Knowledge Management Capabilities in the Kingdom of Bahrain: Case Study of the Supreme Council for Women

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ABSTRACT: This study examines the relationships between Knowledge Management Infrastructure Capabilities (KMIC) and Knowledge Management Process Capabilities (KMPC) in a context that has not been sufficiently considered in literature; it also measures the level of Knowledge Management (KM) capabilities in the Supreme Council for Women in the Kingdom of Bahrain (SCWB) in order to suggest improvements in the current level of KM capabilities for the successful implementation of KM. To serve this purpose, a survey was designed and data were collected from employees in SCWB. Pearson Correlation analysis was used to verify the existence of relationships between the independent variables (namely, learning, decentralisation, T-shaped skills, and IT support in terms of KMIC,) and the dependent variable (KMPC). The results are generally in line with those of previous studies. This study highlights the importance of focusing on creating a knowledge infrastructure that is made up of appropriate technology, culture, structure and human resources. The paper therefore recommends that SCWB and similar strategic organisations pay more attention to KM capabilities in order to achieve a successful and stable implementation and transformation of knowledge-based organisations.

Keywords: Knowledge Management Capabilities, Kingdom of Bahrain, Supreme Council for Women

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Introduction

Over the last decade, the importance of knowledge has been highlighted by both academics and practitioners (Wu and Lin, 2009). Today, knowledge is recognised as being a vital asset in any organisation because it exists in a world that is more interconnected and in which knowledge is an essential element of successful societies. In this unpredictable environment, successful organisations are those that constantly create new knowledge and disseminate it widely and so the realisation that knowledge should be managed effectively is becoming a key concern for leaders of organisations. Implementing KM in organisations is vital; there is a need to access, share and exchange knowledge to ensure that the goals of organisations are achieved. However, the mere act of processing knowledge does not, in itself, guarantee strategic advantage (Zack, 2002); instead, knowledge has to be managed. Despite this, many organisations are not doing enough to manage this vital asset effectively.

Organisations must develop KM capabilities to help support a variety of important organisational operations and activities. Gold et al. (2001) were among the first scholars in the field of KM to provide a comprehensive model of KM capability dimensions from the perspective of organisational capabilities. According to this model, the KM capability of a firm includes two key components: knowledge management infrastructure capabilities (KMIC) and knowledge management process capabilities (KMPC). KMIC includes technology, structure and culture, while KMPC is comprised of acquisition, conversion, application and protection processes. Taken together, these resources determine the KM capability of an organisation (Gold et al., 2001).

Previous research has explored which elements are vital for managing knowledge effectively. Most studies have examined the relationships among knowledge management capabilities, processes and performance. Some research has examined the relationship between capabilities and processes (Hansen, 1999; Szulanski, 1996; Zander and Kogut, 1995) while other studies have focused on the relationship between capabilities and organisational performance (Becerra-Fernandez and Sabherwal, 2001; Gold et al., 2001; Simonin, 1997).

However, the literature reveals that most KM models and measures were originally developed and empirically tested in the context of western countries such as the US (Gold et al., 2001; Hsu, 2006), Australia (Migdadi, 2005), Canada (Manovas, 2004), or newly-industrialised Asian countries such as Taiwan (Chuang, 2004), Hong Kong (Khalifa et al., 2001; Khalifa and Liu, 2003), and Korea (Choi and Lee, 2002; Lee and Choi, 2003). The possibility that such models and measures might need to be modified to fit the specific features of less developed countries has received little attention (Gimenez and Rincon, 2003). Thus, any developed KM models need to be empirically studied in such a context to examine the validity and reliability of the relevant measures.

A number of studies have been conducted in certain developing countries, for example in the Kingdom of Bahrain (a western Asian developing country). For example, one study identified critical successful factors with regard to organisational KM in the public and private sectors (Alalawi et al., 2007) while a second paper studied KM readiness in the public sector (Shajera and Albastaki, 2013). This current study focuses on examining the relationship between KMIC and KMPC in the Kingdom of Bahrain and, in particular, in

official organisations, a field which has not been sufficiently considered in the literature. This research makes use of the case study approach with the selected case being the 'Supreme Council of Women' (SCWB).

The purpose of this paper is to measure the KMIC and KMPC at SCWB, and to examine the relationship between them while its contribution will be to suggest improvements to the current level of KM capabilities for the successful implementation of KM in SCWB. This paper is organised as follows: the theoretical background discusses two capabilities of KM and establishes the study's hypotheses; the following sections then describe the methodology used, the results and analysis; finally, the last section discusses conclusions, presents limitations, and makes relevant recommendations with regard to KM at the SCWB.

Literature Review

A. Knowledge Management

KM is considered to be multi-disciplinary in nature and many different definitions of KM have been proposed by various KM researchers from different disciplines and with different interests. O'Dell and Jackson (1998) believe that KM is a strategy that can be developed within a firm to ensure that knowledge reaches the right people at the right time; furthermore, these people should share and use information to improve organisational functions. Knowledge management can also be defined as the organisational capability which identifies, locates, creates or acquires, transfers, converts and distributes knowledge for competitive advantage (Walters, 2002).

Despite this, academicians do not agree on a generally-accepted definition (Grossman, 2006; Lloria, 2008) although some of the definitions of KM found in the literature reveal that there is general agreement on what KM is. A consistent theme in all supported definitions of KM is that it consists of processes or a set of actions for creating and using knowledge to achieve or enhance different outcomes, such as organisational performance, organisational goals, competitive advantage, or overall success.

KM helps an organisation gain insights and further understanding of its own experience (Davenport and Prusak, 2000; Wiig, 1997). In addition, KM activities can assist an organisation in acquiring, storing and utilising knowledge for processes such as problem-solving, dynamic learning, strategic planning and decision-making (Takeuchi and Nonaka, 2004). Many researchers have emphasised three major factors concerning KM: capabilities, processes and organisational performance (Beckman, 1999; Demarest, 1997; O'Dell and Grayson, 1999).

B. Knowledge Management Process Capabilities (KMPC)

Gold et al. (2001) examined an empirically effective KM model from the perspective of organisational capabilities. This perspective suggests that a knowledge infrastructure, consisting of technology, structure and culture, along with a knowledge process architecture of acquisition, conversion, application and protection, are essential organisational capabilities or preconditions for effective KM. KMPC is the organisation's ability to create new knowledge through the process of converting tacit into explicit knowledge, eventually transforming it into organisational knowledge (Nonaka & Takeuchi, 1995). Similarly, Pentland (1995) defined KM processes as an ongoing set of practices embedded in the social and physical structure of an organisation, with knowledge as the final product. Many

researchers (Gold et al., 2001; Suzana and Kasim, 2010; Aujirapongpan et al., 2010; Chan and Chao, 2008) have discussed KMPC through the following elements: acquisition, conversion, application, protection and storing, as shown in Table 1.

Table 1. Kmpc Definitions

KMPC Elements	Definition
Knowledge Acquisition	A KM acquisition process is to obtain knowledge which can be described by many other terms, such as acquire, seek, generate, create, capture and collaborate. These all have a common theme: the accumulation of knowledge (Gold et al., 2001).
Knowledge Conversion	A KM conversion process is to make existing knowledge useful. This can be enabled by processes such as organising, representing, integrating, combining, structuring, coordinating or distributing knowledge (Davenport and Klahr, 1998).
Knowledge Application	A KM application process concerns the actual use of the knowledge (Gold et al., 2001), making knowledge more active and relevant for the firm in creating value (Bhatt, 2001).
Knowledge Protection	A KM protection process is the protection of knowledge within an organisation from illegal or inappropriate use, or theft (Gold et al., 2001).
Knowledge Storing	A KM storing process is to keep knowledge within the organisation; this includes physical as well as non-physical resources (Zaied et al., 2012).

Gold et al. (2001) provided a comprehensive model of KM capability dimensions from the perspective of organisational capabilities. These process capabilities have been adapted by several subsequent researchers, such as Khalifa and Liu (2003), Manovas (2004), and Smith (2006). In addition to these processes, the storing process which was adapted from Aujirapongpan et al. (2012) and Zaied et al. (2012), has been incorporated into this research.

C. Knowledge Management Infrastructure Capabilities (KMIC)

KMIC (or enablers or influencing factors) are the overall organisational activities or mechanisms that can stimulate knowledge creation, can protect knowledge, and can facilitate the sharing of knowledge in an organisation (Lee & Choi, 2003). Krogh et al. (2001) defined the KM infrastructure as an 'organizational mechanism to create knowledge constantly and intentionally in organization'. A variety of knowledge management capabilities have been addressed in the literature and many researchers have proposed capabilities influencing KM as preconditions, or organisational resources for effective KM (Gold et al., 2001; Gray, 2001; Lee and Choi, 2003; Leonard-Barton, 1995; Wiig, 1997).

In general, an organisation's KM capability is combined with the presence of a KM infrastructure. Table 2 presents a summary of previous empirical studies, conducted since 2001, which discuss different types of KMIC.

Table 2: A Summary of Previous Empirical Studies in KMIC

Researchers	KM Infrastructure Capabilities
Shajera and Albastaki, 2013	Culture (collaboration, trust and learning), structure (centralisation, formalisation and reward systems) and IT infrastructure (IT support)
Mamaghani et al., 2011	Knowledge strategy, management support, motivational encouragements to share knowledge, suitable technical infrastructure
Zin et al., 2010	Culture, technology, top management, human resource practices, organisational structure and leadership
Jalaldeen et al., 2009	Culture, structure and IT infrastructure, and the unified theory of acceptance and use of technology
Lee and Lee, 2007	KM capabilities, culture (learning organisation), people (T-shaped skills), structure (centralisation), and information technology (IT support)
Bayyavarapu, 2005	KM strategy: IT-centered KM strategy, capture-based KM strategy, learning-based KM strategy
Chuang, 2004	Technical KM resources, IT and social KM resources, structure, culture and human resources
Holt et al., 2004	KM infrastructures: organisational culture, organisational structure and IT infrastructure
Gimenez and Rincon, 2003	Leadership, technology, culture
Lee and Choi, 2003	KM enablers: structure, culture, people and IT
Gold, Malhotra and Segars, 2001	Infrastructure capabilities: technology, structure and culture
Khalifa, Lam and Lee, 2001	KM structures: KM strategy, technology fit, culture and leadership

Based on the literature review, and as shown in Tables 2 and 3, KMIC in this research includes: social perspectives, organisational structure (decentralisation), organisational culture (learning), people (T-shaped skills), and technical perspectives of information technology (IT support). These are adapted from Lee and Lee (2007).

Table 3: KMIC Literature Review

KMIC Elements	Description
Learning	- Learning is defined as 'any relatively permanent change in behaviour that occurs as a result of experience' (Robinson et al., 2001). - Learning provides an avenue for the organisation to be infused with new knowledge (Lee and Choi, 2003). - An emphasis on learning and continuous development, and knowledge creation activities, will increase as employees play a more active role in the process (Lee and Choi, 2003). - Successful knowledge creation occurs when organisations develop a deeply ingrained learning culture with education, training and mentoring programmes that encourage learning (Lee and Choi, 2003).
Decentralisation	- Centralisation refers to the locus of decision authority and control within an organisational entity (Caruana et al., 1998). - A concentration of decision-making authority can reduce creative solutions, experimentation and the freedom of expression, which are the lifeblood of knowledge creation (Graham and Pizzo, 1996). - Flexible organisational structures encourage sharing and collaboration across boundaries within the organisation (O'Dell and Jackson, 1998). - Decentralised structures encourage cross-functional teams (Goh, 2002).
IT Support	- IT support refers to the availability of information and communication technology to facilitate storage, retrieval and the sharing of knowledge (Lee and Choi, 2003). - With strong IT support, organisations are likely to be able to capture, share, apply and create knowledge more efficiently and effectively (Gold et al., 2001). - IT facilitates rapid collection, storage and exchange of knowledge, thereby assisting the knowledge creation process (Roberts, 2000). - Well-developed technology integrates fragmented flows of knowledge (Gold et al., 2001); this integration can eliminate barriers to communication among departments in organisations. - IT fosters all modes of knowledge creation and is not limited to the transfer of explicit knowledge (Riggins and Rhee, 1999).
T-Shaped People	- People with T-shaped skills are extremely valuable for creating knowledge because they can integrate diverse knowledge assets (Leonard-Barton, 1995). - T-shaped skills enable their possessors to explore the interfaces between their particular knowledge domain and various applications of that knowledge in particular products (Leonard-Barton, 1995). - Employees with T-shaped skills have a significant and positive impact on the knowledge creation process (Migdadi, 2005). - T-shaped skilled employees will attempt to create new knowledge only if their organisation has an environment that encourages the formation of T-shaped skills and provides systematic management of these skills (Lee & Choi, 2003).

1) Organisational Culture (Learning)

Various researches indicate that organisational culture is central to an organisation's ability to manage its knowledge more effectively (Davenport, DeLong and Beers, 1998). Organisational culture is an aggregate of the shared understandings of individuals, which influence the collective behaviour of the organisation (Lyles and Schwenk, 1992). Organisations should establish an appropriate culture that encourages people to create and share knowledge within an organisation. This study includes learning as a key cultural factor.

For efficient knowledge processes, organisations should develop a learning culture and provide various means of learning such as education, training and mentoring (Swap et al., 2001; Swieringa and Wierdsma, 1992).

2) Organisational Structure (Decentralisation)

According to Mintzberg (1979), organisational structure can be defined as the result of the combination of all the ways in which work can be divided into different tasks, the coordination of which must subsequently be ensured. The organisational structure may encourage or inhibit knowledge management. This study includes decentralisation as a key structural factor. A centralised structure hinders interdepartmental communication and the frequent sharing of ideas due to the existence of time-consuming communication channels; it also causes distortion and the discontinuousness of ideas (Stonehouse and Pemberton, 1999).

A decentralised organisational structure has been found to facilitate an environment where employees participate in the knowledge-building process more spontaneously (Lee and Lee, 2007). Knowledge processes require flexibility and less emphasis on work rules (Ichijo et al., 1998).

3) IT Support

Scholars emphasise the information technology (IT) infrastructure as a crucial element in the linkage of information and knowledge integration in organisations (Teece, 1998). Many researchers have found that IT is a crucial element for the development of efficient knowledge processes (Davenport & Prusak, 1998; Gold et al., 2001; Raven and Prasser, 1996). Therefore, IT is essential for initiating and carrying out KM. This study includes IT support as a key IT factor.

The role of IT in supporting KM processes has been emphasised by many authors such as Davenport and Prusak (1998), Zack (1999), Gold et al. (2001), and Alavi and Tiwana (2005).

4) People (T-shaped skills)

Since knowledge resides in people's heads, human resources are at the heart of creating organisational knowledge; they are recognised to be the key enabler in successful KM (Lee & Choi 2003). Thus, managing people who are willing to create and share knowledge is an important task, and finding new sources of motivation to increase people's participation in knowledge sharing is a real challenge for organisations (O'Dell and Grayson, 1999; Migdadi, 2005). This study includes T-shaped skills as a key people factor.

People with T-shaped skills have the ability both to combine theoretical and practical knowledge and to see how their branch of knowledge interacts with other branches. Therefore, they can expand their competence across several functional branch areas, thus creating new knowledge (Madhavan and Grover, 1998).

Research Model and Hypotheses

This study focuses on examining the relationship between KMIC and KMPC in the Kingdom of Bahrain, and in particular in official organisations. The case study selected for this research is the 'Supreme Council of Women' (SCWB).

Regarding the relationships between KMIC and KMPC, the following hypotheses were formulated and are examined in this research:

Hypothesis 1: There is a positive relationship between the presence of organisational members with T-shaped skills and the KMPC in the SCWB.
Hypothesis 2: There is a positive relationship between decentralisation and the KMPC in the SCWB.
Hypothesis 3: There is a positive relationship between learning and the KMPC in the SCWB.
Hypothesis 4: There is a positive relationship between IT support and the KMPC in the SCWB.

The interrelationships among variables, as represented by the above hypotheses, are displayed in the following proposed theoretical model (Figure 1):
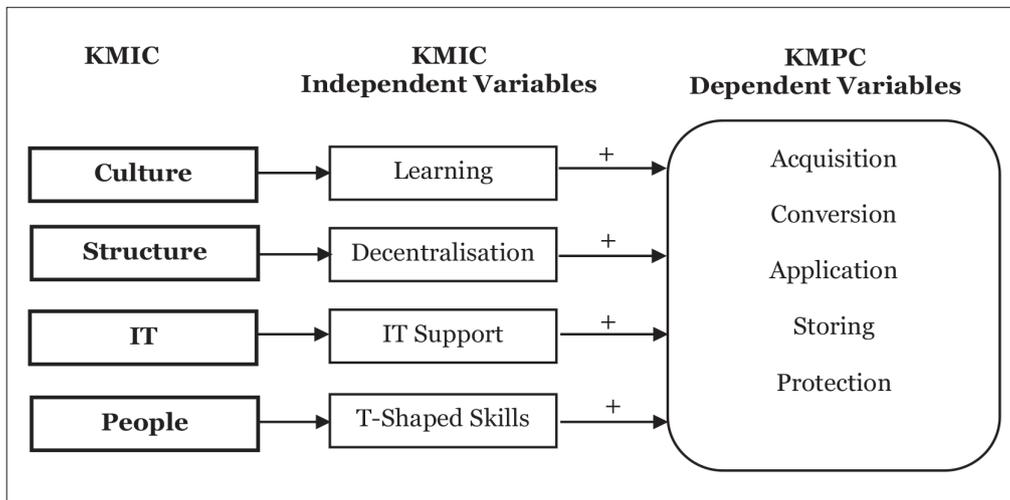

Figure 1: The Proposed the Oretical Model of KM Capabilities

The Supreme Council for Women

The SCWB was established on 22nd August 2001 under the authority of His Majesty the King and is chaired by Her Royal Highness Princess Sheikha Sabeeka bint Ebrahim Al Khalifa, the wife of Bahrain's King. It has legal status, and is considered a reference for women's affairs for all official organisations. It expresses views and decides on issues related directly or indirectly to women's status. All official bodies have to consult the SCWB before taking or making decisions in this regard (Supreme Council for Women, 2014).

Her Royal Highness is particularly interested in promoting modern sciences and technology, in encouraging scientific research, and building knowledge-based organisations. She has funded the electronic library of the Arab Women's Organisation which seeks to help

researchers with issues related to women and provide them with relevant information on advanced experiences in other countries. Her Royal Highness strongly supports Bahrain's Businesswomen's Society, as well as their women's gateway portal (which is under construction). This serves as an information search engine to support women's development in the fields of business, social affairs and health; it is a successful national product of Bahrain that has won international and regional awards for its contribution to the empowerment of women. Moreover, Her Royal Highness is conducting regular meetings with different representatives of the society as way of acquiring knowledge about the current status of women in the Kingdom of Bahrain.

The mission of the SCWB is to empower Bahraini women and integrate their development needs to ensure the sustainability of family stability and familial bonds. In addition, the Council works to enhance the principle of equal opportunities to ensure the competitiveness of Bahraini women, the continuity of lifelong learning for them, and the availability of other varied opportunities. The aim of the Council is to elevate the standard of women's quality of life through a framework of legislation and policies and, by integrating with allies and partners in institutional work, to elevate the status of women. Furthermore, establishing a house of expertise characterised according to national qualifications and international standards and specialising in women's affairs, is another main goal (Supreme Council for Women, 2012).

Based on the National Plan for the Advancement of Bahraini Women (2013–2022), the SCWB has sought to enhance the knowledge-based economy by building the capacity of nationally qualified human resources in order to enable the SCWB to become a house of expertise and a specialised centre of KM in women-related issues at both a regional and international level. In order to ensure that the KM initiatives stated in the National and Strategic Plans are achieved, the level of KMIC and KMPC must be measured at the SCWB, and the relationship between them examined. This study suggests improvements to the current level of KM capabilities for the successful implementation of knowledge management in SCWB (Supreme Council for Women, 2013).

Research Methodology

A. Measurement Development

In order to measure the level of KMIC and KMPC at SCWB, and to examine the correlation between them, an online questionnaire was designed to collect the required information. Multiple-item measures were used for all variables in order to improve the reliability and validity of the measures. These measures were largely derived from an in-depth study of the literature concerning KM capabilities (Hage and Aiken, 1996; Gold et al., 2001; Lee and Lee, 2007).

The questionnaire measured four KMIC and five KMPC variables and examined the correlation between them; each of the KMIC (independent) variables contained five items, which amounted to a total of 20 items. The following KMIC variables were investigated: organisational structure (decentralisation), organisational culture (learning), people (T-shaped skills), and technical perspectives of information technology (IT support). These measures investigated the level of KMIC in the SCWB based on employees' perceptions.

Each of the KMPC (dependent) variables contained five items, which created a total of 25 items. The following KMPC variables were investigated: acquisitions, conversions,

applications, storing and protection. These measures investigated the level of KMPC in the SCWB based on employees' perceptions. All items (45) were rated on a seven-point Likert scale (ranging from 1 – strongly disagree to 7 – strongly agree).

For analysis purposes, an average score greater than or equal to 1 (but less than 3) was considered to be low, indicating that several aspects needed urgent attention; an average score greater than or equal to 3 (but less than 5) was considered medium, indicating that a few aspects needed attention; and an average score greater than or equal to 5 was considered high, indicating that the organisation had adequate capabilities and needed to sustain them.

B. Sample and Data Collection

The questionnaire survey was carried out between May and June 2014. In total, 97 email invitations to participate in this study were sent to SCWB employees. Participants were employees from different levels of management at the SCWB. A covering letter was distributed with the survey to explain the purpose of the study; this included statements that assured the confidentiality and anonymity of the participants. Prior to the actual survey, a pilot survey was used to refine the survey questionnaire. A total of 50 questionnaires were completed, which represents a response rate of 51%.

Findings and Analysis

A. Demographic Data

The demographic data are shown in Table 4 which is presented to show the composition of the respondents. This can be used to provide a better understanding of the responses and the results of the present study. The majority of the respondents were female (76%) while, in terms of roles, 54% were from first-level management, 26% were from middle level management, 12% were in non-managerial posts and 8% were from top-level management. Finally, the majority of the respondents were aged between 30 and 39 (50%).

Table 4: Demographic Data of the Respondents

Current Position		Age Grou	
Top Level	= 8%	20-29	= 28%
Middle Level	= 26%	30-39	= 50%
First Level	= 54%	40-49	= 12%
Non-managerial	= 12%	50+	= 10%
Education		**Gender**	
PhD	= 2%	Male	= 24%
Graduate Diploma	= 4%	Female	= 76%
Master's	= 26%		
Bachelor's	= 46%		
Diploma	= 12%		
High School	= 10%		

B. Reliability and Validity of the Data

The Statistical Package for Social Sciences (SPSS 19.0) software was used to analyse the collected data while the internal consistency of scales was measured using Cronbach's Alpha coefficient. The results of the test show that the value of Cronbach's Alpha equalled 0.956 which confirms the reliability of the collected data. Also, the results show that all nine elements were accepted as important, as shown in Table 5, indicating that all the collected data were reliable and could be analysed. These results were found to be above an acceptable level (Nunnally, 1978); in fact, according to George and Mallery (2003), they could be considered as excellent.

Table 5: Reliability of Statistics

Variables	Cronbach's Alpha
T-Shaped Skills	0.848
Decentralisation	0.750
Learning	0.777
IT Support	0.814
Acquisitions Process	0.876
Conversions Process	0.870
Applications Process	0.912
Protections Process	0.893
Storing Process	0.877
Overall Alpha of all Items	0.956

C. Descriptive Statistics

The results from the descriptive statistics, as shown in Table 6, indicated there was general agreement among the respondents to the different elements of KMIC and KMPC since the mean values ranged from (5.35) to 4.

The mean value calculation was conducted to measure the use of KM and to determine the extent to which knowledge management capabilities (i.e., infrastructure and processes) were implemented in the SCWB. Table 7 shows that knowledge process capabilities had a higher value (5.08) than knowledge infrastructure capabilities (4.75). These results indicate that the two components of knowledge management capabilities are implemented since both means were over 4.50.

The detailed results show that IT Support had the highest mean value (5.48) among the elements of the knowledge infrastructure capabilities, whereas decentralisation had the lowest mean value (4). In terms of the knowledge process capabilities, conversion processes had the highest mean value (5.35 while acquisitions and protection had the lowest mean values (4.92 and 4.95 respectively).

In general, the results show a small difference in implementation between knowledge infrastructure and processes with the standard deviation values ranging from 1.10 to 0.76.

Table 6: Descriptive Statistics

Variable	Mean	Standard Deviation (SD)	Level of KM Capabilities
KMIC	4.75	0.76	Medium
T-Shaped Skills	4.77	0.97	Medium
Decentralisation	4.00	1.07	Medium
Learning	4.79	1.13	Medium
IT Support	5.48	0.93	High
KMPC	5.08	0.84	High
Acquisition Process	4.92	0.95	Medium
Conversion Process	5.35	0.92	High
Application Process	5.13	1.01	High
Protection Process	4.95	1.10	Medium
Storing Process	5.06	1.01	High

D. Correlation Analysis (Testing the Hypotheses)

Pearson Correlation was used to verify the existence of a relationship between the independent variables of learning, decentralisation, IT support and T-shaped skills, with the dependent variable KMPC.

All four hypotheses were tested in this study. The results of the correlation analysis are presented in Table 7. In terms of the KM infrastructure capability, the four elements were positive and significant vis-à-vis the KM process capability. Table 8 shows that all elements of KMIC had a positive significant relationship with KMPC at a 1% level of significance.

Table 7: Correlation between KMIC and KMPC

Variables	KMPC	T	D	L	IT
KMPC	1	.572**	.485**	.547**	.606**
T	.572**	1	.491**	.282*	.209
D	.485**	.491**	1	.486**	.300*
L	.547**	.282*	.486**	1	.599**
IT	.606**	.209	.300*	.599**	1

**. Correlation is significant at the 0.01 level (2-tailed).

KMPC	KMPC
T-Shaped Skills	T
Decentralisation	D
Learning	L
IT Support	IT

The results indicate that all of the independent variables (KMIC) had positive relationships and are therefore statistically significant in terms of the dependent variable (KMPC). Thus, these results support H1, H2, H3 and H4.

E. Issues of Reflexivity and Positionality

In addition to the qualitative approach, the authors made a use of reflexivity method as they were both insiders and outsiders. They were considered as insiders because they were both employees at the SCWB but, prior to this, they worked for an educational institution. Reflexivity is the process of looking both inward and outward with regard to the positionality of the research and the research process (Shaw & Gould, 2001); it is also part of the production of knowledge (Blaxter et al., 2006). The reflexivity method has been used in a number of studies (Makhamreh & Lewando, 2008; Ahmed et al., 2010). A comparison is presented below to differentiate between the KM capabilities in the SCWB and an educational institution. This comparison is based on the authors' previous and current experience; it is also based on a comparison of the results of this study and a published study concerning KM readiness in that education institution (Albastaki, Shajera, 2012).

- The SCWB structure is less centralised compared to that of the educational institution. This could be due to the huge size difference of the organisations in terms of the number of employees as well as the variety and number of departments.
- The SCWB is considered to be a relatively young organisation with a young top management team. This team has helped the SCWB to create a culture of learning which embraces change in a much more flexible manner than the educational institution.
- The SCWB's members have good levels of participation in decision-making. This has reduced the boundaries between the organisational levels, resulting in an easier flow of information; this style of decision-making is very different from that found in the educational institution.
- In order to build organisational capabilities for KM, organisations must develop comprehensive infrastructures that facilitate various types of knowledge. In the educational institution, there was a well-established IT infrastructure so this was compared to the IT tools, systems and services used in the SCWB. The SCWB is equipped with information technologies that provide formal knowledge-sharing facilities, such as a website and electronic document storage; however, the education institution had a very well-established IT infrastructure (Albastaki, Shajera, 2012). Irrespective of this, the information technologies in the SCWB were, to some extent, more exploited than those within the academic institute.
- The SCWB had more flexible, decentralised and multi-functional work teams than the educational institution. These teams facilitate the dissemination of information via a structure that promotes collective rather than individualistic behaviours; this was completely different from the academic environment.
- In order for organisations to be truly ready for KM, reward systems should focus on specific criteria, including: knowledge creation, sharing, collaboration, sharing best practices and teamwork, as well as the development of creativity and innovative solutions. This was observed within the SCWB as its KM practices were linked directly to its annual job performance reviews; this was not apparent in the educational institution (Albastaki, Shajera, 2012).

Recommendations for the SCWB

After analysing the results of the measures of each variable in the questionnaire, the following recommendations are proposed in order to improve the current level of KM capabilities in the SCWB:

- The SCWB encourages employees to attend seminars and workshops and its culture is based on the desire to improve and learn. But, in general, learning in the SCWB demands a high degree of commitment across all organisational levels. Informal and formal training programmes should be encouraged and conducted as they will increase learning further.
- The structure of the SCWB should shift to become a more decentralised, flatter and more flexible form that facilitates the sharing and transfer of knowledge across structural boundaries. Furthermore, the SCWB should increase the level of participation in decision-making in order to reduce the boundaries between organisational levels, as well as to ease the flow of information.
- In order to build organisational KM capabilities, organisations must develop a comprehensive infrastructure that facilitates various types of knowledge. Accordingly, sufficient information systems need to be provided to support the sharing of knowledge throughout the SCWB. This will, in turn, support the simulation, prediction and acceleration of decision-making processes. Although the SCWB is equipped with information technologies that provide a formal knowledge-sharing facility, such as an intranet, website and electronic document storage, the potential and benefits of these functions are not being fully exploited.
- With regard to people (T-shaped skills), it is recommended that the SCWB should hire employees who are specialised in their own tasks and provide them with the knowledge they need for these tasks. Top management must emphasise employees' understanding of their own and others' tasks, develop their expertise, and enable them to communicate well with all other SCWB members. Combining all of these individual capabilities, while paying more attention to cultural issues, will assist the SCWB to develop a strong social KM infrastructure capability.
- In addition, to develop KMIC as positive enablers of the KM process capability, the study further suggests that the SCWB should put more effort into developing clear processes for various KMPCs, instead of there being practices that vary from one department to another. The five related processes of knowledge acquisition, conversion, application, protection and storing, should be integrated and coordinated to improve KMIC.

Conclusion, Limitations and Further Research

This paper contributes to an understanding of the relationship between KMIC and KMPC and the level of KM capabilities in the SCWB in the Kingdom of Bahrain. The study measured the level of KM capabilities and addressed the relationship between KMIC and KMPC while the literature review identified four essential aspects of KMIC, namely: learning, decentralisation, T-shaped skills, and IT support, as well as five KMPCs, namely: acquisitions, conversions, applications, storing and protection.

The results of correlation analysis empirically support the existence of a positive and statistically significant relationship between KMIC and KMPC. Specifically, the SCWB offers support for the hypothesised positive effects of KMIC on KMPC; therefore, it can be concluded that these infrastructure capabilities are vital for the SCWB.

Ultimately, this study examines and highlights the following points: besides providing empirical evidence of the correlation between KMIC and KMPC in a context that has not been sufficiently considered in the literature, this study has indicated high positive correlations between IT Support and KMPC, learning and KMPC, T-Shaped skills and KMPC, and decentralisation and KMPC; the results of the study are consistent with findings of previous research (Lee and Lee, 2007; Hansen, 1999; Szulanski, 1996; Zander and Kogut, 1995). This study directs attention to the importance of focusing on creating a knowledge infrastructure that is made up of appropriate technology, culture, structure and human resources. The management of the SCWB is therefore encouraged to pay special attention to KM capabilities in order to achieve the successful implementation of knowledge management in the SCWB. Furthermore, this could contribute to overcoming some of the barriers women face in advancing their careers (the glass ceiling) in the Kingdom of Bahrain and suggest how female talent might be retained in the workforce (Marinakou, 2014).

Although this research presents strong evidence regarding the relationships between the infrastructure and processes of KM capabilities, the results should be considered in the light of their inherent limitations. Firstly, due to the small sample size, the not found: generalisation? of these findings is, to some extent, restricted. There are many other factors which may affect the level of KMPC but, due to time restrictions, other factors were not considered in this research. The respondents provided information on the KM infrastructure and process capabilities. It should also be noted that there is a possibility of respondent bias in terms of their reporting in the questionnaire.

Despite the above limitations, this study makes a significant contribution to understanding the relationship between the two components of KM capabilities. Future research may include larger scale samples in the Kingdom of Bahrain and in other contexts in order to validate and generalise statistically the findings of this study. Also, to explore in greater depth the relationship between these two components, further studies in this area are required.

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