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# Exploring the Link between Knowledge Management Performance and Firm Performance

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## **Abstract**

*The resource-based theory of the firm attributes superior firm performance to organizational resources that are valuable, rare, irreplaceable, and most readily reproduced. Aligned with this theory, the dissertation examines the widely expressed notion that knowledge management (KM) competencies form a critical organizational resource that contributes to firm performance. Specifically, this dissertation addresses the question: can KM pay off? Using the findings of an independent research company and the data from Compustat, this dissertation empirically examines the relationship between KM performance and firm performance in terms of both accounting and market measures. Matched Sample Comparison Group (MSCG) methodology is employed to test the research hypotheses. This study contributes to the KM literature by going beyond case studies and opinion surveys in providing empirical evidence of the importance of KM. It contributes to the finance literature by studying previously unexplored link between financial performance and KM performance. It also contributes to management practice by furnishing evidence that superior KM does indeed predict superior firm performance.*

**Keywords:** firm performance, KM, knowledge management, resource-based theory,

## **Introduction**

Over the past decade, one of the most striking developments in business has been the rapid proliferation of knowledge management (KM). Organizations are turning to KM practices and technologies to consolidate and reconcile their knowledge assets that enable them to compete in the dynamic and changing global business environment. According to IDC, a strategic market research and consulting firm, business spending on KM will rise from \$2.7 billion in 2002 to \$4.8 billion in 2007 (Babcock 2004). This spending has impacted and will impact organizations' productivity, product and service quality,

and internal processes. There seems to be little doubt that nowadays, KM is extremely critical to the smooth and successful operation of most organizations (Davenport et al. 1996).

Not surprisingly, it is widely accepted by practitioners and researchers that KM can bring important strategic consequences to organizations: KM improves organizations' competitive positions. More specifically, people believe that KM enables firms to promote organizational productivity (Wiig and Jooste 2003), improve operational effectiveness (Drucker 1993), increase agility (Dove 2003), maximize intellectual assets (Teece 2003), promote customer loyalty (House and Bell 2001), enhance innovation (Alavi and Leidner 2001), and generate shareholder value (Bock et al. 2005). In short, this stream of research suggests that KM can have significant impacts on firm performance, and therefore is of great value to the firm. However, empirical support for the link between well-designed KM and firm performance consists primarily of individual case studies (Holsapple and Singh 2003). Systematic empirical investigations of the link have yet to be done. As a result, there is some doubt about whether the identified link can be generalized from the individual cases to all organizations.

To dismiss the doubt, researchers need to address the question that has yet to be answered: does KM pay off? Not surprisingly, several studies have stressed such need. Feng et al. (2004) state that while researchers are focusing their efforts on the use of various technologies for knowledge acquisition and storage or on the conceptual nature of KM, they should not leave the impacts of KM initiatives on firm performance uninvestigated. Similarly, in an article presenting a knowledge chain model that identifies and characterizes critical KM activities, Holsapple and Singh (2003) call for more research attention to the investigation of the connections between KM and competitiveness.

This dissertation investigates the business effects of successful KM initiatives. More specifically, the study develops a theoretical link and empirically examines the association between KM performance and business performance. This study contributes to a better understanding of the relationship between KM performance and firm performance by addressing the following research question at the organizational level of analysis: can KM be performed in ways to enhance firm's financial performance? This research question is investigated in the context of multi-market firms in various industries in this study.

## **Theoretical Foundations and Hypotheses**

### ***Knowledge Management***

Knowledge management is defined as "an entity's systematic and deliberate efforts to expand, cultivate, and apply available knowledge in ways that add value to the entity, in the sense of positive results in accomplishing its objectives or fulfilling its purpose" (Holsapple and Joshi 2004). According to Holsapple and Joshi (2003), one major objective of KM is to "ensure that the right knowledge is available to the right processors, in the right representations and at the right times, for performing their knowledge activities (and to accomplish this for the right cost)." KM is therefore scoped out very broadly as any process or practice of generating new knowledge, acquiring valuable knowledge from outside sources, selecting needed knowledge from internal sources, altering the state of knowledge resources, and embedding knowledge into organizational outputs (Holsapple and Joshi 2004).

### ***A Resource-Based Theory of KM and Firm Performance***

With its root in management strategy literature, the resource-based theory of the firm is developed to understand reasons why firms are able to gain and sustain a competitive advantage (Amit and Schoemaker 1993). The theory asserts that the main driver of firm performance is “unique” firm resources that are valuable, rare, difficult to imitate, and non-substitutable by other resources (Conner 1991). An important assumption of the theory is that the resources needed to conceive, choose, and implement strategies are heterogeneously distributed across firms, which in turn are posited to account for the differences in firm performance (Grant 1991).

Based on the resource-based theory, one stream of research identifies knowledge as a basic source of competitive advantage and suggests that performance difference between firms can be attributed to asymmetries in knowledge, knowledge processors, and knowledge processes (Feng et al. 2004). Knowledge processors are basically human beings and computer systems, while knowledge processes are courses of knowledge manipulation actions intended to achieve KM objectives (Holsapple and Joshi 2003).

The resource-based theory of KM suggests that firms can outperform their competitors by taking advantage of KM. A firm’s product, customer, and managerial knowledge, and its ability to leverage this knowledge serve as firm-specific KM resources, which differentiate the firm from its competitors. Although it is complex to acquire and difficult to integrate these KM resources, firms that succeed in doing so are likely to experience a learning effect in which they improve over time in their abilities for creating value. In other words, the valuable KM resources are likely to contribute to key aspects of firm performance, such as improved ability of innovation, enhanced coordination of efforts, effective process of decision making, and rapid commercialization of new products (Holsapple and Singh 2003). And finally, the contribution of KM resources is captured by a firm’s bottom line figures (Gold et al. 2001). In light of this, we argue that firms that are successful in leveraging KM resources in turn enjoy superior financial performance by increasing profits and decreasing costs. This directly leads us to the two main hypotheses:

*H<sub>1</sub>: Superior KM performance is positively related to higher profit ratios.*

*H<sub>2</sub>: Superior KM performance is positively related to lower cost ratios.*

### ***Research Hypotheses – Market/Book Value***

Another way to measure the value of KM resources is to follow Chung and Pruitt’s (1994) method that is based on Tobin’s *q* theory. Tobin’s *q* is the ratio of the market value of a firm and the replacement value of its total assets (Tobin 1978), while Chung and Pruitt’s method is the technique to calculate Tobin’s *q* ratio. According to the theory, the long-run equilibrium market value of a firm should be equal to the replacement value of its total assets; and a *q* ratio larger than 1.0 indicates the unmeasured source of value attributed to the intangible assets. Thus, Tobin’s *q* is the measure of a firm’s intangible assets. Moreover, it is also a forward-looking measure for the reason that it provides a market-based view of investor expectations of a firm’s future financial performance (Rao et al. 2004). Because KM resources constitute the main part of intangible assets (Bontis 2001), a firm that is successful in leveraging KM resources in turn enjoys high value of intangible assets, and thus is very likely to have a large *q* ratio. Therefore, we hypothesize:

*H<sub>3</sub>: Superior KM performance is positively related to higher Tobin’s q ratio.*

## Methodology

The Matched Sample Comparison Group (MSCG) methodology is employed to empirically test the research hypotheses. As a set of statistical techniques, MSCG methodology refers to statistical analysis that compares over time the levels of interest variables across two samples (Megginson and Weiss 1991). In this study, the two samples are the *treatment sample* of firms with superior KM performance and a carefully selected *control sample* of firms matched to the treatment sample by size and type. The most important advantage of using MSCG methodology is that “the performance of the matched control sample of firms serves as a benchmark and helps remove the confounding effects of extraneous variables and market forces that could influence firm performance” (Bharadwaj 2000). In this study, a variety of profit and cost measures are used to compare the firm performance of the two groups.

## Discussion

Drawing on the resource-based theory of the firm, the purpose of this dissertation is to explore the relationship of a firm’s KM performance to the firm’s financial performance. This study contributes to the growing body of literature linking KM and the resource-based view and provides a framework for understanding how KM may be appropriately viewed as a key driver of firm performance. More important, it is one of the first studies to provide an empirical test of the resource-based view of KM.

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