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Can Technological, Organizational and Individual Antecedents Together Optimize Knowledge Sharing for Establishing Institutional Innovation Capabilities?

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ABSTRACT

Faculty members' are the intellectual leader for developing societies. It is believed that the new knowledge is created and transferred to the people in the Universities. Although, relatively still an infancy field of research, studies in Knowledge Management (KM) and Knowledge Sharing (KS) continue to be on the boost. Knowledge Sharing and Innovation are also whispered to be inter-related and could influence organizational performance. Studies show that individual's knowledge does not renovate simply into institutional knowledge even with the use of knowledge depository. Furthermore, it is also believed that Information and Communication Technology (ICT) can enhance knowledge sharing with the integration of individual behaviour and diverse organizational factors. As a comparatively new field of research, studies on knowledge sharing based on Information Systems (IS) in developed countries is also on the increase. Unfortunately, knowledge sharing research in the higher academic institutions in developing countries were mostly found to be given trivial considerations. Therefore, the aim of this study is to investigate whether the technological, organizational and individual factors together can help increase Knowledge Sharing in HEIs and contribute it in augmenting organizational performance in developing countries. The methodology of this study was subjective/argumentative i.e., idea generation in Information Systems (IS). The findings of the study reveal that utilizing the technological, organizational and individual antecedents together for organizational knowledge sharing can augment overall organizational performance. The study explored the antecedents that increased innovation in organizations. These were the individual intention, attitude, self-efficacy for training and development, subjective norm, organizational trust, leadership, organizational rewards, organizational culture, social network, and use of ICT. It also reveals that KS could be increased in the organizations utilizing selecting and initiating proper antecedents for practicing KS. We desire to extend this study to further an empirical investigation on the same issue to validate the research results.

Keywords-- Academics, Universities, Knowledge sharing, Innovation, Developing countries

I. INTRODUCTION

Knowledge is power and the source of all actions in the organizations [1, 2]. The concept of KS and institutional innovation capability are now the most emerging issues in KM research for achieving competitive advantage. Although, KM research has been very popular for the effectiveness of business organizations in developed countries for more than two decades, yet according to [3], research in KM in the HEIs is still at immaturity stage. The extant literature in KS shows that, in developed countries, universities are now immensely undertaking KS research in the KM field to find links to institutional innovation capability. Recent literature on KM in developed countries suggests that KM phenomenon is continuously being investigated in the United States of America (USA), Canada, Netherlands, United Kingdom (UK). It is interesting to note that presently knowledge workers in the USA constitute 70% of the total workforce. Over the past two decades, there has been a dramatic increase in scientific activity as well as economic advancement based on ICT. The ICT gave birth to the notion of new economic development [4]. The past decade has also witnessed the rapid development of KM research in many organizations in Europe and America. Many universities in Europe focused on institutional innovation through KS practices using ICT to promote knowledge sharing. For instance, Germany had launched a programme

named "EXIST" while Moscow State University, Russia had launched "Formula of Success" for KS practices [5].

Previous studies show that individuals' behavioural intention has a potential impact on knowledge sharing activities. Most of the previous KM and KS researches have overlooked the technological dimensions of ICT for KM and KS. Moreover, individual, organizational and technological determinants for KS research as a whole in HEIs have not been given adequate emphasis in developing countries. Presently, KM literature stresses on KS that with Individual, organizational and technological antecedents altogether can improve organizational performance [7], and it can help explain the level of KS performance in the organizations. Whereas, it is still hard to find in the extant KM literature. The methodology of this study is subjective/argumentative i.e., idea generation in Information Systems (IS). The aim of this study is to investigate whether the technological, organizational, and individual factors together can help increase Knowledge Sharing in HEIs and contribute it in augmenting organizational performance in developing countries. This article is divided into five sections. (1). Introduction–describing the importance shortly and general impression of the significance of technological, organizational and individual antecedents for KM and KS practices; (2). Literature review of past studies for KS status in organizations; (3). Research objectives and methodology of the study; (4). Discussions and Findings; and (5). Conclusions.

II. LITERATURE REVIEW

In the knowledge-based-view of the organizations, knowledge is considered potential to improve organizational performance and competitive advantage [8, 9] and to the long-term sustainability and effectiveness of organizations [10]. Knowledge has been considered very significant component and preliminary resource in the organizations. Knowledge sharing, for this reason, is very important for an organization. This is because KM has systematic power to resolve the problems in the organizations.

[6] Identify KS behavioural climate as incentive or drive, information management ability as capability and organizational IT support as chance. Their investigation reveals that a creativeness behavioural climate has a major influence on KS behavior and perceived organizational use of IT to back up knowledge works stand strong impacts on information management ability and advocating that IT has indirect influences.

2.1 KM Issues among HEIs in Developing Countries

The author Jennex (2008) finds that the current problems in the management of knowledge combined with cutting-edge research in today's organizations to create, capture, transfer, and use of knowledge of cultural, technological, organizational, and people around the issue. Commendable reference topics such as organizational memory, KM, KS and transfer of enterprises, promoters and inhibitors, as well as emerging technologies of KM provides the most important information, which is set in a variety of practitioners and academics provide important research data.

Diverse forms of HEIs in developing countries are involved in education management and service delivery. Certainly, these HEIs are necessary for integrative fields for studying, researching and learning about the knowledge assets that is human intellectual capital and technology. If we find the past study, especially in the developing countries in the last era, educational institutions worked in a comparatively constant setting and eventually were not under pressure. The comprehensive background has changed the decision and systems of HEIs.

Actually, in comparing too many other developed countries, HEIs in the developing countries is not rich and diverse, providing by different types of public and private universities. But it is rich and diverse in the UK. Even though, the United Kingdom has a well-developed and widespread business backing infrastructure which is more helpful for the process of education and institutional innovation. For example, the report of the UNDP on enhancing the innovative performance of the Firms [15] is noteworthy. Moreover, public organizations in developed countries are focusing more on KM practices than in developing countries. Yet, in the age of globalization, there has the potential role of academics' in knowledge sharing in the universities ambiance to bring prosperity to making knowledge base society in developing countries followed by developed countries. According to the [16], there is only UAE, no another country from the developing countries listed in Top 10 of Global Competitiveness in higher education and innovation.

Usually, knowledge sharing happens at the person's level or organizations level. On a personal level, organizational staffs interact with colleagues or other people of the organizations to assist them to get things could be done better to expedite more effective and skilled way for sharing knowledge. Conversely, knowledge sharing for an organization is to capturing, organizing, reusing and transforming expertise within the institution so that this knowledge might be used by other staffs in the organizations. Numerous studies have specifically shown that KS is a significant procedure of innovation. For this reason, it allows an organization to develop innovation and institutional performance [7].

2.2 Innovation status between Developed and Developing Countries

Table 1

Higher Education & Training Top 10	
The Global Competiveness Report 2014-2015 Global rank*	
Finland	1
Singapore	2
Netherlands	3
Switzerland	4
Belgium	5
United Arab Emirates	6
United States	7
Norway	8
New Zealand	9
Denmark	10
Source: The Global Competitiveness Report 2014-2015 Note: * 2014-2015 rank out of 144 economics	

According to the [17], the developing countries are ranked at the lower than that of other developed countries in the world. This indicates that the developing countries' innovation performance is lower than that of developed countries. Even though, it is lower than that of other developed Asian countries like Singapore and Hong Kong. The framework of the GII-2014 weights education, ICT, knowledge workers, knowledge absorption, knowledge creation, and knowledge impact and knowledge diffusion amongst other antecedents. Furthermore, in keeping with the [16], the competitiveness as the set of organizations, rules, and issues that controls the level of the output of a nation. The level of output consequently sets the level of success that can be received by an economy. Additionally, diverse antecedents drive efficiency and competitiveness. The report [18] presents the 12 pillars of competitiveness. Higher education and training, technological progress and good governance are the most critical antecedents of competitiveness among them.

2.3 Role of Technological, Organizational and Individual antecedents in Knowledge Sharing

During the last few years, knowledge sharing schemes have been applied in different global companies. Yet, many companies failed due to a lack of limited technical solutions and they did not consider the organizational and cosmopolitan factors that are needed to make a knowledge sharing stage effectively [22]. There is no single way as same as many others process to implement KM particularly as it is an integration of technology, culture, and human performance. Moreover, [23] described that KM is comprised of organizational, human and technological problems as well as financial, economic and legitimate issues. Besides, [24] states that very significant view of KM is the combination of human, organizational & technological dimensions of knowledge sharing. Besides, [25] suggests an implementation of KM of a post-Nonaka form based on the three types: processes, organization and culture and information technology. Because 3rd generation KM is still very personal initiatives. That is why he recommended insistence to get started in the judgment of cost savings and performance improvement. For this reason, individual human, organizational and technological aspect is now the biggest issue in KM practices in the organizations as well in the universities. Although, the literature reveals that more than 8% KM projects fail [26], Yet, the reviewing pieces of literature show some important antecedents for KS and institutional innovation.

2.4 Factors affecting knowledge sharing on innovation capabilities in diverse organizations

A comprehensive literature review of factors influencing knowledge sharing intention as well as other organizational staffs' intention was conducted. This key literature review has identified numerous antecedent factors as influence or inhibitors to knowledge sharing. It is led to the increase of an overview of antecedents that represents the key motivators and inhibitors to knowledge sharing. Most of these empirical KS studies in the KM field explained the identified antecedents as both directly affecting KS on innovation for the institutions. Thus, these are vital antecedents or preconditions. These also should be the primary antecedents in understanding KS on innovation capabilities for universities (Refer to the Table 2 below):

Table 2
Factors affecting knowledge sharing on innovation capabilities in diverse organizations

Author(s)	Country studied	Method	Settings	Factors Affected
Majeed (2009) [27]	USA, UK and other countries	Systematic literature review of 30 articles	Universities	Trust, learning, and rewards, Senior management support, reward, KM infrastructure, exchange of information and knowledge sharing procedure as a set of HR practices
Jahani et al., (2011) [28]	Iran	empirical study	Universities	Intrinsic rewards and leadership style as counselor
Zwain at. al., (2012) [29]	Iraq	empirical study	41 colleges	KM process
Iqbal et al., (2011) [30]	Malaysia	quantitative survey	University	Self-efficacy, social networks, attitude, intention, Organizational support, trust, and subjective norms
Adenan & Hashim (2012) [31]	Malaysia	empirical study	private university colleges	ICT
Vazquez, Fournier & Flores (2009) [32]	USA	empirical study	municipality	organizational environment, emotive intelligence and managers' commitment, cultural values, leadership, and human resources
Donate & Guardamillas (2011) [33]	Spain	empirical study	industry	cultural values, leadership, and human resources
Cabello-Medina, López-Cabrales. & Valle-Cabrera, (2011) [34]	Spain	empirical study	industry	collaborative HRM practices, selection processes, team-building, and interpersonal abilities
Rahman et al., (2013) [35]	Malaysia	Empirical study	industry	training, knowledge acquisition; knowledge application and knowledge protection
Lee et al. (2013) [36]	Malaysia	Empirical study	industry	Technological innovation, knowledge application and knowledge storage, interrelationships
Hakim & Hassan (2013) [37]	Iraq	Empirical study	industry	Human resources, IT, leadership, organizational learning, strategy, structure and culture, innovation, technological, administrative, radical, incremental
Aulawi et al., (2009) [38]	Indonesia	empirical study	telecommunication industry	behaviour, teamwork, trust, senior management support, and self-efficacy.
Lin (2007) [39]	Taiwan	empirical study	50 organizations	Employee willingness, KS process, knowledge donating, knowledge collecting, enjoyment in helping others, and knowledge self-efficacy, top management support, organizational rewards and also technological factors as ICT use
Chang & Lee (2008) [40]	China	empirical study-quantitative	organizations	External environment and organizational culture

2.5 The role of ICT collaborative technologies for KS and organizational innovation

ICT tools are a most important catalyst for organizational success by implementing proper KS initiatives. Knowledge sharing flows well with the help organizational support and human interaction. Thus, without the help of ICT tools, mere only organizational support, and human interaction, it is almost impossible to share knowledge in the modern information technology era. The contribution of ICT tools is being demonstrated for open up the vision of IT. A number of prior researchers focus on a variety of ICT usages and its contribution to organizations. The following table 3 represents the usefulness of ICT in individual and organizational activities (Refer to the Table 3 below):

Table 3
ICT increases knowledge sharing performance in Diverse Ways

Technologies for knowledge sharing/KM	Author(s)
Email	Thakur, 2007; Ting & Majid, 2007; Osunade et. al., 2007; Burns, 2007; Rusli & Mohd, 2007; Hwang & Kim, 2007 & Abdullah et al., 2006
The Internet (World-Wide-Web) Various search engine, Facebook, Twitter, Online Newspaper etc.	Ting & Majid, 2007; Burns, 2007; Osunade et. al., 2007; Kamal et. al., 2007; Minna&Pekka, 2007 & Parirokh, et al., 2006
Database Management Technologies	Coakes, 2006; Kim & Lee, 2006 & Part at. Al., 2004
Content Management Systems	Ting & Majid, 2007; Gartner, 2006a; Logan, 2006a; Tsui, 2005 & Part et. al., 2004
Decision Support Systems	Thakur, 2007 & Part at. al., 2004
Groupware Software	Sahibuddin et. al., 2006; Han & Anantatmula,2006; Tsui, 2005; Riege, 2005 & Part et. al., 2004
Business Intelligence Technologies	Riege, 2005
Collaboration Tools	Coakes, 2006; Kim & Lee, 2006; Gartner, 2006a; Tsui, 2005 & Rusmus 2003.
Discussion Group	Kim & Lee, 2006 & Logan; 2006b
Online Discussion Forum	Ting & Majid, 2007 & Thakur, 2007
Video Conferencing	Ting & Majid, 2007; Osunade et. al., 2007; & Han & Anantatmula, 2006.
Customer Relationship Management Systems	Ting & Majid, 2007
Document Management Systems	Ting & Majid, 2007; Abdullah et al., 2006 &Sahibuddin et. al., 2006
Web Conferencing	Thakur, 2007; Han & Anantatmula, 2006 & Abdullah et al., 2006.
Shared Space Collaboration Tool	Ting & Majid, 2007
Enterprise Information Portal	Ting & Majid, 2007; Abdullah et al., 2006 & Chowdhury 2005.
Data Warehousing	Ting & Majid, 2007
Multimedia technologies	Burns, 2007
Virtual Learning Environments	Burns, 2007
SMS (Short Messaging Service)	Osunade et. al., 2007; Rusli & Mohd, 2007 & Thakur, 2007
Mobile Computing	Rusli & Mohd, 2007
Communities of Practice (CoP)	Rusli & Mohd, 2007
Virtual Teamwork	Derballa & Pousttchi, 2004
Audio and video messages	Thakur, 2007
Lessons Learned Database	Derballa & Pousttchi, 2004
Virtual/Augmented Reality	Derballa & Pousttchi, 2004
Network Learning	Hodgsen& Reynolds, 2005
Digital Repositories	Doctor, 2006
Learning Object	Doctor, 2006
Repositories Blogs	Osunade et. al., 2007
Online Communities	Osunade et. al., 2007 & Kamal et. al., 2007
Mailing Lists	Osunade et. al., 2007
Online Databases	Osunade et. al., 2007
Story Telling	Kamal et. al., 2007
Online Chat (ICQ, MSN, Messenger, etc.	Ting & Majid, 2007

Source:Nassuora, 2011 [41]

III. RESEARCH OBTECTIVES AND METHODOLOGY

The aim of this study is to investigate whether the technological, organizational and individual factors together can help increase Knowledge Sharing in HEIs and contribute it in augmenting organizational performance in developing countries. This study will apply a conceptual analysis based on KM literature. The methodology of this study is subjective/argumentative i.e., idea generation in Information Systems (IS). The unit of analysis of this study is knowledge workers i.e. faculty members of public universities working in diverse countries of the world. This study will include some senior executives of other industries and organizations that might help to investigate the status of innovation performance by selecting technological, organizational and individual antecedents.

IV. DISCUSSIONS AND THE FINDINGS

This study has discussed the significance of KM and KS briefly for the better performance in the organizations referring to both developed and developing countries. It has focused on knowledge sharing and its role that is immensely utilizing in developed countries for the development and innovation of the higher education institutions. The study has highlighted the report of the UNDP, Global Competitiveness Report, and other initiatives that have demonstrated their knowledge sharing practices and performance for the organizations. Moreover, the study has reviewed KM literature elaborately for KS activities in both developed and developing countries. The study has found that some technological, organizational and individual antecedents are responsible for the barrier of the knowledge sharing in the HEIs and also other organizations. Conversely, these factors combined have improved the KM and KS practices by individuals and increased the work performance of the institutions. The explored factors are – behavioural intention, attitude, self-efficacy for training and development, subjective norm, organizational trust, leadership, organizational rewards, organizational culture, social network, and use of ICT.

V. CONCLUSION AND RECOMMENDATIONS

Individual's intentions have an important role in organizational as well as individual level knowledge sharing practices. This knowledge sharing action is usually augmented when an individual, organizational and technological factors act together. Universities' knowledge sharing practices might be better in a systematic way involving technology. As a result, the universities might be benefitted. Access to more knowledge sharing practices in the institutions is an essential requirement, especially in the developing countries where people are still expected to be motivated to knowledge management practices. This paper explored some important technological, organizational, and individual antecedent factors. The antecedent factors that influence knowledge sharing are technological, organizational and individual. This study has employed some senior executives from the service industry and other organizations along with faculty members from diverse universities this is because of unavailability of sufficient institutions for reviewing the exact relevant literature. It is being believed based on this study that effective knowledge sharing practices among faculty members might improve the innovation capability of the universities. This study is expected to extend for further an empirical investigate elaborately on the same issue in developing countries to validate the present research results.

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