

The Impact of Knowledge Management Strategy on Service Innovation Performance in Private and Public Hospitals

Seyed Samad Hosseini^{1*}, Younes Nikkhah Tekmedash², Azhdar Karami³, Younes Jabarzadeh¹

1. Department of Management, University of Tabriz, Tabriz, Iran

2. Faculty of Economics and Management, University of Tabriz, Tabriz, Iran

3. Department of Management, University of Tabriz, Tabriz, Iran & Bangor Business School, Bangor University, UK

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Abstract

The main objective of this research is to investigate the comparative effect of knowledge management strategy on the service innovation performance in public and private hospitals through the mediating role of knowledge management practices. Drawing in knowledge management theory, all the organizations require a suitable knowledge management strategy to perform successfully. Therefore, this research focuses on this under-researched subject. This research benefits from quantitative and hypothetical-deductive approach. The sample of the research includes 852 therapy sections of both public and private hospitals in Tabriz. The data was collected via research questionnaire. The data has been analyzed using structural equation modeling (SEM) methodology. The results indicate a significant positive relationship between the knowledge management strategy and the knowledge management practices. Moreover, the mediating role of knowledge management practices was confirmed in the relationship between knowledge management strategy and service innovation performance in public and private hospitals.

Keywords

Knowledge management strategy, Knowledge management practices, Service innovation performance, Hospitals, Iran.

* **Corresponding Author, Email:** s.hosseini@tabrizu.ac.ir

Introduction

Knowledge management (KM) can be considered as a collection of activities, innovations, and strategies that organizations apply in order to create, store, and use the knowledge to improve the performance of the organization (Zack et al., 2009). Also, amongst organizational and system factors, knowledge management strategy and practices are critical to the success of the organizations (Ali et al., 2016). Based on the KM strategy, an organization has to approach the existing knowledge in itself and choose the most appropriate strategy for the organization which gains the best advantage (Halawi et al., 2006). So the knowledge production process is one of the necessary elements in the analysis and understanding of the strategies for organizations. The use of KM results in the improvement of the extraction and application of the knowledge resources in the hospitals and improves the level of medical services. Knowledge management in the hospitals is known as a management process which manages all kinds of the knowledge in the hospital. It is notable to say that for the promotion of management level in the hospitals, the existing obstacles in creation, evaluation, transition, application, and maintenance of the knowledge must be removed and this requires an appropriate strategy (Hongying & Qian, 2011). In addition to this, technically, innovation can be considered as a direct result of the efficiency of KM (Du Plessis, 2007). It also has been argued that due to the dynamic and uncertain environment, innovational behavior is a key factor in the survival and growth of the hospitals in the long term and health domain and public health centers all over the world require the knowledge leverage undoubtedly (Dalkir, 2011). The administration of the strategy is a tool for the realization of any strategies which includes the main elements of the leadership structure, human resources, culture, and budgeting (Analoui & Karami, 2003). Meanwhile, KM strategy can be considered as an important factor because strategies have a major effect on the direction and efficiency of the KM in the organization. Despite the importance of KM, only in recent years, researchers have started to study the role of leaders' strategies in the implementation of the KM and have related the management patterns to a good KM. Therefore, more studies in this domain are required. In recent theoretical developments, knowledge management activities play a

key role in improving innovation performance (Moosavi Jad et al., 2017). Hence, innovation achievements depend highly on knowledge, proficiency and the commitment of employees as the key factors in the process of value creation (Mir Fakhredini et al., 2010).

One of the objectives of this research is to study the effect of the knowledge management strategy on the knowledge management practices. In this study, we have more comprehensively presented the activities related to the KM strategies which affect the KM practices in organizations (Jansen et al., 2009; Donate & De Pablo, 2015). Following these suggestions, organizational leadership has been presented as an essential prerequisite for the development and improvement of knowledge management practices in order to achieve the service innovation with the goal of gaining a better performance in the hospitals which are among the busiest organizations. Since the competitive advantages necessarily lead to the development of ideas and new services for the organizations, they must investigate and exploit the intellectual and knowledge assets fast, efficiently and flexibly (Subramaniam & Youndt, 2005). The researchers have hardly studied the relationships among these separate structures including knowledge management strategies, knowledge management practices, and service innovation performance. Establishing the relationships among these three domains can be the main focus of this research. Several studies have covered the experimental and theoretical analyses related to the relations among the leadership, innovation, and the special processes of the KM (Mir Fakhredini et al., 2010; Yung-Lung et al., 2014; Zhang, 2015; Jasimuddin & Naqshbandi, 2017). However, there is a high vague atmosphere about the current studies of knowledge management strategies that can help the knowledge-based institutions and organizations to check and exploit the organizational knowledge and use it in order to gain an organizational advantage. Overall, the main objective of this research is to study the effect of the knowledge management strategy on the knowledge management practices in order to achieve a better service innovation performance in healthcare sector. This is a comparative study of the public and the private hospitals.

Literature Review and Theoretical Framework

Knowledge Management Strategy

Nowadays, the art of management in organizations is associated with the art of knowledge management. This means that the managers do not merely manage the personnel but they manage people and ideas. It means the provision of the appropriate atmosphere for the production of valuable knowledge via the investment on the intellectual assets of the human resources and carrying it out in a way that encourages the personal commitment of the personnel. Contemporary management scholars argue that proficiency is created through the achievement, development, and application of the knowledge. They believe that the achievement of the new knowledge depends on the evolution method of the organizations and leadership activities and it causes the compatibility with the change of organizational conditions (Viitala, 2004). Leaders can play an important role in strengthening and weakening the knowledge relations of safety, motivation and employee participation (Jiang & Probst, 2016). Lakshman and Parente (2008) specify that the knowledge management strategy plays an important role in upgrading the organizational knowledge, its absorption and transfer to organizational performance, overt organization, organizational efficiency, organizational culture, organizational training and knowledge and information creation and management. Knowledge management strategy results in more efficient use of human resources, detection of the shortcomings in the organizational knowledge, more effective and efficient learning of the employees, the provision of the goods and services with more added value, customers' and employees' content, prevention from the errors repetition, duplications and time economy (Zhang, 2015).

Knowledge management strategy helps to overcome barriers to implement good strategies in organizations. In fact, this strategy involves knowledge, the process of creating, documenting, and communicating explicit and implicit information in the organization, so that the suitable information is available to the appropriate people in an accurate and timely manner (Halawi et al., 2006). According to Hosnavi et al. (2012), leaders with dedication to the organizational culture promotion and the application of the modern leadership

practices encourage the personnel, convincing them to play a more effective role in the process of managing knowledge of the organization.

Knowledge Management Practices

Nowadays, the knowledge of human resources and intellect has a determining role in promoting the competitive power of the institutions. Knowledge management is one of the important approaches which helps the organization in this competitive situation. Bhatt (2001) specifies the knowledge management process as the creation, storage, approval, transfer, and application of knowledge. He believes that knowledge management is the analysis and organization of information from various aspects. Knowledge has always been valuable for the people. Currently, knowledge management plays an essential and important role in management and the economy of the world. The researchers emphasize the importance of the knowledge management as it organizes the knowledge in line with empowering the personnel and the organization itself to perform the activities more efficiently (Taghizadeh et al., 2010). This study focuses on the creation, storage, transfer and application of knowledge as knowledge management practices. Also, there are differences between the strategies and performance parameters in public and private sectors regarding their attitudes toward knowledge management practices due to the structural differences between these sectors. Private organizations in comparison to public organizations have more freedom and authority and this implication arises that knowledge management at least in some areas in the public organizations has not developed sufficiently (Azizi et al., 2011).

Service Innovation Performance

It is argued that in current global economic system and the increasing competition, creativity and innovation are the key factors for survival and the success of organization (Hosseini & Sadeghi, 2010). Innovation performance is the combination of total successes of the organization resulted from the efforts made for the renewal, improvement, and application of the different aspects of innovation in the organization. In the related literature, it has been considered as one of the most important factors driving the other aspects of the organization forward because of the constant efforts applied for the improvement, revision, learning from

the mistakes, and adaptation with the highly variable competitive environment (Gunday et al., 2011). Regarding the growth of the service organizations, a topic with the title of service innovation or service science has been emerged (Paton & Mclaughlin, 2008). As the focus of this research is on the service innovation, the general processes of the service innovation have been explained here. Nasirzadeh and Naji (2008) have defined the general processes of the service innovation in five steps. The first step is energy direction meaning that the service innovation is a two-dimensional factor including opportunities and problems. The second step is the deep understanding of customers' demands. The third step is the creation and collection of the ideas. The next step is to change the strategy and manage the cultural and organizational changes. Finally, the fifth step is designing and creating the model of the related service and its practical test.

Development of the Research Hypotheses

Leaders should have a deep understanding of the knowledge management strategy and possess a high flexibility. Knowledge management strategy is a process in which a person supports other members of the group in learning processes to achieve group or organizational goals (Yang et al., 2014; Cannatelli et al., 2016). So, knowledge management strategy can be considered as a suitable strategy to promote innovation and business opportunities (Teece, 2009). In this regard, the organizations should apply the best knowledge management strategies via a suitable leadership strategy for management knowledge, motivation and communications. Generally, this combination of leadership behavior must promote the knowledge management innovations regarding the creation, storage and application of knowledge in the organization. In addition to this, knowledge management strategy must clarify the relation between the expectations of knowledge agents and organizational goals (Ribiere & Sitar, 2003; Jasimuddin & Naqshbandi, 2017). Knowledge management strategy combines different aspects of the flexible and common leaderships and takes advantage of the communicational and motivational elements as well (Donate & De Pablo, 2015). The main goals of the knowledge management strategy are to encourage the learning through challenging the employees and managing them intelligently and present a counter culture that tolerates

errors, encourages the fundamental role and mutual performance, develops the knowledge transfer and storage, and extends the practical mechanisms (Williams & Sullivan, 2011; Von Krogh et al., 2012).

An appropriate knowledge management strategy can intensify the tendency to exploit the available knowledge via an interactional approach (Miller et al., 2007) which is performed through the development of storage innovations, transfer (for example, the benefit of the knowledge in other places), and application (for example, integration of the sections and knowledge). It has been argued that the motivational and communication elements affect the efficiency of these innovations and intensify the tendency to develop knowledge storage, transfer, and application (Donate & De Pablo, 2015; Jasimuddin & Naqshbandi, 2017). Therefore, when an organization is more inclined to knowledge management strategy, the organization seeks to develop and use knowledge management practices. So, the first proposition is presented in the form of four hypotheses as follows:

H1.1. Knowledge management strategy has a significant and positive effect on knowledge creation.

H1.2. Knowledge management strategy has a significant and positive effect on knowledge transfer.

H1.3. Knowledge management strategy has a significant and positive effect on knowledge storage.

H1.4. Knowledge management strategy has a significant and positive effect on knowledge application.

Knowledge management can be considered as a collection of activities, innovations, and strategies that organizations apply in order to create, store, and use the knowledge to improve the organizational performance (Zack et al., 2009). Knowledge management is considered as an approach to improve the innovative capabilities of the organization. On this basis, knowledge creation management practices based on the domestic research and development are necessary for the organization and the improvement of its innovation performance (Donate & De Pablo, 2015). Implementing knowledge management skills increases organizational performance (Yang et al., 2014). Kazanjian et al. (2000) have pointed out that it is possible to consider the knowledge transfer and application strategies as the success factors necessary for the development of the new ideas and services. Generally,

the method which organizations use to manage their knowledge determines the application of this knowledge in innovation (Brockman & Morgan, 2003). Some recent studies show that the knowledge management activities affect the improved innovation in manufacturing organizations (Moosavi Jad et al., 2017). Regarding these deductions, knowledge transfer and application of knowledge will have a direct impact on service innovation performance. This argument led to the development of the following hypotheses.

H2. Knowledge creation has a significant and positive effect on the service innovation performance.

H3. Knowledge transfer has a significant and positive effect on the service innovation performance.

H4. Knowledge application has a significant and positive effect on the service innovation performance.

Although the current researches have considered the storage as a knowledge extraction process, in this research, only its indirect relations with the service innovation performance have been considered, given that knowledge management activities play an important role in innovation performance (Moosavi Jad et al., 2017). Generally, there are almost no evidences concerning the direct effect of the knowledge encoding or creation in databases or in organizational reports on innovation. Since the knowledge storage practices include filing, structuring and collecting data and information, their impact on the innovation performance will be noticeable only if the members of the organization follow special purposes or use these innovations (Cummings & Teng, 2003). When their implementation is accompanied by knowledge application and transfer strategies, knowledge storage strategy affects the innovation results of the organization (Donate & De Pablo, 2015). So, knowledge application and transfer strategy might have an intermediate role in the interface between knowledge storage strategy and innovation performance.

H5. Knowledge storage has a significant and positive effect on the service innovation performance through a knowledge transfer practice.

H6. Knowledge storage has a significant and positive effect on the service innovation performance through a knowledge application practice.

A suitable leadership strategy creates a kind of compatibility in the workplace which makes employees feel that they are part of the

organization and this leads to motivation in the individual to move toward the innovation and it will, in turn, result in a better organizational performance (Soltani et al., 2016; Elrehail et al., 2017). In relation to the knowledge management strategy, a great deal of researches has been done to specify how to implement knowledge management practices to take advantage from the effect of the innovation performance (Von Krogh et al., 2012). The discussions above provide some elements support the positive relations between the innovation performance and knowledge management strategy. A knowledge management strategy can be considered as a stimulating factor for innovation performance (Donate & De Pablo, 2015). In particular, a better knowledge management strategy will develop more suitable knowledge management practices which can have a positive effect on innovation performance.

H7. Knowledge management strategy has a significant and positive effect on the service innovation performance.

H8. Knowledge management practices mediate the relationship between the knowledge management strategy and the service innovation performance.

Based on empirical studies, theories and hypotheses, the conceptual model of research is presented in Figure 1.

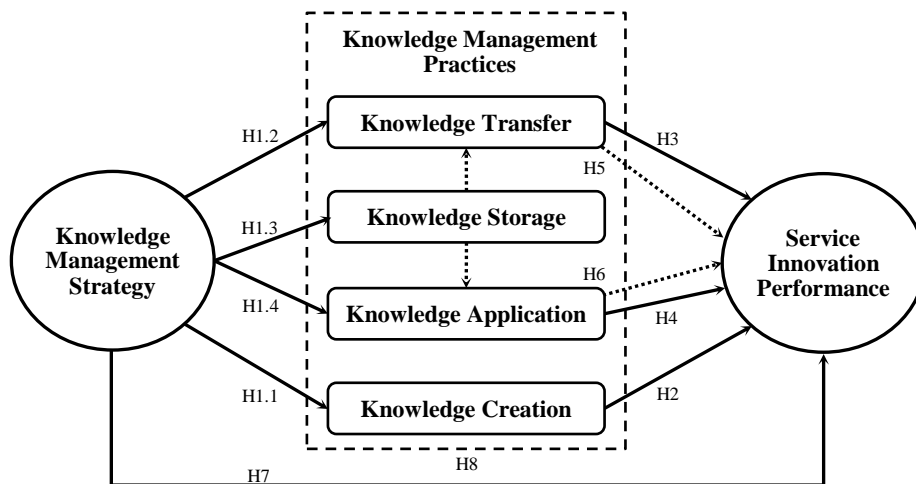


Fig. 1. The research conceptual model

Sample and Data

The therapy sections of the hospitals are among the important institutions in the services domain and play an important role in the maintenance and provision of a better health service to the patients. The sample of this study includes all the therapy sections of public and private hospitals in Tabriz. The number of public and private hospitals in Tabriz at the time of this research was respectively 20, including 852 therapy sections (631 public and 221 private sectors). The sample for the study was selected through performing the multi-level cluster sampling method. The final sample volume includes 266 therapy sections that have been selected proportionate to the number of the therapy sections in each hospital type (62 samples for private sector and 197 samples for public sector).

In term of data analysis, this research is quantitative. The survey research design has been used to collect the data. In this research, for the descriptive analysis of the data and reliability tests, SPSS 23 has been applied. Also in order to analyze the research data, variance-based method using structural equations modeling (SEM) in Smart PLS 3 has been used. For data collection, a standard combined questionnaire designed by Lawson (2003), Newman & Conrad (2000), Kim et al., (2014) and Donate & De Pablo (2015) has been used. All constructs have been measured using a 5-level Likert scale. We conducted a pilot study using a panel of experts in the subject field. So the views of the management professors have been considered to increase the face validity of the questionnaire. Cronbach's alpha scale has been applied to measure the reliability of the questionnaire. Alpha results are presented in Table 1.

Table 1. Results of Cronbach's alpha

Variables		Knowledge Creation (KC)	Knowledge Storage (KS)	Knowledge Transfer (KT)	Knowledge Application (KA)	Knowledge Management Strategy (KMS)	Service Innovation Performance (SIP)
Number of questions		6	7	7	6	5	5
Alpha Coefficient	Public Hospitals	0.824	0.890	0.862	0.903	0.817	0.794
	Private Hospitals	0.834	0.838	0.907	0.914	0.840	0.823

Results and Findings of the Research

Descriptive Analysis

The number of usable and analyzable questionnaires available includes 169 questionnaires from the public sector and 62 questionnaires from the private sector. The results of the demographic features of respondents in the therapy sections of the public and private hospitals have been separately presented in Table 2.

Table 2. Demographic profile of the respondents

Type of organization		Public Hospitals		Private Hospitals	
Variable	Levels	Frequency	Percent	Frequency	Percent
Gender	Male	131	77.5	39	62.9
	Female	38	22.5	23	37.1
Age	Up to 30 Years	17	10.1	11	17.7
	31-40 Years	47	28.4	16	25.8
	41-50 Years	67	39.6	21	33.9
	> 50 Years	37	21.9	14	22.6
Years of service	Up to 5 Years	25	14.8	9	14.5
	6-10 Years	42	24.9	16	25.8
	11-15 Years	55	32.5	24	38.7
	16-20 Years	25	14.8	8	12.9
	21-25 Years	13	7.7	4	6.5
	> 25 Years	9	5.3	1	1.6
Education	Associate Degree	-	-	-	-
	Bachelor	12	7.1	2	3.2
	Masters	34	20.1	9	14.5
	PhD	123	72.8	51	82.3

As the measurement scale for variables of the current research is the 5-level Likert scale, Spearman's rank correlation coefficient (Spearman's rho) has been used to perform bivariate analysis to test the correlation between the rankings of the variables. Tables 3 and 4 present the results of Spearman's rho between variables of the current research. We found significant correlations between the variables in both the public and private sectors.

Table 3. Correlations between variables for public hospitals

Variable	Mean	AVE	KC	KS	KT	KA	KMS	SIP
KC	3.773	0.590	1.000					
KS	3.855	0.533	0.575	1.000				
KT	3.712	0.520	0.424	0.410	1.000			
KA	3.718	0.607	0.529	0.537	0.338	1.000		
KMS	3.636	0.565	0.467	0.538	0.367	0.664	1.000	
SIP	3.897	0.597	0.531	0.450	0.340	0.491	0.557	1.000
Number of observations					169			

All Spearman correlations are significant with $P < 0.01$; AVE= Average Variance Extracted

Table 4. Correlations between variables for private hospitals

Variable	Mean	AVE	KC	KS	KT	KA	KMS	SIP
KC	3.871	0.699	1.000					
KS	3.774	0.662	0.598	1.000				
KT	3.788	0.734	0.787	0.695	1.000			
KA	3.417	0.645	0.578	0.671	0.551	1.000		
KMS	3.661	0.702	0.551	0.638	0.626	0.612	1.000	
SIP	3.626	0.748	0.637	0.457	0.554	0.634	0.630	1.000
Number of observations					62			

All Spearman correlations are significant with $P < 0.01$; AVE= Average Variance Extracted

Model Fitness Evaluation Criteria

The Partial Least Square (PLS) method has been used for the evaluation of structural equation modeling. It consists of three parts:

1. Shared Index: This scale shows that how much of the change of the questions is determined by the related construct. Positive values of this scale indicate the acceptable and suitable quality of the measurement model. The results have been presented in Table 5 for both the public and private sections in the form of CV COM.

2. The structural section version: We have used the R squared for the structural model. Chin (1998) has proposed three values of 0.19, 0.33, and 0.67 as the criteria values for weak, average and strong R squared. The results have been presented in Table 5 for both the public and private sections which show the acceptable structural model fitness.

3. Assessment of the whole model: Goodness of Fit (GOF) scale is

related to the generality of the structural equations models. In the following formula, the communality shows the average shared values of each construct (CV COM), and R squared (R²) shows the average value of the endogenous constructs' values which have been illustrated inside the circles as the output of the Smart PLS software. Wetzel et al. (2009) have determined the values of 0.01, 0.25, and 0.36, respectively, for weak, average, and strong GOF. Based on the results of Table 5, this value is appropriate for both sectors.

$$GOF = \sqrt{\text{Communality} \times R \text{ Square}}$$

Table 5. Results of CV COM, R² and GOF

Variable	Public Hospitals			Private Hospitals		
	CV COM	R ²	GOF	CV COM	R ²	GOF
KMS	0.386	-		0.551	-	
KC	0.384	0.281		0.516	0.429	
KS	0.373	0.333	0.385	0.523	0.538	0.547
KT	0.358	0.252		0.607	0.660	
KA	0.438	0.560		0.482	0.596	
SIP	0.389	0.520		0.577	0.608	

Model Output and Results of Testing Hypotheses

Beta index specifies the causal linear relation and its intensity and direction between two latent variables. Its value is between +1 and -1 and a zero value indicates that there is no linear relation between two latent variables. Based on the software output in Figures 2 and 3, there are linear relations between the latent variables of the research. In order to check the significance level of the beta indexes, we must have the t-value of each route which has been presented in the Smart PLS software output in Tables 6 and 7. The criterion t measures the relationship between the variables of the model. In case the value of this scale is more than 1.96, the accuracy of the relationship between the construct and research hypotheses at different significance levels is confirmed. Output model of the research with beta indexes and R squared indexes have been presented in Figures 2 and 3, respectively, for the public and private sectors.

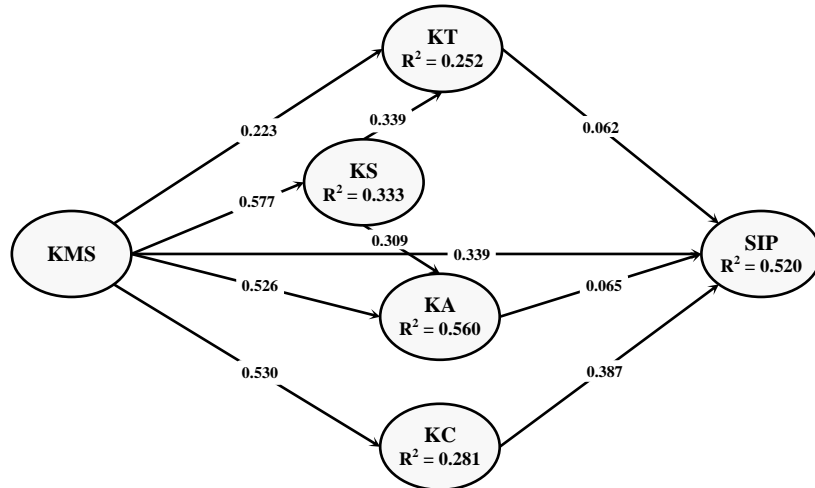


Fig. 2. Output model for public hospitals

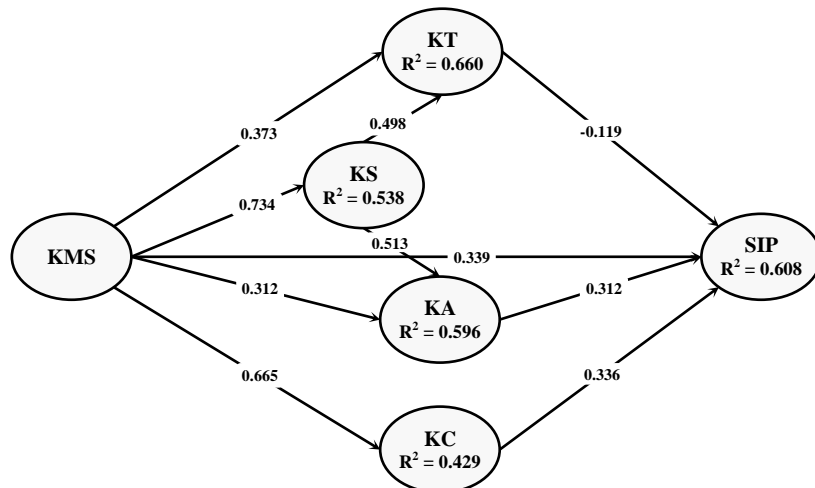


Fig. 3. Output model for private hospitals

Based on the results, as shown in Table 6 for the public sector, the hypotheses 3, 4, 5, and 6 have not been supported due to the low t-value and also due to the unacceptable significance level. The rest of the hypotheses were approved at the significance level of 0.001, except the route of knowledge management strategy to the knowledge transfer which was approved at the significance level of 0.05. Also as

shown in the Table 7 for the private sector, the hypotheses 3, 5, and 6 have not been supported due to the low t-value and also due to the unacceptable significance level. The rest of the hypotheses were approved at the significance level of 0.001 and 0.01, except two routes of knowledge management strategy to the knowledge transfer and knowledge application which were approved at the significance level of 0.05.

Table 6. Results of hypotheses for public hospitals

H	Variable Type			Beta	t-value	Results
	Independent	Mediator	Dependent			
H1.1	KMS	-	KC	0.530	7.632***	Accepted
H1.2	KMS	-	KT	0.223	2.327*	Accepted
H1.3	KMS	-	KS	0.577	9.623***	Accepted
H1.4	KMS	-	KA	0.526	6.329***	Accepted
H2	KC	-	SIP	0.387	5.301***	Accepted
H3	KT	-	SIP	0.062	1.088	Rejected
H4	KA	-	SIP	0.065	0.982	Rejected
H5; H6	KS	KT KA	SIP	0.041	1.269	Rejected
H7	KMS	-	SIP	0.339	4.124***	Accepted
H8	KMS	KMP	SIP	0.276	3.869***	Accepted

*** P < 0.001; ** P < 0.01; * P < 0.05

Table 7. Results of hypotheses for private hospitals

H	Variable Type			Beta	t-value	Results
	Independent	Mediator	Dependent			
H1.1	KMS	-	KC	0.665	7.975***	Accepted
H1.2	KMS	-	KT	0.373	2.395*	Accepted
H1.3	KMS	-	KS	0.734	9.506***	Accepted
H1.4	KMS	-	KA	0.312	2.448*	Accepted
H2	KC	-	SIP	0.336	3.203**	Accepted
H3	KT	-	SIP	0.119	1.212	Rejected
H4	KA	-	SIP	0.312	2.636**	Accepted
H5; H6	KS	KT KA	SIP	0.100	1.255	Rejected
H7	KMS	-	SIP	0.347	2.759**	Accepted
H8	KMS	KMP	SIP	0.346	2.865**	Accepted

*** P < 0.001; ** P < 0.01; * P < 0.05

Discussion and Conclusion

A great volume of the researches are performed in relation to designing and implementing the organizational strategies to improve the innovation. These researches show the importance of the theoretical and practical role and position of these strategies for organizations (Donate & De Pablo, 2015). Knowledge creation is necessary in order to take advantage from the competitive advantages based on knowledge innovation, transfer and application which allow the organization to develop the service that can provide the organization maximum competitive power. According to this view, the knowledge management strategy is a dynamic capability which is focused on the constant revision of a knowledge opportunity in the organization by applying the innovations created to manipulate, develop, encode and use the implicit and explicit knowledge (Wang & Ahmed, 2007; Moosavi Jad et al., 2017). The results show that the knowledge creation, storage, transfer, and application in management practices have strong relationships with knowledge management strategy. Therefore, organizations that tend more to the knowledge management strategy consider the effects related to the development and support of the knowledge exploitation activities to achieve a more efficient organizational performance. This is originated from the private section and the results of current research confirm this in therapy sections of the private hospitals in Tabriz as well. Also, in the public sector, we have found the same results. Perhaps the therapy sections of these hospitals require a lot of knowledge as well to give services to all of their clients. The first four hypotheses of the research which emphasized the positive and significant effect of the KM strategy on all the four KM practices (creation, storage, transfer and application) in the therapy sections of the public and private hospitals have been supported. These findings are consistent with the findings of Evis and Alba (2013) in both sections. All of the results of the research hypotheses for the private sector and for the public sector (except the fourth hypothesis in public sector) are also in consistent with the findings of Kim et al. (2014) and Donate & De Pablo (2015).

As predicted, the knowledge creation and knowledge application have positive relations with the service innovation performance in the private sector. These results are consistent with the findings of Yung-

Lung et al. (2014) and Mir Fakhredini et al. (2010). According to the findings of these researchers, knowledge management practices have significant positive effects on the innovation performance. But the result of the fourth hypothesis for the therapy sections of the public sector hospitals, unlike the private sector, is not consistent with the findings of the related researches. This can be due to the formal and dogmatic regulations dominant in these public sector organizations. Generally, researches show that these knowledge management practices are related to the innovative advantages (Donate & Guadamillas, 2010). The reason for this is that the combination of existing and new acquired knowledge can play an undeniable and extraordinary role in service innovation. Also, hospitals for effective implementation of knowledge management practices must apply appropriate strategies. They also should share the knowledge with employees. With managing the intellectual resources and with new ideas presented by the employees, the hospitals are able to provide innovative ideas, tools and services, and processes for their therapy sections. So, hospitals' managers must analyze the individual and organizational factors in order to promote the knowledge of their employees and create innovational behavior (Hyun & Seong, 2014). However, the results of the study show that, both in the public and the private sectors, only some of the knowledge management practices have positive relationships with service innovation performance.

Although the fifth and sixth hypotheses were in the form of an indirect relationship between the storage of knowledge and the performance of service innovation, the final results do not support them. Also, in the therapy sections of the public and the private hospitals, although there are some correlations between knowledge storage, transfer, and application and innovation performance, any intermediate effect cannot prove the effectiveness of the related factors on the performance innovation. In addition to this, there are no notable evidences about relationship between the knowledge transfer and the innovation performance in therapy sections of both the public and the private hospitals. Also, there is no obvious relationship between the knowledge application and the innovation performance in the public sector. There were evidences of service innovation in this research that led us to consider the scale of this concept for further

exploration. Knowledge storage and the related knowledge transfer activities have not got a high impact on the innovation performance because knowledge storage and transfer do not have a close relationship with the innovation performance as the efficiency is achieved through the rotation of the current knowledge. So, innovation increases the implementation process of these knowledge management practices in improving the timing of the routines and technologies and it is followed as a learning process (Gupta et al., 2006). Leadership along with knowledge management systems have a positive impact on the quality of content knowledge, and doctors use better quality knowledge to lead them to better results for patients (Ali et al., 2016). The seventh hypothesis for each of public and private sectors is consistent with the researches of Soltani et al. (2016) and Jasimuddin & Naqshbandi (2017). Based on the findings of these researchers, leadership has a direct significant positive effect on the innovation performance. Also, the results of the last hypothesis for each of the public and the private sectors indicate that knowledge management practices are good mediators between knowledge management strategy and innovation performance. This confirms the main aim of the current research and is consistent with the research of Kim et al. (2014), Donate and De Pablo (2015), and Moosavi Jad et al. (2017). In addition, the managers who are active in knowledge exploitation, meaning the storage, transfer and application of knowledge, may need a knowledge strategy concerning the constant improvement in this domain to develop a strong commitment to innovation (Nonaka & Takeuchi, 2011). Overall, there were sufficient supports for the knowledge management practices based on the knowledge management strategy in relation to the development of innovation in new services to be able to provide the clients with better services in the therapy sections of hospitals.

Managerial Implications

According to the results of this research, as in therapy sections of the public hospitals, knowledge management faces multiple values and some technical issues. Therefore, these organizations only with the adoption of a suitable knowledge management strategy will be able to achieve the organizational advantages and efficiency. In case of the

therapy sections of the private hospitals, the management can lead the process of establishing effective knowledge management practices. The following practical comments are also suggested for both public and private sections: Knowledge is a human related factor, so digital resources cannot guarantee the improvement of knowledge by themselves. Since knowledge is created and developed in the mind of human and, in fact, it is the result of human's thought, then the managers should establish effective knowledge management strategy to develop and use knowledge in the organizations. With motivating and encouraging the employees and engaging them, managers of the therapy sections can promote the individuals' knowledge in order to provide new services in line with the acceptable innovation performance in the hospitals. Provision and distribution of knowledge help to develop its own usage in hospitals. It means that knowledge is the only asset that increases, when shared with others. One of the reasons that organizations tend to establish knowledge management strategy is that it encourages innovation and increases the quality of performance. So, the managers should encourage good knowledge management practices in both public and private hospitals.

Suggestions for Future Research

In this research, as we have examined only services innovation, it is expected that other aspects of innovation, such as organizational innovation and process innovation, be investigated in the future. A comparative analysis of public and private sectors in the context of knowledge management strategy and knowledge management practices in the healthcare sector has been carried out in this research. It is suggested to conduct similar studies in a wider range of industries.

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