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Knowledge management infrastructures and organizational intelligence in Iranian research centers

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Abstract

Purpose – The purpose of this paper is to explore the possible relationship between knowledge management infrastructures (KMI) and organizational intelligence (OI) in two country-wide research centers dependent to Ministry of Science, Research and Technology, namely, Iranian Research Institute for Information Science and Technology (IRIIST) and Institute for Humanities and Cultural Studies (IHCS).

Design/methodology/approach – The research is a survey in a descriptive manner. Using two validated questionnaires related to KMI and OI, the research was conducted among 175 faculty members and staffs of the two research centers. Using structural equation modeling (SEM) procedures, collected data were then analyzed by software SPSS and partial least squares.

Findings – Factor analysis showed a high factor loading related to the two main variables and all of the items indicated goodness of fit (GoF) related to the questions. The variance-mean ratio between two variables was higher than 0.5 indicating a high convergent validity. R^2 for OI showed fitness of SEM. The GoF for IRIIST was 0.642 lower than IHCS with 0.645. Also, path analysis indicated a significant relationship between two variables by 95 percent degree of confidence accepting the two research hypothesis.

Originality/value – By comparison, KMI was more correlated with OI in IHCS than IRIIST. KMI in IRIIST predicted OI by 0.826 percent while in the IHCS by 0.848 percent.

Keywords Knowledge management, Organizational intelligence, Comparative evaluation, Institute for Humanities and Cultural Studies, Iranian Research Institute for Information Science and Technology, Knowledge management infrastructures

Paper type Research paper

1. Introduction

As an old belief, "knowledge is power" could be replaced by "sharing knowledge is power" in the current information societies in which knowledge-based decisions and activities are of utmost importance (Davenport and Prusak, 1998; Ahmad, 2014; De Angelis, 2016) and organizations are becoming more knowledge intensive (Wong, 2005). As a result, knowledge can now be viewed as a strategic asset for organizations in comparison with tangible elements. In such a subtle state, knowledge management is an attempt to manage knowledge (skills, merits, and insight) of employees and managers which is internal and external as well (Trisnanty and Handayani, 2013; Patil and Kant, 2014). Knowledge management has emerged as an approach to incorporate emerging requirements of the modern organizations (Gold *et al.*, 2001; Chang and Chuang, 2011; Williams, 2015) in which ever-changing capabilities and competitive intelligence are of pressing concerns.

Knowledge management efforts typically focus on organizational objectives, such as improved performance, competitive advantage, innovation, the sharing of lessons learned,

integration and continuous improvement of the organization in an increasing competitive market (Gupta and Sharma, 2004; Wong, 2005). As an established discipline since 1990s, knowledge management includes courses taught in the fields of business administration, information systems, management, and library and information sciences (Omotayo, 2015). The basic factors required for the creation of a system, organization or structure is called infrastructure. These infrastructures have soft, invisible and physical, visible nature and can be considered as the software of the organizations rather than their hardware (Chang and Chuang, 2011). Knowledge management infrastructure also reflects the long-term foundations for knowledge management. In an organizational context, knowledge management infrastructure includes five major components, including organization culture, organization structure, organization's information technology infrastructure, common knowledge and physical environment (Becerra-Fernandez and Sabherwal, 2010; Trisnanty and Handayani, 2013).

The early definitions of knowledge management emphasized the technology infrastructure (Sher and Lee, 2004). Most organizations still invest heavily in the knowledge management infrastructure to collect, manage, and distribute knowledge within the organization more effectively and efficiently (Chinowsky and Carrillo, 2007). The appropriate knowledge management infrastructure can enhance the ability of organization to create, share, and exploit knowledge, but it is yet insufficient to improve knowledge management success (Khalifa and Liu, 2003; Zack, 1999). Zack (1999) also mentioned that the appropriate knowledge management infrastructure can enhance an organization's ability to create and exploit knowledge, but it does not ensure that the organization is making the best investment of its resources or that it is managing the right knowledge in the right way. Some researchers called such infrastructures as important as critical success factors of the organizations (Hamidi *et al.*, 2016). Usually, the costs of developing and maintaining knowledge management infrastructures (KMI) are high, and without the expenditure of time and effort to maintain a knowledge management system, it would fail to yield any outcomes (Choi and Lee, 2003; Taejun, 2011).

A remarkable part of knowledge in organizations is always implicit and in the mind of a small group of people. Knowledge management seeks to share this information so that the organizations boost their mobility and advancement in the knowledge-based activities (Wong, 2005; Hamidi *et al.*, 2016). Sharing knowledge will then be achieved only through knowledge management. In doing so, the first requirement is to establish the infrastructures of knowledge management needed (Trisnanty and Handayani, 2013).

On the other hand, organizational intelligence (OI) is a set of mental abilities of a given organization (Matsuda, 1992; Rahimi and Moqtader Mansouri, 2016) in which both human and artificial intelligence can be considered as the strategic capacity to generate knowledge to be used in the market (Moshabaki Esfahani and Mir, 2014; Halal, 1998; Bahrami *et al.*, 2016). The theory of OI seeks to identify organization-related strengths and weaknesses and provides necessary strategies for the improvement of organizational performance through the assessment of intelligence situation of the organizations (Bahrami *et al.*, 2016). Albrecht (2002, 2003) defined OI as a continuous cycle of activities that include sensing the environment, developing perceptions, and generating meaning through interpretation, using the memory of past experience to help awareness and taking action based on the developed interpretations. Thus, OI refers to a process of turning data into knowledge and knowledge into action for organizational gain (Lee and Lee, 2007; Staskeviciute-Butiene *et al.*, 2016) and to promote innovations, create and share knowledge (Staskeviciute-Butiene *et al.*, 2016).

By examining such components as adaptability to the environment and perspectives, learning and application of knowledge, structural and organizational performances, morality, ICT, efficiency and effectiveness, the OI can be evaluated (Bahrami *et al.*, 2016). As such, making use of capacities to make quick and accurate decisions, an effort to permanent learning, the use of different creativity and skills in unexpected and critical situations to cope with changes are totally considered as OI (Potas *et al.*, 2010;

Bahrami *et al.*, 2016; Sistani and Kamalian, 2016). For the purposes of this research, OI is defined as the ability of an organization to adapt, learn, and change in response to environmental conditions through the use of relevant knowledge. OI as well as knowledge management, are key factors of success in contemporary competitive environments that exist in different organizations (Hamidi *et al.*, 2016).

2. Problem statement
It is discussed in the related literature that OI depends on a structured network of expert analyzers who offer their technical skill, knowledge, and personal experiences to support the sense-making and decision-making processes (De Angelis, 2013; Moshabaki Esfahani and Mir, 2014) and it is why the two concepts are related together. Although important in nature, the two concepts are potentially appropriate for further investigation. The main reason for conducting the current research was to fill the existed gap in the literature by a case study. The study could shed some lights for understanding the fact that the gap should be taken into consideration by researchers in the field.

Both, KMI and OI are of high importance in modern organizations in which competitive advantages is among the main concerns (Moshabaki Esfahani and Mir, 2014). The two concepts, however, are from the soft properties of the organizations and their evaluation is difficult for managers and researchers. Such an evaluation is more important for the organizations where their decisions and achievements are in a country-wide domain. Additionally, cultural institutions have critical roles in such important areas as historical and mental identity of a given society.

This study seeks to examine the current situation and relationship between KMI and OI of the two Iranian research and cultural centers, namely, Iranian Research Institute for Information Science and Technology (IRIIST) and Institute for Humanities and Cultural Studies (IHCS). In addition to the importance of evaluating such a relationship, the research focuses on strengths and weaknesses of the two organizations, thereby, some solutions could be put forth. These solutions will be emerged after the analysis of the gathered data. Specifically, the analysis will show the current situation of the two concepts and their lacks needing to be resolved by practical implications.

There are few studies that explored the mentioned relationship in related literature (Moshabaki Esfahani and Mir, 2014). The study is the first one in the Persian language, especially in relation with cultural and research organizations. It is important knowing the relationship between the two concepts as they could predict each other. The research efforts to fill the gap existed in literature related to the two concepts. The results obtained from this study will include the awareness of the readiness level of KMI in the two institutes and its impact on OI.

3. Literature review
There exist a research gap between the two subject areas of knowledge management and OI in the literature (Moshabaki Esfahani and Mir, 2014). In a research effort to model the relationship between the two concepts, De Angelis (2013) conducted a study. This study developed a KM-OI model with empirical tests, using structure equation modeling (SEM), with nine hypotheses (Nunnally, 1978). The study showed the importance of KM and OI for public administration and that the KM-OI model is useful to identify influential factors that must be taken into consideration to improve the processes of creation (KM) and application of knowledge (OI). The findings showed the importance of a structure, which allows information to flow effectively, supports programs of competencies development, and that defines the roles and responsibilities in constructing and applying for KM programs and so on.

Researchers in the field of knowledge management identified various infrastructures for knowledge management within organizations. Some of the most important infrastructures of knowledge management can be seen in Table I.

In a new and comprehensive study, Adine Ghahramani *et al.* (2011) evaluated and verified a set of critical variables related to KMI that resulted to the following six fundamental infrastructures: organizational culture, organizational structure, individuals, processes, financial resources, and technology. In this study, they identified six infrastructures which have been used[1] because of their comprehensiveness and applicability in real settings.

On the other hand, as one of the greatest scholars of OI, Albrecht (2002) identified seven components for OI. As a validated literature, a set of components has been used in this study in the form of a valid questionnaire[2] in the field of OI, as shown in Table II.

OI in the view of Karl Albrecht (2003) is the talent and capacity of an organization for mobilizing its mental abilities to reach the organizational mission (Rahimi and Moqtader Mansouri, 2016). Different research used the theory in their projects. For example, Lefter *et al.* (2008) conducted a research to provide an overview of the Romanian companies to staff positions due to the seven dimensions of Albrecht OI model. OI has a moderate or higher level.

In Iran, some research has been conducted to explore the possible relationship between the two constructs. For example, the findings of a research conducted by Alavi and Arablou (2012) showed that components of strategic vision are in first place and knowledge components are located in second place. Also, in terms of knowledge function, the strategic vision, tendency to change, and pressure of OI function are desirable. But constituents of unity and agreement, and the spirit of common fate have been at a low level among the librarians. Keivanara *et al.* (2011) also determined the relationship between components of knowledge management and OI in Isfahan University of Medical Sciences. The survey instrument consisted of a questionnaire on knowledge management and OI standard

Researchers	Year	Investigated infrastructures
Davenport and Prusak	1998	"Technology," "leadership, culture, education" and "knowledge and E-resources of Knowledge"
Donoghue *et al.*	1999	Technology, human resources, organizational culture, and organizational structure
Bassi	2000	Information technology, human resources, organizational process, organizational culture and financial resources
CIO Council	2001	Individuals, process and technology
Sharma *et al.*	2005	Cooperation, organizational memory, human resources, knowledge network
Lee and Lee	2007	Individuals, organizational culture, technology, organizational structure
Zaim *et al.*	2007	Organizational culture, organizational structure, intellectual capacity and technology

Table I.
Some prominent works related to KMI

Component	Concept
Strategic vision	The desired aims of an organization seeking to achieve
Shared fate	Declaring the organizational mission and the belief that the organization employees can achieve their objectives by cooperation with each other
Appetite for change	Challenges and opportunities for new experiences and achievements
Alignment and congruence	Organizing individuals and teams to realize the organizational mission to prepare legislation so that groups are not suffered from problem in their work and no disagreements occur among them
Spirit (heart)	Good feeling about working in the organization and the desire to do the job duties beyond the necessary criteria
Knowledge deployment	Resorting the organization to knowledge to achieve success and victory on the basis of its application
Performance pressure	Self-conscious recognition of performances of staffs, lack involvement among managers on the organizational executive performance

Table II.
Components of the theory of organizational intelligence (Albrecht, 2002, 2003)

questionnaire of Albrecht. The results showed that the rate of knowledge management and OI was below the average level and there was a significant correlation between scores of knowledge management components and OI.

Likewise, Boudlaie *et al.* (2014) conducted a research to analyze the status of OI and agility at Tehran University of Medical Sciences by taking into account the model of Albrecht (2003) designed for OI. Results showed that the status of OI is not suitable except for in the dimensions of tendency to change, spirit, and consistency. Organizational agility was in a middle level except for the dimensions of quality and changes in the context studied. Zeynabadi *et al.* (2014) evaluated the role of OI of job performance in Tejarat Bank branches employees in Tehran using the Albrecht seven-dimensional model. Results showed that four components including appetite for change, alignment and congruence, knowledge deployment and shared fate entered regression equation. Using this equation, the researchers concluded that the employee job performance is influenced more by alignment and congruence index, but the three other components are also have crucial impacts on this performance.

4. Objectives and hypotheses

The main objective of this study was to investigate comparatively the infrastructures of knowledge management and its relationship with OI in IRIIST and IHCS. In this regard, determining the components related to the two variables and the level of their influence on each other will be closely investigated. By reviewing the related literature and the mentioned relationship that existed between the two concepts, some hypotheses could be investigated. The research seeks to explore the following hypotheses:

H1. There is a direct and significant relationship between the components of the infrastructure of knowledge management and the components of OI in IRIIST.

H2. There is a direct and significant relationship between the components of the infrastructure of knowledge management and the components of OI in IHCS.

5. Methodology

Since this study aims to determine the possible relationships among the components of the infrastructure of knowledge management and of the OI, the study is applied in terms of its objective and is descriptive and correlational in terms of data collection and particularly is based on SEM. The population of this study consists of 139 and 380 cases of employees and faculty members in IRIIST and IHCS, respectively. Using the formula of stratified random sampling, 65 participants (33 males and 32 females) in IRIIST and 110 participants (47 males and 63 females) in IHCS filled in the questionnaires. Details and statistics of questionnaires collected from the two institutes have separately been given in Table III based on faculty member, employees, level of education and gender.

As mentioned before, the basic tool for the research is the output of the research of Adine Ghahramani *et al.* (2011) to measure the infrastructures of knowledge management. The questionnaire consists of six infrastructures of organizational culture, organizational structure, people, processes, financial resources, and technology. Additionally, as one of the theorists of OI, Albrecht (2002, 2003) presented seven components for OI. These components have been applied as a standardized and validated questionnaire in the field of OI in the current study. Both questionnaires were measured with Likert scale (from completely disagree $= 1$ to completely agree $= 5$). To evaluate the initial validity of both instruments, confirmatory factor analysis which is expressed in detail in result section was used. To ensure the validity of the questionnaire, the comments of six faculty members including three faculty members of the management group and three faculty members of knowledge

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Level of education	Gender	IRIIST	IHCS	Total (IRIIST)	Total (IHCS)
Faculty member					
PhD	Male	5	19	16	39
PhD	Female	5	17		
MA	Male	4	1		
MA	Female	2	2		
Employee					
MA	Male	10	12	49	71
MA	Female	15	15		
Bachelor	Male	11	17		
Bachelor	Female	10	22		
Associate degree	Male	2	3		
Associate degree	Female	0	2		
Diploma	Male	0	0		
Diploma	Female	1	0		

Table III.
Demographic features of the research participants

and information science were used and after reforming and adjusting, the final questionnaires were formulated. To assess the reliability of questionnaires, Cronbach's α test was used. As it has been shown in Table IV, the resulted values are larger than 0.7, therefore, it was determined that the questionnaires have a good reliability.

6. Research findings

In this study, in order to analyze the model, SEM with partial least squares (PLS) approach has been used. The algorithm consists of two main steps, including investigating the fit of the model and testing the hypotheses of the study (Wetzels *et al.*, 2009). The first part, i.e. the fit of the model is done in three sections: fitting measurement models, fitting the structural model and fitting the overall model.

6.1 Fitting of the measurement models

According to the analysis algorithm of PLS, to evaluate the fit of measurement models, the reliability and convergent validity is used.

Variable	Structure	Loading (IRIIST)	Loading (IHCS)	Cronbach's α (IRIIST)	Cronbach's α (IHCS)	Composite reliability (IRIIST)	Composite reliability (IHCS)
KMI	Organizational culture	0.867	0.759	0.80	0.786	0.852	0.849
	Organizational structure	0.884	0.817				
	People	0.425	0.579				
	Processes	0.809	0.800				
	Financial resources	0.54	0.596				
	Technology	0.612	0.598				
OI	Strategic vision	0.885	0.831	0.93	0.911	0.942	0.930
	Shared fate	0.842	0.686				
	Appetite for change	0.913	0.852				
	Alignment and congruence	0.837	0.757				
	Sprit	0.870	0.887				
	Knowledge deployment	0.629	0.816				
	Performance pressure	0.868	0.823				

Table IV.
Measuring the reliability of the model

6.1.1 Reliability. Based on the algorithm of PLS analysis, for evaluating the goodness of fit (GoF) for the model, three criteria including reliability, convergent validity, and divergent validity should be tested. Reliability is evaluated using three methods including factor loadings, Cronbach's α, and composite reliability (ρ). Loading is the numeric value specifying the intensity of the relationship between a latent variable (structure) and obvious variable (index) during the process of path analysis. Specifically, obvious variables are the questions of the distributed questionnaire which are visible to researcher and participator, while the latent variables are broad concepts related to the different sets of the questions of the questionnaire where each set measures a different variable. The more the loading of an index corresponding to a specific structure, the greater the index plays a share in explaining the structure.

When factor loadings value of an indicator in comparison to a specific construct is more, thus that indicator has more fitting. Factor loading should be more than 0.4 (Nunnally, 1978). Cronbach's α is considered as a criterion for the assessment of reliability and an appropriate measure for the evaluation of internal consistency. Internal consistency indicates the correlation between a structure and its corresponding indexes. Composite reliability was introduced by Werts *et al.* (1974) and compared to Cronbach's α; its advantage is that the reliability of structures is calculated not only in absolute terms but also according to the correlation of their structures with each other.

Loadings of greater than 0.4 have a good credit. Here, the loading of knowledge management structures is between 0.425 and 0.884 in IRIIST and between 0.579 and 0.817 in IHCS, as well as, the loading of OI structures is between 0.629 and 0.913 in IRIIST and between 0.686 and 0.887 in IHCS which indicates high correlation. The criterion is greater than 0.7 for the suitability of Cronbach's α and higher than 0.7 for composite reliability (Nunnally, 1978). According to Table V, all the criteria on the latent variables have achieved a good value, thus the suitability of reliability of measurement model can be confirmed.

6.1.2 Convergent validity. Convergent validity examines the correlation of each structure with its related questions (indexes). For this purpose, average variance extracted (AVE) is applied by Smart PLS software. Fornell and Larcker (1981) have introduced 0.5 and above for a good value of AVE.

As it can be observed in Table V, the mean variance of knowledge management and OI is above 0.5 in both IRIIST and IHCS which indicates high convergent validity, i.e. the correlation of each structure with an index.

6.2 Fitting structural model (criteria of R^2)

R^2 is the coefficients related to endogenous latent (dependent) variables. R^2 is the measure indicating the impact of the exogenous variable on an endogenous variable and 0.19, 0.33 and 0.67 are considered as criteria for weak, medium and strong values of R^2. R^2 is 0.683 for OI structure in IRIIST (Figure 1) and 0.720 in IHCS (Figure 2) which confirms the fit of the structural model.

Structure	> 0.5 AVE (IRIIST)	> 0.5 AVE (IHCS)
KMI	0.505	0.501
OI	0.704	0.656

Table V.
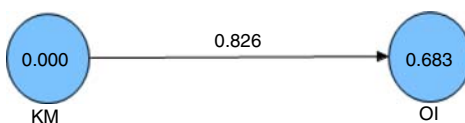The average of
the variance

Figure 1.
Value of R^2 in IRIIST

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6.3 Fitting general model (GoF)

GoF is related to the overall part of structural equation models, i.e. by this criterion, the researcher can control the fit of the overall part after examining the fit of measurement part and structural part of the general model of this study. This criterion was introduced by Wetzels *et al.* (2009, p. 185) and is calculated according to the following model:

$$GoF = \sqrt{Communalities \times R^2}$$

Communalities show that the mean collective values of each structure and R^2 also is the mean value of endogenous structures of the model. Wetzels *et al.* (2009, p. 187) have introduced 0.01, 0.25 and 0.36 as low, medium, and high values, respectively.

As it can be seen in Table VI, the fit of the general model is 0.642 in IRIIST and 0.645 in IHCS which indicates a strong overall fit of the initial model of this study.

6.3.1 Investigation of significance coefficients related to each hypothesis. Using the coefficients of *t* as a statistical value, fitting the model is done in a way that these coefficients should be more than 1.96 so that their significance can be confirmed at the level of confidence of 95 percent.

The path of infrastructures of knowledge management to OI with the coefficient of 26.112 indicates the significance of the effect of infrastructures of knowledge management on OI at the level of significance of 0.95 in IRIIST which confirms the *H1*. Also, among the components of KMI: organizational structure, organizational culture, processes, technology, financial resources and people, and of the structures of OI: appetite for change, strategic vision, spirit, performance pressure, shared fate, alignment and congruence and knowledge deployment are the most important ones (Figure 3).

The path of infrastructures of knowledge management to OI with the coefficient of 36.857 indicates the significant effect of infrastructures of knowledge management on OI in IHCS which confirms the *H2*. According to *t*-value in both institutes, it can be concluded that in IHCS, KMI have more effect on OI compared to IRIIST. Also, among the structures of KMI: organizational structure, organizational culture, processes, technology, people and financial resources, and out of the structures of OI: spirit, appetite for change, strategic vision, performance pressure, knowledge deployment, alignment and congruence and shared fate are the most important components (Figure 4).

6.3.2 Evaluation of standardized coefficients of paths related to the hypotheses. The standardized coefficient of paths indicates the intensity of the impacts of the paths. As Figures 5 and 6 indicate, the standardized coefficient of path between infrastructure of
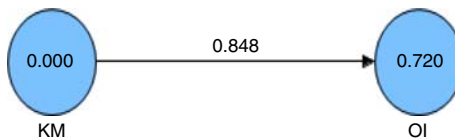
Figure 2. Value of R^2 in IHCS

Structure	Collective values (IRIIST)	Coefficients of determination (IRIIST)	Collective values (IHCS)	Coefficients of determination (IHCS)
KMI	0.505	0.683	0.50	0.720
OI	0.704		0.656	
Fitting	0.642		0.645	

Table VI. Overall fitness of the model

knowledge management and OI is 0.826 and 0.848 in IRIIST and IHCS, respectively, and demonstrate that the infrastructures of knowledge management directly explains subsequent changes in OI in IRIIST and IHCS.

6.4 Results from testing the hypotheses
Table VII reveals the results from testing hypotheses in the form of path coefficients and *t*-statistic along with two hypotheses of the study.

7. Discussion
The results of this study are consistent with the results of similar studies such as the study by De Angelis and Despres (2012) in terms of the significant impact of the infrastructures
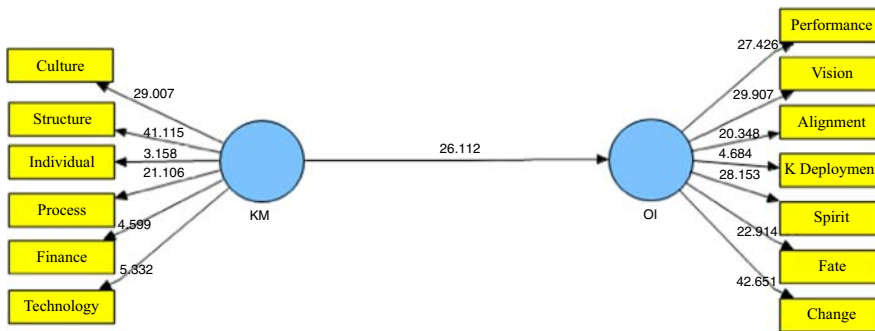

Figure 3.
Model of measuring
KMI and OI in the
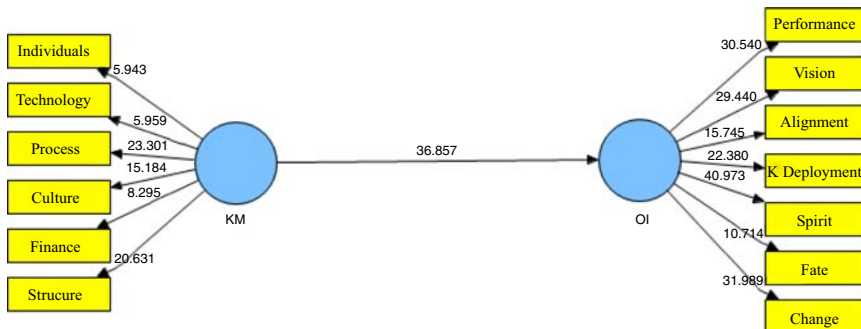significant state
(*t*-value) in IRIIST

Figure 4.
Model of measuring
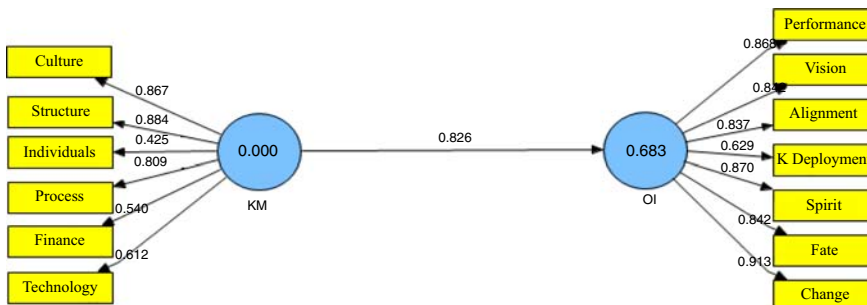KMI and OI in the
significant state
(*t*-value) in IHCS

Figure 5.
Model of measuring
KMI and OI in
the state of path
coefficient (IRIIST)

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of knowledge management on OI. Although in most conducted studies, the general concept of knowledge management has been noted, its significant correlation with OI has been confirmed. In confirming the results of similar studies, the results of this study reflect the impact of knowledge management and its infrastructure on the OI and finally the achievement of organizational objectives.

Through examining the loading of knowledge management structures in IRIIST and IHCS, it can be concluded that there is a high correlation between the forming structures. On the other hand, by reviewing the loading of OI structures in both institutes, a high correlation is observed among the structures. Hence, the measurement model has a high reliability and is considered as a good criterion to measure the variables of the study. Such findings show the reliability of the research tool designed by Adine Ghahramani *et al.* (2011) to explore the main KMIs. Moreover, the infrastructures identified by them for knowledge management were proved to be proper for future and other related studies.

The mean variance of knowledge management and OI is above 0.5 in both IRIIST and IHCS which indicates high convergent validity. Thus, the correlation of each structure with its related questions and indexes is high. In addition, R^2 is 0.683 for OI structure in IRIIST and 0.720 in IHCS which confirms the fit of the structural model. With regard to the fit of the general model, it was determined that this value is 0.642 in IRIIST and 0.645 in IHCS which indicates an overall strong overall fit of the model.

The path of infrastructures of knowledge management to OI indicates the significance of the effect of infrastructures of knowledge management on OI at the level of significance of 0.95 in IRIIST which confirms the *H1*. Similarly, the path of infrastructures of knowledge management to OI indicates the significant effect of infrastructures of knowledge management on OI in IHCS which confirms the *H2*.

The standardized coefficient of the path between the infrastructure of knowledge management and OI demonstrates that the infrastructures of knowledge management directly explain 0.826 and 0.848 percent of the changes in OI in IRIIST and IHCS, respectively. Thus, in IRIIST, less attention has been paid to the infrastructures of knowledge management, and consequently OI.

According to the *t*-value in both institutes, it can be concluded that in IHCS, the infrastructures of knowledge management have more effect on OI compared to IRIIST. Also, among the structures of KMI: organizational structure, organizational culture,
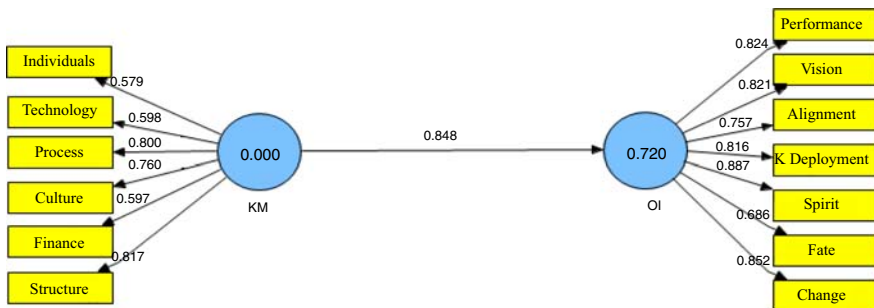

Figure 6.
Model of measuring KMI and OI in the state of path coefficient (IHCS)

Row	Variables	Path coefficients of β	*t*-statistic	Result
1	KMI→OI(in IRIIST)	0.826	26.112	Confirmed
2	KMI→OI(in IHCS)	0.848	36.857	Confirmed

Table VII.
Results from testing the hypotheses

processes, technology, people and financial resources, and out of the structures of OI: spirit, appetite for change, strategic vision, performance pressure, knowledge deployment, alignment and congruence and shared fate are the most important ones.

The arrangement of components will be very important in organizational planning in a way that organizational structure and culture first include important components of KMI that should be prioritized in both institutes, and then the other components should be considered. On the other hand, of the components of OI, spirit and appetite for change are more important and should attract a special attention. While considering appropriately all the components, different attentions could be made regarding the priority of the components of the two variables. In addition to the prioritizing the components of the variables studied, it is also important to study the other possible variables influencing the flows of work in the organizations.

Considering different priorities of dimensions, the results are somehow different from related studies. For example, in research by Boudlaie *et al.* (2014), OI is not suitable except for in the dimensions of tendency to change, spirit, and consistency which is different from the results of the current study, as spirit and appetite for change were identified as more important and should attract a special attention. Similarly, Zeynabadi *et al.* (2014) found that four components including appetite for change, alignment and congruence, knowledge deployment and shared fate are more important than other.

For the fitness of measurement model, Cronbach's α, composite reliability, convergent and divergent validities indicated the appropriateness of using structural modeling for the analysis. It resulted from the fitness of the model that all of the questions and the relationship between variables are significant in 0.95 degree of confidence. AVE for all constructs is more than 0.5, thus the present research model has appropriate convergent validity. Moreover, the divergent validity of the model was measured by the correlation between different factors of the variables.

The main contribution of the study is its successful identification and integration of the affective factors of knowledge management success and infrastructures and their relationship with OI in a local setting. Findings from factor analysis showed that all the questions in the scales have a good fitness for the final model and are capable of explaining variance. Because of the validation nature of the study, appropriate loading for all of the dimensions was important. In the other word, loadings of the factors indicate the appropriateness of the dimensions and normality of the responses.

It is advised from the findings of the current research that methodologies like pre- and post-tests, quality methods like interview and observation and specifically mixed methods are important components to reach result close to the actual situations. The use of a validated Persian scale is advised to different organizational contexts. Conducting similar studies by having variables such as task settings, sex, age, education, experience, and other psychological issues such as motivation and character could enhance the related body of literature.

8. Conclusion

The research showed the importance of the two variables of KMI and OI and also their close relationship and correlation. Specifically, the enhanced infrastructures of knowledge management would remarkably predict the OI of IRIIST and IHCS and thus the mission and goal of the upper organizations. It appears after the research that organizational structure and culture first include important components of KMI that should be prioritized in both institutes, and then the other components should be considered. Moreover, from the components of OI, spirit and appetite for change are more important and should attract a special attention. In general, it can be said that if OI assists in adapting to changes in line with decision making, learning and quick and correct use of various creativity and skills and

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providing solutions required for the improvement of organizational performance, improving its important predictors such as the infrastructures of knowledge management is necessary. The existence of such infrastructures will not only have additional values such as OI but also potentially support the organization for the suitable use and share of organizational knowledge to fulfill organizational objectives in the contemporary knowledge-based world. In such circumstances, leading organizations such as institutes and universities within the country including the two investigated institutes are required to provide appropriate conditions for the operation of such inter-organizational capabilities.

Notes

1. The paper available at: https://journals.ut.ac.ir/article_28762_9bf6580fc34ee71b76f5d1d774122f9b. pdf (May 20, 2017)

2. www.karlalbrecht.com/downloads/Albrecht-OrganizationalIntelligenceProfile-Qnr.pdf (May 20, 2017)

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