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A Proposed Model for Knowledge Management Implementation in Organizations

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ABSTRACT:
This article primarily aims to develop a model for knowledge management implementation in organizations. This research is based on the synthesis of the literature of knowledge management. The current literature of knowledge management provides evidence regarding the critical factors influencing effective knowledge management implementation. A theoretical model for knowledge management implementation is suggested and the theoretical linkages are formulated based on the model. Since knowledge management implementation is multidimensional and the interaction among organizational factors can lead to knowledge management strength in organizations, effort is made to explain the impacts of organizational factors on knowledge management implementation. The synthesis of literature indicates that to implement knowledge management in organizations, leaders can build a strong organizational culture and structure and also deploy information technology to create new knowledge and disseminate it around the companies. This research can contribute to practice by identifying the ways in which to implement knowledge management in organizations.

Keywords: knowledge management, organizational culture, organizational structure, information technology, change leadership

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INTRODUCTION

Knowledge has long been recognized as a valuable resource that is indispensable for organizations to grow and to sustain a competitive advantage in volatile environments (Mahdi, Nassar & Almsafir, 2019). Abubakar et al. (2019) also believe that knowledge is the source of wealth for organizations and for today's communities, is the engine of economic development.

Effective knowledge management is a key factor that can support organizations to create, acquire and utilize their knowledge resource and influence organizational effectiveness (Zheng, Yang & Mclean, 2010). The success of innovative organizations today is often a result of good knowledge and skills applied by their professional and technical employees (Mardani et al., 2018). Complex decisions are particularly knowledge demanding, and Litvaj and Stancekova (2015) maintain that decision making is an integral part of organizations, so knowledge management helps organizations in decision making. Knowledge management is the process of providing value through intangible assets of the organization. This intangible asset of knowledge is considered an essential factor and a vital resource of organizations. Future competitive advantages in the form of organization's ability will be reflected in knowledge management, and physical and financial capital give their place to conceptual and intellectual capital.

Organizations have become aware that with implementation of effective knowledge management they can utilize all their intellectual capacity to improve organizational performance. Effective implementation of knowledge management requires paying attention to infrastructures of key factors that facilitate and play catalyzer roles. Thus, organizations, at the time of designing and implementing knowledge management, should make sure that they are in possession of the required infrastructure (Merlo, 2016). These infrastructures are enablers, facilitators and activities that are considered vital in the implementation of knowledge management.

The problem here is what infrastructural factors are effective in knowledge management implementation? Are organizational structure, organizational culture and information technology the needed infrastructures for knowledge management implementation?

The literature shows that the first wave of knowledge management efforts were focused on information technology as the technical infrastructures and information technology support as a prerequisite to the success of knowledge design in the organization (Merlo, 2016). The lack of such infrastructure will cause a great amount of information and knowledge to vanish. The information technology-based approach assumes that knowledge is a set of data that is encodable. But in this approach values and beliefs, which are formulating components of information and knowledge, are ignored. This encouraged subsequent researchers to pay attention to other factors that are affecting knowledge management implementation. The factors include culture and organizational structure. Regarding organizational culture, Ahmady, Nikooravesh and Mehrpour (2016) maintain that the organization should make sure that the knowledge management implementation and the organizational culture are harmonized. Kathiravelu et al. (2014) also maintain that knowledge management implementation is effective only when it is enforced by organizational culture and such culture should encourage trust, cooperation and learning among employees. Sensuse, Cahyaningsih and Wibowo (2015) maintain that cooperation culture is considered an important infrastructure, because in such a culture people interact and share knowledge and ideas with each other. Trust is another aspect of organizational culture. The lack of high degree of trust causes people to be suspicious of other people's intent and behavior, and avoid sharing knowledge.

Thus, knowledge management is facilitated by developing trust-based relationships among people. Learning culture is another requirement of knowledge management implementation in which people

continuously play roles in the process of knowledge creation. It is an environment that allows employees to investigate the organization in action encouraging them to learn.

The results of some studies indicate that organizational structure, by balancing decentralization and formalization, facilitates the implementation process of knowledge management. Studies conducted on infrastructural dimensions of knowledge management indicate that there is not consistent thought on this matter, Thus, the lack of an appropriate model for knowledge management implementation, that would require infrastructures, has always been an important concern. The purpose of this research is to provide a comprehensive model that includes the critical elements of effective knowledge management implementation. The model can be of great importance to organizations. Through the model organizations can become well-prepared before the implementation of knowledge management, and they can manage the process faster, easier and more effectively. Studies show that these infrastructures are designed using different approaches. Since knowledge management is a multidimensional structure, paying attention to a comprehensive approach maximizes the efficiency of its implementation. In the former approach, cultural and human factors are addressed and in the latter approach, information technology is examined which has been the basis of the work in this research.

DEFINING KNOWLEDGE MANAGEMENT

Knowledge management has many definitions and because of its multi-dimensional concept it is difficult to define (Allameh, Zare & davoodi, 2011). It can be stated that these definitions are different because knowledge management has been looked at from different perspectives. Some of these definitions are focused on knowledge management processes and some others on objectives. Some of these definitions are provided here:

Table 1. *KM definitions*

Writer's Name	KM definitions
Bhatt (2001)	Management program which manages and diffuses a set of activities of knowledge-resources acquisition, creation, presentation, validation, distribution and application.
Gottschalk (2002)	Investigating research about implementation, distribution, creation and comprehension of knowledge.
Heisig, Mertins and Vorbeck (2003)	Knowledge management is a systematic management of knowledge that is related to the processes of creating, storing, transferring and utilizing knowledge.
Yang, Zheng and Viere (2009)	A set of processes for socialization, systematization, transformation, formalization, routinization, evaluation, orientation, deliberation, realization, institutionalization, indoctrination, externalization, internalization, inspiration and integration of knowledge.
Zheng, Yang and McLean (2010)	Knowledge management is a systematic and integrated process at the organization level that includes generating, sharing and utilizing activities of knowledge by people and groups to achieve organizational goals.

This research approaches knowledge management from the process perspective since this is the prevailing approach in knowledge management models (Cegarra-Navarro, Soto-Acosta, & Wensley, 2016; Ha, Lo & Wang, 2016).

THEORETICAL LINKAGES

Organizational Culture and Knowledge Management Implementation

Organizational culture is one infrastructural variable for knowledge management implementation (Feijoo, Ordaz & López, 2015). Organizations should establish an appropriate culture of trust and learning to facilitate the implementation of knowledge management. A trust culture increases trust and relationships among the members of an organization and people have more inclination to engage in the implementation of knowledge management. Leaders can contribute to a trust culture through considering both employees' individual interests and companies' essential needs. Organizations also need a culture of continuous learning to successfully implement knowledge management in a way that learning occurs in every level of the organization (Gagnon et al., 2015). In a learning culture, people look for problems and are encouraged to learn. Knowledge management can be supported by tools such as training. With the fostering of a learning culture, the capability for knowledge management implementation is enhanced.

To create learning capability in the organization, three concepts should be examined that are: learning, change in innovation and change in culture (Daneshfard, 2004). In doing this, leaders can take a change-oriented approach to identify the individual needs of their employees and develop a learning culture to generate new knowledge and share it with others. In the future, organizations that are continuously learning are more successful (Saadat & Saadat, 2016). Organizations need to have supporting relationships, participative efforts and to create a friendly atmosphere (i.e. cooperation culture) in order to foster knowledge management. In a such culture people support and help each other and share to easily utilize knowledge and provide a situation in which new ideas and procedure are created. Leaders can facilitate cooperation culture by developing relationships in organizations. Therefore, a review of the literature provides the following hypothesis:

H1: Organizational culture (trust, learning and cooperation) positively affects KM implementation.

Organizational Structure and Knowledge Management Implementation

The research literature shows that the organizational structure variable can encourage or discourage effective knowledge management (Said et al., 2014) and its two dimensions (formalization and centralization) are the key underlying variables that affect knowledge management implementation (Zheng, Yang & McLean, 2010). On the formalization dimension, knowledge management implementation has a relationship with the degree of rules and regulations of decisions and work relations (Chen & Huang, 2007). Some experts believe that flexibility and less emphasis on work regulations extend idea forming and its utilization, and an increase in flexibility of organizational structure may bring great success to knowledge management implementation (Damanpour, 1991). Low formality allows the organization's members to interact and establish communication in order to implement knowledge management. In other words, the organization's structure should smooth the course of knowledge and allow knowledge to have a deep effect on performance. Some other experts believe in high formality in knowledge management implementation (Eisenhardt & Santos,

2006). Formalization decreases vagueness and cooperation improves cooperativeness among employees of the organization, because it forms the structure of interaction.

Thus, it can be concluded that formalization and knowledge management implementation are related. In the centralization dimension, knowledge management implementation is related to decision making authority in the organization. Decentralization structures distribute decision making authority, in such structures the number of creative solution are significantly increased, the communication channels in centralized structures are very slow and time consuming but a decentralized structure may provide an atmosphere in which employees participate voluntarily in knowledge management implementation. Thus, leaders need to re-design organizational structure to effectively implement knowledge management and develop a more conducive environment. More emphasis on formalized and centralized structures can negatively impact leaders' ability in implementing knowledge management. Therefore, a review of the current literature provides the following hypothesis:

H2: Organizational structure (centralization and formalization) negatively affects KM implementation.

Information Technology and Knowledge Management Implementation

Information technology and the support for it can have a relationship with knowledge management implementation. Tools such as the internet, intranet and extranet support knowledge management implementation. The purpose of technology development is to solve a problem or difficulty in society or to better utilize the resources and create growth opportunities (Tohidi, 2011). The leaders of leading and knowledge focused organizations employ information technology as a driving force and an efficient and effective factor in the success of knowledge management implementation, in other words, information technology is one of the success factors in knowledge management success (Mao et al., 2016). Information technology can play different roles in supporting knowledge management, and knowledge management projects cannot be effective without the support of information technology. Thus, it is apparent that leaders need to develop technological infrastructures to store and retrieve knowledge. Therefore, a review of the current literature provides the following hypothesis:

H3: Information technology (IT support) positively affects KM implementation.

RESEARCH BACKGROUND

Many studies have been conducted on the subject of infrastructures and key factors of knowledge management implementation. For example, Merlo (2016) has conducted a research in which the main question was:

- What factors are effective in the success of knowledge management implementation?

The hypotheses of this study were:

- Organizational factors have direct and meaningful effect on knowledge management success.
- Information technology has an effect on knowledge management success.

The result of this study indicated that organizational factors such as corporate structure and information technology have an effect on knowledge management implementation.

Another research under the title of "A Framework for the Implementation of Knowledge Management in Supply Chain Management" was done by Shakerian,

Dehnavi and Shaterib (2016). The findings indicated that to implement knowledge management, the needed infrastructures were:

Cooperation infrastructure is determined by the organization through designing cooperation culture framework, human asset infrastructure that focuses on the people's participation and inclination. Organizations should provide motivation for people, reward them and train employees. Human asset infrastructure helps to identify and utilize the employees' special skills. People can create value through having motivation and employing their skills, organizational memory infrastructure, which ensures that information and knowledge are available at any time and to anybody. Knowledge transferring network infrastructure relates to information and knowledge transferring factor. Organizational intelligence infrastructure includes integrated information systems for collecting and analyzing data. (P.176)

Another study was done by Allameh, Zare and davoodi (2011) about key and underlying factors needed to implement knowledge management. The tools for collecting data were surveying top managers, and variables such as organizational culture and information technology were considered important.

Furthermore, in a study conducted by Yaşlıoğlu, Şap and Toplu (2014), some of the infrastructural factors for knowledge management implementation were identified, the factors were:

Organizational culture supports knowledge management to encourage cooperation in the organization and to create organizational trust through which the process of knowledge management implementation is facilitated. The other finding of the research was that learning culture allows people to investigate about current affairs of the organization. (P.1211)

Other key and underlying variables included IT infrastructure and individual characteristics. Huang and Lai (2012) identified two key factors about knowledge management implementation. These factors included a technological infrastructure and individual characteristics such as educational level, tenure and participation.

Moreover, in a study conducted by Leal, Cunha and Couto (2017), infrastructural and key factors of knowledge management implementation were examined. The findings of this study indicated that five factors are considered important in knowledge management implementation. These factors were: organizational culture, employee motivation, peer recognition and organizational commitment.

THEORETICAL MODEL DEVELOPMENT

The theoretical model includes organizational structure, organizational culture and information technology.

Figure 1.
Theoretical Model

CONCLUSIONS

This research shows that organizational culture is a strategic necessity for knowledge management implementation (H1).

Learning, cooperation and trust culture were determined as infrastructures. This kind of culture opens a new path for creation of knowledge and by emphasizing the development of a learning culture, organizations increase knowledge creation, transmission and utilization activities. Employees can have an active role in implementing the knowledge management process. Thus, it can be said that by improving learning culture level, knowledge management implementation is facilitated.

Therefore, organizations should strengthen learning culture through employing learning tools such as developing comprehensive learning system, designing individual and group learning system, developing performance appraisal system based on learning and employing innovation and problem solving techniques. The synthesis of the literature also shows that trust culture is also an important infrastructure for knowledge management implementation. The reason for this may be the fact that as the level of trust is high in the relations among organizational members, people are more inclined to exchange knowledge and creation of new ideas. Trust culture is one of the essentials of knowledge management and the knowledge management exchange activity can cause knowledge to be created through reciprocal trust. Reciprocal trust in an organization is a vital facilitator in knowledge exchange.

Therefore, it is essential that organizations provide for a general trust environment. In addition, cooperation culture is another important infrastructure for implementing knowledge management. Cooperation culture is an important infrastructure for knowledge management implementation and developing this culture can put an end to the impediments of transferring knowledge.

Furthermore, organizational structure is related to knowledge management implementation (H2). Formalization and decentralization are considered infrastructures of knowledge management implementation. This means that the relative emphasis on answerability causes the organization to comply with some rules and regulations of reporting but to be compatible to environmental changes and benefit from employee's experience and ideas organizations have to be innovative and creative. This would argue for organizations to have flexible structures in creating, transferring and implementing knowledge in order to achieve effective knowledge management. Decentralization and delegation of authority to lower levels in the organization facilitate idea flow and increase participation of employees, they are exposed to more ideas and experiences which can lead to developing creative and innovative ideas and employing knowledge.

Another point in the research was related to information technology as an infrastructure which was identified as a facilitator (H3). This infrastructure is most related to knowledge transference which suggests organizations can benefit from information technology capabilities in disseminating knowledge around the companies.
The synthesis of the literature shows that there is a relationship between organizational culture and knowledge management implementation. Leaders as change agents can manipulate organizational factors (i.e. culture, structure, and information technology) to improve organizational knowledge management performance.

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