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Investigating the success of knowledge management: An empirical study of small- and medium-sized enterprises

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ABSTRACT

Most firms have started to realize the importance of KM in streamlining their operations and processes to improve organizational performance. So in this paper, we try to survey and present a model for measuring success of KM in small- and medium-sized enterprises (SMEs). This study is the first empirical test of an adaption of the Jennex and Olfman (J&O) KM success model considered a better description of KM success due to its strong theoretical grounding to analysis the influences of KM and inter-actions on workers' productivity in Taiwanese SMEs settings. Structural equation modeling techniques are applied to data collected through questionnaires from 277 knowledge workers. All the hypothesized relationships between the variables are significantly supported by the data. The findings served as useful reference points for researchers interested in investigating issues related to the successful implementation of KM, and for practitioners aiming to achieve the benefits of KM in SMEs.

1. Introduction

In Taiwan, small- and medium-sized enterprises (SMEs) exert a strong influence and constitute approximately 97.63% of all enterprises and make up 77.12% of the Island's overall employment. In the face of the volatility and rate of change in business environments, SMEs are facing the unprecedented challenges brought about by the knowledge economy and to continue to retain flexibility and innovation is actually a vital topic. KM has become a critical component for maintaining competitive advantages and many organizations are exploring the field of KM in order to improve and sustain their competitiveness. Faced with competitive dilemmas may be solved by the implementation of KM to enhance competitiveness. That is, KM has the potential to make SMEs more competitive and innovative and the ability of KM to lead to sustainable performance is even more critical. Such as Friedman and Prusak (2008) noted that KM can be used to improve both individual and organizational performance, and has become a critical issue in industrial practices. Okunoye and Karsten (2002) stated that KM has indeed become the underlying sources for successful organizations regardless of their size and geographical locations. KM has now become a widely spread business discipline, it is no longer the concern of just large organizations. As asserted by Frey (2001), although major corporations have led the way in introducing and implementing KM, it is increasingly important for SMEs to manage their collective intellect.

Information systems success is one of the most widely used dependent variables in information systems research. Measuring the success of systems is critical to understand the value, effect of management operations and investment on them (DeLone & McLean, 2003). Therefore, since 1992, several studies have been examined the success of different information systems and measured it experimentally (Lee & Lee, 2009; Lin & Shao, 2000; Muylle, Moenaert, & Despontin, 2004; Wang, Wang, & Shee, 2007). However, few studies have concentrated on measuring KM success. As Kulkarni, Ravindran, and Freeze (2006–2007) note, there has been a lack of adequate theoretical modeling and empirical examination of factors leading to KM success. Markus (2001) has also indicated that getting employees to use KMSs effectively to improve organization performance is still a central issue for both researchers and practitioners. In proposing a success model of KM and empirically investigating multidimensional relationships among success measures, this study is based on the Jennex and Olfman (J&O) model (2005) and Kulkarni et al.'s (2006–2007) KM success model. The J&O model is based on several case studies and quantitative research studies and is

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theoretically grounded on the DeLone and McLean IS Success Model, which has been accepted for several years and has been validated by several studies, applied within the KM context. Although KM have been widely implemented in organizations, their availability does not guarantee that employees will be willing to spend time and effort to use them. Measuring KM success is therefore crucial for providing a basis on which companies can evaluate KM, stimulating management to focus on critical aspects of the business, and justifying investments in KM activities. The measurement of KM success is also valuable for building and implementing efficient KM initiatives and systems from the perspectives of KM practitioners (Jennex & Olfman, 2005).

SMEs need to respond rapidly to these emerging changes to fulfill their customer needs more rapidly. In order to further utilize KM for seamless business operations and decision-making, adoption of KM in SMEs has become the emerging agenda in developing business strategies. To manage knowledge resources is considered the main objective of pursuing KM in business operations in Taiwanese SMEs. However, most studies of KM implementation have been heavily focused on large companies. As such, existing research findings are mainly large companies oriented, thereby reflecting their situations. SMEs face unique KM challenges that are distinct from those of their larger business. Directly applying these results into the SMEs environment may not be sufficient without an understanding of their very own and specific conditions. Previous studies fall short of studying and identifying the adoption of KM from the SMEs perspective. They have not considered the differences of company size as well as the specific features of SMEs that could affect KM. Even, in recent years, many researchers have been focusing on the development of practical implementation of KM in SMEs (Chan & Chao, 2008; Denning, 2006; Handzic, 2004; Tseng, 2007). There are issues existing where SMEs fail to realize and recognize the potential benefits of KM. A better understanding of the adoption for implementing KM in SMEs is needed in order to ensure the success of their efforts. Such as Jennex, Smolnik, and Croasdell (2008) noted, to assess the benefits of implementing KM and its status of KM readiness within an organization's practices is an important issue that requires further exploration. In spite of KM importance for sustainable competitiveness, in most SMEs there is an absence of systematic KM (Wong & Aspinwall, 2005).

In spite of the vast literature on KM, there has been little or no empirical evidence for Taiwanese SMEs. Due to SMEs have some unique features (limited financial and human resources, flat structure, informal managerial styles, centralized decision-making, focus on the day-to-day business operations) that deeply influence the way they can approach KM. In the context of SMEs, a field where research on KM is still fragmented and quite limited (Durst & Edvardsson, 2012). Hence, this research attempts to propose a success model for KM and to empirically investigate the multi-dimensional relationships among the success measures based on KM success model for Taiwanese SMEs. In order to understand KM practices in SMEs, do we need a new concept of KM and new interpretive frameworks that are different from those normally adopted in the case of large firms? We examine the following research questions: (1) What are the influences of system quality, knowledge quality, and service quality on KM use in SMEs setting? (2) What are the individual and combined influences of system quality, knowledge quality, and service quality on user satisfaction in SMEs setting? (3) What is the effect of KM use on user satisfaction in SMEs setting? (4) What is the individual and combined influences of KM use and user satisfaction on net benefits in SMEs setting? A potential contribution of this study focuses on the less explored SMEs in Taiwan context and provides some insight for companies that are not sure how to implement KM into their business operations, further take the necessary action based on these assessments.

2. Theoretical background

2.1. Knowledge management in SMEs

KM is becoming a growing concern in management research and practice because of its role in determining firm innovation capability and in enhancing working life quality of knowledge workers. KM may be particularly relevant for SMEs. SMEs tend to be relatively more dynamic and agile than larger organizations, and more ready to learn. How to effectively establish and sustain good KM practices in SMEs in order to ensure their competitiveness is important. KM refers to managing the corporation's knowledge by means of a systematic and organizational specified process for acquiring, organizing, sustaining, applying, sharing and renewing both tacit and explicit knowledge by employees to enhance organization performance and create value (Davenport & Prusak, 1998). Tiwana (2001) claims that 'KM can be extended to management of organizational knowledge for creating business value and generating a competitive advantage', 'KM enables the creation, communication, and application of knowledge of all kinds to achieve business goals', 'KM is the ability to create and retain greater value from core business competencies'. KMS supports the use of information through knowledge acquisition, knowledge sharing and knowledge application for improvement. This captured knowledge is then stored in knowledge repositories to be shared between individuals and departments. Subsequently, the knowledge is applied in business situations, and introduces other ideas and frames of reference to ultimately create new knowledge. As new knowledge is created, it needs to be captured and stored, shared and applied, and the cycle continues KM practices are applied to help the organization strengthen its competitive advantage, and assist knowledge workers to leverage their skills and their ability to offer business value. Therefore, KM is the process through which an organization uses its collective intelligence to accomplish its strategic objectives. KM process should start by recognizing and identifying the knowledge to be captured, shared and applied, to enable the organization and its workforce to achieve a sustainable and competitive advantage.

In fact, KM can provide several benefits to SMEs, such as better communication, improved customer service, faster response times, enhanced innovativeness, greater efficiency in processes and procedures, and reduced risk of loss of critical capabilities (Edvardsson & Durst, 2013). In this regard, Dotsika and Patrick (2013) underline that the implementation of KM initiatives in SMEs may be even more crucial, as knowledge can be their single key resource. For Taiwanese SMEs, they have to rely on their own ability to improve products and processes, providing customers with value-adding innovations and learning capabilities. Due to resource constraints, SMEs are particularly required to absorb knowledge from external sources (Durst & Edvardsson, 2012). KM can provide quick and easy access to external sources of knowledge and new and more intense communication channels with partner organizations. Furthermore, it can erase traditional constraints on SMEs innovation ability, while leveraging their flexibility and responsiveness.

2.2. KM success models

A stream of research has been conducted to identify IS success measures. DeLone and McLean (2003) introduced a comprehensive taxonomy in order to organize this diverse research. The DeLone and McLean (D&M) IS success model is based on the review and integration of 180 research studies that used some form of system success as a dependent variable. The model identifies six