

## Do external diversity practices boost focal firm performance? The case of supplier diversity

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Based on the resource-based view, we propose that external diversity practices such as supplier diversity may affect firm performance. We find that the relationship between supplier diversity and short-term performance (i.e. productivity) is moderated by context such that firms in declining industries experience positive productivity effects while firms in munificent industries witness negative effects. For longer-term profitability (i.e. Tobin's  $q$ ), we do not find support for a positive relationship between supplier diversity and long-term performance. However, positive supplier diversity effects emerge in munificent environments. Overall, in support of the strategic human resource management approach, we conclude that the effect of external supplier diversity on firm performance is contingent upon environmental munificence, which documented the necessity to include supplier diversity as a relevant component of a comprehensive diversity and equality management system.

**Keywords:** diversity practices; environmental munificence; firm performance; resource-based view; supplier diversity

### Introduction

Enhancing diversity practices has become more important since such initiatives can be touted as a demonstration of effective stakeholder management centered on corporate social responsibility (CSR) (McWilliams & Siegel, 2001; Porter & Kramer, 2011; Snider, Hill, & Martin, 2003). From a strategic human resource management (SHRM) standpoint, scholars have examined firm demographic diversity practices *internally*, such as employee recruitment, retention, training and succession, and have linked such diversity practices to firm performance (Buttner, Lowe & Billings-Harris, 2009; Horwitz, Bowmaker-Falconer, & Searll, 1996; Lepak & Shaw, 2008; Nyambegera, 2002; Richard & Johnson, 1999, 2001; Shen, D'Netto, & Tang, 2010; Subeliani & Tsogas, 2005). However, few studies have paid attention to firm diversity practices *externally*. Supplier diversity – specifically, purchasing from minority-owned vendors – is one of the important external demographic diversity practices. But as noted by Edmondson, Suh, and Munchus (2008), Greer, Maltbia, and Scott (2006), and Worthington (2009), supplier diversity has been largely overlooked in the diversity literature. We believe, consistent with Alcázar, Fernández, and Gardey (2013), that a comprehensive SHRM system should consider the role that diversity practices play in addressing internal employee diversity but we extend this theoretical logic to focus exclusively on the role of external supplier diversity.

Since suppliers play a key role in a firm's stakeholder management (Freeman 1984), supplier diversity has increasingly captured the attention of policymakers (Horwitz & Jain,

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2011; Worthington, Ram, Boyal, & Shah, 2008) and practitioners (Hokey, 2009; Horwitz & Jain, 2011; McMains, 2009; Varmazis, 2007). It has been advocated as a way to increase the performance of the focal firm (Adobor & McMullen, 2007).<sup>1</sup> According to the Insight Center for Community and Economic Development (2007), a US research organization committed to improving the economic health of vulnerable communities:

The focus of supplier diversity is both on changing the nature of the purchasing body, e.g., having more diverse suppliers is an asset to the purchaser (product quality and public image of purchaser) as well as on increasing opportunity for a diverse pool of firms who are suppliers and contractors.

According to the [National Minority Supplier Development Council](#) – a US-intermediary organization – a US firm is considered to have maximum supplier diversity if it purchases from both majority-owned (i.e. white) and minority-owned (i.e. African American, Asian American, Hispanic and Native American) suppliers *equally*. Advocates of supplier diversity encourage large purchasing organizations (LPOs) – a term that is used interchangeably with “focal firms” in this article – to use previously underutilized minority-owned vendors as suppliers in an effort to not only benefit these suppliers, but also enhance focal firms’ own performance (Worthington et al., 2008).

According to the US Census Bureau, minority-owned businesses now employ roughly six million people and ring up nearly \$1 trillion in revenues. In fact, the [National Minority Supplier Development Council](#), which has over 3500 companies that proactively target minority suppliers to increase their supplier diversity, reports that corporate purchasing from diverse suppliers increased from around \$90 million in 1973 to \$100 billion in 2011. These numbers have increased substantially over the last decade. For example, AT&T alone spent \$12 billion with diverse suppliers during the year 2011. Our exploration is timely in that racially minority-owned businesses have become the fastest growing segment in Great Britain, South Africa and the USA (Horwitz & Jain, 2011; Shah & Ram, 2006). It appears that the impetus for increasing supplier diversity extends beyond mere CSR (Carter, 2004; Ram & Smallbone, 2003) to a more market-driven business case with performance implications (Greer et al., 2006; Porter & Kramer, 2011).

However, research on supplier diversity – particularly how it impacts focal firm performance – has not been forthcoming (Whitfield & Landeros, 2006). Drawing on the resource-based view (RBV), we consider the capability to leverage supplier diversity to be a valuable, rare and hard-to-imitate resource that can positively impact focal firm performance (Barney, 1991; McWilliams & Siegel, 2011; Richard, 2000). This article can be broadly positioned as part of strategic HRM research, which not only considers how diversity practices geared toward selection and retention of talents inside the firms (Richard, Roh, & Pieper, 2013), but also expands to encompass supplier diversity in an effort to enhance firm performance.

Thus, the primary goal of our research is to determine the precise nature of the relationship between supplier diversity and focal firm performance. Despite the strong advocacy, to date there is little theoretical guidance or empirical findings concerning the impact of external supplier diversity on focal firm performance. While we know some of the challenges and problems encountered through supplier diversity (Dollinger & Daily, 1989; Kauffman, 2001), we know little about its performance effects for the focal firm. Although previous research documents how alliance partnerships provide additional resources (Koka & Prescott, 2002; Zoogah, Vora, Richard, & Peng, 2011), impact organizational learning (Anand & Khanna, 2000) and contribute to firm performance (Jiang, Tao, & Santoro, 2010; Kale, Dyer, & Singh, 2002), it is not clear that similar value

is derived from supplier diversity. Thus, our first question is: Does having a diverse mix of suppliers really boost focal firms' financial performance?

Our second goal is to explore the short-term and long-term effects of supplier diversity. In other words, how do the effects of diversity differ between short-term and long-term performance measures? Using the existing diversity literature as well as group dynamics research that considers time as a critical factor (Harrison, Price, & Bell, 1998), we predict a more positive relationship between diversity and performance on our long-term measure of performance than our short-term measure. We believe introducing time as a factor enables us to untangle the differential effects of supplier diversity over time.

Finally, there is a need to understand the boundary conditions for the effects of supplier diversity on performance metrics. Organizational theorists and strategic management scholars have identified the external environment as a key contingency variable in the relationship between organizational processes and performance (Richard, Murthi, & Ismail, 2007). Such a contingency approach represents a core foundation of research in the SHRM domain (Delery & Doty, 1996; Lepak & Shaw, 2008). However, there has been little research on the impact of the external environment on the supplier diversity–performance relationship. Therefore, our third goal is to explore the role of the external environment (specifically environmental munificence) on the relationship between supplier diversity and performance.

Overall, our study endeavors to contribute to the strategic HRM literature in general and to firm diversity research in particular by focusing on a key but underexplored component of a comprehensive diversity and equality management (DEM) system – supplier diversity. Supplier diversity can be viewed as part of the work on diversity in general. Over 50 years of research on diversity within organizations have investigated the impact of diversity at the individual level (McKay & Avery, 2006; Williams & O'Reilly, 1998), the group level (Joshi, Liao, & Jackson, 2006) and the firm level (Miller & Triana, 2009; Richard et al., 2007). Aspiring to extend such research to the interorganizational domain, we draw on a sample of US firms participating in *Fortune* magazine's diversity survey to make and substantiate our case on the importance and nuances associated with supplier diversity.

### **Supplier diversity, performance and environment**

The RBV suggests that valuable, rare, hard-to-imitate organizational resources and capabilities underpin firm performance (Barney, 1991). The business case for supplier diversity is similar to that of alliance network diversity (Jiang et al., 2010; Park & Mezas, 2005; Terjesen, Patel, & Covin, 2011). Specifically, a supplier network and a talent pool that reflects a firm's customers may generate keen insights that may lead to growth, profit maximization, cost reduction and positive reputation (Murphy, 1998; Slater, Weigand, & Zwirlein, 2008; Varmazis, 2007; Worthington, 2009; Worthington et al., 2008). In other words, a diverse base of suppliers may influence the focal firm's product offerings by helping improve product relevance for diverse markets. LPOs that place strategic importance on supplier diversity do so with the desired outcomes of attracting new, loyal customers, an increased network of qualified suppliers, improved product quality and innovation, and enhanced community relations (Greer et al., 2006). A network of diverse suppliers and buyers can be valuable, inimitable and rare (Jiang et al., 2010; Goerzen & Beamish, 2005). Thus, supplier diversity, as characterized by the relationship between buyers and sellers and the desirable outcomes, may be in itself a valuable resource that can lead to sustainable competitive advantage (Adobor & McMullen, 2007).

Performance gains linked to supplier diversity are the competitive gains obtained through exploring opportunities in new markets where ethnic identities are an important dimension of consumer demand (e.g. food, clothing, personal care products) (Jain & Verma, 1996; Worthington, 2009). Several LPOs have cited supplier diversity as a key contributor to the bottom line (Hannon, Francis, & Gottlieb, 2001; Harris, Drakes, Lott, & Barrett, 2008; Varmazis, 2007). While most examples of supplier diversity success has been captured in terms of spending, AT&T claimed that \$11 billion in *revenue* was linked to supplier diversity through sales enablement and direct revenue generation (Varmazis, 2007). For LPOs, suppliers become a substitute for internal production and a vehicle to obtain information beyond what LPOs can access on their own. In a recent qualitative study, the business case for supplier diversity made by a JP Morgan Chase executive was quoted:

It's good business to do business with diverse communities—it's a business imperative . . . not only are those suppliers helping us to drive down our total costs of doing business, they are bringing us the added benefit of helping us to reach markets that may have their own prerequisites for doing business with corporate America (Worthington, 2009, p. 52).

However, in order for a resource to confer sustained competitive advantage, it must also be difficult for competitors to imitate and difficult to acquire (i.e. rare). Behavioral and cognitive emergence processes such as coordination, communication, cohesion and trust that tie the focal firm to their suppliers cannot be easily duplicated by competitors (Ployhart & Moliterno, 2011). Although the relatively additive impact of any one supplier may be replicated by a second firm (e.g. adding a minority supplier with equally high qualifications), the firm's aggregate supplier diversity cannot be easily imitated unless the second firm duplicates the whole behavioral and cognitive emergence processes (e.g. communication, cohesion, trust) through which the focal firm's entire supplier diversity is created and nurtured (Adobor & McMullen, 2007; Ployhart & Moliterno, 2011; Sirmon, Hitt, & Ireland, 2007). Nevertheless, regardless of the value and inimitability that supplier diversity can confer (as noted above), it still remains a rarity in LPOs. The Hackett Group reveals that companies considered world-class in their supplier diversity efforts only commit 13.3% of their total spending to minority-owned suppliers with the typical company spending only 10%. Given that minority-owned businesses represent 21.3% of US companies (Diversity Direct, 2010; Minority Business Development Agency, 2009), clear opportunities to further exploit supplier diversity for competitive advantage exist.

In practice, several well-known companies also consider supplier diversity a key issue in stakeholder management and human resource management (Greer et al., 2006; Horwitz & Jain, 2011; Worthington, 2009). These minority suppliers represent a group that provides the focal firm not only legitimacy for diversity and inclusion working environments, but also diverse and innovative perspectives. For example, SC Johnson and Son, a company in our sample, offers the following in its "Diversity and Inclusion" function<sup>2</sup>:

Engaging Diverse Suppliers: At SC Johnson we see great value in working with suppliers that offer diverse perspectives in addition to the best quality, service and price. We proactively seek out minority- and woman-owned suppliers, as well as those who primarily employ minority and/or handicapped employees.

### ***Supplier diversity and short-term performance***

Along with the fruitful promise of supplier diversity are the associated challenges that are characteristic of relationship-building efforts where cultures intersect. The associated risks include issues related to ethnic differences, such as ineffective communication, goal

incongruence, conflict and dissatisfaction (Milliken & Martins, 1996; Worthington, 2009). While communication, trust and racial identity are key contributors to diverse supplier relationships, overcoming the associated barriers may impede short-term returns (Pullins, Reid, & Plank, 2004). Other challenges that may impede short-term performance include a lack of cohesion between LPO and minority-owned firm infrastructure and strategic goal congruence.

The expectation to see immediate returns in supplier diversity is an unrealistic byproduct of the overly optimistic rhetoric of the 1990s, which highlighted the success of supplier diversity programs at large corporations such as General Motors and Bayer (Morgan, 2002). While the optimistic rhetoric has championed the value of supplier diversity, the challenges and obstacles – especially initially – have often overshadowed the benefits (Murphy, 1998).

Establishing a new relationship with a supplier can be time-consuming, disruptive (to current operations) and costly. Due to imperfect information and cultural uncertainty, the initial costs to establish a new relationship are more likely to outweigh the benefits in the short term. Communication plays a critical role at the onset of the buyer–supplier relationship. While there are benefits to supplier diversity, these are also costs such as managerial time and energy. The time and energy required to establish trust in the buyer–supplier relationship will likely have a negative impact on the focal firm’s performance in the short run. Because monitoring is a major factor in relationship building, LPOs will incur higher monitoring costs at the onset of the relationship. As two different firms intersect, the heterogeneity of racial/ethnic cultures of both firm also interact, which may influence the ability to effectively communicate and breeds the potential for misunderstanding and conflict (Goerzen & Beamish, 2005). Thus:

*Hypothesis 1.* Supplier diversity is negatively associated with short-term financial performance of the focal purchasing firm.

### ***Supplier diversity and long-term performance***

We argue that the effect of diversity on a focal firm’s competitive position and performance may show in the longer term (Cannon, Doney, Mullen, & Petersen, 2010). After the focal firm has integrated supplier diversity into its supply chain management, such diversity may generate benefits such as improved productivity, sales growth influenced by enhanced reputation and new market potential (Edmondson et al., 2008; Worthington, 2009). A major focus of supplier diversity programs is to build successful long-term relationships that provide superior value to all constituents involved in the supply chain (Worthington et al., 2008). The ability to capture the effects of diversity on organizational performance is best captured long term (Worthington, 2009). To achieve sustainable competitive advantage through supplier diversity, LPOs must be willing to invest in the integration, socialization and coordination of the supply chain (Barringer & Harrison, 2000; Hult, Ketchen, & Slater, 2004). Due to the long-term orientation of supplier diversity, operational and strategic measures are necessary to grasp a comprehensive value assessment of these efforts (Villena, Revilla, & Choi, 2011).

Slater et al. (2008) found that on average, firms with a strong commitment to human capital and supplier diversity outperform their competitors. Much like diversity in alliance networks, supplier diversity implies a complex network of organizational adaptation, cultural adaptation and coordination between buyer and suppliers (Goerzen & Beamish, 2005; Terjesen et al., 2011). The ability to accomplish the learning, adaptation and

coordination faster than the competition, and at a lower cost, will lead to positive long-term performance. Thus:

*Hypothesis 2.* Supplier diversity is positively associated with long-term financial performance of the focal purchasing firm.

### *The moderating role of environmental munificence*

Contingency theory suggests that organizational processes must fit their context (Drazin & Van de Ven, 1985). The central proposition of the theory posits that performance is influenced by the conditional association or interaction between multiple independent variables such as organizational culture, people, environment, technology and task (Drazin & Van de Ven, 1985). In other words, the theory hypothesizes that there is no one best way to manage under all situations. Thus, researchers should explore the context in which various resources will have the best influence on performance (Ginsberg & Venkatraman, 1985; Miller & Shamsie, 1996; Terjesen et al., 2011). In this article, we focus on suppliers and argue that supplier diversity provides strength and potential opportunity to be exploited for competitive advantage since suppliers are a vital stakeholder. Yet, we also acknowledge that the nature of supplier diversity is different for different environments.

While scholars have offered a variety of dimensions of environmental attributes such as levels of stability, volatility, uncertainty, complexity, relative scarcity of resources and hostility (Bourgeois, 1980; Dess & Beard, 1984; Goll & Rasheed, 2005; Wan & Hoskisson, 2003), we focus on one of the attributes, namely, *munificence* – the abundance of resources. As a key contingency variable, environmental munificence has an established, 30-year history of theoretical and empirical research (Boyd, 1990; Castrogiovanni, 1991; Goll & Rasheed, 2005; Park & Mezias, 2005; Richard et al., 2007; Staw and Szwajkowski, 1975; Zammuto & Cameron, 1985).

While some environments lack the needed resources for firms to compete effectively, other environments offer more abundant resources or munificence (Castrogiovanni, 1991; Dess & Beard, 1984). Resource scarce environments, in particular, present notable challenges to the organization. Firms competing in such an environment face dwindling resources and managerial decisions frequently relate to changes in human capital and strategy that immediately affect their short-term performance (Goll & Rasheed, 2005; Park & Mezias, 2005). In resource scarce environments where organizations suddenly find themselves with fewer resource options, firms may become more desperate and be more motivated to look for new ideas and new ways to innovate and grow.

We posit that supplier diversity will afford some of these benefits that are especially useful for firms operating in resource scarce environments. Thus, increasing supplier diversity represents one way that firms in a resource scarce environment can secure a unique, valuable and rare resource. Under circumstances where the industry growth rate is slow, nonexistent, or even negative, the potential benefits brought by supplier diversity, despite the initial cost, may eventually outweigh its drawbacks. By leveraging a different and unique set of supplier-based resources, firms in declining industries may be able to maintain their resource supply, stabilize their operations and bolster their diversity reputation in the community (Park & Mezias, 2005; Roberson & Park, 2007). In other words, in resource scarce environments, because of the urgency to create alternative sources of competitive advantage for survival and

sustainability, the benefits of supplier diversity may be able to shine more immediately as reflected in short-term performance. Because firms in a munificent environment do not necessarily share a sense of urgency to obtain alternative supplier resources, they may not realize the same advantages and may instead experience initial short-term performance losses.

*Hypothesis 3.* In the short run, environmental munificence will negatively moderate the relationship between supplier diversity and performance such that firms in munificent environments will have negative effects from supplier diversity, while those in resource scarce environments will have positive effects from supplier diversity.

Although we previously argued that supplier diversity would be advantageous for all firms over the long term, we believe that organizations operating in a munificent environment will experience the greatest benefit compared to those in resource scarce contexts. In fact, research has shown that munificence can create a scenario known as “the rising tide lifting all boats” (Wan & Hoskisson, 2003). In other words, given expanding industry-wide demand, firms may be able to “do business as usual” and remain competitive (Castrogiovanni, 1991; Lumpkin & Dess, 1996; Park & Mezas, 2005) without having to pay attention to expand supplier diversity in the short term given the initial challenges associated with enhancing supplier diversity. However, we argue that firms in munificent environments that do not choose to expand supplier diversity, which may add cost and disruption to the existing supply chain in the short term (as noted above), may end up missing out on developing valuable supplier relationships that create growth opportunities in the long run. In fact, research reveals that the positive relationship between racial diversity in human capital and long-term performance is stronger in munificent environments than resource scarce environments (Richard et al., 2007). We argue that supplier diversity affords the same long-term performance gains for firms competing in munificent environments. While we expect most firms in an environment with an abundance of resources and strategic choices to continue doing “business as usual”, we predict that those that proactively and aggressively diversify their supplier diversity will reap the ultimate long-term performance gains. Thus:

*Hypothesis 4.* Over the long term, environmental munificence will positively moderate the relationship between supplier diversity and performance such that firms in munificent environments will realize stronger positive effects from supplier diversity than those in resource scarce environments.

## Method

### *Data and sample*

Our data consist of US firms participating in *Fortune* magazine’s diversity survey used to select the “50 Best Companies for Minorities.” This is a broad sample of *Fortune* 1000 firms spanning numerous industries. *Fortune* reports on average a 14% response rate (Hickman, Tkaczyk, Florian, Stemple, & Vazquez, 2003). Although *Fortune* only publishes the “50 Best Companies for Minorities,” we were able to obtain data for all additional companies that responded to its survey with the agreement that we would only use the data in aggregate. Detailed supplier diversity information was available from the *Fortune* survey data for 2002 (collected at the beginning of year). The data source for

the environmental and financial variables was COMPUSTAT for the same year (at the end of year).

### ***Measures and analytical approach***

#### *Dependent variables*

The dependent variable is firm performance and is for year-end 2002. We measured performance using two distinct measures: (1) productivity, and (2) Tobin's  $q$ . Productivity, our short-term metric, was measured as revenue divided by the number of employees. The measure was employed by Bartel (1994) and Huselid (1995). This measure reflects employee efforts and remains quite stable across variations in capital and product markets (Huselid, 1995; Huselid, Jackson & Schuler, 1997). Tobin's  $q$ , a commonly used measure of long-term profitability, reflects the market's perception of potential profitability (Carpenter, 2002; Huselid, 1995). Tobin's  $q$  is defined as the ratio of the market value of a firm to the replacement value of its assets and is widely used as a measure of organizational performance (Yermack 1996). We use a measure of Tobin's  $q$  proposed by Lee and Tompkins (1999), which is defined as:

$$Q = \frac{(\text{MKTVAL} + \text{PSVAL} + \text{DEBT})}{\text{TA}}, \quad (1)$$

where MKTVAL, the market value, is obtained by multiplying the number of shares outstanding with the share price. PSVAL is the liquidating value of the outstanding preferred stock, DEBT is the long-term debt plus the difference between the value of firm's short-term liabilities and its short-term assets, and TA is the book value of the total assets of the firm. This measure of Tobin's  $q$  computed from COMPUSTAT data has been shown to be a very good proxy that is consistent with the other measures of Tobin's  $q$  such as the ones proposed by Chung and Pruitt (1994) and Lewellen and Badrinath (1997).

#### *Independent variables*

Regarding supplier diversity, respondents were asked at the beginning of the year 2002 "What is the proportion of total purchases conducted with minority-owned vendors?" We then subtracted this proportion from 1 to determine the proportion of total purchases conducted with majority-owned vendors. Blau's (1977) index of heterogeneity was then used to develop our measure of supplier diversity. This is consistent with previous research handling of categorical data (Bantel & Jackson, 1989; Murray, 1989). The index is calculated as follows:

$$\text{Supplier Diversity Index} = \left(1 - \sum P_i^2\right), \quad (2)$$

where  $P_i$  is the proportion of group members in a category  $i$ . There are two categories of supplier diversity (i.e. purchasing proportion to majority-owned [white] vendors and purchasing proportion to minority-owned [African American, Asian American, Hispanic and Native American] vendors). For two categories, the index takes on a range from 0 to 0.50. An index of zero suggests only one category (e.g. all majority suppliers) while a value of 0.50 implies that both the majority-owned and minority-owned supplier categories are equally represented in terms of supplier purchases.

### Control variables

Firm size was specified in the model as a control variable and operationalized as total assets in billions of dollars logged. Consistent with research on Tobin's  $q$ , we included cost of goods sold as an additional covariate (Salinger, 1984). Next, we included industry controls. Using each firm's standard industrial classification (SIC) code, we coded a dummy variable that differentiated between manufacturing (0 for SIC codes between 2000 and 3999) and service (1 for SIC codes less than 2000 or greater than 3999) (Gomez-Mejia, Larraza-Kintana, & Makri, 2003). This approach preserves degrees of freedom. Industry concentration was measured as the percentage of sales generated by the top four firms relative to total industry sales (Berman, Wicks, & Kotha, 1999; Dess & Beard, 1984).

Lastly, we included the moderator variable of the supplier diversity-performance relationship. Calculated for all four-digit SIC codes included in our data set, environmental munificence was calculated as a basic growth rate that represents the percentage change in industry revenues from the previous year (Ferrier, 2001).

### Results

Table 1 shows descriptive statistics. Companies in our sample represent the full data range from 0 to .50 on our supplier diversity measure. Hierarchical regression results are shown in Table 2.

Polynomial regression and response surface plotting was used to test the set of hypotheses (Edwards & Parry, 1993). Specifically, polynomial regression of supplier diversity and munificence effects on performance refers to a model that includes higher powers of supplier diversity and munificence beyond its linear term. We utilized quadratic regression where 2 is the largest power of our two predictors (Cohen, Nahum-Shani, & Doveh, 2010). For Hypotheses 1 through 4 we created the following hierarchical regression equation of the form:

$$Y = b_0 + b_1S + b_2M + b_3S^2 + b_4(S \times M) + b_5M^2 + e, \quad (3)$$

where  $S$  represents supplier diversity and  $M$  represents munificence. Consistent with recent research (Bashshur, Hernandez, & Gonzalez-Roma 2011; Bono & Colbert, 2005), variables were entered into the analyses in a series of steps including controls along with  $S$  and  $M$  (Step 1) to test Hypotheses 1 and 2, and higher order polynomials including  $S^2$ ,  $S \times M$ , and  $M^2$  (Step 2) to test Hypotheses 3 and 4.

After testing the equations using polynomial regression on both of our dependent measures, we then preceded to conduct additional test to examine the curvatures and slopes along the congruence line (i.e.  $S = M$ ) and the incongruence line (i.e.  $S = -M$ ).

Hypothesis 1, tested in Model 2, predicts a negative effect of supplier diversity on firm productivity and was not supported ( $p > .1$ ). Hypothesis 2, tested in Model 5, predicts a positive effect of supplier diversity on Tobin's  $q$  and was also not supported ( $p > .1$ ). Hypotheses 3 and 4 predict that munificence would negatively moderate the relationship between supplier diversity and performance. Model 3 (productivity) and Model 6 (Tobin's  $q$ ) in Table 2 show the unstandardized coefficients as well as the curvatures and slopes along the congruence and incongruence lines for the polynomial regressions. Figures 1 and 2 depict the response surface based on these coefficients.

As displayed in Table 2 (Model 3), the three second-order polynomial terms were significant as a block ( $\Delta R^2 = .15, p < .001$ ) and the surface along the incongruence line

Table 1. Descriptive statistics and correlation matrix.

	<i>Mean</i>	<i>S.D.</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
1. Firm size	24	1.57	–						
2. Cost of goods sold	13,349	23,795	0.38	–					
3. Industry type	0.62	0.49	0.15	–0.14	–				
4. Industry concentration	0.60	0.20	0.15	0.14	–0.24	–			
5. Supplier diversity	0.09	0.09	0.18	0.06	0.11	–0.03	–		
6. Munificence	0.04	0.09	–0.15	0.00	0.00	–0.18	–0.16	–	
7. Productivity	12.69	1.01	0.47	0.16	0.01	–0.07	–0.05	0.14	–
8. Tobin's <i>q</i>	1.13	0.97	–0.27	–0.15	–0.47	0.22	–0.01	–0.08	–0.21

Note:  $n = 92$ . Values above |0.18| are significant at  $p < 0.05$ .

Table 2. The effect of supplier diversity on financial performance of the focal purchasing firm.

	Productivity			Tobin's q		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	6.69** (2.14)	5.67** (2.07)	7.38*** (1.49)	3.09** (1.18)	3.42** (1.14)	3.29** (1.22)
Firm size	0.28** (0.09)	0.32** (0.09)	0.25** (0.06)	-0.07 (0.05)	-0.08 (0.05)	-0.08 (0.05)
Cost of goods sold	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00** (0.00)	0.00** (0.00)	0.00** (0.00)
Industry type	-0.22 (0.20)	-0.24 (0.19)	-0.24 (0.17)	-0.98** (0.23)	-0.98** (0.23)	-0.98** (0.22)
Industry concentration	-1.09* (0.44)	-0.97* (0.46)	-1.26** (0.38)	0.77** (0.35)	0.72* (0.37)	0.84** (0.40)
Supplier diversity (S)		-1.45 (0.26)	-2.27 (3.95)		0.48 (0.61)	2.56 (3.11)
Munificence (M)		1.80 (1.06)	5.25** (2.24)		-0.55 (0.94)	-4.87 (3.18)
Supplier diversity <sup>2</sup> (S <sup>2</sup> )			11.20 (15.03)			-10.94 (10.30)
Supplier diversity × Munificence (S × M)			-66.46*** (24.88)			39.19** (22.58)
Munificence <sup>2</sup> (M <sup>2</sup> )			-1.50 (7.72)			10.31 (9.10)
Adjusted R <sup>2</sup>	0.20	0.23	0.38	0.31	0.30	0.33
F <sup>2</sup>	6.71***	5.57***	7.492***	11.03***	7.33***	5.96***
<i>Congruence (S = M)</i>						
<i>line</i>						
Slope			2.98 (4.63)			-2.31 (4.48)
Curvature			-56.77† (29.72)			38.57 (26.42)
<i>Congruence (S = -M)</i>						
<i>line</i>						
Slope			-7.53† (4.47)			7.44† (4.43)
Curvature			76.17** (32.14)			-39.83 (29.51)

†p < 0.1; \*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001.

revealed a U-shape (curvature = 76, p < .01) on productivity. Figure 1 reveals that it is indeed curved upward along the incongruence line supporting Hypothesis 3. The incongruence line (S = -M) is from the left corner to the right corner of the figure. In particular, for levels of performance on the left side of the plane, munificence exceeds supplier diversity, while on the right side of the plane, supplier diversity exceeded munificence.

For additional insight, we also examined the slope along the surface to decipher if there are differences across incongruence levels. As can be seen from the slope value in Table 2, this coefficient is negative for levels of productivity (slope test statistic = -2.881, p < .01). This indicates that the consequences of incongruence are more advantageous when supplier diversity is greater than munificence levels than the other way around. In Figure 1, the congruence line extends from the nearest (front) to the farthest (rear)

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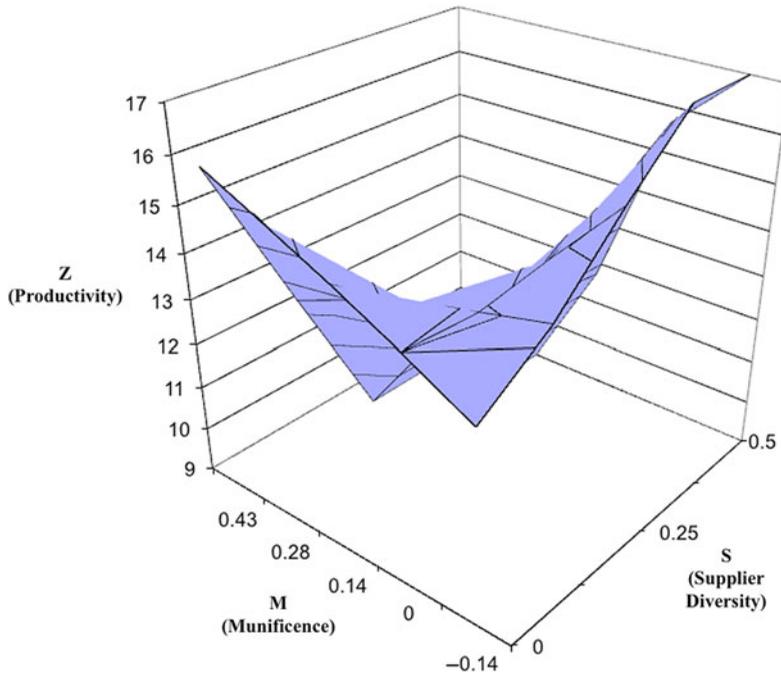


Figure 1. Effect of supplier diversity and munificence on short-term financial performance (productivity).

corners of the plane. Interestingly, the response surface along this congruence line is also significantly curvilinear in the form of an inverted U-shape (curvature test statistic =  $-56, p < .1$ ).

We next tested Hypothesis 4 with results displayed in Table 2 (Model 3). The three second-order polynomial terms were significant as a block ( $\Delta R^2 = .03, p < .001$ ) and the surface along the incongruence line revealed an inverted U-shape on Tobin's  $q$ . Figure 1 reveals that it is indeed curved downward along the incongruence line. Additionally, the slope across incongruence levels is significant and positive for levels of Tobin's  $q$  (slope test statistic =  $7.44, p < .01$ ). Figure 2 indicates that the consequences of incongruence are more severe when supplier diversity is greater than munificence levels than the other way around. Also, Figure 2 shows that the highest level of Tobin's  $q$  is observed when both supplier diversity and munificence are maximized lending further support for Hypothesis 4.

#### *Post hoc robustness analysis*

Because the results for Tobin's  $q$  were not as strong as they were for productivity, we sought to obtain corroborating evidence for Hypothesis 4. A  $2 \times 2$  between-groups analysis of covariance was performed on Tobin's  $q$  (see Appendix A). Based on splitting predictor measures at the median, independent variables consisted of supplier diversity (high and low) and environmental munificence (resource abundance and resource scarcity). Covariates are firm size, capital expenditures, cost of goods sold, industry type and industry concentration. After adjustment for covariates, Tobin's  $q$  does not significantly vary by either supplier

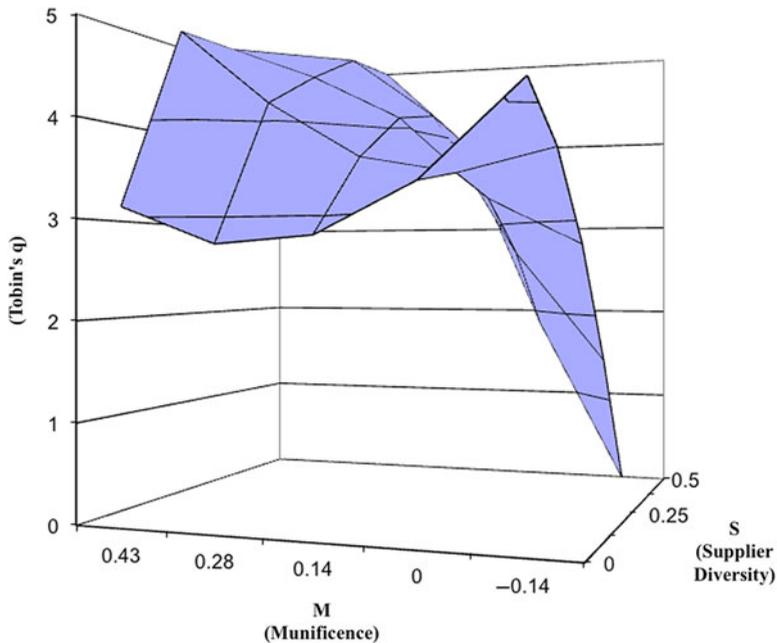


Figure 2. Effect of supplier diversity and munificence on long-term financial performance (Tobin's  $q$ ).

diversity ( $F = 2.129$ ,  $p > .10$ ) or environmental munificence ( $F = .022$ ,  $p > .10$ ). However, there is a significant interaction effect between supplier diversity and environment munificence ( $F = 5.978$ ,  $p < .01$ ). The adjusted marginal means show that the highest level of Tobin's  $q$  is experienced by firms with high supplier diversity and high munificence (adjusted mean = 1.653), and the lowest level of Tobin's  $q$  is revealed in firms with low supplier diversity and high munificence (adjusted mean = .882). A least significant difference post hoc test shows that these mean differences are significant ( $p < .01$ ). Firms in resource scarce environments do not significantly differ ( $p > .10$ ) between those with low supplier diversity (adjusted mean = 1.344) and those with high supplier diversity (adjusted mean = 1.132). These findings complement the subgroup regression analysis for Hypothesis 4, revealing that supplier diversity has a significant and positive longer-term effect for firms operating in munificent environments but not in resource scarce environments.

## Discussion

### Contributions

In our view, at least three contributions emerge. First, we have broadened the scope of strategic HRM research by focusing on the relationship between suppliers and focal firm performance (Worthington et al., 2008). Thus, this article joins the earlier work by Ram and Smallbone (2003), Whitfield and Landeros (2006), Worthington (2009) and Worthington et al. (2008) to enhance our understanding of the crucial but underexplored relationship between supplier diversity and focal firm performance. In the same vein, we also contribute to the growing international conversation of supplier diversity that is

currently taking place in the UK (Ram & Smallbone, 2003; Ram, Theodorakopoulos, & Worthington, 2007; Theodorakopoulos, Ram, & Beckinsale, 2013; Worthington et al., 2008) and in South Africa (Horwitz & Jain, 2011; Rogerson, 2012).

Second, we develop a contingency framework centered on environmental munificence as an integral contingency factor that modifies the relationship between supplier diversity and focal firm performance. We believe context serves a critical role when exploring not only internal human resources but also external ties that stem from supplier diversity. Thus, findings based on our contingency framework contribute to the untapped supplier diversity literature.

Third, although not often accounted for in the literature, we account for time horizon by exploring the direct effects of supplier diversity on performance along with moderating role of environmental munificence on short-run performance (productivity) and long-term performance (Tobin's  $q$ ). Our findings reveal that our understanding of supplier diversity effects on focal firm performance would be partial and potentially misleading if the time dimension (short versus long run) is not accounted for. Specifically, if inferences from short-run performance findings were generalized to the long term, one might assume that supplier diversity would always be detrimental to firms operating in munificent environments. Therefore, we highlight "time" as a critical factor in organizational studies.

Overall, we depart from the relatively superficial arguments – either "supplier diversity equals better performance" or "supplier diversity equals poor performance" – that have dominated the practitioner literature. Our theoretical framework enables us to probe into the complex, previously underexplored relationship between supplier diversity and performance, and our empirical results help us gain a deeper understanding of this relationship. Although research provides evidence of the performance effects of demographic diversity within the employee base (Joshi & Roh, 2009), our understanding of supplier diversity effects on focal firm performance has been limited to anecdotal cases. Using the RBV, we elaborate on the value, rarity and imitable nature of supplier diversity and how firms can exploit such resources for competitive advantage. We explain how competitors will find it challenging to develop identical supplier diversity advantages for two reasons. First, supplier diversity remains a rarity as evidenced by the low average supplier diversity in our sample. It is clear that opportunities exist for companies to expand their supplier diversity to include the growing number of minority suppliers. Second, each focal firm develops a unique web of relationships with suppliers that evolve from emergent processes such as coordination, communication, cohesion and trust. Such behavioral and cognitive emergence processes create strategic value that represents a context-specific organizational capability (Ployhart & Moliterno, 2011).

Generally, we hypothesized that supplier diversity would have negative short-term and positive long-term effects on firm focal performance. We found that supplier diversity was not significantly related to firm productivity or Tobin's  $q$ . Notwithstanding, we believe the jury remains out on the short-term and long-term effects of supplier diversity. It could be that a longitudinal design may more effectively test this hypothesis and thus we suggest time-series methods to examine the longer run effects of supplier diversity.

Consistent with our prediction, we found that environmental munificence negatively moderates the supplier diversity to short-term focal performance relationship. Specifically, we found that organizations competing in an environmentally scarce industry experience performance gains when they exploit supplier diversity. In contrast, those firms that operate in munificent environments realize negative effects from supplier diversity over the short run. Fortunately, in the long run, organizations that compete in munificent environments experience performance gains from supplier diversity. This highlights the

need to compare short-term to long-term effects when attempting to unveil the impact of supplier diversity as well as other firm-specific capabilities and resources.

### ***Limitations and future directions***

Several limitations may influence our interpretation of the results. First, the categorization of only two supplier groups limits our potential to dive deeper into supplier diversity effects. In a US context, it would have been more ideal to have our minority supplier group more finely split out across suppliers owned by African Americans, Asian Americans, Hispanics and Native Americans so that we could see if there are significant differences depending on various minority suppliers. Future research should attempt to investigate, when possible, the differences across minority suppliers as well as other types of supplier subgroups such as women and veterans. Second, another extension is to sample suppliers internationally. Does supplier diversity, measured by the geographic scattering of suppliers around the world, contribute to or inhibit focal firm performance? This would be an interesting extension to the budding literature on international buyer–supplier relationships (Li, Xie, Teo, & Peng, 2010). Finally, some focal firms may choose to work with certain suppliers with the possibility to eventually acquire these suppliers in mind (Yang, Lin, & Peng, 2011). How these dynamics play out will be fascinating to investigate.

Furthermore, the link of supplier diversity to firm performance should have a greater advantage for some firms as opposed to others according to the firm's relative strategy and overall commitment to diversity (Dickens, 1999). The process that leads to competitive advantage for the focal firm should also include the selection of qualified suppliers that are competitively positioned to match the firm's overall strategy, visible commitment from the focal firm's leaders, buy-in and support from firm's internal customers, performance measurement and tracking, and competency in relationship-building (Adobor & McMullen, 2007; Hokey, 2009; Slater et al., 2008). Research should explore these potential relationships as well as how supplier diversity improves performance of the supplier side. For example, focal firms can help bolster supplier performance by increasing access to inputs and sharing technology. While both parties reap financial benefits shared value has created (Porter & Kramer, 2011), the ultimate result extends beyond both the focal firm and supplier firm to the community at large through increased wages and job growth. Future research should explore these dynamics.

Our analyses were also limited by the time period and specific set of firms included in the dataset. Longitudinal data would be more appropriate to test causal relationships between supplier diversity and performance. Although we were able to compare short-term to longer-term performance effects in our cross-sectional design, future research would benefit from multiple years of data that are suitable to explore changes in longer time horizon measures. It is also important to note that in the current study, we did not control for the internal homogeneity or cultural distance between diverse suppliers and a focal firm. Future research should explore cultural distance when examining international buyer–supplier relationships as well as the internal homogeneity (Jackson, Louw, & Zhao, 2013). Lastly, since our study focuses only on US companies, the generalizability of our findings in other contexts remains to be explored.

### **Conclusion**

Suppliers are vital stakeholders in organizational value chain, but they are underexplored in the setting of diversity policy. With a focus on supplier diversity, this article sheds light

on firm diversity practices not only in terms of HRM but also in terms of stakeholder management (Berman et al., 1999; Greer et al., 2006; Worthington et al., 2008). Our findings suggest that the performance effects of supplier diversity vary across contexts as well as between time horizons. From a practical standpoint, such findings are critical because focal firms that make supply change decisions based on short-run performance expectations may miss out on a valuable resource that over time appears to develop into a rare, hard-to-imitate asset that provides firm-specific competitive advantages. As firms continue their external diversity efforts in an increasingly competitive environment, we have identified some boundary conditions within which firms can leverage supplier diversity to impact the bottom line.

Although firms in an environmentally scarce context appear to reap short-term benefits from diversity, firms that must compete in a munificent environment may benefit from developing and nurturing their supplier diversity network so they can gain more loyal suppliers and ultimately more competitive advantage in the long run. We believe that short-term challenges may be partially mitigated by not exerting maximum bargaining power on suppliers to drive down prices, establishing clear goals for supplier diversity, educating and training key stakeholders, regularly evaluating effectiveness, communicating the results to all constituents of the supply chain and treating suppliers as partners who have mutual goals of creating shared value. Thus, while supplier diversity does not pay off in all environments and during all times, its financial performance-enhancing benefits shine through in the long run. In conclusion, we recommend that future research within the SHRM domain incorporates diversity and equality management practices such as supplier diversity and their alignment with firm's strategy, organizational structure and environmental uncertainty to more thoroughly understand the financial implications of more broadly defined SHRM systems.

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### **Notes**

1. For example, Walmart's notes that "Diversity comes full circle at Walmart through our more than 3,000 minority- and women-owned suppliers. Because of our strong relationships with our suppliers, we are able to deliver the products our customers need at the prices they deserve. Their ideas, products and energy have helped fuel our growth for 50 years and they are an important part of our future" (<http://corporate.walmart.com/global-responsibility/diversity-inclusion/our-suppliers>). Similarly, Johnson & Johnson's mission statement notes: "We recognize the importance of having a diverse supplier base that reflects our patients and customers around the world. We are committed to working with small and diverse suppliers that can support our long-term growth objectives and add value to our businesses by providing innovative solutions to our

marketing, manufacturing and R&D efforts” (<http://www.jnj.com/partners/suppliers/supplier-diversity>).

2. <http://www.scjohnson.com/en/commitment/diversity/supplier.aspx>

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#### **Appendix A. Adjusted and unadjusted means for long-term performance (Tobin's $q$ ) at four combinations**

<i>Combinations</i>	<i>Adjusted mean</i>	<i>Unadjusted mean</i>
High supplier diversity and high munificence	1.653	1.599
Low supplier diversity and high scarcity	1.344	1.471
High supplier diversity and high scarcity	1.132	1.074
Low supplier diversity and high munificence	0.882	0.866