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Interactions among factors influencing knowledge management in public-sector organizations: A resource-based view

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ABSTRACT

In public administration, knowledge management (KM) is increasingly advocated for improving novelty and agility in policy development and service delivery. This study identifies factors influencing KM, theorizes their interaction effects based on the resource-based view, and assesses the impact of KM on organizational effectiveness. Physical resources invested specifically to promote KM (e.g., KM technology) are hypothesized to interact with organizational and human resources to influence public organizations' KM capability in capturing, sharing, applying, and creating knowledge. Data collected from 101 public organizations indicate that senior management championship, social capital, and employees' job expertise enhance the effectiveness of physical KM resources while organizational structure has a suppressing effect. Among them, senior management championship has the strongest enhancing effect. The findings also support the general expectation that developing a strong KM capability improves organizational effectiveness. Clarifying the interaction effects has important implications for the theoretical understanding of KM in public administration, while providing empirical evidence for the performance impact of KM informs public management.

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1. Introduction

Knowledge is central to policy making and public services (Blackman, Kennedy, Burford, & Ferguson, 2013; Kim & Lee, 2006). Knowledge Management (KM) has been found to be instrumental in policy development (Riege & Lindsay, 2006), law enforcement (Chen et al., 2003), crisis and disaster management (Yates & Paquette, 2011), health and human services (Huang, 2014), and electronic government (Metaxiotis & Psarras, 2005), to name a few. As public organizations face increasing pressure to innovate in service delivery and improve performance (Hartley, Sørensen, & Torfing, 2013), KM is seen as potentially useful, especially for dealing with “wicked” public problems that are unstructured, lack one-off solutions, and require public managers to work, share, apply, and create knowledge across many agencies, organizations, and citizen groups (Dawes, Cresswell, & Pardo, 2009; Weber & Khademian, 2008). In line with this, Wiig (2002) suggests that KM can enhance decision making within public services, aid the public to participate effectively in policy decision making, build competitive societal intellectual capital capabilities, and develop a knowledge-competitive work force. With many public administration tasks and services being knowledge-intensive in nature (Papavassiliou,

Ntioudis, Abecker, & Mentzas, 2003; Willem & Buelens, 2007), excelling in KM can potentially enhance public organizations' effectiveness.

Two trends in public administration highlight the relevance of developing strong KM capability in public organizations. First, the mounting human capital crisis in many public organizations due to downsizing, resignation, or retirement calls for more effective capturing of knowledge to minimize knowledge loss (Hu, 2010; Liebowitz, 2004; Rubenstein-Montano, Buchwalter, & Liebowitz, 2001). For instance, a study of police work found that the mass retirement of baby boomers had led to the dissipation of critical knowledge (e.g., knowledge of services and functions provided by specialized police groups and units), knowledge of processes, procedures, and policies of handling special assignments, and knowledge of navigating the organizational bureaucracy to obtain expeditious results (Hu, 2010). Regular knowledge capture can retain intellectual capital, facilitate the training of new employees and their assimilation of institutional memory (Kim & Lee, 2006), and minimize disruptions to the functioning of agencies. In some public services, disruptions can be catastrophic. For example, at United States' National Aeronautics and Space Administration agency, personnel cuts involving the elimination of one-third of a space shuttle's program staff affected the agency's ability to support shuttle flights safely (Liebowitz, 2004). KM could help to mitigate some of the negative impact of employee turnover, which is often inevitable.

Second, as public organizations increasingly use information technology to collaborate with one another, there is a greater need to develop strong capabilities in sharing, applying, and creating

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knowledge. For instance, more and more transnational public-sector knowledge networks are being formed to facilitate knowledge sharing across national boundaries and collaboration on critical global issues. The success of these networks depends heavily on participating agencies' abilities in sharing and applying valuable knowledge (Dawes, Gharawi, & Burke, 2012). These networks also accelerate the flow and generation of knowledge within and across agencies, which places a greater demand on an organization's KM capability.

Both researchers and practitioners agree that investing in KM technology and motivating employees' participation by providing KM incentives are crucial first steps in developing KM capability (Brown & Brudney, 2003; Currie, Waring, & Finn, 2008; Dawes et al., 2009; Kim & Lee, 2006; Syed-Ikhsan & Rowland, 2004). Nevertheless, it is increasingly recognized that the impact of these KM-specific investments may be contingent upon organizational and social contexts. For instance, Dawes et al. (2009) emphasize that technology is necessary but not sufficient for the success of knowledge sharing in public-sector knowledge networks; Currie et al. (2008) observed in case studies of public hospitals that political considerations could inhibit knowledge transfer through KM systems; Seba, Rowley, and Delbridge (2012) interviewed police officers and found that issues related to trust, leadership, and structure were frequently identified as barriers to knowledge sharing. Despite the anecdotal evidence, there is still a lack of theoretical explanation and empirical assessment of the magnitude of the interaction effects. This study addresses the gap by proposing a model based on the theory of resource-based view to clarify how KM-specific investments interact with organizational and social resources to influence the development of KM capability, and empirically assessing the model.

Although KM is gaining a foothold at different levels of public administration globally (Janowski & Ojo, 2009), empirical evidence for the performance impact of KM is still limited. The growing investment of public resources into KM creates a pressing need to understand how the investments translate into performance improvement. This study proposes that investments in KM (e.g., technology) improve organizational effectiveness through enhancing KM capability. KM capability is conceptualized as the additive and formative aggregate of an organization's abilities in knowledge capture, sharing, application, and creation. Past studies have mostly focused on knowledge sharing (e.g., Amayah, 2013; Currie et al., 2008; Seba et al., 2012; Willem & Buelens, 2007). Our conceptualization is more encompassing and extends prior research by accounting for the reality that organizational KM involves more than knowledge sharing. In sum, the objectives of this study are: 1) examine how KM-specific investments interact with organizational and social resources to influence the development of KM capability and 2) empirically assess the impact of KM capability on organizational effectiveness.

2. Conceptual background

The theoretical basis of our proposed model, the resource-based view (RBV), will be described first. This is followed by a review of the literature to identify factors that are likely to influence KM and a categorization of the factors based on RBV. The conceptualization of KM capability is then discussed.

2.1. Resource-based view

RBV highlights the importance of resources and capabilities in supporting organizational survival, growth, and overall effectiveness (Barney, 1991; Wernerfelt, 1984). Organizations build upon and exploit the pool of resources they own or have access to. Three important categories of resources identified in RBV are physical, organizational, and human resources (Barney, 1991). Physical resources are typically tangible and consist of plant and equipment, raw materials, financial instruments, geographic location, and information technology (IT). Organizational resources include formal reporting structure as well as

planning, controlling, coordination, and management systems. Human resources include experience, judgment, insights, and social relationships of employees.

Research adopting RBV also recognizes that resources rarely act independently in creating value. For example, Wade and Hulland (2004) concluded that the performance effects of resources related to information systems depend on how they are complementary to organizational and human resources. Black and Boal (1994) note that resources can have enhancing or suppressing effects on one another: an enhancing relationship exists when one resource magnifies the impact of another resource. A suppressing relationship exists when the presence of one resource diminishes the impact of another.

RBV suggests that resources are transformed into outputs of greater value through various capabilities in deploying resources (Barney, 1991; Grant, 1991). Capabilities are repeatable patterns of actions in the use of resources to create value in the forms of products and services. Capability subsumes the notion of organizational competency and is rooted in skills and processes (Prahalad & Hamel, 1990). It can include skills such as managerial ability or processes such as knowledge sharing. Overall, RBV posits that resources affect the development of capabilities and strong capabilities are likely to improve organizational effectiveness.

RBV originated from the private sector but it is increasingly being applied as a theoretical basis for studying public organizations, which also rely on resources and capabilities to deliver public value to key stakeholders (Piening, 2013). For example, drawing upon RBV, Melián-González, Batista-Canino, and Sánchez-Medina (2010) identified key resources in a state university to be information technology, classrooms, information resources, networks with other organizations, and educational materials. The key capabilities include capturing the needs of the society, communicating the university's offer of training, and managing the university's teaching facilities. In a study of a public healthcare service provider, Pablo, Reay, Dewald, and Casebeer (2007) found that the capability of learning through experimenting is developed in response to the need for continual performance improvement in spite of reduced financial resources. RBV emphasizes the use of internally available resources and is clearly relevant to the public sector, which focuses on internal resources rather than competitive market behavior (Pablo et al., 2007). The inside-out perspective is especially appropriate for understanding how value is created from entities within public organizations.

2.2. Key resources in knowledge management

To identify resources that influence the success of KM, we reviewed prior studies of organizations in the public as well as private sectors. As summarized in Table 1, factors that have been found to influence KM in private organizations include KM technology, non-IT KM investment to promote KM (e.g., KM incentives, KM training), organizational structure, senior management championship, social capital, and job expertise. Among them, KM technology and KM training are acquired financially through purchases while KM incentives are typically offered in financially valuable forms (e.g., rewards, bonus, gifts). They are therefore considered as physical resources according to RBV. Organizational structure and senior management championship relate to the reporting structure and management mechanisms and are therefore organizational resources. Social capital and job expertise focus on interpersonal relationships and human capital and are clearly human resources.

KM technology is a physical KM resource that refers to the availability of information and communication technology facilitating the capture, sharing, application, and creation of knowledge (Lee & Choi, 2003). Technology is a key enabler of KM and modern KM initiatives typically involve the implementation of technologies such as electronic knowledge repositories, expert directories, and discussion forums. Technology can provide a virtual platform for KM to take place (Gold, Malhotra, & Segars, 2001) and affords efficiency in a way that is not easily

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