on outcomes is most likely indirect and mediated by a number

of intervening processes. In the meta-analysis of 76 studies, Webber and Donahue (2001) identified two mediating mechanisms as the core reasons for the diversity-performance link: (a) task-related knowledge, skill, and abilities (KSAs), and (b) morale involving interpersonal attraction and satisfaction. In addition to these cognitive and affective processes, we believe that diversity at the organization level creates a certain climate, such as flexibility or tolerance regarding ambiguity and differences (Phillips & Loyd, 2006; Van der Vegt, Vliert, & Huang, 2005). Thus, we propose that organizational diversity indirectly affects organizational performance outcomes through its direct effect on organizational climate, employee KSAs, and employee satisfaction.

In sum, the present study investigates workforce diversity at the organization level that has been relatively overlooked. In so doing, we employ the status-related process that complements the ambiguities involving social categorization and information processing perspectives. Furthermore, this research identifies the theoretically meaningful mediators of the organization-level relationship between diversity and performance, such as climate and the cognitive resources and attitudes of employees. Based on the recommendation of Horwitz and Horwitz (2007), both qualitative and quantitative outcomes of the organization, such as its innovative performance and operational efficiency, are examined. The theoretical framework is verified using time-lagged, multi-source data collected from 256 Korean manufacturing companies.

THEORETICAL FRAMEWORK AND HYPOTHESES

Recently, status differentials have received increasing scholarly attention as a core theoretical mechanism that provides complementary and perhaps more elaborate explanations of the diversity-outcome relationship beyond social categorization and information processing perspectives (Chatman & O'Reilly, 2004; Chattopadhyay et al., 2004; Choi, 2007a). The SCT suggests that various individual characteristics, such as ethnicity, gender, age, education, and task experience, serve as status cues that lead to differentiated perceptions of task competence and/or performance expectations for others. Such expectations

automatically shape status structure in workplace, resulting in discrimination between higher and lower status members (Amoroso, Loyd, & Hoobler, 2010; Bunderson, 2003; DiTomaso, Post, & Parks-Yancy, 2007). Status disparity leads to the suppression of voice, reduced communication, and interpersonal undermining that have negative implications for creativity and performance (Berger et al., 1977; Harrison & Klein, 2007; Van der Vegt et al., 2005).

Apparently, most dimensions of diversity are associated with status differentials. Pelled, Xin and Weiss (2001) suggested that males, whites, seniors, and supervisors have higher status than their female, non-white, junior, and subordinate counterparts. Stereotypically, the formation of differentiated status among members based on these characteristics may be true. Nevertheless, the fundamental assumption of SCT involving status formation driven by perceptions of task competence and performance expectation may not hold consistently over time for most demographic variables. As Van Dijk, Meyer and van Engen (2012) demonstrated, individuals' initial competence perceptions of others based on observable attributes such as gender are often inaccurate, resulting in negative consequences for the group. For example, although some women are better in math than men, men are expected to perform better on mathematical tasks than women, and thus males tend to garner greater status and influence in the context of math-related tasks than females, resulting in suboptimal performance for the group. Thus, in on-going work units, status based on performance expectations associated with differing social categories can be broken and reassessed continually due to inconsistency between expected competence and actual competence.

Although the gender, age, and education of employees can be used as status cues (Bunderson, 2003; Pelled et al., 2001; van Knippenberg & Shippers, 2007), their status implications are limited and ambiguous due to their informal nature and vulnerability to reality checks that may invalidate the perceived status. Therefore, demographic diversity of organizational workforce based on gender, age, and education is less likely to be directly related to the authority and control over others in organizations, and thus is relatively free

from potentially negative implications of status differentiation. In contrast, hierarchical position constitutes the most salient and formal indicator of authority and prestige within the organization (Choi, 2007a; Harrison & Klein, 2007). Considering explicit power implications of hierarchical ranks, hierarchical position is identified as the attribute that causes status-related diversity, inviting status-driven dynamics and interpersonal processes due to its unambiguous status connotations.

Insert Figure 1 about here

Based on this distinction between demographic and status diversity, we propose the differentiated effects of those diversity dimensions on organizational performance that are mediated by various internal processes involving employees (see Figure 1). As the diversity researchers have maintained (Kunze, Boehm, & Bruch, 2011; McMahon, 2010), the collective perceptions of employees, such as innovative climate, and their KSAs and affective reactions are expected to account for the diversity-performance link at the organization level. Considering the multi-dimensional nature of performance (Horwitz & Horwitz, 2007), our theoretical framework includes two forms of outcomes, innovative and operational performance, each reflecting the qualitative and quantitative aspects of organizational outcomes.

Demographic and Status Diversity and Organizational Performance

Acknowledging the plausibility of both the self-categorization process based on the similarity-attraction paradigm (Chatman & Flynn, 2001; Kunze et al., 2011; Riordan & Shore, 1997) and the information processing perspective (Talke, Salomo, & Rost, 2010; Wu et al., 2010), we propose status-relatedness of diversity dimensions as a third theoretical perspective that might offer a more elaborate explanation. Specifically, we posit that the process and performance implications of diversity may vary depending on the level of status-relatedness

of the given diversity dimension. For instance, functional diversity may lead to different outcomes when it does not greatly involve status implications (e.g., cross-functional teams composed of first-line managers from different departments) compared to when it implies status differential (e.g., cross-functional teams composed of members from the parent company and subcontractors).

At the organization level, we propose that more status-related diversity dimensions may develop an institutional environment that emphasizes the intergroup differences based on social categorization and suppresses the potential informational benefit of the given dimension. The SCT suggests that lower-status members are given less time to express their views and often disagree with the alternatives proposed by the higher-status members due to dissatisfaction with the process (Amoroso et al., 2010; Bunderson, 2003; Deanna & Alison, 2003). The higher-status employees discount the ideas of the lower-status employees because the former views the latter as people with lower ability and competence (Van der Vegt et al., 2005). Hence, status differentials generate severe social divisions that separate organizational members from each other (Amoroso et al., 2010; Harrison & Klein, 2007). A high level of hierarchical position diversity intensifies organizational hierarchy and divides members based on organizational echelons, which leads to blocked communication and decreased integration of different perspectives of junior and senior members of the organization (Berger & Fişek, 2006). Diversity in hierarchical positions of organizational members should decrease both the qualitative and quantitative outcomes of the organization by creating an institutional context that endorses and invigorates divisive formal and informal organizational structures.

Hypothesis 1. Status diversity of organizational members is negatively related to innovative and operational performance.

On the other hand, diversity in less status-related attributes, such as gender, age, and education, may not generate severe social divisions among employees. Thus, the informational benefit from employees with different gender, age, and education is more likely to be achieved. Gender, age, and education diversity promote the division of labor among

employees, which can be realized more effectively because these attributes impose less status differential and social chasm among employees. Gender diversity is a source of intangible and socially complex resources that improve problem solving, creativity, and overall organizational performance (Ali et al., 2011; McMahon, 2010). Scholars have explained the reason for the positive implications of a gender-diverse workforce for organizational performance as complementarity between males and females with regard to their skills and abilities (Ali et al., 2011; Wood, 1987). Similarly, organizations are likely to be more effective and productive when composed of members of diverse ages due to the potential complementarity and division of labor between older and younger employees based on their distinct social experiences, skill profiles, and differing perspectives (Bantel & Jackson, 1989; Vendramin, 2009). In addition, age-diverse workforce also softens interpersonal tension and unnecessary competition. This is because employees at the same life and career stages tend to pursue the same resources and positions in organizations, thus causing potential strain and destructive competitive behavior (Choi, 2007a). Organizations intentionally diversify the age composition of their workforce, such that they can maintain the continuity of their workforce in the long run with adequate knowledge transfer from the older to the younger generation of employees (Backes-Gellner & Veen, 2009; Vendramin, 2009).

Workforce diversity with varying levels of educational attainment may also enhance the division of labor by providing heterogeneous skills and expertise to the organization. Organizations, particularly those in the manufacturing industry as in the present research setting, need to staff a number of different functions with varying levels of complexity and skill requirements (Nagel & Bhargava, 1994). In such a context, having employees with diverse skills and educational attainment is necessary to avoid the under-utilization of high-skilled employees in routine tasks, or imposing too complicated problems on low-skilled members (Andersen & Taylor, 2006; Peri & Sparber, 2009). The relatively low status implications of gender and education boost the potential performance gain from gender and education diversity. The reason is that the division of labor and task specialization based on

these attributes help the organization to resolve complex problems more creatively and to utilize internal resources more efficiently.

Hypothesis 2. Demographic diversity of organizational members (gender, age, and education diversity) is positively related to innovative and operational performance.

Workforce Diversity and Internal Organizational Processes

Employing the well-established input-process-output model of group effectiveness, researchers have positioned diversity as an input factor based on the members' relatively stable dispositions. This affects the internal group processes or psychological states of members, which are more directly responsible for group outcomes (Chatman & Flynn, 2001; Harrison et al., 2002). We also presume that that the workforce diversity of an organization affects internal organizational processes before it shapes organizational performance. In this respect, the present study focuses on the collective perception of the employees about the organization, their KSAs, and attitudes as immediate process outcomes of organizational diversity. Specifically, more and less status-related diversity dimensions are expected to be negatively and positively related to innovative climate, employee competence, and employee satisfaction (see Figure 1).

Diversity with strong status implications can create situations where members are unlikely to voice their own ideas and opinions because lower-status members are fearful of creating conflicts with senior or higher-ranking members due to potential negative reputation (e.g., being rude) and unfavorable performance appraisal (Choi, 2007a; Pelled et al., 2001). Furthermore, even when lower-status members express ideas, their opinions are often discounted or neglected by higher-status members (Van der Vegt et al., 2005). Thus, hierarchical position diversity may impede the innovative climate of organizations.

Status diversity may also negatively affect employee competence because the task ability of employees often results from interpersonal learning and knowledge sharing among members (Bowers, Pharmer, & Salas, 2000; van Knippenberg, De Dreu, & Homan, 2004). The strong social chasm caused by hierarchical position diversity is apt

to impair such learning and knowledge sharing processes, reducing cognitive stimulation and knowledge repertoire available to employees (Amoroso et al., 2010; Kunze et al., 2011). Finally, such position-based differentials may diminish employee satisfaction because they have overall destructive implications for employee morale. Organizations characterized by status-related diversity may engender employee perceptions of unfairness in resource allocation due to the concentration of prestige and influence to high-status members (Findler, Wind, & Mor Barak, 2007). Employees are apt to perceive such a situation as a highly politicized environment and feel relatively deprived of social and organizational resources (van Knippenberg et al., 2004). The perceptions of unfair treatment and resource deprivation increase job-related stress and decrease satisfaction among employees (Findler et al., 2007).

Hypothesis 3. Status diversity of organizational members is negatively related to innovative climate, employee competence, and employee satisfaction.

In the case of demographic or less status-related diversity dimensions, opposite internal processes are expected to take place. Studies have shown that disagreement with individuals from the same background engenders greater feelings of surprise and irritation due to violated expectations of similarity, resulting in reduced voice or creativity among the homogeneous members (Phillips & Loyd, 2006). In contrast, when a group is heterogeneous, members do not expect uniformity in ideas and attitudes, and they feel more comfortable with expressing different ideas, resulting in an innovative climate (Phillips & Loyd, 2006; Van der Vegt et al., 2005). Therefore, the diversity in less status-related attributes, such as gender, age, and education, can break the pursuit of uniformity among members without inviting severe social divisions in the organization. The presence of such diverse members may signal that the organization cherishes differences and flexibility, which forms a more innovative climate.

In addition, the effective division of labor and task specialization prompted by gender, age, and education diversity may enhance the task competence of employees because they are more likely to actively sharpen their skills in their specific task domain over time (Andersen

& Taylor, 2006). Differing and often complementing skills and the competence of males and females, and of the old and the young can also stimulate mutual learning, leading to greater KSAs of employees (Ali et al., 2011; Backes-Gellner & Veen, 2009; Wood, 1987). Complementarity and the overall efficient division of labor based on the educational attainment of employees can also enhance their work and organizational satisfaction. The dynamics involving the differing skills of men and women, and of the old and the young, and the differing abilities of highly educated and less educated members may be congruent with those suggested by the complementary person-environment fit, which generates positive individual outcomes (Muchinsky & Monahan, 1987). Organizations composed of all males, all young, or all highly educated individuals may generate intense competition among members, resulting in increased interpersonal strain and job stress of employees (Inoue & Kawakami, 2010). In sum, demographic diversity is expected to promote employee competence and satisfaction.

Hypothesis 4. Demographic diversity of organizational members (gender, age, and education diversity) is positively related to innovative climate, employee competence, and employee satisfaction.

Contribution of Internal Processes to Organizational Performance

The three internal organizational processes have meaningful implications for the two forms of organizational performance examined in the present study. Innovative climate has been acknowledged as a precursor that offers a safety net for the risk employees take in challenging the conventional mode of operation and exploring new approaches (Choi, 2007b). In organizations with a strong innovative climate, employees are encouraged to be cognitively flexible, search for novel solutions, and express different ideas without fear of being rejected or punished, which in turn lead to greater creativity and innovation (West & Richter, 2008). Hence, an innovative climate should enhance the innovative performance of organizations.

Hypothesis 5. An innovative climate is positively related to innovative performance.

Scholars have argued that superior organizational performance is achieved when employees possess sufficient cognitive resources, such as knowledge, skills, and information, needed for carrying out the job tasks (Bowers et al., 2000; Katou, 2009). The KSAs or the task competence of the employees comprise a critical condition for the generation of innovative ideas and high quality solutions, as well as the efficient and reliable operation of organizational functions (Webber & Donahue, 2001). The task competence of employees enhances both the innovative and operational performance of organizations.

Hypothesis 6. Employee competence is positively related to innovative and operational performance.

Scholars have noted that employees who are satisfied with their job tend to exert more voluntary efforts to perform the tasks, whereas those who are dissatisfied are reluctant to participate in work activities beyond the minimum task requirement (Kunze et al., 2011; Riordan & Shore, 1997). Apparently, employee satisfaction is likely to improve operational performance, such as the efficient and reliable completion of routine organizational functions. In contrast, the role of employee satisfaction in organizational innovation is unclear and somewhat ambivalent (Zhou & George, 2001). Thus, employee satisfaction leads to enhanced operational performance but not to the innovative performance of organizations.

Hypothesis 7. Employee satisfaction is positively related to operational performance.

Internal Processes as a Mediator between Workforce Diversity and Performance

Contextual perceptions, such as organizational climate and employee-related processes (e.g., employee competence and satisfaction), have been presumed as plausible intervening processes that explain the relationship between diversity and performance (Phillips & Loyd, 2006; Webber & Donahue, 2001). However, empirical evidence of such mediation is still quite limited, particularly at the organization level. The present study hypothesizes and empirically validates whether those internal processes operate as significant

intervening processes through which workforce diversity affects organizational performance. Combining the earlier propositions, the following mediation hypothesis is proposed:

Hypothesis 8. The relationship between workforce diversity and organizational performance is mediated by innovative climate, employee competence, and satisfaction.

METHOD

Sample and Data Collection Procedure

To empirically validate the present hypotheses, we used Human Capital Corporate Panel (HCCP) data archived by Korea Research Institute for Vocational Education and Training (KRIVET). The sample for the corporate survey was randomly drawn from the entire population of private business organizations with 100 or more employees in the manufacturing industry in Korea. The corporate survey data were collected at two time points in 2007 (T1, $N = 314$) and 2009 (T2, $N = 336$). Of the initial sample, 256 companies participated in both waves of data collection. These companies represented diverse manufacturing industries (e.g., energy, automobile, electronics, chemical products, and machinery).

In each company, different groups of members participated in the corporate survey. The T1 sample was composed of HRM directors of each company and 6,842 employees representing various functions, such as engineering, purchasing, production, and marketing. On average, there were 26.73 ($SD = 13.49$) participants per company, composed of 85.7% males with a mean age of 41.2 years ($SD = 7.94$) and an average tenure of 13.9 years ($SD = 7.27$). For the T2 data, strategy directors and 1,284 department managers, with an average of 5.01 ($SD = 2.09$) managers per company, completed the survey. The T2 manager sample was 97.9% males with an average age of 44.1 years ($SD = 5.34$) and an average tenure of 15.2 years ($SD = 7.06$).

Measures

Data were collected from four different sources. The HRM directors of the companies rated the scales related to the workforce diversity of the organization and employee competence. Employees reported on the innovative climate and satisfaction. The strategy directors of the companies rated the level of innovative performance and control variables. Department managers reported on the operational performance of the company. All variables were assessed by multi-item measures using a five-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Individual responses were aggregated to the organization level for analysis. All scales exhibited acceptable within-firm agreement ($r_{wg(j)}$) and intraclass correlations (ICC(1) and ICC(2)), suggesting that employees and managers of the same company shared similar perceptions of the present constructs (Chen, Mathieu, & Bliese, 2004).

Workforce diversity (HRM Director, T1). The HRM directors reported the composition of the employees in their organization regarding the four demographic characteristics using their company's report: (a) gender (0 = female, 1 = male); (b) age (in years); (c) education (1 = high school graduate, 2 = two-year college, 3 = bachelor's degree, 4 = master's degree, 5 = doctoral degree); and (d) hierarchical position (1 = entry level, 2 = associate, 3 = first-line manager, 4 = middle manager, 5 = general manager, 6 = executive). Diversity was operationalized on three continuous variables (age, education, and hierarchical position) as the firm-level standard deviation of those attributes. Given that the standard deviation of an attribute is affected by its mean, the organization-level mean values of those attributes were included as control variables in the present analysis (Harrison & Klein, 2007). For the categorical composition variable (gender), an entropy-based diversity index (Teachman, 1980) was calculated by the following equation:

$$H = -\sum_{i=1}^{n} P_i(\ln P_i)$$

where *i* is a particular category, *n* is the total number of possible categories, and *Pi* is the proportion of the members of the particular category within the organization. For both the standard deviation and the entropy-based diversity index, an organization is more heterogeneous when these indices of diversity have larger values.

Innovative climate (Employees, T1). To assess innovative climate, we used a three-item scale (α = .63, $r_{wg(3)}$ = .91, ICC(1) = .17, ICC(2) = .84, F = 6.21, p < .001), which was drawn from prior studies (Van der Vegt et al., 2005). The scale included the following items: (a) "Our company is concerned with the status quo than with change, and suppresses new experiments" (reverse coded); (b) "Our company rewards people who dedicate themselves to innovation;" and (c) "In our company, those who are creative are more respected than those who are hardworking."

Employee competence (HRM Director, T1). The HRM directors rated the level of employee competence on the following measurement items (α = .78): "In our company, employees in the following functional areas have adequate levels of task-related expertise and knowledge: (a) research and development, (b) sales and service, and (c) manufacturing" (cf. Katou, 2009).

Employee satisfaction (Employees, T1). Adopting existing measurement items (Findler et al., 2007), a three-item scale was constructed to measure employees' satisfaction in their job and work life (α = .70, $r_{wg(3)}$ = .93, ICC(1) = .15, ICC(2) = .82, F = 5.47, p < .001): "I am satisfied with (a) my job, (b) wage, and (c) the relationship with colleagues in our company."

Innovative performance (Strategy Director, T2). Strategy directors reported on the innovative performance of their companies by responding to the following three items (α = .79): "In the past two years, to what extent did your company (a) introduce administrative changes (e.g., organizational restructuring), (b) introduce technological changes related to

your products, and (c) develop and introduce new products?" (1 = *not at all*, 5 = *a great deal*) (Bantel & Jackson, 1989; Talke et al., 2010).

Operational performance (Department Managers, T2). Department managers rated the operational performance of their company by responding to five items (α = .91, $r_{wg(5)}$ = .93, ICC(1) = .23, ICC(2) = .62, F = 2.60, p < .001): "Our company has competitive advantage over other companies in (a) efficiency of task procedures, (b) cost reduction, (c) product quality, (d) overall productivity and defect reduction, and (e) prompt response to customer requests" (Katou, 2009; Kunze et al., 2011).

Control variables (Strategy Director, T1). To take into account the effects of other factors that may bear significance for organizational performance, we included two control variables in our analysis: market demand and organization size. Market demand is a critical environmental factor that affects organizational performance (Bantel & Jackson, 1989). Market demand was measured by an item: "In the past two years, how was the market trend in the demand for the main products of your company?" (1 = *rapidly decreasing*; 5 = *rapidly increasing*). Organization size has also been acknowledged as a critical firm-specific factor that affects various firm outcomes (Ali et al., 2011; Wu et al., 2010). In the present data, organization size was indicated by a scale with four categories representing the number of employees (1 = 100–299; 2 = 300–999; 3 = 1000–2999; 4 = above 3000).

RESULTS

Table 1 reports the descriptive statistics and correlations among the study variables. To test the present model, the structural equation modeling (SEM) was used to provide an omnibus test of all hypotheses involving multi-step predictive relationships with multiple mediators while simultaneously taking their measurement error into account (Bentler, 2006).

Insert Table1 about here

Hypothesized Model and Alternative Models

The hypothesized model as shown in Figure 1 produced an acceptable fit to the data (Hu & Bentler, 1999): χ^2 (df = 31) = 59.03, p = .002; CFI = .95; RMSEA = .060. Following the common SEM practice, the possibility that theoretically plausible alternative models offer a better explanation of the observed patterns in the data was checked. First, although we hypothesized the full mediation, the mediated relationships could be partial rather than full. Thus, the possibility of partial mediation was tested by adding eight indirect-effect paths from the four diversity dimensions to two organizational performance measures. This model produced a model fit (χ^2 (df = 23) = 41.36, p = .011; CFI = .97; RMSEA = .056) that was significantly better than that of the hypothesized model ($\Delta\chi^2$ (df = 8) = 17.67, p < .05). This suggests that the diversity-performance relationship can be explained by other mediating mechanisms that were not examined in the current study. Thus, this partial mediation model was adopted.

Second, although it was expected that innovative climate predicts only innovative performance, and employee satisfaction affects only operational performance, these two variables may have effects on both innovative and operational performance. Hence, such a possibility was tested by adding two paths from the innovative climate to operational performance, and from the employee satisfaction to innovative performance to the partial mediation model. Although this model produced a good fit to the observed data (χ^2 (df = 21) = 35.46, p = .025; CFI = .98; RMSEA = .052), it failed to significantly improve the model fit ($\Delta\chi^2$ (df = 2) = 5.90, p > .05). Finally, the possibility that diversity and intervening processes (innovative climate, employee competence, and satisfaction) have parallel or independent effects on organizational performance, instead of having mediated relationships, was checked. This alternative model produced a model fit (χ^2 (df = 35) = 83.57, p = .000; CFI = .92; RMSEA = .074) that was much worse than that of the partial mediation model.

Hypothesis Testing

Figure 2 presents the results of the best-fitting, partial mediation model. Market demand was a significant positive predictor of innovative performance ($\beta = .22$, $p < .001$). Organization size was related to both innovative and operational performance ($\beta = .10$ and .12, respectively, both, $p < .10$). Among the three mean values of demographic characteristics included as controls for the three intervening processes, only the mean value of hierarchical position showed a significant positive effect on employee task competence ($\beta = .17$, $p < .05$).

Insert Figure 2 about here

With regard to the relationship between diversity and performance, age and education diversity were directly related to innovative performance. When direct effects were examined, hierarchical position diversity was not significantly related to organizational performance. Contrary to our expectation, age diversity showed a negative effect on innovative performance ($\beta = -.10$, $p < .10$). Education diversity revealed a significant positive effect on innovative performance ($\beta = .21$, $p < .001$), partially supporting Hypothesis 2.

Hypotheses 3 and 4 proposed negative and positive effects of status and demographic diversity dimensions on internal processes involving employees. Confirming Hypothesis 3, hierarchical position diversity exhibited negative effects on employee competence and satisfaction ($\beta = -.19$, $p < .05$ and $\beta = -.26$, $p < .001$, respectively). Gender diversity exerted a significant positive effect on innovative climate ($\beta = .13$, $p < .05$), whereas education diversity was a significant predictor of innovative climate, employee competence, and satisfaction ($\beta = .16$, $p < .01$; $\beta = .14$, $p < .05$; $\beta = .24$, $p < .001$, respectively). Age diversity was not related to any of the internal processes. The results partially supported Hypothesis 4 in that the dimensions of less-status related diversity were positive predictors of the intervening processes.

With regard to the relationships between internal processes and organizational performance outcomes, the structural relations reported in Figure 2 supported Hypothesis 5, showing a positive predictive relationship over two years between innovative climate and innovative performance ($\beta = .25$, $p < .001$). As expected, employee satisfaction was a significant predictor of operational performance ($\beta = .17$, $p < .05$), confirming Hypothesis 7. However, employee task competence exhibited a marginally significant association with operational performance ($\beta = .10$, $p < .10$) without any effect on innovative performance. Thus, Hypothesis 6 was not supported.

In Hypothesis 8, the mediating roles of the three intervening internal processes were proposed. To validate the significance of the mediated, indirect effects of workforce diversity on organizational performance, the product-of-coefficients approach was employed, and their significance was tested by applying the bootstrapping procedure (MacKinnon, Fairchild, & Fritz, 2007). Three of the twelve possible indirect effects were significant. Education diversity exhibited a meaningful indirect effect on innovative performance through innovative climate (point estimate = .28, $p < .05$, confidence interval of .05 and .57). Employee satisfaction was the major route through which workforce diversity affected operational performance. Education diversity had a significant and positive indirect effect on operational performance through satisfaction (point estimate = .23, $p < .01$, confidence interval of .09 and .45), whereas such an indirect effect was negative for hierarchical position or status diversity (point estimate = -.12, $p < .01$, confidence interval of -.22 and -.05). However, none of indirect effects of diversity on organizational performance through employee competence was significant. This pattern indicated that workforce diversity affected organizational performance through innovative climate and employee satisfaction, partially confirming Hypothesis 8.

DISCUSSION

In recent years, the concept of diversity in terms of status has received increasing attention to provide explanations for different performance implications of diversity (Choi, 2007a; Van der Vegt et al., 2005). Nevertheless, research about the role of status in diversity has been lacking, and there is a call for more attention to the status issue as a complementary theoretical ground for understanding diversity effects (Harrison & Klein, 2007; van Knippenberg & Schippers, 2007). Thus, the present study theorized the role of status-relatedness of different diversity dimensions in relation to subsequent internal processes and organizational performance. This study further tested the widely assumed, but rarely validated, presumption that diversity affects organizational outcomes by shaping intermediate processes, such as employees' collective contextual perceptions, their KSAs, and morale. Empirically, the current study makes unique contributions to the diversity literature by examining the phenomena at the firm level using a large-scale, multi-source data set collected over a two-year period. Below, we highlight the important findings of the study and their implications. The limitations and directions for future research are discussed as well.

Organization-level Implications of More Status-related Diversity

The basic premise of the current study was that the process and performance implications of workforce diversity could shift depending on the level of status-relatedness of the diversity in question. The analysis of 256 organizations in various manufacturing industries indicated that status diversity has negative effects on internal processes and organizational performance. Indeed, hierarchical position is the formal and clearest indicator of status and prestige that can yield disharmony, interpersonal undermining, and reduced communication among employees (Choi, 2007a). Such negative interactive dynamics driven by status differentiation may lead to limited social support and interpersonal learning that should impede satisfaction and task competence of employees (Bowers et al., 2000).

Although these negative effects of status diversity may reflect dysfunctional interpersonal behaviors and negative consequences of status differential as observed in dyads or groups, these may also due to structural properties of the organization and the resulting

institutional environment for employees (Finlay, Martin, Roman, & Blum, 1995; Oldham & Hackman, 1981). The differentiation based on formal organizational positions constitutes the bases of organizational structure, such as span of control and centralization. When organizational members are widely spread to differing hierarchical positions (i.e., high position diversity), the organization is likely to employ a centralized, tall structure that introduces explicit lines separating employees into different organizational echelons (Carpenter, Bauer, & Erdogan, 2009). Hierarchical and tall organizational structures tend to decrease employee satisfaction because of the many layers of bureaucracy and rigid rules. In this context, lower-level employees have fewer chances to take on responsibility, leading to an "us vs. them" attitude that generates social chasm among members (Carpenter et al., 2009). This further creates an institutional context for employees that signals the legitimacy of hierarchy and unfair allocation of resources and exclusion of lower-class members from decision-making processes (Findler et al., 2007).

Unlike prior studies in organizational structure typically assessed by managers' report of the number of hierarchies (e.g., Oldham & Hackman, 1981), the current study examined the effect of the organizational structure by focusing on the actual segregation of organizational workforce into different hierarchical ranks. The analysis clearly demonstrated that creating status differential among organizational members based on their formal hierarchical position was detrimental to employee competence and satisfaction, as well as to operational performance. To avoid such unfavorable consequences, a company may develop a horizontal structure that endorses operational values, such as a wide span of control and empowerment (Finlay et al., 1995). This effort toward a reduced status differential should facilitate social integration, interpersonal learning, and social support among employees (Carpenter et al., 2009).

Organization-level Implications of Demographic Diversity

The positive effects of less status-related, demographic diversity dimensions were proposed because of their complementary informational values that are less likely depreciated

by social chasm among employees. The data supported this expectation for both gender and education diversity. Gender diversity seems to contribute to openness and flexibility of the organization by visibly diversifying the composition of the organization's workforce. Such a visible heterogeneity of members tends to reduce uniformity pressure that suppresses dissenting opinions, which typifies homogeneous groups (Phillips & Loyd, 2006). For such reasons, data in the present research indicated that gender diversity was positively related to the innovative climate of the organization, which increased its innovative performance. Despite the potential risk of gender-based division, gender diversity tends to improve social interactions and the commitment of members toward the work unit because of the complementarity between males and females (Ali et al., 2011; Wood, 1987).

The most potent effects were observed in education diversity that exhibited significant positive relationships with all three internal processes, and exerted a strong direct effect on innovative performance. Although these findings were consistent with what was hypothesized, the level of prevalence and strength observed in the effects of education diversity was rather surprising. In group-level examinations, the findings were mixed for education diversity. As van Knippenberg and Shippers (2007) noted, education level can be a source of prestige, and it sometimes drives negative interpersonal dynamics (Knight et al., 1999; Van der Vegt et al., 2003), whereas it also leads to positive outcomes (Talke et al., 2010; Wu et al., 2010). Indeed, education level is a meaningful point of comparison that can engender dysfunctional status-driven interpersonal dynamics in small, interactive groups. At the organization level, however, such potential negative interpersonal dynamics seem to be overwhelmed by the structural advantage of educational diversity that benefits the entire organization. This signifies that the dynamics involving diversity at the organizational level is more complicated than those at lower levels based on actual interactions and experiences. Organization-level diversity may operate through employees' summary perception of the organization with regard to the overall workforce composition. This effectively generates the

institutional process in which macro organizational factors shape employee attitudes and behavior through symbolic processes (Scott, 1995).

Workforce diversity in education should facilitate division of labor among employees with different educational attainment because they have differing skills and abilities, as well as distinct career aspirations and task motivation (Peri & Sparber, 2009). For instance, highly educated employees possess high professionalism based on intensive training and pursue complicated problems and challenges, whereas less educated employees may want to work in a more predictable, structured situation with clearly established extrinsic rewards (Andersen & Taylor, 2006). This efficient division of labor based on education diversity prompts task specialization that maximizes employee proficiency and expertise in the given task domain, which is a condition for efficiently leveraging manpower within the organization (Jones & George, 2003). Moreover, the increased task-relevant information, specialized knowledge, and distinct perspectives due to education diversity may provide a fertile ground for the creative thinking and high quality decision making of members, which enhances organizational innovation (Bantel & Jackson, 1989; Talke et al., 2010). The benefit of education diversity is particularly more plausible in manufacturing organizations in the present research sample because these organizations include a much wider range of functions and tasks as compared to professional (e.g., consulting firms) or service organizations (e.g., call centers).

Contrary to the positive effects of gender and education diversity on internal processes and operational performance, age diversity exhibited a weak negative effect on innovative performance. It seems that although somewhat less significant at the organization level, age diversity can establish an informal hierarchy based on seniority, and encourage young members to conform to elder employees, effectively suffocating debates and challenges among members (Kee, 2008). As a significant indicator of status, organization-level age diversity can impede the organization's overall creative potential (Bunderson, 2003). This was consistent with the findings of Choi (2007a) that both individual-level relational

demography and group-level diversity in age have negative effects on the creative behavior of Korean employees.

Mediating Processes between Workforce Diversity and Organizational Performance

Researchers have maintained that workforce diversity may improve organizational performance that requires innovative ideas and high-quality problem solving (van Knippenberg et al., 2004; Wu et al., 2010). Empirical findings also indicate the value of diversity for complex and non-routine information processing and creative endeavors (Choi, 2007a; Talke et al., 2010). Unfortunately, prior studies have rarely examined the effects of diversity on both qualitative (e.g., flexibility, problem solving, creativity) and quantitative outcomes (e.g., operational efficiency, sales volume) (Horwitz & Horwitz, 2007). The present study included both types of outcome measures, and demonstrated that both outcomes are affected by different dimensions of diversity through distinct mediating processes.

Drawing on the input-process-output model (Chatman & Flynn, 2001; Harrison et al., 2002), the reason why a given diversity dimension is more strongly related to one type of outcome than to another type was explored by investigating intermediate processes. The three intervening processes we identified provided reasonable explanations of the diversity-performance link, although the significant direct effects of diversity variables on innovative performance suggested the presence of alternative intervening processes. Consistent with prior research (Choi, 2007b; West & Richer, 2008), the innovative climate of an organization was a meaningful predictor of organizational innovative performance, mediating the positive effects of gender and education diversity. On the other hand, employee satisfaction was a direct predictor of operational performance, mediating the negative effects of education and hierarchical position diversity. Thus, innovative performance was related to the overall flexible and supportive climate, whereas operational performance was better explained by employee morale than other internal processes.

Interestingly, employee competence showed a weak association with operational performance but not with innovative performance. Perhaps, organizational innovation was

less affected by the amount of information and knowledge held by employees than by the extent to which they were freely shared and utilized to generate new ideas. This pattern is consistent with the arguments of knowledge management literature in that the innovative performance of a group depends on the extent to which knowledge is exchanged and exploited among members instead of the presence of knowledge or knowledge stock within the group (Griffith & Sawyer, 2010). Likewise, in organizations, innovative performance seems to be strongly influenced by innovative climate that unleashes the knowledge and information of employees toward creative problem solving.

Limitations and Conclusion

The present research design has several strengths in the use of multiple sources, multiple time points over a two-year period, and a large sample size at the firm level. The current findings, however, should be interpreted cautiously by taking into account several limitations of the study. First, although organizational performance was assessed after two years following the corporate survey, it was based on the subjective responses of strategy directors and department managers. Future research should employ objective indexes (e.g., number of new products, sales based on recently introduced products, defect rate) to assess organizational performance.

Second, organizational performance measures were assessed two years after the collection of data on organizational diversity and intervening organizational processes. Although the two-year duration is enough to allow complicated organizational processes to unfold and affect organizational outcomes, it was unclear if that duration provided an optimal temporal gap sensitive enough to detect the current organizational phenomena. Scholars have asserted that the effects of diversity may change over time (cf. Jackson et al., 2003). For instance, Harrison et al. (2002) found that time mitigates the negative effects of surface-level diversity on team social integration, whereas it intensifies the negative effects of deep-level diversity. Similarly, Hobman and Bordia (2006) reported that the effects of visible and professional dissimilarity on conflict diminish over time. Thus, the implications of diversity

dimensions examined in the present study may also change over time, perhaps holding shifting effects on both the intervening organizational processes and performance. Future studies should consider such time-dependent dynamics of organizational diversity.

Third, the present sample included only manufacturing companies, and the findings may not be generalized to other industries, such as banking or professional service industries, or to a different sector, such as non-profit organizations. Distinct industry-specific conditions may produce somewhat different diversity-related dynamics of organizations than the present patterns. The present findings may need to be validated with data from other industrial contexts.

Finally, the current results based on Korean companies could reflect distinct organizational culture, such as respect for formal authority based on a high power-distance value, and a relatively high level of centralization (Kee, 2008). This cultural context might be a reason for the strong effect of hierarchical position diversity. Future studies need to examine the distinct roles of diversity and intervening processes in organizational performance in other cultural contexts.

Despite these limitations, the present study enriched the diversity literature by theoretically elaborating the role of status-relatedness in explaining the effects of various diversity dimensions on internal processes and organizational performance. Moreover, this study investigated diversity and its consequences at the organization level, making a distinct empirical contribution to the diversity literature filled with research conducted at individual or group levels of analysis. In this respect, we specified theoretical underpinnings of diversity at the organization level by highlighting symbolic and institutional processes beyond interpersonal dynamics in small group settings. The large-scale, firm-level field data collected over a two-year period verified our conceptual model, confirming the status-relatedness propositions of diversity.

The findings regarding organization-level dynamics of workforce diversity need to be further validated by taking into account industry-related differences, cultural contexts, and

temporal shifts of diversity effects. Given that the three intervening, internal processes only partially mediated the diversity-performance relationship, future studies should explore alternative mediating mechanisms. Various social processes, such as interpersonal, inter-departmental communication, information exchange, cooperation, and conflict (Horwitz & Horwitiz, 2007) could be plausible mechanisms that underlie the effects of workforce diversity on organizational performance. In addition, given that the effect of diversity may emerge and intensify under certain circumstance (Jackson et al., 2003), researchers should identify contingencies and boundary conditions that operate as opportunities or constraints for the activation of diversity effects at the organization level, such as industry characteristics, socialization practices, and diversity training programs. The intensive research attention devoted to diversity at the group level of analysis should be extended to the organization level to elaborate the strategic implications of workforce diversity of organizations.

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TABLE 1

Means, Standard Deviations, and Correlations among Study Variables

Variables	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1. Market Demand	2.37	.96	--										
2. Organization Size	1.84	.94	-. 01	--									
3. Gender Diversity	.38	.13	.01	- .12*	--								
4. Age Diversity	8.34	1.40	-. 02	.04	.17**	--							
5. Education Diversity	.87	.14	.06	.19**	- .04	.12	--						
6. Hierarchical Position Diversity	1.47	.23	- .01	- .42**	.26**	- .06	.13*	--					
7. Innovative Climate	3.33	.31	.15*	.23**	.07	.16*	- .06	-.09	--				
8. Employee Competence	2.96	.54	.09	.24**	- .04	.20*	- .02	-.10	.26**	--			
9. Employee Job Satisfaction	3.50	.26	.05	.41**	- .05	.27**	- .01	-.20**	.55**	.26**	--		
10. Innovative Performance	2.60	.72	.27**	.19**	.04	.26**	- .09	-.09	.38**	.15*	.32**	--	
11. Operational Performance	3.63	.50	.05	.21**	.01	.16*	.06	-.04	.25**	.19**	.26**	.23**	--

Note. Unit of analysis is organization ($N = 256$).
* $p < .05$; ** $p < .01$

FIGURE 1

Theoretical Framework Predicting Organizational Performance

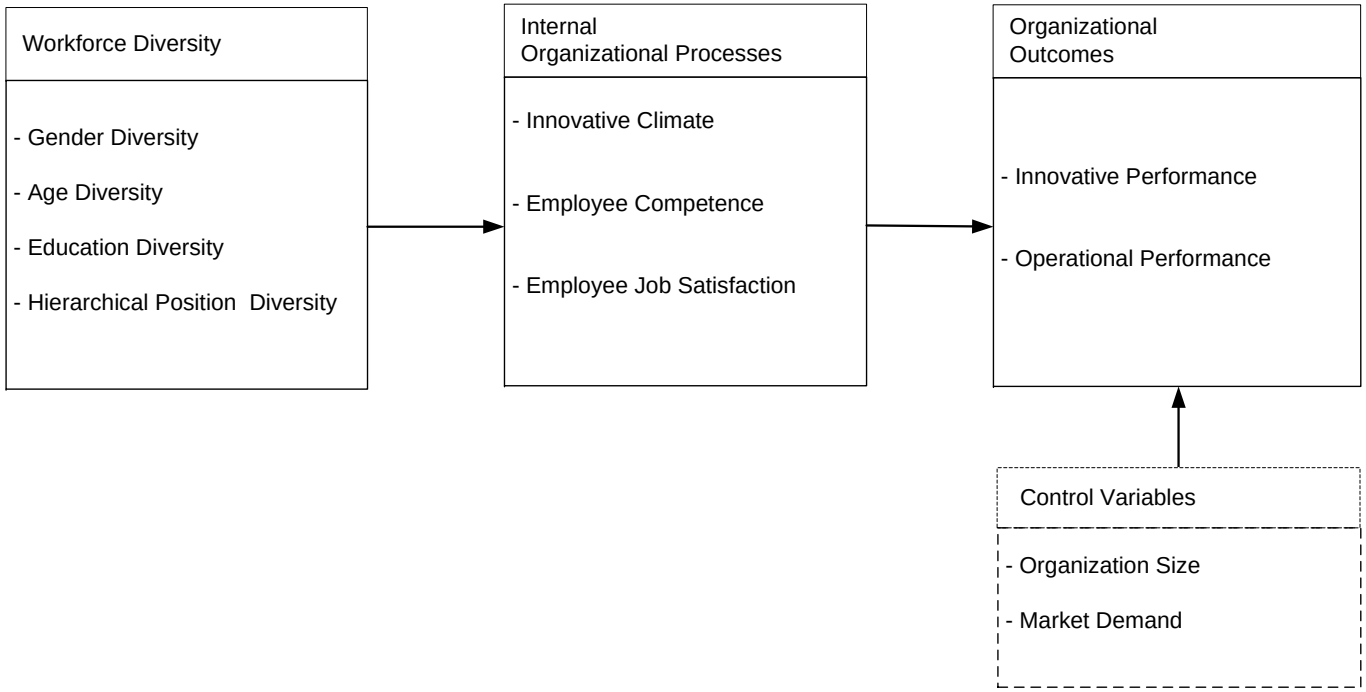
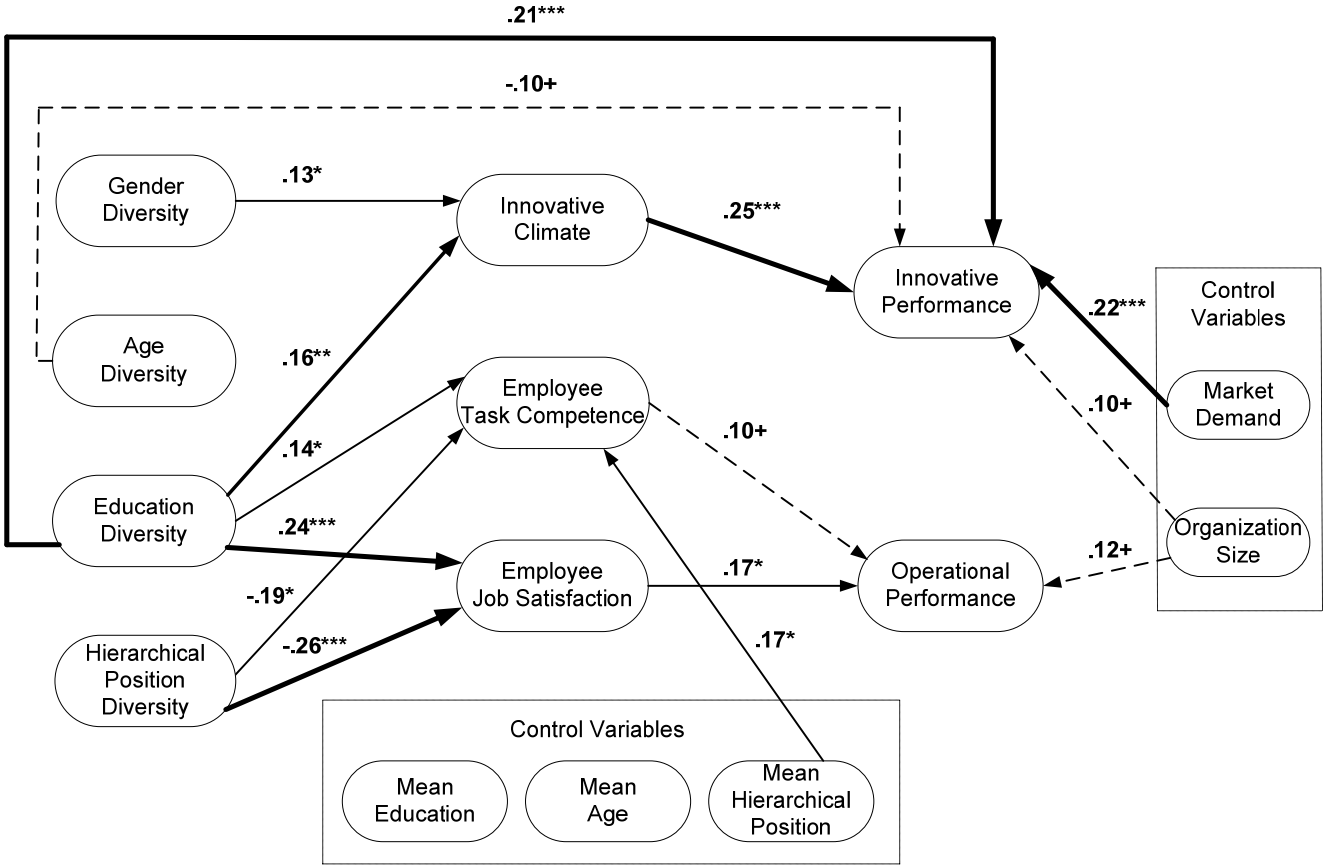


FIGURE 2

The Distinct Effects of Workforce Diversity on Organizational Outcomes



Note. Solid lines represent statistically significant results. Insignificant paths are not depicted in the diagram.
+ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$