THE BUSINESS CASE FOR GENDER DIVERSITY: THE ROLE OF HRM INVESTMENTS

ABSTRACT

Integrating opposing theoretical perspectives from past literature, the authors hypothesize and test U-shaped curvilinear relationships between workforce gender diversity and organizational performance outcomes (workforce productivity and profit). They further propose that the curvilinear effects vary depending on an organization's HRM investments; that is, higher HRM investments show more salient patterns than do lower HRM investments. As predicted, results reveal that high HRM investments influence the gender diversity–workforce productivity association to form a U-shaped curvilinear relationship. Results also show that when HRM investments are high, there are stronger curvilinear effects of gender diversity on financial performance (profit) via workforce productivity. Research and practical implications are discussed.

Keywords: Gender diversity, human resource management investments, organizational performance

During the past few decades, women have made significant inroads into the workplace. Consequently, organizations have sought to determine the business implications of gender diversity (Catalyst, 2004). Many diversity researchers and practitioners have proposed the "business case," asserting that more diverse workforces increase organizational effectiveness, a now-popular view that has been well espoused in the field (Conference Board, 2006; Kochan et al., 2003; Society for Human Resource Management, 2008). Although that view is positive and socially desirable, it lacks theoretical and empirical guidance indicating how gender diversity in the workplace can positively influence organizational performance (Kochan et al., 2003).

Opposing theoretical perspectives have suggested that the increasing representation of women in the workplace has various performance implications. For instance, drawing on the social contact theory (Allport, 1954), scholars have argued that increasing proportions of women and minorities in organizations enhance work environments because frequent cross-group interactions tend to reduce biases and stereotypes against dissimilar individuals (Blau, 1977; Kanter, 1977). Others, however, have indicated negative consequences of diversity such as in-group/out-group biases, intergroup conflict, and discrimination due to threats and competition over limited resources (Blalock, 1967; Tajfel & Turner, 1986). Although the past literature has somewhat supported both negative and positive views, especially those regarding individual work outcomes (e.g., Pfeffer & Davis-Blake, 1987; Tolbert, Simons, Andrews, & Rhee, 1995) and racial diversity (e.g., Richard, Murthi, & Ismail, 2007; Zatzick, Elvira, & Cohen, 2003), we know less about how both perspectives can be applied to explain gender diversity's effects on organizational performance outcomes. Empirical evidence, though limited, has revealed mixed patterns, finding gender diversity to yield positive, negative, or even insignificant performance effects (see Jackson, Joshi, & Erhardt, 2003, for a review).

To better understand performance implications of gender diversity in organizations, researchers have suggested that the relationship is potentially curvilinear, meaning that social contact and group competition theories may be compatible. Combining these perspectives would indicate a U-shaped association between gender diversity and performance (Blau, 1977; Richard, Barnett, Dwyer, & Chadwick, 2004; see also Pfeffer & Davis-Blake, 1987; Tolbert et al., 1995). Biases, categorization, and intergroup competition might exert initial negative performance effects, but increased diversity and intergroup interactions can diminish those negative consequences (e.g., Tolbert et al., 1995). As employees engage in information elaboration, organizational performance can improve (Blau, 1977; Richard et al., 2004). Although the theoretical integration appears to be relevant, past literature has rarely examined the possible curvilinearity of the gender diversity–organization performance relationship. Limited research examining the relationship has yielded unclear evidence (e.g., Richard et al., 2004).

Another way to reconcile unclear findings from past research is to take a more nuanced, contextual perspective (e.g., Johns, 2006). Diversity researchers have also suggested that it is crucial to go beyond examining the main effects of diversity on performance by asking when and how diversity effects translate into positive performance outcomes (Joshi & Roh, 2009). A few studies have focused directly on the external organizational context and have found significant performance effects of diversity under certain environmental conditions such as industry type, stability, environmental munificence, and community demographics (e.g., King et al., 2011; Richard et al., 2007; Sacco & Schmitt, 2005) and strategic orientations (e.g., Richard, 2000; Richard et al., 2004). On the other hand, we lack insights into the highly important internal work context where diverse people closely interact (Jackson, 1992). For instance, researchers have suggested that organizations choose human resource management (HRM) practices to create

certain work contexts that signal and promote desirable behaviors (Bowen & Ostroff, 2004). HRM approaches reflect organizational investments in employees, such as pay, training, benefits, and communication, and their different forms of exchange relationships and social norms (Shaw, Dineen, Fang, & Vellella, 2009; Tsui, Pearce, Porter, & Hite, 1995). In a diverse work setting, an organization's HRM approach can also influence the perceptions, behaviors, and social interactions of dissimilar members (e.g., Homan et al., 2008), which in turn will affect organizational performance outcomes.

In this study we address two important questions: (1) Does workforce gender diversity relate to organizational performance? If so, how? (2) Do the contexts HRM has created determine the association? Integrating opposing theoretical perspectives from past research, we test whether gender diversity and organizational performance have a U-shaped relationship. We further propose that organizations with high HRM investments in, for example, pay, training, benefits, and communication, will enhance workforce interconnectedness, inspire positive affectivity toward the organization, and create a positive work context for gender diversity dynamics, which, in turn, will enhance organizational performance. We consider two dimensions of organizational performance outcomes: workforce productivity — an intermediate performance, and profit — a distal performance (Ployhart, Weekley, & Ramsey, 2009). Following Edwards and Lambert's (2007) method, we examine the first-stage moderated-mediation model: HRM investments moderate the relationship between gender diversity and workforce productivity and, as a result, influence profit. To minimize causality issues, we test our predictions using time-lagged data of 366 organizations across multiple industries: gender diversity and HRM investments data collected at Time 1, and organizational productivity and profit performance data collected at Time 2. Figure 1 shows the proposed model.

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THEORETICAL BACKGROUND AND HYPOTHESES

Diversity researchers have long argued that workplace diversity is a double-edged sword because it has mixed performance implications (e.g., Milliken & Martin, 1996). Proponents of organizational diversity suggest more positive intergroup relations with a relatively large number of minorities in the workforce (e.g., Kanter, 1977). According to the logic of the social contact theory, the more individuals interact with members of other social groups, the more likely they are to receive evidence disconfirming the validity of out-group stereotypes (Allport, 1954). Cross-group interactions increase as groups become more similar in size (i.e., increasing level of diversity, Blau, 1977). Under this circumstance, dissimilar members are more likely to elaborate informational differences about diverse members, leading to positive organizational outcomes such as more creative solutions and enhanced innovation (Cox, 1994; Jackson, 1992; van Knippenberg, De Dreu, & Homan, 2004). Because diversity is an intangible and socially complex resource that is inimitable, rare, and valuable to organizations, it can also provide them a source of sustained competitive advantage (Frink et al., 2003; Richard, 2000).

Conversely, we also expect diverse workplaces to show conflict, disintegration among members, and inefficiencies in organizational functioning. These negative consequences should occur because dissimilar people tend to show unfavorable social comparisons, categorization-based stereotype and biases, and the resulting in-group/out-group discrimination (e.g., Tajfel & Turner, 1986; Williams & O'Reilly, 1998). Elaborating on the logic of group competition, scholars have also argued that increases in the proportion of women in male-dominated organizations should worsen intergroup relations because the majority will perceive dissimilar

members as threatening their control of social resources (Blalock, 1967; Bonacich, 1972). Competition theory further suggests that diversity's negative consequences continue at least until they reach some proportional threshold (Blalock, 1969; Pfeffer & Davis-Blake, 1987; Tolbert et al., 1995).

Integrating predictions from these competing perspectives, Blau (1977) theorized and later Richard and colleagues (2004; 2007) further articulated that organizations with different levels of diversity experience dissimilar dynamics and organizational outcomes. At a minimal level of diversity, as in male-dominated settings, homogeneous members have no psychological barriers to social interactions. However, as the diversity increases from low to moderate, such as during an influx of women into male-dominated workplaces, members who lack familiarity with dissimilar others are likely to experience unfavorable social comparison and categorization-based processes that impair overall group functioning (Blalock, 1967; Tajfel & Turner, 1986). An initial entry of women into traditionally male-dominated organizations may typically damage the quality of group relations because their visibility threatens their male counterparts (Kanter, 1977). Those tendencies will be exacerbated until the proportion of women reaches a meaningful level, such as a token level. As diversity increases further (e.g., above the token proportions and toward size equality), however, unfavorable social comparison is less likely to emerge and categorization-based processes are limited (Blau, 1977). In diverse workplaces, where minorities have proportional presence, social contacts and communication are likely to involve dissimilar members, such as groups comprising both men and women (Allport, 1954), which could weaken pressures that inhibit social interactions with out-group members (Blau, 1977). As Blalock (1969) posited, this setting may represent the above-threshold condition in which intergroup conflict decreases because of the similarity in proportionate size and organizational power (see Pfeffer &

Davis-Blake, 1987; Tolbert et al., 1995, for related discussions). Those conditions encourage diverse members to engage in elaboration of information to benefit from a diverse pool of resources (van Knippenberg et al., 2004), which eventually can result in better organizational performance (Richard et al., 2004). In keeping with past theorizing and integration (e.g., Richard et al., 2007), we form our first hypothesis:

Hypothesis 1: Gender diversity in the workforce will have a U-shaped curvilinear association to organizational performance (workforce productivity).

The Role of HRM Investments

Scholars drawing on social exchange theories (Blau, 1964; Ekeh, 1974) and the employee-organization relationship framework (Coyle-Shapiro & Conway, 2004; Tsui et al., 1995) have suggested that organizations develop and invest in HRM to shape employee perceptions and behaviors and thus create certain forms of exchange relationships. HRM practices such as pay, benefits, training, and communication indicate organization's investments in employees (Shaw, Delery, Jenkins, & Gupta, 1998; Tsui, Pearce, Porter, & Tripoli, 1997). From an organizational point of view, HRM practices represent sustained commitment to workers and development of deep human capital pools (Osterman, 1988). According to the general logic of social exchange theory, organizations with high HRM investments go beyond purely economic exchanges and focus more on long-term, social aspects of exchange relationships such as employees' perception that the organization supports and invests in their careers (Tsui et al., 1997). High HRM investments encourage employees to perceive strong organizational support and long-term commitment. In exchange, employees feel obliged to repay the organization by maintaining positive attitudes, acting appropriately (Settoon, Bennett, & Liden, 1996), considering organizational interests as important as core job duties, being willing

to learn firm-specific skills, helping others, and making organization-specific links or connections that may fall outside the employee's areas of expertise (Hom, Tsui, Wu, & Lee, 2009; Tsui et al., 1997). Under high HRM investment contexts, employees may also develop cooperative and developmental interpersonal relationships with coworkers (Tsui et al., 1997), and value interests of the organization and coworkers as well as their own tasks, which can foster expectations of mutual assistance and trust (Tsui et al., 1997). Furthermore, under this condition, munificence of resources (e.g., more pay, training, and benefits) can also foster a sense of harmony while minimizing competitive pressures (Richard et al., 2007). In contrast, when HRM systems show less employee investment, and thus fewer social exchanges and resources, employees may focus on short-term employment returns and see coworkers as competitors, eventually damaging coworker trust and relationships (Barker, 1993; Pearce, Bigley, & Branyiczki, 1997).

Adopting a contextual perspective, we suggest that HRM investments create certain work contexts that can influence perceptions, behaviors, and social interactions of diverse members. When situational/structural factors convey a common group identity ("we" rather than "we-they" categorizations; e.g., Sheriff, 1958), within-group differences become less salient and diversity is less likely to have negative consequences (Brown & Turner, 1981; Gaertner & Dovidio, 2000). We propose that high HRM investments create a mutual investment relationship between employer and employees by strengthening trust, positive interpersonal contacts, cooperation with coworkers, and obligations and commitment to an organization. As a result, diverse individuals are more likely to develop a superordinate or collective identity ("we" categorization). On the other hand, individual-based identity orientations cause individuals to see themselves primarily in terms of their own traits and demographic attributes, such as gender, a

frame of reference that inhibits intergroup contact and cooperation (e.g., Brickson, 2000). However, when HRM investments encourage collective organization-oriented identities, the frame of reference shifts from individual characteristics to collective goals and values, so that individuals are motivated to procure benefits for others and for the overall group (e.g., Brewer & Gardner, 1996; Gaertner & Dovidio, 2000). Thus, a strong superordinate identity increases the likelihood that organizational members will view themselves as partners with deeper cognitive and affective understandings of others. Dense and integrated networks of relationships develop, promoting interpersonal communication and cooperation rather than competition (Batson, 1998; Gaertner & Dovidio, 2000; Homan et al., 2008).

Kanter (1983) noted that integrated organizations have flow charts that resemble a "plate of spaghetti" (p. 133). In contrast, low HRM investments can activate individual-based identities and fragment organizations, what Kanter called *segmentalist organizations*, so that "structural barriers are matched by attitudes that confine people to the category in which they have been placed" (p. 31), confirming and reinforcing preexisting perceptions and attitudes associated with social categories such as gender, biases, and stereotypes.

Based on that reasoning, we expect HRM investments to have a contextual influence on the gender diversity and organizational performance relationship. Under high HRM investments and low-moderate diversity levels, dissimilar members may still experience internal conflicts, but enhanced collective/common group orientations can weaken those negative effects. Under high HRM investments and high diversity levels, members may regard one another as long-term partners, resulting in active communication, diverse information elaboration, and superior organizational performance. Under low HRM investments, we expect dissimilar members to

have stronger individual-based identity orientations, weakening the previously proposed relationships.

Hypothesis 2: HRM investments will positively moderate the relationship between gender diversity and organizational performance (workforce productivity) such that gender diversity and organizational performance will have a more salient U-shaped relationship under high than under low HRM investments.

To enhance our understanding of gender diversity effects on organizational outcomes, we further incorporate a distal measure of organizational performance in our model: profitability. Strategic management and strategic HRM research have considered financial performance, including profitability, as a primary construct of interest (e.g., Hitt, Bierman, Shimizu, & Kochhar, 2001; Polyhart et al., 2009). In addition, the literature has often considered workforce productivity to be a key antecedent of financial performance (e.g., Delery & Shaw, 2001). Therefore, we extend our theoretical and empirical model to examine processes that lead to distal financial performance. We propose that the U-shaped curvilinear relationship between gender diversity and workforce productivity is more apparent when HRM investments are high and that workforce productivity serves as a mediator between these interactive relationships and financial performance. That argument produces a first-stage moderated-mediation model: the indirect and total curvilinear effects of gender diversity on profit (via productivity) will be stronger when HRM investments are high.

Hypothesis 3: The mediated curvilinear relationship between workforce gender diversity and organizational financial performance (via workforce productivity) will vary depending on HRM investments; the indirect and total curvilinear effects of workforce gender diversity on organizational financial performance (profit) will be more salient

under high rather than low HRM investments.

METHODS

We used two public data sets: (a) the Human Capital Corporate Panel (HCCP) database collected by the Korean Research Institute for Vocational Education and Training (KRIVET) in collaboration with the South Korea Ministry of Employment and Labor, and (b) the organizational performance database provided by Korea Information Services (KIS). The HCCP database was developed to represent all organizations with more than 100 employees excluding foreign, public service, agriculture, fisheries, and forestry organizations. KRIVET selected and contacted 900 organizations among 7,246 organizations in South Korea, using stratified sampling. The final HCCP data were collected from 13,101 employees of 454 Korean organizations, for a response rate of 50%. The HCCP includes an organization and an employee survey. For our study, the top HRM manager referred to the organization's HR records to answer survey questions about HRM practices such as compensation, training, unionization, and number of male and female employees. The employee survey included perceptions of organizational communication practices. We linked the HCCP data for the 2004 calendar year with the organizational performance data for the 2005 calendar year using the unique organization ID. The final usable sample sizes were 366 for productivity and 294 for profit after listwise deletion.

Measures

Gender diversity. We used Blau's index of heterogeneity (1977). We calculated the gender diversity index by the formula: $1 - \Sigma P_i^2$, where P is the proportion of male and female members. Larger values of this index represent greater organizational gender diversity. In our data, we observed index values from 0 to .50, reflecting the entire feasible range of gender diversity.

HRM investments. The four separate HRM dimensions — pay level, benefits level, training, and communication — created an additive HRM investments index. We combined those four dimensions reflecting direct and indirect forms of HRM investments (see Shaw et al., 1998; Shaw, Park, & Kim, in press, for a similar approach). Pay level was measured as the average annual salary for full-time employees. Benefits level was measured as the average annual benefit for full-time employees. Training was measured as the average training investment for full-time employees. Communication was assessed with three items, for example: "Our company shares organization information (e.g., strategy, financial performance) with all employees," and "In this company, employees freely express their opinion with their supervisor/higher ranked employees." An average of 29 employees per organization indicated their perceptions of communication practices using a five-point Likert-type scale from 1 (*not at all*) to 5 (*to a great extent*). Reliability of communication scale was .73. Aggregation statistics revealed strong agreement (rwg[j] = .82), acceptable levels of reliability of individual assessments of group means (ICC[1] = .15) and group means (ICC[2] = .84). Each component of HRM investments was standardized to form the index.

Organizational performance (workforce productivity and profit). We measured organizational performance using workforce productivity and profit, which capture the intermediate and distal organizational performance, respectively, and which are commonly used in the management literature (e.g., Guthrie, 2001; Hitt et al., 2001; Shaw, Gupta, & Delery, 2005). We used the natural log of sales per employee (i.e., a measure of workforce productivity) and the natural log of profit. These variables were log transformed because of skewness.

Control variables. Drawing on previous research on organizational-level diversity and strategic HRM, we controlled for several variables that are related to organizational performance,

gender diversity, and HRM investments including industry characteristics (Datta, Gutherie, & Wright, 2005), organizational age (Kalleberg & Leicht, 1991), unionization (Arthur, 1994), organizational size (Osterman, 1994; Shaw et al., 1998), and operating and financial leverage (McGuire, Sundgren, & Schneeweis, 1988). Industry characteristics were measured as (a) industry capital intensity (three-year [2002-2004] average ratio of fixed assets to sales for firms in each industry in the Korean Standard Industrial Classification [KSIC]), (b) industry growth (the average three-year [2002-2004] annual growth rate for firms in each industry in the KSIC), and (c) industry dynamism (the natural log of sales for firms in each industry in the KSIC for the three-year [2002-2004] regressed against time, followed by the anti-log of the standard errors from these models). Organizational age was measured as years since the founding of the firm. Organizational size was measured as the natural log of the total number of employees in the organization. Unionization was measured as a dichotomized scale; 1 for organizations that have a labor union or labor-management counsel, and 0 otherwise. Operating leverage was measured as the ratio of fixed assets to total assets, and financial leverage was measured as the ratio of debt to total assets.

RESULTS

Table 1 contains descriptive statistics and correlations and Table 2 presents the regression results. To reduce multicollinearity, we standardized gender diversity before computing the squared and interaction terms. The left section of Table 2 shows the results for productivity. Model 2 shows that gender diversity was negatively related to productivity (b = -.22, p < .01). Model 3 shows that gender diversity squared was positively related to productivity (b = .14, p < .01), explaining an additional 1% of the variance in productivity. Therefore, Hypothesis 1 was supported.

Model 5 shows that the interaction of the gender diversity squared and HRM investments was significant (b = .18, p < .01), explaining an additional 2% of the variance in productivity. As Figure 2 shows, under high HRM investments, the gender diversity–productivity relationship was curvilinear in a U shape. The left section of Table 3 (i.e., first stage) presents the slope differences at high and low levels of HRM investments: when HRM investments were high, the linear ($b_{\text{High HRM Linear}}$ = -.42, p < .01) and quadratic ($b_{\text{High HRM Quadratic}}$ = .27, p < .01) simple slopes were significant; when HRM investments were low, the linear ($b_{\text{Low HRM Linear}}$ = .00, n.s.) and quadratic ($b_{\text{Low HRM Quadratic}}$ = -.09, n.s.) simple slopes were not significant. Therefore, Hypothesis 2 was supported.

The right section of Table 2 shows the results for profit. Model 2 shows that the linear (b = -.13, n.s.) and the quadratic (b = .15, n.s.) gender diversity terms were not significant. In Model 3, the productivity mediator was significant (b = 1.12, p < .01), explaining 26% of the additional variance in profit. To test Hypothesis 3, which examined the effects of gender diversity on profit via productivity across HRM investments levels (i.e., the first-stage moderated-mediation hypothesis), we followed Edwards and Lambert's (2007) moderated-mediation path analytic approach. First, Equation (1) estimated the curvilinear effects of gender diversity and the interaction effect between gender diversity squared and HRM investments on productivity:

$$M = a_0 + a_1X + a_2X^2 + a_3Z + a_4XZ + a_5X^2Z + e_M \quad (1)$$

M refers to the mediator productivity, X refers to gender diversity, X^2 refers to gender diversity squared, and Z refers to the moderator, HRM investments.

Equation (2) estimates the effects of gender diversity and the productivity mediator on profit. Y refers to profit:

$$Y = b_0 + b_1X + b_2X^2 + b_3M + e_Y \quad (2)$$

Substituting Equation (1) for M in Equation (2) formed the combined equation for the first stage moderated-mediation model:

$$Y = [b_0 + (a_0 + b_3a_3Z)b_3] + [b_1 + (a_1 + a_4Z)b_3]X + [b_2 + (a_2 + a_5Z)b_3]X^2 + b_3e_M + e_Y \quad (3)$$

In Equation (3), the direct effect of X (gender diversity) on Y (profit) is represented by the coefficient b_1, the direct curvilinear effect of X on Y is represented by the coefficient b_2, the indirect effect of X on Y across different levels of Z (HRM investments) is represented by the coefficient $(a_1 + a_4Z)b_3$, and the indirect curvilinear effect of X on Y across different levels of Z is captured by the coefficient, $(a_2 + a_5Z)b_3$. Following Edwards and Lambert (2007), we used bootstrapping methods with 1,000 random samplings to construct confidence intervals for the significance tests of indirect and total effects. Research recommends this procedure because the indirect and total effects, which include product terms, are not normally distributed and may induce an inflated Type 1 error rate (Shrout & Bolger, 2002).

Table 3 shows the path analytic results, which revealed that the indirect and total effects of gender diversity on profit via productivity were different across levels of HRM investments. When HRM investments were high, the indirect (b = .30, p < .05) and the total (b = .24, p < .05) curvilinear effects of gender diversity on profit via productivity were significant. When HRM investments were low, the indirect (b = -.10, n.s.) and the total (b = -.16, n.s.) curvilinear effects of gender diversity on profit via productivity were not significant. In summary, both the indirect and total effects were significantly stronger when HRM investments were high. Figure 2 shows that when HRM investments were high, the gender diversity–profit relationship (via productivity) was curvilinear in the shape of U. Thus, Hypothesis 3 was supported.

The overall results were virtually identical when we excluded all or several sets of control variables from the models, and also when we used 15 industry dummy variables to capture the

16 industries instead of industry characteristics (industry capital intensity, growth, dynamism). These supplemental analyses provided confidence in our findings.

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DISCUSSION

This study contributes to the diversity and HRM literatures in several ways. First, combining opposing theoretical perspectives, our study provides an explanation and clearer evidence of the U-shaped relationship between workforce gender diversity and organizational performance. The literature has offered a surfeit of contradictory perspectives and an abundance of diverging findings on the diversity-performance relationship. Building on this, researchers have sharpened their focus to understand the organization-level relationship between workforce diversity and organizational performance through rigorous empirical tests and comparisons of alternative theories (e.g., Richard et al., 2004; Richard et al., 2007). In particular, on the basis of Blau's theory of heterogeneity (1977), Richard and his colleagues (2007) provided an initial empirical support for a U-shaped relationship between workforce racial diversity and organization performance in a cross-industry sample of U.S. organizations. In line with that finding, we find the same U-shaped pattern regarding workforce gender diversity in a nationally representative cross-industry sample of Korean organizations. The consistent results of these two studies complement each other and hint at the generalizability of the U-shaped relationship between workforce demographic diversity and organizational performance across industries and two distinct cultures. Findings also indicate the compatibility of different theoretical perspectives (social contact/value-in-diversity views versus categorization/group competition theories) and demonstrate how these theories can be applied to explain the effects of workforce gender

diversity on organizational performance outcomes.

Next, integrating the social exchange-based perspective on HRM (Shaw et al., 2009; Tsui et al., 1997) with Blau's theory of heterogeneity (1977), we clarify the relationship between workforce diversity and organizational performance. We find that HRM investments are a critical contextual factor in the relationship between workforce gender diversity and organizational performance; gender diversity has a significant U-shaped relationship with the two dimensions of organizational performance — productivity and profit — with high HRM investments but not low HRM investments. That finding is our most important contribution from this study. Previous research has largely focused on external contextual factors such as industry type, growth rates, and stability as boundary conditions of workforce demographic diversity and organizational performance (e.g., Richard et al., 2007). Although these factors enhance our knowledge of the relationship between workforce diversity and organizational performance, the focus on external contextual factors has been at the expense of research on internal contextual factors such as HRM practices. Thus, the investigation of HRM investments can give the workforce diversity literature a fuller contextual picture (see Joshi & Roh, 2009). Not only are HRM investments positively related to organizational performance (for a review, see Combs, Liu, Hall, & Ketchen, 2006), but they are also an important contextual factor that shapes the effects of workforce gender diversity on organizational performance. From a manager's perspective, HRM practices are more controllable than external industry or environmental conditions, and provide decision makers a lever to capitalize on workforce diversity effects on organizational performance.

Our findings indicate that the U-shaped relationship between workforce gender diversity and organizational performance is apparent only when HRM investment levels are high. Low HRM investment settings show no meaningful relationship. These findings are particularly

important because contemporary organizations are experiencing a steady rise of women in the workplace. As of 2009, across industries, 47% of the U.S. workforce and 42% of the Korean workforce were women (Bureau of Labor Statistics, 2011; Bureau of Labor Statistics and International Labor Office, 2012). Findings suggest that despite initial negative consequences, organizations experiencing increasing levels and more needs for diversity should adopt high levels of HRM investments regarding pay, training, benefits, and communication to reap the benefits of their diverse workforce. Organizations operating in increasingly diverse labor markets but with low levels of HRM investments will fail to realize diversity's positive aspects and will fail to create competitive advantage through their workforce, eventually resulting in poor performance outcomes.

Limitations and Future Directions

Along with its contributions, our study has some limitations. First, common method bias was not a critical problem because we used HRM managers as sources for workforce diversity and HRM investments, and we used archival records as sources for organizational performance. The one-year time lag, however, limited causal inference. Nevertheless, we developed the hypotheses from theoretical frameworks, and higher-order effects confirmed predicted patterns that made reverse direction appear less plausible. Future studies using at least three-wave panel data will be necessary to clarify the causal inference of the effects of workforce diversity on organizational performance.

Next, the study's external validity is limited because we collected these data from South Korea. Countering those limitations, we investigate theory-driven workforce diversity–organizational performance linkages regarding gender diversity in a nationally representative cross-industry sample with a key internal contextual factor — HRM investments, after

controlling for external contextual factors (e.g., industry characteristics), and with two different indicators of organizational performance: productivity and profit. Although it is ideal to test these ideas using multinational organizations in several nations, combined with Richard et al.'s (2004, 2007) work, our findings provide evidence about the generalizability of the U-shaped relationship between workforce demographic diversity and organizational performance. However, we encourage constructive replications that investigate these relationships in other contextual settings.

Future researchers should investigate the effects of generational diversity on organizational performance by integrating recent theoretical advances regarding generational relationships (see Joshi, Dencker, Franz, & Martocchio, 2010). In 2011, approximately half of U.S. workers were 45-years-old or older (Bureau of Labor Statistics, 2012). Employers are faced with critical age-based issues such as retirement of baby boomers (Lee & Skinner, 1999; Wang, 2007) and bridge employment (Wang, Zhan, Liu, & Shultz, 2008). In addition, organizations must manage greater age diversity as they integrate younger employees (see Lyons, Duxbury, & Higgins, 2005; Smola & Sutton, 2002). Thus, investigating the organizational performance effects of age diversity in the workforce may give researchers and managers new insights.

We also encourage future workforce diversity research that more richly conceptualizes HRM practices. Strategic HRM research following "high performance work practices" tends to view HRM practices on a single continuum between low-investment or high-performance practices as they affect control and commitment (see Lepak, Liao, Chuang, & Harden, 2006, for a review). Although we follow the literature in adopting this approach, it fails to capture the broader scope of HRM dimensions. For example, Shaw and his colleagues (2011) suggested two distinct HRM dimensions—HRM investments and HRM expectation-enhancing practices (see

also Jiang, Lepak, Hu, & Baer, in press, for a three-dimension model including skill-enhancing, motivation-enhancing, and opportunity-enhancing HRM practices). Our results, using a single continuum conceptualization of HRM, show that the organizational performance consequences of workforce diversity differ considerably across HRM investments levels such as high pay, benefits, training, and communication. However, it is unknown how workforce diversity relates to organizational performance among organizations that adopt HRM expectation-enhancing practices such as monitoring, pay-for-performance, frequent performance appraisal, or other HRM dimensions. We speculate that HRM investments and HRM expectation-enhancing practices may differentially affect the workforce diversity and organization performance link because HRM expectation-enhancing practices may trigger employees' self-interest. This will likely result in greater unfavorable social comparisons and, in turn, will intensify negative biases and discrimination toward out-group members. Investigating these dynamics may lead to new insights into the workforce diversity–organizational performance relationship.

In summary, this study provides a constructive replication and theoretical extension concerning the U-shaped relationship between workforce gender diversity and organizational performance and the moderating effects of an organization's HRM investments. We encourage replications as well as additional research on the content of organizational-level workforce diversity and the potential boundary conditions for organizational performance.

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Table 1
Descriptive statistics and correlations

	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Industry capital intensity	.60	.46											
2. Industry growth	.24	.31	.09										
3. Industry dynamism	2.49	6.41	-.08	.05									
4. Organizational age	26.70	17.10	.21**	-.08	.22**								
5. Unionization	.51	.50	.19**	-.06	.23**	.44**							
6. Organizational size	6.02	1.05	-.04	.00	.44**	.29**	.37**						
7. Operating leverage	.46	.21	.41**	.04	-.28**	.15*	.15*	.03					
8. Financial leverage	.50	.28	.08	-.12**	.28**	.16*	.16**	.16*	-.02				
9. Gender diversity	.28	.15	.00	-.12*	.06	-.01	-.28**	-.06	-.14**	.04			
10. HRM investments	.00	1.00	-.04	.06	.20**	.04	.11*	.28**	-.14**	.05	-.06		
11. Productivity	12.55	1.00	.12*	.08	.31**	.17**	.24**	.19**	.06	.10**	-.26**	.25**	
12. Profit	9.65	1.97	.12*	-.01	.18**	.15**	.03	.05	-.10	.01	.02	.24**	.42**

Notes: * p <.05, ** p <.01. N = 346~454.

Table 2
Regression results

	Productivity					Profit		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3
Industry capital intensity	.28*	.30*	.30*	.28*	.28*	.98 **	.92**	.61**
Industry growth	.09	-.05	-.07	-.10	-.12	-.49	-.60	-.52
Industry dynamism	.05 **	.04 **	.04 **	.05 **	.05 **	.05 *	.05 *	-.01
Organizational age	.00	.00	.00	.01 *	.00	.01	.01	.00
Unionization	.26 *	.07	.01	.05	.05	-.10	-.33	-.37
Organizational size	-.02	-.08	-.09	-.09	-.09	-.05	-.19	-.05
Operating leverage	.01	.00	-.02	-.13	-.15	-.90	-.76	-1.00 *
Financial leverage	.18	.18	.17	.20	.21	-.08	-.11	-.27
Gender diversity		-.22 **	-.22 **	-.23**	-.21 **		-.13	.08
HRM investments		.24 **	.26 **	.25 **	.08		.48 **	.21
Gender diversity^2			.14 **	.09	.09		.15	-.06
Gender diversity × HRM investments				-.20 **	-.21 **			
Gender diversity^2 × HRM investments					.18 **			
Productivity								1.12 **
Total R^2	.16 **	.26 **	.27 **	.29 **	.31 **	.09 **	.14 **	.40 **
ΔR^2	.16 **	.10 **	.01 **	.02 *	.02 **	.09 **	.05	.26 **

Notes: * p <.05, ** p <.01. Two-tailed test. Productivity N = 366 and Profit N = 294. Unstandardized regression coefficients are reported.

Table 3
Path analytic results: Indirect and total effects of gender diversity via productivity on profit at low and high levels of HRM investments

	First Stage		Second Stage	Direct Effects		Indirect effects		Total effects	
	P_{mx}	P_{mx}^2	P_{ym}	P_{yx}	P_{yx}^2	$P_{ym}P_{mx}$	$P_{ym}P_{mx}^2$	$P_{yx}+P_{ym}P_{mx}$	$Pyx^2 + P_{ym}P_{mx}^2$
Profit									
Simple paths for *high* HRM investments	**-.42****	**.27***	1.12**	.07	-.06	**-.47****	**.30***	**-.40****	**.24***
Simple paths for *low* HRM investments	**.00**	**-.09**	1.12**	.07	-.06	**.00**	**-.10**	**.07**	**-.16**

Notes: * $p < .05$, ** $p < .01$. Two-tailed test. Coefficients in bold are significantly different across HRM investments levels at $p < .01$.
Pmx = linear path from X (gender diversity) to M (productivity); Pmx^2 = curvilinear path from X^2 (gender diversity squared) to M; Pym = path from M to Y (profit); Pyx = linear path from X to Y (direct linear effect of gender diversity on profit); Pyx^2 = path from X^2 to Y (direct curvilinear effect of gender diversity on profit); Pym * Pmx = indirect linear effect; Pym * Pmx^2 = indirect curvilinear effect; Pyx + Pym* Pmx = total linear effect of X on Y; Pyx^2 + Pym* Pmx^2 = the total curvilinear effect of X on Y. We used bootstrapping methods to construct bias-corrected confidence intervals on the basis of 1,000 random samples for the significance tests of indirect and total effects (see Edwards & Lambert, 2007).

Figure 1
Proposed model

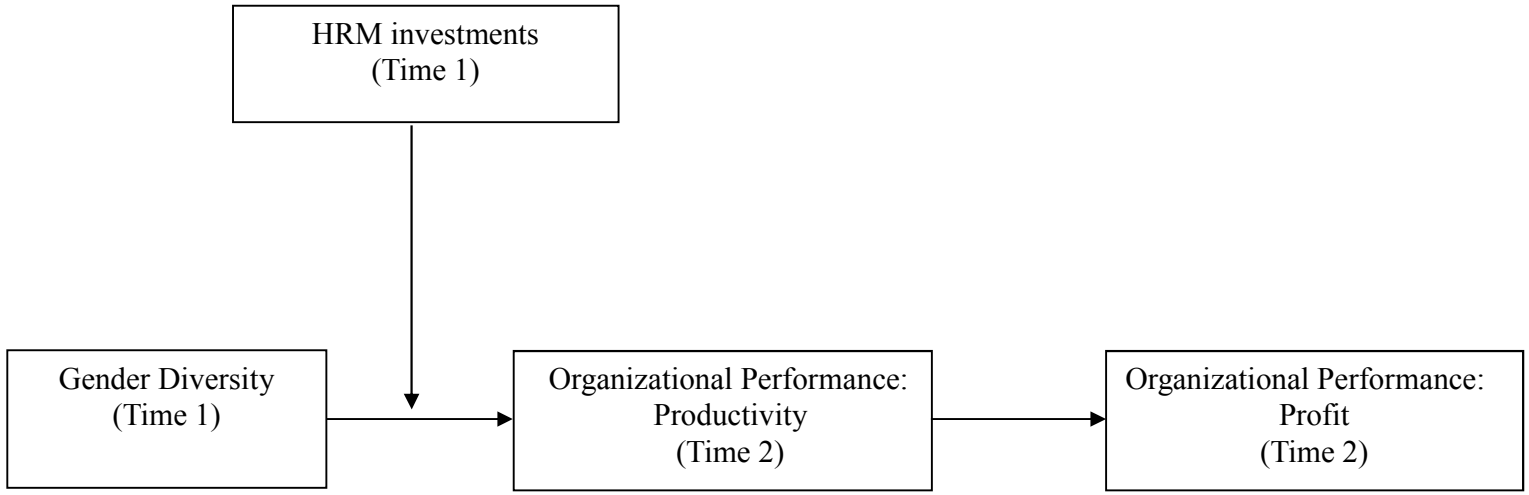
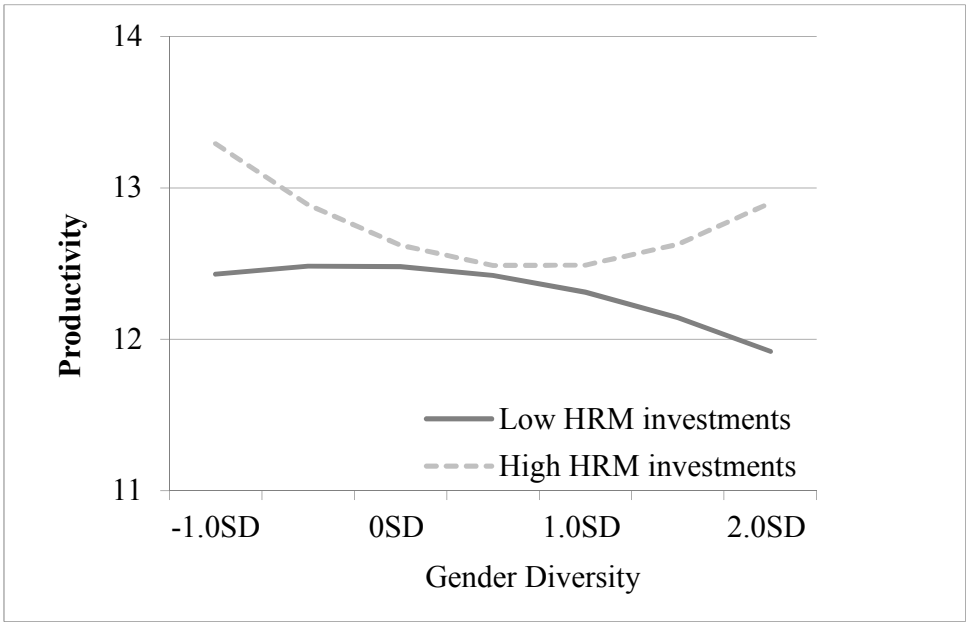


Figure 2
Moderated effect of gender diversity on productivity and profit at low and high levels of HRM investments

1. First Stage Indirect Effect



2. Total Effect