Organizational Innovation By Knowledge Management Processes In Palestinian Universities

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Abstract: In today’s environment which is characterized by complex and constant change, managing knowledge and knowledge resources as well as encouraging a culture of knowledge sharing in organizations both have become important issues in many organizations. Knowledge is one of the best assets that is able to be transmitted into new services and innovative products that become a cause of competitive advantage for organizations. In this era of knowledge and technology, innovation is seen as the most important resource for competitive advantages for most of the leading organizations. Hence, these organizations are trying to develop their innovative performance in order to reach the competitive boundaries. One of the most effective methods in this area is to ensure a successful implementation of knowledge management (KM) in organizations. In this regard, this study is to provide an answer to the main question on how KM contributes to organizational innovation (OI). The effect of three stages of KM processes including (knowledge acquisition, knowledge sharing and knowledge application) on two types of organizational innovation (Product innovation and process innovation) is investigated. The research method followed in this study is descriptive and correlational. Statistical population consists of (854) academic teaching staff in five public and private Palestinian universities. Sample was chosen randomly, (261) questionnaires were analyzed out of (290) distributed questionnaires. The results suggest that KM Processes with the two reviewed dimensions of OI have a positive and significant relationship, as a result, an effective implementation of KM processes in universities supports the development of organizational innovation. On this regard, practical recommendations will be provided to managers, decision makers and researchers.

Index Terms - Organizational Innovation, Knowledge Management Processes, Universities, Palestine

1. INTRODUCTION

In our time, it is very critical for organizations to be innovative. Faced by different challenges in this knowledge era, organizations are persistently struggling to attain and maintain their competitive advantage. Many factors are shaping the environment of these organizations and forcing them to consider their activities, practices and processes including the ones related to Knowledge Management (KM). These factors may include; the tough competition, the changing customer needs and preferences, the disruptive technologies, and the new models of business (Akram, Siddiqui, Nawaz, Ghauri, & Cheema, 2011). Thus, the need of organizations to intentionally manage the knowledge in the organizational setting is seen nowadays as an urgent issue to improve their innovation. However, there is a growing awareness of the significance of KM by leaders, academics and scientists worldwide, as it helps to enhance the energy exerted to achieve innovation and creativity (Al-hayaly & Alnajjar, 2016; Yaseen, 2007). It is recognized that organizations having effective KM processes are more innovative than those which are not effectively practicing KM (Darroch, 2005).

Studies in the field of KM have been developing surprisingly nowadays where knowledge is seen as a key organizational resource (Chen, Feng, & Liou, 2004; Holsapple & Joshi, 2000), thus, it has become in the center of the mechanisms followed by organizations in order to facilitate the performance of these organizations to attain the competitive advantage in this knowledge-based era (Clarke & Turner, 2004; C.-L. Huang, 2011). One of the significant contributions achieved by KM is promoting innovation in organizations. It is a main concern for organizations to become innovative, survive and achieve a competitive advantage which will make them ready to adapt quickly to the rapid- changes taking place in around the world and the fast transformations of today. The literature has supported the great need to implement effective KM processes from the perspective of organizations and higher education institutions (HEIs) (S & Mary, 2017).

The effect of KMP on promoting OI has been approved by many scholars in this field, however, there are a few studies in this area (Tabatabaei, S.A.H., Aqdam B. G. Mehrzadegan, E. & Kheiri, 2015) and the available literature is not rich enough in relation to developing countries like Palestine, and the work done in the education sector is considered rare. Therefore, the main objective of this study is to investigate the effect of knowledge management processes (KMP) on Organizational Innovation (OI) in Palestinian universities. This paper focuses on the efforts should be done regarding KMP undertaken by universities to perform innovative activities.

2. LITERATURE REVIEW

2.1 Knowledge Management

KM is recognized as one of the key issues concerned by organizations in business management (Nguyen, 2011; Surat Chumjit, 2012). The concept of the knowledge is considered complex with the existence of various approaches of KM which resulted in the lack of an attitude towards it (J. Yang, 2010). KM can be defined as a process by which organizations are able to identify, select, or organize, publish and transmit vital information and skills that are considered part of the organization’s history and which can be found as an unstructured form within the organization (Nouri, Ghorbani, & Soltani, 2017). It also entails all the processes including identifying, sharing and creating knowledge. KM can be classified differently. KM is related to the effort done to discover latent assets that reside in people’s mind then turning it to organizational assets in order for those responsible for decision-making to access this value and make full use of it (Wilson, 2002).
2.2 Knowledge Management Process

Knowledge Acquisition
Acquisition-oriented KMP are those processes aimed at obtaining knowledge (Gold, Malthora, & Segars, 2001). Different terms have been used to identify these processes such as acquiring, seeking, or generating, creating, or capturing and collaborating. All these terms agree on a common theme, which is, Knowledge accumulation. For example, (Liao & Wu, 2009) defined knowledge acquisition as “the process of collecting knowledge from external environment then melding the gathered knowledge for the benefit of the organization.” The term “acquisition” means “the ability of an organization to identify, acquire, and store the essential knowledge to perform the organizational operations” (Zahra & George, 2002). Knowledge acquisition also involves various aspects such as: create, sharing, and disseminate knowledge (Moslemib, 2013). Acquisition refers to the ability of an organization to identify, access, then collect knowledge from internal and external resources that is crucial for performing its activities (Chiu & Chen, 2016; Gold et al., 2001; Zahra & George, 2002).

Knowledge Sharing
Whenever knowledge has been created, then it needs to be shared among members of the organization, in order to act as a base for innovation and creating knowledge in the future. Creating new knowledge and sharing it aiming at creating knowledge will be possible by cooperation of people and synergy caused by combining the experiences and the backgrounds of those members (Tabatabaei, S.A.H., Aqdam B. G. Mehrzadegan, E. & Khei, 2015). Previous literature defines knowledge sharing as “a process of diffusion of knowledge across the organization”. It is spread among different people, groups or organizations when they all have communication channels (Alavi & Leidner, 2001). Many scholars recognized the process of knowledge sharing as being equal to knowledge flow, they believe that this flow of knowledge has five key pillars: the value of the knowledge source, the source readiness to share knowledge, media wealth of communication channels, recipients willingness to get knowledge in addition to being able to compensate the recipient (Gupta & Govindarajan, 2000). The employees’ sharing of knowledge employees enables the organization to enhance its innovation capability (Han & Anantatmula, 2007; Nawaz, 2014). As for (Burke, El Harbi, Anderson, & Amamou, 2011), knowledge sharing is extremely important for the success of an organization so that they can develop well established systems in order to share.

Knowledge Application
Application-based processes are the processes aimed at the actual use of knowledge. Remarkably, little investigation has been made to the outcomes of effectively applying knowledge (Ngah, Tai, & Bontis, 2016). There are some process characteristics that are related to the application of knowledge in literature which include; “storage, retrieval, application, contribution and sharing” (Almeida, 1996; Appleyard, 1996). It has been recognized that the ultimate goal of KM is to perform application of knowledge in order to improve organizational performance. As knowledge is not valuable in itself, but will be valuable when it is applied (Nguyen, 2011).

2.3 Organizational Innovation
Nowadays, the process of globalization happening around the world caused different challenges to organizations by increasing the competition, developing information technology, affecting the quality of products and services, increasing customer orientation, and inefficient administration. Organizational innovation (OI) is considered one of the best effective strategies followed to overcome those challenges face by organizations in this world of economy and fast changes (Nouri et al., 2017). The concept of “innovation” was first presented by (Schumpeter, 1934) who proposed it as the process to create new brands, new products, new services and processes and it is presented as a factor which influences economic development. Since that date, many scholars have defined it in different ways as being a concept which works for organizations’ long-term survival and, hence, a key factor for organizations (Kamaşak & Bulutlar, 2010). Innovation refers to “the process of the development and improvement of products, services, processes and markets with the aim of increasing value” (Marins, 2008). As many functions, innovation is considered a management process that requires the existence of good tools, rules and procedures to be used by the organization so it achieves its long-term goals (Davila, Epstein, & Shelton, 2012).

Furthermore, the interest of decision makers have been increased in developing knowledge-based innovation to be a driving force of the economic development (Nouri et al., 2017). Today, competition is becoming more complex, so innovation seems to...
be a main source advantages of organization in order to survive, by introducing new and innovative ideas (Golgoni & Najafzadeh, 2014).

In this research, after reviewing related literature done in relation to the field of organizational innovation, and by reviewing the different models introduced in this regard, the dimensions that seem to be more common among researchers and experts and have been chosen as the dimensions ofOI for this study are product innovation and process innovation which both have been frequently used in the field of organizational innovation.

- **Process Innovation:** is the component which provides a tool for maintaining and improving quality and saving costs as well as involves adopting new or creative methods of production, distribution or delivery of service. Actually, it means the extent to which organizations adopt new technologies and test new ways of performing work.

- **Product Innovation:** is the activity involved around producing new goods (products) or services in order to build new markets or attain new customers (Al-husseini, 2014). Product Innovation has been indicated as a substantial motivating factor for organizations to create value and achieve competitive advantage in this complex and rapidly changing environment (Utami, 2013).

### 2.4 Knowledge Management Processes and Organizational Innovation

Effective KM within universities indicates that by participating in knowledge sharing, members will be able to avoid exorbitant mistakes, make innovation much easier, save time through not ‘reinventing the wheel’, and make more decisions (Loh, Chee, Menkoff, Chay Yue Wah, & Hans-Dieter Evers, 2010). It is noted that knowledge, being an important asset in an organization, needs to be managed to promote more innovation (Bordoli & Islam, 2012).

Acquiring knowledge from outside and inside environment offers opportunities for the organizations to combine existing knowledge and create new knowledge (Raz, Ghorbani, & Elahi, 2012). The interaction between new obtained knowledge with existing knowledge will modify organizational knowledge storage and increase existing knowledge’s depth. Consequently, it will rise the potential of getting new innovative outcomes (Honarpour, Jusoh, & Nor, 2012).

Sharing Knowledge and innovation are positively related as innovation consists of “an ongoing process of creating new and unique knowledge that can be fostered through knowledge sharing” (Ozlaš & Donaldson, 2012). Literature indicated that the value of the individual and organizational knowledge primarily lies in the effective application of knowledge that is implicit. Innovation also requires applications and combining specific knowledge and specific inputs obtained from different areas. Organizations involved in deep application of knowledge, are able to constantly change the organizational expertise towards products or services (Sivashpour, Hosseingolizadeh, & Maharati, 2015).

### 2.5 Knowledge Management for Universities

There is an increasing recognition of the significanc of KM by thinkers, academics and scientists around the world, as it contributes to improving the energy for innovation and creativity (Yaseen, 2007). Universities are considered the centre of HEIs having a significant role in investing in increasing innovation and creativity, which in turn increased the need of universities to manage their knowledge, for many reasons: KM contributes to promote innovation initiatives by the teaching staff in the universities (Al-hayaly & Alnajjar, 2016). KM also helps to enhance the psychological empowerment of the staff members. It also increases the university capability to support the economic development to be play effectively the economic role by supporting the stakeholders and the managers, and developing the infrastructure to make proper use of technology (Brewer & Brewer, 2010). KM also helps to develop the performance of university and associates it to the society, fulfill the needs of the market, set relevant curricula and effective teaching methods which benefits the society (CHO, 2011; Rohendi & others, 2012).

### 3. OBJECTIVES OF THE STUDY

The general objective of this study was to establish the effect of knowledge management processes on enhancing organizational innovation in the education sector in Palestine. As well as determining which process of knowledge management has the best influence on organizational innovation in Palestinian universities.

### 4. CONCEPTUAL MODEL

The study conceptual model introduced in Figure 1. was developed depending on the literature review of this study. It consists of two constructs. The independent construct which is Knowledge management processes (acquisition, sharing, and application). While Organizational Innovation (product and process) is the dependent construct for this study.

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**Fig. 1:** Conceptual model
**Major Research Hypothesis:**

Based on the literature discussed previously, the hypotheses of this study can be formed accordingly as follows:

**H1:** Knowledge management processes have a significant positive effect on Organizational Innovation in universities in Palestine.

**Secondary Research Hypotheses:**

**H1a:** Knowledge Acquisition has a significant positive effect on Organizational Innovation in universities in Palestine.

**H1b:** Knowledge sharing has a significant positive effect on Organizational Innovation in universities in Palestine.

**H1c:** Knowledge application has a significant positive effect on Organizational Innovation in universities in Palestine.

5. **RESEARCH METHODOLOGY**

Aiming to achieve the research objective previously mentioned, the researcher decided to use the quantitative research approach as being the most proper approach to investigate the relationship between the variables (Rudestam & Newton, 2001). Hence, the researcher developed a survey questionnaire asking academic staff members of universities to evaluate the processes of knowledge management and organizational innovation in their institutions.

5.1 **Study Population and Sample**

The population of this study includes (5) public and private universities located in Gaza Strip (Palestine). The sampling unit and analysis of the study (respondents) is based on (Krejcie & Morgan, 1970), the sample required for the population equals (261). The target respondents were teaching staff working in the target institutions for their important role in the activities of knowledge management. The most proper sampling technique used in this study is the random sampling.

5.2 **Study Instrument**

The instrument used in this study is a self-administered questionnaire developed by the researcher after reviewing the literature in relation to KMP and the OI, was adapted to the context of higher education. The questionnaire included 3 parts and started with a cover page introducing study variables and the researcher information as well as confidentiality and privacy insurance statements; the first asked the demographic information of respondents and institutions, the second part measuring knowledge management processes by a total number of items equal to 12 items, while the third part included 10 items measuring product and process innovation. The scale used to assess the questions of the last two parts of questionnaire is a five-point Likert Scale, ranging from strongly disagree (1); disagree (2); Neutral (3); agree (4); and strongly agree (5). For this study, (290) questionnaires were distributed and out of them (273) returned questionnaires, only (261) were usable for analysis.

5.3 **Instrument Validity and Reliability**

Review of literature related to the variables of the study was conducted to ensure the validity of the instrument. In addition to asking some experts to review the study instrument and provide the researcher with their opinions and recommendations regarding on which the researcher depended to finalize the questionnaire to fit the current study. The researcher also conducted a pilot test on a small sample of (35) employees to confirm the clarity of items used. The instrument reliability was tested by the Cronbach’s alpha coefficients in order to insures the internal consistency between the questionnaire items. Cronbach’s alpha values were (0.81) for the knowledge management processes items and (0.85) for the items of Organizational Innovation.

6. **RESULTS AND DISCUSSION**

6.1 **Analysis on Respondents’ Profile**

The final analysis of respondents' demographic profiles after the process of data screening process consists of (261) samples. The sample of this study included 81.2% males and 18.8% females, the majority of respondents 69.3% is in the age range between 31 and 50 years, a count of 48% of respondents have an experience up to 10 years, while 82.7% of them have a master degree or PhD degree, a count of 80.2% are faculty members, and the respondents are from five public and private Universities in Gaza-Strip of Palestine.

6.2 **Validity and Reliability of Constructs**

As the research uses PLS analysis, it is essential to perform some validity and reliability tests for the measurement model which includes composite reliability, outer loading, convergent validity, and discriminant validity (Hair Jr, Hult, Ringle, & Sarstedt, 2016; Sekaran, 2003). As shown in Tables 1a, and 1b reliability is tested using composite reliability and the results show that the values range between 0.809 to 0.915 which are above the threshold of 0.7. Therefore, the internal consistency is proven and the model is valid. VIF values are between 1.14 and 2.98, which shows that there is no collinearity between variables of different levels as all the VIF values are between 0.2 and 5.0, which satisfies the threshold value. In addition, the items must have proper loading within their associated construct and have to be more than 0.708 with no cross loading. The results in the table show all loadings are above 0.708 which is accepted based on the rule of thumb. The average Variance Extracted (AVE) values are all above 0.5 with the range of 0.587 to 0.662, therefore convergent validity is achieved. Finally, Table 2 shows the matrix of Fornell-Larcker criterion, which indicates that there are no discriminate validity issues. This study satisfies the rule of thumb proposed by Hair Jr et al. (2016).

<table>
<thead>
<tr>
<th>construct</th>
<th>Item</th>
<th>Loading</th>
<th>AVE</th>
<th>VIF</th>
<th>Composite Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Management</td>
<td>KMP_AC1</td>
<td>0.842</td>
<td>0.662</td>
<td>2.942</td>
<td>0.887</td>
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<tr>
<td>Process - Acquisition</td>
<td>KMP_AC2</td>
<td>0.852</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Knowledge Management Process - Application</td>
<td>Item</td>
<td>Loading</td>
<td>AVE</td>
<td>Composite Reliability</td>
<td></td>
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<tr>
<td>-------------------------------------------</td>
<td>------------</td>
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<td>-------</td>
<td>-----------------------</td>
<td></td>
</tr>
<tr>
<td>KMP_AC3</td>
<td>0.821</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>KMP_AC4</td>
<td>0.734</td>
<td></td>
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<td></td>
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<tr>
<td>KMP_AP2</td>
<td>0.825</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>KMP_AP3</td>
<td>0.711</td>
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<tr>
<td>KMP_AP4</td>
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<tr>
<td>Knowledge Management Process - Sharing</td>
<td>Item</td>
<td></td>
<td></td>
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<tr>
<td>KMP_S1</td>
<td>0.699</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>KMP_S3</td>
<td>0.833</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>KMP_S4</td>
<td>0.848</td>
<td></td>
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</tbody>
</table>

Table 1b: Construct Reliability and Validity of Dependent Variable

<table>
<thead>
<tr>
<th>construct</th>
<th>Item</th>
<th>Loading</th>
<th>AVE</th>
<th>Composite Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Innovation</td>
<td>IN_PS1</td>
<td>0.822</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>IN_PS2</td>
<td>0.815</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>IN_PS3</td>
<td>0.856</td>
<td></td>
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<td></td>
<td>IN_PS4</td>
<td>0.801</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>IN_PT1</td>
<td>0.701</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IN_PT2</td>
<td>0.737</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IN_PT3</td>
<td>0.708</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Discriminant validity – Fornell-Larcker criterion

<table>
<thead>
<tr>
<th>IN</th>
<th>KMP_AC</th>
<th>KMP_AP</th>
<th>KMP_S</th>
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<tbody>
<tr>
<td>IN</td>
<td>0.779</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KMP_AC</td>
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<td>0.814</td>
<td></td>
</tr>
<tr>
<td>KMP_AP</td>
<td>0.316</td>
<td>0.327</td>
<td>0.766</td>
</tr>
<tr>
<td>KMP_S</td>
<td>0.393</td>
<td>0.811</td>
<td>0.346</td>
</tr>
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</table>

6.3 Structural Model

Predictive power R² and predictive relevance are used to measure the overall power of the mode. (Hair Jr et al., 2016). Figure 2 presents the structural model based on the PLS algorithm analysis showing the predictive power and values of the path coefficient of the paths within the proposed model. It can be realized that the proposed determinants explain 21.2% of the variance in the organizational innovation. The results are supported with Predictive relevance Q² of 0.115. The model is considered moderate in predictive power and has a small predictive relevance.

Table 3 shows the path coefficient values associated with the proposed hypothesis based on the PLS bootstrapping analysis. The rule of thumb as proposed by (Hair Jr et al., 2016) says that T-statistic must have a value of 1.96 or higher, which is equivalent to the significant value of 5% or less. The three proposed relations H1a, H1b, and H1c are all accepted. H1a proposes the positive relationships between knowledge acquisition and organizational innovation (Beta = 0.245; T-statistics = 4.31). H1b proposes the positive relationship between knowledge application and organizational innovation (Beta = 0.192; T-statistics = 4.86). H1c proposes the positive relationship between knowledge sharing and organizational innovation (Beta = 0.128; T-statistics = 2.04).
Table 3: Structural Relationships and Hypothesis Testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Path Coefficient</th>
<th>T Statistic</th>
<th>Sig Value (1 Tailed)</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>KMP_AC -&gt; IN</td>
<td>0.244621</td>
<td>4.313901</td>
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</tr>
<tr>
<td>KMP_AP -&gt; IN</td>
<td>0.191866</td>
<td>4.86393</td>
<td>0.00001</td>
<td>Accepted</td>
</tr>
<tr>
<td>KMP_S -&gt; IN</td>
<td>0.128004</td>
<td>2.035974</td>
<td>0.021282</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

As the three-sub hypothesis are all accepted based on level of significance at 5%, knowledge management process have significant positive effect on organizational innovation in Universities in Palestine. The precedence of the approved determinants of the organizational innovation variance are knowledge acquisition, followed by knowledge application, then knowledge sharing.

7. CONCLUSION AND RECOMMENDATIONS

In this study, it has been examined the relationship between processes of KM and organizational innovation. One main hypothesis and three sub-hypotheses were formulated according to the study model, which all of them have been accepted based on the data analysis. Results of the research indicate that the KMP has a significant and positive effect on OI in the Palestinian Universities. These findings are aligned with previous studies, for example; the studies of (Liao & Wu, 2009; McAdam, 2000; Tabatabaei, Aqdad, Mehrzadegan, & Kheiri, 2015; D. Yang, 2011). Indicating that organizational innovation is a significant source of competitive advantage, its process includes acquisition, sharing, and application of new knowledge. Innovation of any organization is related to its ability to use and apply its own knowledge resources. KM is concerned with more effective application of knowledge and expertise in order to add value and increase organizational innovation.

Universities management and its main stakeholders have to practice effective KM and the ensure more advancement of knowledge sharing culture by the top management support and providing of sufficient resources, appropriate organizational structures such as (appointing of a main knowledge officer as a head of a KM unit, establishing a reward system which encourages knowledge sharing and innovation promoting).

REFERENCES


