ORGANIZATIONAL PERFORMANCE WITH ENVIRONMENTAL KNOWLEDGE INTENSITY: RESOURCE- VS. KNOWLEDGE-BASED PERFORMANCE

Research-in-Progress

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Abstract

In the current knowledge-oriented society, knowledge is a core strategic component for organizations. Successful knowledge management is therefore a key factor in organizational performance. At the same time, some studies have assumed that knowledge management performance is distinguished from the general features of organizational performance. Thus, this study conceptualizes organizational performance. With data collected from 150 Korean firms, we examine a two-factor model in which organizational performance consists of two different dimensions: knowledge management performance and firm performance. In addition, the two-factor model is analyzed across two sub samples (i.e., high and low knowledge-intensive firms) divided by environmental knowledge intensity, a key contextual factor on which organizational performance depends. Our findings raise issues on the causal relationship between knowledge-based success and firm performance, also suggesting the contingency understanding of organizational performance across organizations and industries. On the basis of the results, we discuss implications and future directions.

Keywords: Organizational performance, firm performance, knowledge management performance, environmental knowledge intensity, structural equation modeling, confirmatory factor analysis, multi-group confirmatory factor analysis
Introduction

As today’s society shifts toward a more knowledge-based economy, the importance of organizational knowledge as a core strategic resource continues to grow. To attain competitive advantage, organizations must accordingly satisfy diverse environmental requirements and consider their own internal inconsistencies. Such complicated business circumstances compel organizations to effectively manage organizational knowledge toward performance improvement. However, how to improve knowledge management (KM) performance should be understood in a manner different from comprehending the maximization of generic performance (i.e., firm performance in this study). The difference between generic firm performance and KM-specific performance has not been clearly discussed in previous studies, especially in the context of KM. According to their knowledge intensity, organizations are confronted with different environmental requirements (i.e., both industry-based needs and firm-specific needs) for realizing fit between their competitive advantages and the specific business environment (Miller 1992). In this sense, we consider organizational performance across high and low knowledge-intensive firms.

This study aims to (1) understand the dimensionality of organizational performance, a complex concept that comprises diverse dimensions of organizational success. More specifically, we focus on firm performance and KM performance to distinguish KM-oriented success from general firm performance at the firm level. On top of these, we attempt to (2) investigate whether the differences between firm performance and KM performance are consistent across high and low knowledge-intensive firms to show how organizational success can be achieved alongside environmental and internal fit.

Conceptualizing Organizational Performance

The concept of organizational performance might reflect organizational success with the degree to which an organization is able to identify and track progress according to its business objectives, to identify opportunities for improvement, and to create best practices against internally formed standards and externally given environmental requirements (Miller 1992). To suggest effects of various KM practices on organizational performance, KM research has mainly relied on two perspectives: resource-based view (RBV) and knowledge-based view (KBV) of the firm. RBV emphasizes novel organizational resources and assets as key competitive advantages that firms attain to be sustainably successful in the rapidly changing business arena. On the other hand, KBV emphasizes the strategic value of organizational knowledge as the key source of competitive advantages (Grant 1996; Nonaka 1994).

In explaining the effects of KM practices, prior KM studies based on each of the two perspectives has considered different dimensions of organizational performance, respectively general firm performance or KM-specific performance, thus generating conflicting findings. For example, some studies propose that IT-oriented KM practices internalized within organizations generate competitive advantages (e.g., Zahra and Nielsen 2002) because people easily access and acquire codified knowledge from internal rather than from external sources (e.g., Teigland and Wasko 2003). However, other studies find the opposite effect of the same practices because excessively relying on the practices leads organizational members to depend on codified knowledge in the form of electronic documents that mainly contain the basic and general information, rather than new insights or ideas (e.g., Haas and Hansen 2005), resulting in the loss of integrity of their internal knowledge and of the liaison between knowledge and contexts in which it is applied. Such conflicting findings might be because they consider different dimensions of organizational performance: the first stream considers the KM-related performance based on KBV whereas the second one focuses on general success based on RBV as organizational performance. In addition, the relationship between KM practices and organizational performance have been inconclusive and the impact of the environmental contexts under which organizations implement KM initiatives has not been fully explored in prior KM studies.

Theoretical Background

RBV asserts that a firm’s specificity generates superior firm performance. A company must rely on rare, valuable, non-substitutable, and inimitable resources and capabilities to achieve competitive advantage
over its competitors and improve firm performance (Barney 1991; Dyer and Singh 1998; Rumelt 1991). Using RBV as basis, various studies have recognized firms as a unit of analysis in measuring and understanding performance. On the other hand, KBV explains that knowledge sharing is an organizational KM capability that generates competitive advantage in markets, assuming organizational knowledge as a key resource/capability. The simultaneous specificity or distinctiveness of knowledge flow across firms, and the similarity or continuity of knowledge flow within firms arise from KM capabilities that promote knowledge transfer within a firm while retarding transfer to new contexts (Argote and Ingram 2000). In this sense, RBV and KBV suggest different sub-performance types (i.e., firm and KM performance) to explain the same eventual performance (i.e., organizational performance).

In addition, the importance of a knowledge-intensive environment has been empathized as a key contextual factor in the KM literature. For example, Liao, Fei, and Liu (2008) established the concept of “knowledge inertia” which refers to the extent to which problem-solving is routinized by relying on prior knowledge. Knowledge inertia comprises learning inertia and experience inertia. In a highly knowledge-intensive environment, stagnant knowledge sources and obsolete prior experience inhibit knowledge-intensive firms from effectively creating and using organizational knowledge. In managing organizational knowledge, however, routine problem-solving procedures are helpful to traditional firms with a low knowledge-intensive environment because such routines enable the conservation of time and effort, and avoid potential risks. Thus, we theoretically assume that the knowledge-oriented dynamic environment can be characterized by high knowledge intensity, while the knowledge-oriented stagnant environment features low knowledge intensity. This assumption is supported by previous empirical studies in that knowledge-based resources are more associated with organizational performance in a dynamic environment than in a stable environment (e.g., Miller and Shamsie 1996).

**Firm Performance: Resource-Based Organizational Success**

Given the intangibility of knowledge assets, previous KM studies could not clearly explain the causal relationship between KM practices and organizational performance (Choi 2004). One of the main reasons for such deficiency might be the absence of measures of KM-specific performance. Alternatively, other empirical studies have investigated the effects of KM practices on the market value of companies; these effects serve as different indicators of organizational performance. According to Choi (2004), measuring organizational performance in the context of KM is pursued in three ways: (1) financial indices, including return on sales (ROS), return on asset (ROA), return on equity (ROE), and Tobin’s q (e.g., Bierly and Chakrabarti 1996); (2) non-financial outcomes (i.e., organizational effectiveness, efficiency, innovation, etc.) that are measured by the degree of overall company success, market share, growth rate, profitability, and innovativeness compared with major competitors (e.g., Choi and Lee 2003; Schulz and Jobe 2001; Turner et al. 2002); and (3) mixed outcomes which are derived by using both financial indices and non-financial measures (e.g., Lee et al. 1999; Ordóñez de Pablos 2002).

Among such ways of measuring firm performance, the second (i.e., non-financial outcomes) can be considered a latent variable that requires testing with measurement issues, whereas the two alternatives are characterized by limitations in terms of accurately measuring organizational performance through the analysis of intangible knowledge-based assets. The public announcement of organizational performance is unreliable because business companies have strategic intentions to project success (Choi 2004). Thus, we focus on organizational performance measured by multiple items, which indicate the degrees of (1) overall success, (2) market share, (3) growth rate, (4) profitability, and (5) innovativeness.

**Knowledge Management Performance: Knowledge-Based Organizational Success**

According to Chong, Wong, and Lin (2006), KM performance can be understood with five key general dimensions: systematic knowledge activities, employee development, customer satisfaction, good external relationships, and organizational success. From such dimensions arise specific indicators for measuring pure KM performance, which are clearly distinguished from measures of organizational performance. The five indicators are (1) the helpfulness of KM in solving organizational problems, (2) the usefulness of KM in improving communication, (3) the contribution of KM to employee development, (4) the effectiveness of KM in creating value through new products/services, and (5) the efficiency of KM in satisfying
First, the helpfulness of KM in solving organizational problems pertains to KM helping an organization overcome enterprise-wide limitations, and consequently, succeed commercially (Chong et al. 2006). KM with an appropriate infrastructure enables an organization to streamline and improve its administrative processes, and to integrate necessary knowledge into its core business, thereby enhancing its intellectual capital (Chong et al. 2006). Second, the usefulness of KM in improving communication refers to improving organizational learning capability through KM (Chong et al. 2006). Because KM with improved communication transforms personal knowledge into corporate knowledge, it enables best practices to be diffused not only within an organization but also among organizations, improving employee skills and productivity (Chong et al. 2006). Third, the contribution of KM to employee development is concerned with whether a firm can encourage employee development through KM (Chong et al. 2006). In terms of knowledgeable workers, their experiences improve their ability to make the best decisions, and their valuable intellectual capital can be managed through KM (Chong and Choi 2005). According to Bhatt (2000), a firm’s KM application encourages organizational members to coordinate diverse sets of activities and solve complex problems. Fourth, the effectiveness of KM in creating value through new products and services means that a firm can develop new products and services by leveraging knowledge (Chong et al. 2006). Successful KM generates internal and external feedback intended to improve the quality of products and services, and encourages new product and service development to create new opportunities (Chong and Choi 2005; Chong et al. 2006). Finally, the efficiency of KM in satisfying customers indicates whether a firm can handle its customers’ needs by exploiting knowledge through its KM (Chong et al. 2006). The critical role of KM is to facilitate continuous improvement and innovation, so as to understand clients’ problems and satisfy their needs (Stankosky 2000). Today’s clients want better, faster, and more affordable products and services (Kotter 1996). In this light, KM enables a firm to strengthen its competence in handling customers because the firm can operate in accordance with the needs and requirements of its customers; it can use KM as a platform from which to improve product and service quality (Chong et al. 2006). Because of the above-mentioned reasons, the five indicators are critical and comprehensive items for measuring KM performance.

Environmental Knowledge Intensity

Environmental knowledge intensity reflects the knowledge-oriented external requirements of specific circumstances, in which an organization differentially manages and organizes its tasks and businesses (2000); in accomplishing these, the organization forms external context-driven propensities for KM initiatives (Revilla et al. 2010). Environmental knowledge intensity has been considered a key contextual factor because an equivalent level of innovation is required for organizations competing with one another for the same business and tasks (e.g., Alvesson 2000; Autio et al. 2000; Cohen and Levinthal 1989; Liao et al. 2007; Liao et al. 2008; Malerba 2005; Nonaka and Takeuchi 1995; Pavitt 1984; Swart and Kinnie 2003; Tödtling et al. 2006; Tödtling and Trippl 2007). The extent of organizational knowledge required to preserve valuable heritage, learn new techniques, solve problems, create core competencies, and identify new business opportunities differs depending on the specific businesses and tasks of each company (Liao et al. 2007). As the innovation processes of an organization are under the competitive influence of its knowledge-oriented environment (Cohen and Levinthal 1989), the organization faces different degrees of knowledge intensity in its efforts to achieve superiority over its competitors.

A widely accepted assumption on knowledge-intensive environments is that the innovation process (i.e., key knowledge sources, the role of codified and tacit knowledge, and the types of knowledge links with others) required for firms differs depending on their environmental requirements (Malerba 2005; Pavitt 1984), thereby distinguishing between analytical and synthetic knowledge bases (Tödtling and Trippl 2007). Organizations must satisfy different environmental requirements because the required quality of human capital, market value through organizational knowledge, application of innovation, and relationships with clients result in varied levels of environmental instability for traditional and knowledge-intensive firms (Swart and Kinnie 2003). The low knowledge-intensive environment of a synthetic knowledge base, which is dominant in traditional industries (e.g., machinery and engineering), is characterized mainly by the application or novel combination of existing knowledge, relatively low level of R&D, and strong orientation toward solving specific problems articulated by customers. By contrast, the complex interplay between codified and tacit knowledge for radical innovation is viewed significantly
in a high knowledge-intensive environment (e.g., biotechnology, information and communication technologies, etc.), and is suitable for analytical knowledge bases (Tödtling et al. 2006). Swart and Kinnie (2003) argued that organizations have different knowledge-oriented environments even in the same industry, emphasizing not only industry- but also firm-specific criteria for environmental knowledge intensity. Unlike previous KM studies that focused on only knowledge-intensive industries/firms and excluded traditional industries/firms, the present work extends the investigation to an alternative hybridizing industry- and firm-specific categorization of the environmental knowledge intensity of firms (Liao et al. 2007).

**A Two-Factor Model of Organizational Performance**

Based on the consideration of organizational performance and the importance of environmental context, this study examine a two-factor model that distinguishes between firm performance and KM performance as key dimensions of organizational performance with an important context, environmental knowledge intensity. Figure 1 describes the multi-group two-factor model of organizational performance.

![Multi-Group Two-Factor Model of Organizational Performance](image)

**Research Methodology**

**Data Collection and Sample Characteristics**

The survey questionnaires were used to collect firm-level data. Using the Korean Standard Industrial Classification 9th Edition (Statistics Korea 2008), we selected Korean companies whose industry compositions are proportional to that in Korea to enhance the representativeness of the study sample and the generalizability of results. Because all study items are held at an organizational level of analysis, we administered the survey to multiple raters in each company.

For the final 150 firm data, we filtered out the responses from companies that included only one respondent or failed to meet a within-agreement criterion for aggregation, i.e., $r_{wg}$ (James et al. 1993). Details regarding the size and age of the 150 companies and the demographic information on 734 respondents are presented in Table 1. Given that no significant differences were found in the ratings of study variables across respondents’ positions, age, gender, years in the industry, and organizational tenure, all final data were pooled for analyses.
The availability of descriptive statistics of firm-level data was confirmed as a result of interrater reliability tests with \( r_{wg} \), \( \eta^2 \), and intraclass correlation coefficient (ICC). We calculated all of these indices by following Klein and Kozlowski’s (2000) recommendation because each index has its own strengths and weaknesses, and no single most effective method for a detailed review and comparison is currently available. As presented in Table 3, these aggregation indices and significant F-test results revealed that individual ratings on the 10 items showed little variance within firms but considerably larger variance between firms, providing sufficient evidence to support aggregation to firm level given the relatively small unit size (i.e., the average number of raters within a firm is 4.89). The \( r_{wg} \) values of within-unit agreement and significant between-unit differences derived from ANOVA for these variables support aggregation.
Table 3. Aggregation Indices for Study Items

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item</th>
<th>$d.f.$</th>
<th>$r_{ig}$</th>
<th>$\eta^2$</th>
<th>ICC(1)</th>
<th>ICC(2)</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Performance</td>
<td>FP01</td>
<td>149,584</td>
<td>.772</td>
<td>.501</td>
<td>.375</td>
<td>.746</td>
<td>3.942**</td>
</tr>
<tr>
<td></td>
<td>FP02</td>
<td>149,583</td>
<td>.806</td>
<td>.568</td>
<td>.584</td>
<td>.873</td>
<td>7.879**</td>
</tr>
<tr>
<td></td>
<td>FP03</td>
<td>149,582</td>
<td>.786</td>
<td>.542</td>
<td>.425</td>
<td>.783</td>
<td>4.617**</td>
</tr>
<tr>
<td></td>
<td>FP04</td>
<td>149,581</td>
<td>.773</td>
<td>.526</td>
<td>.405</td>
<td>.769</td>
<td>4.325**</td>
</tr>
<tr>
<td></td>
<td>FP05</td>
<td>149,581</td>
<td>.692</td>
<td>.452</td>
<td>.313</td>
<td>.690</td>
<td>3.230**</td>
</tr>
<tr>
<td>Knowledge Management</td>
<td>KMP01</td>
<td>149,584</td>
<td>.746</td>
<td>.300</td>
<td>.122</td>
<td>.406</td>
<td>1.683**</td>
</tr>
<tr>
<td></td>
<td>KMP02</td>
<td>149,584</td>
<td>.714</td>
<td>.281</td>
<td>.098</td>
<td>.348</td>
<td>1.533**</td>
</tr>
<tr>
<td></td>
<td>KMP03</td>
<td>149,584</td>
<td>.726</td>
<td>.313</td>
<td>.138</td>
<td>.440</td>
<td>1.786**</td>
</tr>
<tr>
<td></td>
<td>KMP04</td>
<td>149,584</td>
<td>.706</td>
<td>.284</td>
<td>.102</td>
<td>.358</td>
<td>1.557**</td>
</tr>
<tr>
<td></td>
<td>KMP05</td>
<td>149,584</td>
<td>.727</td>
<td>.364</td>
<td>.202</td>
<td>.554</td>
<td>2.243**</td>
</tr>
</tbody>
</table>

** $p < .01$.

Analysis and Results

Means, standard deviations, and correlations for all the items of firm performance and KM performance are presented in Table 4 (i.e., the Pearson correlation matrix with continuous variables). A review of Table 4 indicates that all 10 items of firm performance (i.e., FP01, FP02, FP03, FP04, and FP05) and KM performance (i.e., KMP01, KMP02, KMP03, KMP04, and KMP05) are significantly and positively related to one another.

Table 4. Descriptive Statistics and Inter-Correlations

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>S.D.</th>
<th>FP01</th>
<th>FP02</th>
<th>FP03</th>
<th>FP04</th>
<th>FP05</th>
<th>KMP01</th>
<th>KMP02</th>
<th>KMP03</th>
<th>KMP04</th>
<th>KMP05</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP01</td>
<td>5.03</td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FP02</td>
<td>4.96</td>
<td>1.12</td>
<td>.82**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FP03</td>
<td>4.84</td>
<td>.92</td>
<td>.78**</td>
<td>.65**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FP04</td>
<td>4.81</td>
<td>.92</td>
<td>.87**</td>
<td>.77**</td>
<td>.73**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FP05</td>
<td>4.42</td>
<td>.93</td>
<td>.64**</td>
<td>.48**</td>
<td>.73**</td>
<td>.57**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KMP01</td>
<td>4.74</td>
<td>.61</td>
<td>.34**</td>
<td>.25**</td>
<td>.45**</td>
<td>.29**</td>
<td>.60**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KMP02</td>
<td>4.57</td>
<td>.63</td>
<td>.39**</td>
<td>.20*</td>
<td>.44**</td>
<td>.32**</td>
<td>.60**</td>
<td>.77**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KMP03</td>
<td>4.71</td>
<td>.66</td>
<td>.45**</td>
<td>.30**</td>
<td>.43**</td>
<td>.36**</td>
<td>.60**</td>
<td>.72**</td>
<td>.78**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KMP04</td>
<td>4.79</td>
<td>.63</td>
<td>.46**</td>
<td>.33**</td>
<td>.50**</td>
<td>.37**</td>
<td>.65**</td>
<td>.77**</td>
<td>.78**</td>
<td>.86**</td>
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<tr>
<td>KMP05</td>
<td>4.63</td>
<td>.73</td>
<td>.42**</td>
<td>.30**</td>
<td>.46**</td>
<td>.35**</td>
<td>.63**</td>
<td>.74**</td>
<td>.75**</td>
<td>.73**</td>
<td>.81**</td>
<td></td>
</tr>
</tbody>
</table>

N = 150. * $p < .05$. ** $p < .01$.

Confirmatory Factor Analysis

Table 5. Factor Loadings and Reliability

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item</th>
<th>Loading</th>
<th>$t$-value (S.E.)</th>
<th>Construct Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Performance</td>
<td>FP01</td>
<td>.82</td>
<td>15.70** (.05)</td>
<td>.923</td>
</tr>
<tr>
<td></td>
<td>FP02</td>
<td>.93</td>
<td>12.40** (.07)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FP03</td>
<td>.76</td>
<td>12.34** (.06)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FP04</td>
<td>.83</td>
<td>14.09** (.06)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FP05</td>
<td>.63</td>
<td>9.36** (.07)</td>
<td></td>
</tr>
<tr>
<td>Knowledge Management</td>
<td>KMP01</td>
<td>.51</td>
<td>12.46** (.04)</td>
<td>.943</td>
</tr>
<tr>
<td></td>
<td>KMP02</td>
<td>.54</td>
<td>13.09** (.04)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>KMP03</td>
<td>.59</td>
<td>13.86** (.04)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>KMP04</td>
<td>.59</td>
<td>15.07** (.04)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>KMP05</td>
<td>.63</td>
<td>13.01** (.05)</td>
<td></td>
</tr>
</tbody>
</table>

** $p < .01$.

We used structural equation modeling (SEM) with LISREL 8.7 to validate the CFA results. SEM provides goodness-of-fit statistics, which indicate that two factors are not statistically reflected by each of the 5 items: $\chi^2(34) = 149.08$, $p < .01$; root mean square error of approximation (RMSEA) = .15. Unlike such absolute fit indices, however, incremental fit indices, including normed fit index (NFI), non-normed fit index (NNFI), comparative fit index (CFI), and incremental fit index (IFI), suggest that the two-factor model proposed in this study fits the data set, regardless of the two ways of scaling latent variables (i.e., setting variance of latent factors to 1 and establishing one loading of each latent factor to 1): NFI = .94;
NNFI = .94; CFI = .95; IFI = .95. The loadings of the 10 items on two factors are reported in Table 5.

**Multi-Group Confirmatory Factor Analysis**

We conducted a multi-group confirmatory factor analysis (MG-CFA) of knowledge-intensive and non-knowledge-intensive firms. We allowed five items of firm performance to be explained by one factor, and the other five items of KM performance to be explained by the other factor. That is, we constructed a two-factor model, in which the two factors (i.e., firm performance and KM performance) are correlated with each other, for MG-CFA. We also set the regression coefficients, constants, and error variances of all the 10 items to be unequal across both samples. The absolute fit indices indicate that the two-factor model does not fit the data set: $\chi^2(69) = 173.37, p < .01; \text{RMSEA} = .14$. Conversely, the incremental fit indices suggest that the proposed two-factor model fit the data set: NFI = .92; NNFI = .94; CFI = .95; IFI = .95.

**Discussion**

Generic firm performance has been considered a key outcome in investigating the effectiveness of organizational practices/strategies, even though organizational performance is a complex and multidimensional concept (Dess and Robinson 1984). KM success is also a critical factor that enhances organizational performance by creating beneficial and valuable products, services, and processes (Skyrme and Amidon 1997). In this sense, we distinguished KM performance, which can be understood in terms of KM-specific competencies and should be expanded to organizational competitive advantage, from general firm performance by testing the two-factor model of organizational performance. The two-factor model of organizational performance is not supported by our CFA with data from 150 Korean companies. That is, the CFA findings indicate that KM-specific performance is not statistically different from generic firm performance, as determined by the absolute fit indices. The MG-CFA shows that the dimensions of organizational performance are not invariant between high and low knowledge-intensive firms.

**Implications**

One contribution of prior KM studies is to improve our understanding of the relationships between KM enablers (i.e., KM practices/initiatives) and organizational performance. In doing so, prior KM studies mainly consider two dimensions of organizational performance based on the two perspectives, RBV and KBV, across different industrial and various organizational contexts. RBV-oriented studies focus on tangible and intangible benefits (e.g., Bierly and Chakrabarti 1996; Simonin 1997) which show overall firm performance. At the same time, KBV-oriented studies considers KM-specific success (e.g., knowledge sharing, organizational learning, and KM satisfaction) as organizational performance (e.g., Becerra-Fernandez and Sabherwal 2001; Hansen 1999; Szulanski 1996). As a result, their findings are not adequate to understand the impact of KM practices/initiatives. Alternatively, few studies have tried to consider both general firm success and KM-specific performance simultaneously in order to suggest the causal relationship between the two dimensions of organizational performance. For example, Gold et al.’s (2001) findings suggests that KM enablers eventually improve overall firm performance by achieving KM success, arguing the causal relationship from KM performance (i.e., KM process capability) to firm performance (i.e., organizational effectiveness). Lee and Choi (2003) also suggests that KM outcome mediate the impact of KM enablers on firm performance. In this sense, our findings raise research issues on the causal relationship between KM success and firm performance, by analyzing the dimensionality of organizational performance.

In addition, this study suggests that the two dimensions of organizational performance need to be understood differently according to environmental knowledge intensity. This can be supported by prior studies in which industry- and firm-specific characteristics are considered as key contextual factors (e.g., Appleyard 1996; Bennett and Gabriel 1999). That is, the contingency understanding by organizational contexts (e.g., environmental knowledge intensity in this study) is required in KM research in order to suggest that the organizational success from KM practices/initiatives will vary based on contextual variables. Specifically, such contingency understanding can explain how KM practices/initiatives generate competitive advantages by balancing the external environmental requirements and the internal organizational situations. This study infers that for eventual organizational success, firms need to
configure their resources and KM capabilities with given environmental knowledge intensity.

**Future Research Directions**

On the basis of our findings, we suggest three directions for future studies. First, KM research needs to analyze the relationship between KM-specific success and firm general improvement, based on the synthesis of RBV and KBV. We believe that the causal relationship is not fully explored yet. In this study, our main intention is to show whether KM performance is distinguished from generic firm performance and whether the difference is consistent across high and low knowledge-intensive firms. From this study, implications about the dimensionality of organizational performance might encourage follow-up studies to generate solid hypotheses about how KM performance and firm performance are related to and how they are different from each other. On top of that, since diverse KM enablers influence the determination of the organizational performance, different outcomes might reflect different aspects of organizational performance and some outcomes can improve the others (Lee and Choi 2003). Such follow-up consideration may explain how KM practices ultimately create business value (Davenport 1999). Second, understanding organizational performance necessitates a multi-level perspective of organizational performance with the multi-level factor analysis. Such an approach is essential because multiple efforts across levels (i.e., individual, group/team, and organization levels) simultaneously influence organizational performance. For example, KM performance can be observed within the social context of organizations, in which individuals manage their knowledge and organizations collect and manage the set of such knowledge through organization-wide KM processes (Robinson and O'Leary-Kelly 1998) in knowledge networks. In managing organizational knowledge, multi-level KM units and their network-based capabilities should be simultaneously considered in the social context of organizations. This goal can be achieved by multi-level factor analysis. In addition, hierarchical factor analysis (Brown 2006) can also be applied in research on organizational performance because of its multidimensionality. That is, organizational performance comprises different dimensions of various operations in organizations. Such dimensions can be either homogeneous or heterogeneous. Aside from KM performance and generic firm performance, other successes in organizations should be considered to understand the complex concept that is organizational performance. A direction that researchers can take is focusing on the maturity of organizational information systems (IS) because IS-based capabilities is a critical factor in supporting strategies; these are complicated routines of all organizational sections as well as within the IS department (Ravichandran and Lertwongsatien 2005). Hierarchical factor analysis can help other researchers examine more than three dimensions of organizational performance.

**Conclusion**

According to both RBV and KBV, there are diverse organizational resources that are recognized as the main drivers of improving organizational performance. In this sense, this study explains the dimensionality of organizational performance, thus indicating that organizational success in KM is connected directly with organizational performance as well as generic firm performance. KM performance cannot be different from generic firm performance in current knowledge-intensive environments. This study also shows that organizational success through KM can only be realized if a firm searches for its own specific fit with given environmental knowledge intensity.

**Appendix: Measurements of Organizational Performance**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Performance (FP)</td>
<td>FP01: My company's overall firm performance has exceeded that of its competitors.</td>
</tr>
<tr>
<td></td>
<td>FP02: My company's market share has exceeded that of its competitors.</td>
</tr>
<tr>
<td></td>
<td>FP03: My company's growth rate has exceeded that of its competitors.</td>
</tr>
<tr>
<td></td>
<td>FP04: My company's return rate has exceeded that of its competitors.</td>
</tr>
<tr>
<td></td>
<td>FP05: My company's innovation has exceeded that of its competitors.</td>
</tr>
<tr>
<td>Knowledge Management Performance (KMP)</td>
<td>KMP01: Knowledge Management (KM) in my company is helpful in solving organizational problems.</td>
</tr>
<tr>
<td></td>
<td>KMP02: KM in my company is useful in improving communication.</td>
</tr>
<tr>
<td></td>
<td>KMP03: KM in my company contributes to developing employee ability.</td>
</tr>
<tr>
<td></td>
<td>KMP04: KM in my company is effective in creating value of products/services.</td>
</tr>
<tr>
<td></td>
<td>KMP05: KM in my company is efficient in satisfying customers.</td>
</tr>
</tbody>
</table>
References


