An Investigation of the Relationship Between Information Culture Components and Knowledge Creation Among Top Iranian Researchers

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Abstract

Purpose: The main purpose of this study is to investigate the relationship between information culture components and knowledge creation among top Iranian researchers.

Methodology: The present study is based on an applied purpose and is done through a survey. The population of this study consists of Iranian researchers present in Clarivate Analytics citation database top 1%. Data gathering tools in this study included two questionnaires: Curry and Moore (2003) Cultural Information Components and Byounggu & Heeseok Knowledge Creation (2002). Cronbach's alpha coefficient was 0.889 for information culture questionnaire and 0.886 for knowledge creation questionnaire. Spss21 software was used for data analysis.

Findings: According to this study findings, all information culture elements include strategy and goal, communication, environment, professional societies, information systems and the predictive information of information creation among top Iranian researchers. In general, there is a positive and meaningful relationship between the Information culture and knowledge creation components with top Iranian researcher.

Conclusion: According to this study results, a powerful and effective information culture must be in line with an organization goals and strategies. The involvement of individuals and elites in setting goals and strategies in an organization can play a significant role in managing and creating knowledge in that organization. Accordingly, organizations need to pay attention to external and intra-organizational information gathering and clarification of future prospects, identifying strengths and weaknesses of the organization, and generally speaking, using knowledge and skills to determine the goals and strategies.

Keywords: Information Culture, Information Culture Components, Knowledge Creation, Top Iranian Researchers.

Introduction

Information culture is the one in which the conversion of mental resources is maintained alongside the transformation of material resources. The primary sources for this type of conversion are different types of knowledge and information. The output is a processed mental product that is essential for material activities to function positively and ultimately, could be developed (Davenport & Grover, 2001). Information culture is an information goal and needs to be programmed to the same extent as physical resources. The culture of information is the recognition of people's interactions with information in organizations. Value of information, attitudes toward it, especially in organizational contexts, are indicators of information culture (Ginman, 1988). Information culture is also defined as effective information management, in which the value and use of information are recognized in achieving operational and strategic goals. For that reason, information is the basis of organizational decision making and information technology that is easily exploited as an enabler of effective information systems. (Curry & Moore, 2003). The information culture, like any other culture, is made up of various components. The smallest identifiable themes and units in information culture are called information culture components, and the researches upon that will be comprehensive once all its components have been identified (Leidner & Kayworth, 2006). On this basis, information culture components are its smallest components that, if broken down, will no longer be its part. These components include: strategy and goals, information, environment, professional societies, information systems and communications (Curry & Moore, 2003) that has also been taken into consideration in this research.

Knowledge creation can be the process of creating new knowledge or replacing and improving existing knowledge through social relationships and organizational collaborations. This process occurs at the individual and organizational levels and leads to the creation of new knowledge (Alavi & Leidner, 2001; Tajedini et al., 2018). Knowledge creation is not unique to organizations that have knowledge management systems because all healthy organizations create and use knowledge (Davenport and Prussack, 1998).

However, in recent years, despite increasing production of articles and indexing them in scientific databases, Iran's scientific ranking in international indices and global rankings has not received much attention. As an instance, Iran ranks 101 in developing technology and applying it (including important knowledge creation indices). Also, by studying the extent and status of scientific and technical

development based on two criteria, the number of patents per million population and high technology exportation, the countries of the world are divided into three groups of 1. Innovators' regions, 2. Users and 3. Technology exclusions. The belief that research in our country has little effect and that knowledge creation faces a variety of problems is almost accepted by scientific centers, researchers, and even those bases that want to use it (Fazeli, 2003). Attention to the components of information culture and its relation to knowledge creation is very important for explaining the research activities' effectiveness and consequently, it has an important position in promoting knowledge creation (Goodyear & Brinster, 2017). In the present age, the attention has been focused on the relationship between information culture and knowledge creation as a supportive and effective factor in optimizing universities' knowledge assets. Therefore, this study aims to identify the relationship between information culture and knowledge creation from the perspective of Iranian top researchers in knowledge creation. Therefore, this study aims to test the following hypotheses in order to investigate the relationship between components of information culture and knowledge creation among Iranian top researchers. Those hypothesis are as follows:

1. There is a relationship between top Iranian researchers' information culture and knowledge creation and their strategies and goals.
2. There is a relationship between information culture and knowledge creation connections among top Iranian researchers.
3. There is a relationship between the information culture environment and knowledge creation among top Iranian researchers.
4. There is a relationship between the professional societies of information culture and knowledge creation among top Iranian researchers.
5. There is a relationship between information systems of information culture and knowledge creation among top Iranian researchers.
6. There is a relationship between information in information culture and knowledge creation among top Iranian researchers.

After searching through the internationally accredited databases and profiles and reviewing other researches, it appears that Vick, Nagano and Popadiuk (2015), Svard (2015), Cho (2013), Wang (2005), and Curry & Moore (2003) have taken it into consideration, and the results of most studies indicate the relationship between culture and knowledge management. According to the results of the studies, knowledge can be effectively created and shared within the organization if it is

supported by organizational culture. Organizational culture can also be used as a powerful lever to reinforce organizational behavior; weak organizational culture prevents individuals from creating and disseminating their knowledge in an effort to maintain their personal power base and performance.

Methodology

The present study is based on an applied purpose and it is known as a survey. The statistical population of this study consists of Iranian researchers affiliated with the Ministry of Science, Research and Technology, who are among the top 1% of scientists in Clarivate Analytics Scientists. Clarivate Analytics is a Citation Database and provides a list of the world's top scientists, updated every two months based on the latest developments in the international science network. Scientific authority is the basis for gathering top scientists in Science Pioneers Database. According to data extracted from the Science Pioneers' Database (May 2017), a total of 228 Iranians fall into this domain, 181 of whom are affiliated with the Ministry of Science, Research and Technology. Sampling is not required and all members of the population are surveyed.

In this study, two questionnaires were used as data collection tools. In this order and to assess the information culture components, Curry and Moore (2003) questionnaire was used. Byounggu & Heeseok (2002) questionnaire was used to measure knowledge creation. It consisted of 19 questions in the form of 4 knowledge creation components. Likert scale was used for scoring and quantifying the questions in each questionnaire.

It should be noted that in addition to reviewing the questionnaires by the experts, Currie & Moore Information Culture Questionnaire (2003) and Byounggu & Heeseok (2002) Knowledge Creation Questionnaire was distributed among six information science experts to express their views on it to ensure their validity conformation with the variables presented in the research hypotheses. Afterwards, the cited editions they sought were made. And on this basis, the questionnaires' validity were ostensible and content.

In this study, to determine the reliability of the questionnaires, they were distributed among 30 faculty members from different universities for the pre-test. And then its reliability was calculated using Cronbach's alpha coefficient. Cronbach's alpha coefficient was 0.889 for the Currie & Moore (2003) Information Culture

Questionnaire and 0.886 for the Byounggu & Heeseok (2002) Knowledge Creation Questionnaire, indicating appropriate the study tools' reliability.

Research Findings

To analyze the hypotheses of any kinds of researches, data analysis is very important. In this study, descriptive and inferential statistics were used for data analysis.

- **Strategy and goal status**

To describe this variable, the data on strategy and goal have been examined in five categories: strongly disagree, disagree, not sure, agree and strongly agree (Table2).

Table 1. Respondents' frequency distribution by strategy and goal

Strategies and Goals										
Variables' Titles	Strongly Disagree		Disagree		Not sure		Agree		Strongly agree	
	Fre.	Pct.	Freq	Pct.	Freq	Pct.	Freq	Pct.	Freq.	Pct.
Organization's Goals Perception										
Organizational Development Values Awareness										
The Clarity in Education Department Goals										
Universities' Interest in Ideas and Opinions										
Assisting Universities to achieve their Goals										
Frequency Distribution of Variables' Mean										

According to the results of Table 1, out of 78 top researchers, 13 (16.7%) answered Disagree, 16 (16.7%) were not sure, 26 (33.3%) answered Agree and 26 (33.3%) responded strongly agree. Considering that the responses to strategy and goal component were completely in agreement (66.6%), this indicates that most respondents gave a high score to this component.

- **The Status of Information in information culture**

To describe this variable, the data on information culture have been examined in five categories of Strongly Disagree, disagree, not sure, agree and strongly agree (Table 2).

Table 2. Respondents' Frequency distribution on information in information culture

Information In Information Culture										
Variables' Titles	Strongly Disagree		Disagree		Not sure		Agree		Strongly agree	
	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.
Basic information for decision making										
Targeted business based goals										
Health Care Importance										
qualitative information Importance										
Qualitative information-based decisions										
Achieving significant Information, Decision Making										
Awareness of the Key Organizational Information										
Tying Up Important Information, Decision Making										
Being close to the organization's information team										
Regular Information for the People out of the organization										
Frequency Distribution of Variables' Mean										

According to the results of Table 2, out of 78 top researchers participating in this study, 8 (10.25%) answered disagree to this component and 10 (12.83%) were not sure, 46 (58.97%) agree, and 14 people (17.95%) were strongly agree. Given that 66.92% of participants responded to the information component in the information culture were strongly agree and agree, it can be concluded that most respondents gave a high score to this component.

- **The Status of information culture environment**

To describe this variable, the data on the information culture environment were analyzed in five categories of strongly disagree, disagree, not sure, agree, and strongly agree (Table 3).

Table 3. Respondents' Frequency distribution based on information culture environment

Information Culture Environment										
Variables' Titles	Strongly Disagree		Disagree		Not sure		Agree		Strongly agree	
	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.
Evaluating the organization's efforts										
University interest in personal development										
Appraised by the university Dean										
Motivation at work										
Positive atmosphere in the university										
Positive atmosphere in the Education Department										
Supported by the University										
Teamwork and partnership										
Frequency Distribution of Variables' Mean										

According to the results of Table 3, out of 78 top researchers participating in this study, 5 (6.41%) responded strongly disagree, 8 (10.25%) answered disagree, 13 (16.7%) answered not sure, 31 (39.73%) answered agree and 21 (26.91%) answered strongly Agree. Considering that the responses to the component of information culture environment were completely in agreement (66.64%), this indicates that most respondents gave a high score to this component.

- **Status of Professional Information Culture Societies**

To describe this variable, the data on professional information culture societies were analyzed in five categories: strongly disagree, disagree, not sure, agree, and strongly agree (Table 3).

Table 4. Respondents' Frequency Distribution by Professional Information Culture Societies

Professional Information Culture Society										
	Strongly Disagree		Disagree		Not sure		Agree		Strongly agree	
	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.
the education department Collaboration and support										
Positive relationships of the Education department with other departments										
Independent Decision making by the Education Department										
Involving other departments in making decisions										
Supporting other departments' information										
Enjoying the achievements of other departments										
Non-disclosure of information for confidentiality										
Awareness of the goals of other Departments										
Exchanging information and ideas with other departments										

According to the results of Table 4, out of 78 top researchers participating in the study, 2 (2.57%) answered strongly disagree and 4 (5.13%) were not sure, 48 (61.53%) said they agree, and 24 people (30.77%) chose strongly agree. Given that the response rate to the component of *Professional Information Culture Societies* were strongly agree/ agree (92.3%), it can be said that most respondents gave a high score to this component.

- **Status of Information Systems of Information Culture**

To describe this variable, data on information systems of information culture were examined in the five categories of strongly disagree, disagree, not sure, agree, and strongly disagree (Table 5).

Table 5. Respondents' Frequency Distribution by Information Systems of Information Culture

Information Systems of Information Culture										
Variables' Titles	Strongly Disagree		Disagree		Not sure		Agree		Strongly agree	
	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.
Information Management Strategy in the Organization										
Matching the organization strategy with my information										

Variables' Titles										
Matching university information with my information										
Having access to information systems										
Accessing High Speed Internet										
Awareness of library information resources										
Needs to be met by library resources										
Documenting university information policies										
Accessing to University Information Policies										
Frequency Distribution of Variables' Mean										

According to the results of Table 5, out of 78 top researchers participating in this study, 13 people (16.7%) responded disagree, 40 people (51.25%) Agree, and 12 (15.35%) chose strongly agree. Considering that the responses to the component of information systems of information culture were completely in agreement (66.6%), it can be concluded that most respondents gave a high score to this component.

- **The Status of Information in the information culture**

To describe this variable, the data on information culture in information were analyzed in the five categories of strongly disagree, disagree, not sure, agree and strongly agree (Table 6).

Table 6. Respondents' Frequency distribution based on information in information culture

Information in Information culture										
Variables' Titles	Strongly Disagree		Disagree		Not sure		Agree		Strongly agree	
	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.
Collaboration and support of the Education department										
Matching the organization strategy with my information										
Matching university information with my information										
Having access to information systems										
Accessing High Speed Internet										
Awareness of library information resources										
Needs to be met by library resources										

Variables' Titles										
Documenting university information policies										
Exchanging information and ideas with other groups										
Good communication within the department										
Director's confidence in his information awareness										
Understanding university issues from informal circles										
Clear communication of organizational issues										
Frequency Distribution of Variables' Mean										

According to the results of Table 6, out of 78 top researchers participating in this study, 8 (10.25%) responded strongly disagree, 13 (16.7%) disagree, 16 (20.51%) responded not sure, 32 (41.02%) answered agree and 9 (11.52%) answered strongly agree. Considering that the responses to the component of information in the information culture agree and strongly agree (52.54%), it can be said that most respondents gave a high score to this component.

- **Knowledge Creation Status**

To describe this variable, the data on Knowledge Creation Status were analyzed in the five categories of strongly disagree, disagree, not sure, agree and strongly agree (Table 7).

Table 7. Respondents' Frequency distribution based on knowledge creation

knowledge creation										
Variables' Titles	Strongly Disagree		Disagree		Not sure		Agree		Strongly agree	
	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.
Sales and production bases										
Sharing consumer experiences										
Negotiating with scientific competent										
Creating a work environment for professional understanding										
Emphasis on creative debate										
Emphasis on deductive and deductive thinking										
Emphasis on the use of metaphors and examples										
Exchanging ideas and conversations										
Emphasis on unrealistic and imaginary beliefs										

Strategic planning according to research										
Setting Up documents, documents and manuscripts										
scientific products and services Database										
Transferring new concepts in scientific texts										
Developing interdisciplinary scientific collaboration										
Directing experiences and sharing them with others										
Seeking and sharing new values and thoughts										
Sharing Insights and Values in Collaboration										
Optimizing, testing, and presenting results										
Frequency Distribution of Variables' Mean										

According to the results of Table 7, out of 78 top researchers, 1 (1.3%) responded strongly disagree, 9 (11.5%) disagree, 27 (35.7%) responded not sure, 35 (43.7%) answered agree and 6 (7.8%) answered strongly agree. Given that the responses to the information component in knowledge creation were agree and strongly agree 52.54%, it can be said that most respondents gave a high score to this component.

Examining Research Hypotheses

Hypothesis 1. There is a relationship between information culture and knowledge creation strategy and goals among top Iranian researchers.

Pearson and Spearman correlation coefficients were used to examine the relationship between information culture and knowledge creation strategy and goals among Iranian top researchers (quantitative and normal data). The results of this test are presented in Table 8.

Table 8. The Correlation coefficients between information culture and knowledge creation strategy and goals among top Iranian researchers

Variable	Information Culture Strategy and Goals		Communication	Communication Type
	Correlation			
Knowledge Creation	Pearson Correlation	Spearman Correlation		
			×	Direct

The results of Pearson and Spearman correlation test show that there is a positive and significant relationship information culture and knowledge creation strategy and goals among top Iranian researchers (p <0.05) and Pearson and Spearman correlation respectively (0.76) And 0.65), which means that with the increase in the score of the information culture strategy and goals, the knowledge creation among top Iranian researchers also increases. According to Table 12, standardized beta coefficients, 0.324 for the strategy communication and information variables is obtained, which means that if the strategy variable and information goals change to a standard deviation, we can predict that by the increase in knowledge creation variable (Increase by 0.324 units), so there will be a 95% confidence variable strategy and predictor of knowledge creation among Iranian top researchers.

Hypothesis 2. There is a relationship between information culture communication and knowledge creation among top Iranian researchers.

Pearson and Spearman correlation coefficients (quantitative and normal data) were used to investigate the relationship between information culture communication and knowledge creation among top Iranian researchers (Table 9).

Table 9. Correlation coefficients between information culture communication and knowledge creation among top Iranian researchers

Variable	information culture communication		Communication	Communication Type
	Correlation			
Knowledge Creation	Pearson Correlation	Spearman Correlation		
			×	Direct

The results of Pearson and Spearman correlation test show that there is a significant relationship between information culture communication and knowledge creation among Iranian top researchers (p <0.05), and Pearson and Spearman correlation are 0.45 and 0.31, respectively. As the score of information culture communication increases, the level of knowledge creation among top Iranian researchers also increases, so according to Table 13 standardized beta coefficients for the information culture communication variable are obtained 0.262, which means that if the communication variable changes a standard deviation, it could be predicted that the knowledge creation variable is 0.262 units. It is therefore increasing with 95% confidence that information culture communication variable predicts knowledge creation among top Iranian researchers.

Hypothesis 3. There is a relationship between the information culture environment and knowledge creation among top Iranian researchers.

Pearson and Spearman correlation coefficients were used to investigate the relationship between information culture environment and knowledge creation among Iranian top researchers (quantitative and normal data). The results of this test are presented in Table 10.

Table 10. Correlation coefficients between information culture environment and knowledge creation among top Iranian researchers

Variable	Information Culture Communication Correlation		Communication	Communication Type
Knowledge Creation	Pearson Correlation	Spearman Correlation		
			$\times$	Direct

The results of Pearson and Spearman correlation test show that there is a significant relationship between information culture environment and knowledge creation among top Iranian researchers (p <0.05) and Pearson and Spearman correlation are 0.24 and 0.35, respectively. That is to say, as the score of the information culture environment increases, knowledge creation among top Iranian researchers also increases. The information in Table 14 of the standardized beta coefficients shows 0.025 for the information culture environment variable, which means that if the environmental variable changes a standard deviation, it could be predicted that the knowledge creation variable is 0.025 units. Therefore, the increase with 95% confidence with the information culture environment is a predictor of knowledge creation among top Iranian researchers.

Hypothesis 4. There is a relationship between professional societies of information culture and knowledge creation among top Iranian researchers.

Pearson and Spearman correlation coefficients were used to examine the relationship between professional societies of information culture and knowledge creation among top Iranian researchers (quantitative and normal data). The results of this test are presented in Table 11.

Table 11. Correlation coefficients between professional societies of information culture and knowledge creation among top Iranian researchers

Variable	professional societies of information culture		Communication	Communication Type
	Correlation			
Knowledge Creation	Pearson Correlation	Spearman Correlation		
			×	Direct

The results of Pearson and Spearman correlation test show that there is a significant relationship between professional societies of information culture and knowledge creation among top Iranian researchers (p <0.05) and Pearson and Spearman correlation are 0.97 and 0.98, which means that with the rise of the top Iranian researchers in the component of professional information culture societies, their knowledge creation will also increase significantly. According to Table 15 Standardized Beta Coefficients for the Information Society Professionals Variable is 1.36, which means that if the Professional Societies variable changes a standard deviation, it could be predicted that the knowledge creation variable is also increased by 1.36 units, so that with 95% confidence the professional societies predict knowledge creation among the top Iranian researchers.

Hypothesis 5. There is a relationship between information systems of information culture and knowledge creation among top Iranian researchers.

Pearson and Spearman correlation coefficients were used to examine the relationship between information systems of information culture and knowledge creation among top Iranian researchers (quantitative and normal data). The results of this test are presented in Table 12.

Table 12. Correlation coefficients between information systems and knowledge creation among top Iranian researchers

Variable	information systems		Communication	Communication Type
	Correlation			
Knowledge Creation	Pearson Correlation	Spearman Correlation		
			×	Direct

The results of Pearson and Spearman correlation test show that there is a significant relationship between information culture information systems and knowledge creation among top Iranian researchers (p <0.05). Pearson and Spearman correlation are respectively 0.45 and 0.38, which means that as the top researchers score in the information systems of information culture variable, their knowledge creation rate

also increases. According to standardized beta coefficients in Table 16, the information culture variable for the information systems is 0.362, which means that if the information system variable changes a standard deviation, it could be predicted that the knowledge creation variable will also have 0.362 units increase. Thus, with 95% confidence, information systems are predictors of knowledge creation among top Iranian researchers.

Hypothesis 6. There is a relationship between information in information culture and knowledge creation among top Iranian researchers.

Pearson and Spearman correlation coefficients were used to investigate the relationship between information in information culture and knowledge creation in Iran's top researchers (quantitative and normal data). The results of this test are presented in Table 17.

Table 13. Correlation coefficients between information in information culture and knowledge creation among top Iranian researchers

Variable	information in information culture		Communication	Communication Type
	Correlation			
Knowledge Creation	Pearson Correlation	Spearman Correlation		
			×	Direct

The results of Pearson and Spearman correlation test show that there is a significant relationship between information in information culture and knowledge creation among top Iranian researchers p <0.05 and Pearson and Spearman correlation are respectively 0.41 and 0.40. That is to say, as the information score in the information culture increases, knowledge creation among top Iranian researchers also increases. So according to Table 17, the standardized beta coefficients for the information culture information variable are 0.362, which means that if the information variable changes the standard deviation, it could be predicted that the knowledge creation variable will also increase (by 0.362 units). Thus, it can be said that this variable predicts knowledge creativity with 95% confidence among the top Iranian researchers.

Discussion and Conclusion

Generally speaking, information culture is a community of shared patterns of behaviors, norms and values that determine the importance and the use of information at one time (Choo, 2013). The information culture has 1. A systematic organization, (bringing to mind the concept of the system), 2. Some elements and 3. The interactions between them, or the structure and the process. The information cultural construction is usually composed of cultural elements, cultural compositions, and finally, the cultural domain that is called the smallest identifiable subject and a cultural unit (Nayar, 2010).

The increasing importance of knowledge has been identified as a key feature of post-industrial societies. Knowledge is one of the most important resources for an organization and may be the only valuable resource. Intellectual or knowledge-based assets are distinguished from more traditional land, worker and machinery reproductive agents. Unlike traditional production factors, knowledge is intangible and live within the individuals. As a result, it will be difficult to find and organize and it may be lost easily. In order to compete with knowledge-based industries, organizations must continually create and apply new knowledge. Thus, knowledge creation involves activities that reshape and re-integrate existing pieces of knowledge, reduce deficiencies, enhance research and capability development, monitor and control external environments, and apply external technologies to the organization.

Based on the results of the first hypothesis and confirming it, it can be said that a culture can be strong when it is consistent with the goals and strategies of an organization at large. Accordingly, the involvement of individuals and elites in setting goals and strategies in the organization can be of great help in managing and creating knowledge in the organization. The critical issue is that usually the strategy and goals must be aligned with the knowledge creation in the organization in order to increase productivity in that organization. It seems that the organization needs to pay attention to the external and internal information gathering categories in order to set goals and strategies and therefore to clarify the future outlook, identify the strengths and weaknesses of the organization, and pay attention to the use of knowledge and skills in general. The organization must determine what knowledge, with what depth, from what source, by whom and how to support the strategic plan and then, achieve its goals.

Based on the findings of the second hypothesis, it can be said that knowledge management is concerned with the synergistic combinatory of information, information technology and human creative ability. But all this requires that corporate culture be receptive to these. In the present study, it was also noted that conformity of information culture with an organization goals and strategies will lead to culture power and sustainability.

According to this study results, by increasing the information culture intra-organizational and extracurricular communication in an organization, it can be expected that knowledge creation in that organization will also increase. In this regard, Martin and Hafer (2010) in their research showed that the difference between information culture and organizational cultures has a significant impact on the managers' tolerance to influence personal and organizational relationships. The the main research hypothesis test results show that organizational culture plays a significant role in the development of knowledge creation process.

Regarding the direct relationship between information culture environment and knowledge creation, and according to the present study results, creating a friendly cultural environment for employees that can lead to encouragement, agreement, participation and teamwork can increase an organization knowledge creation. In this regard, the results of Olivola and Ritov's (2017) study showed that coordination among information cultures will result in collaboration in knowledge environments.

This study results show that with increasing researchers' participation in professional information culture societies, their knowledge creation also increases significantly. Joining people in professional forums and engaging in the community can align people's abilities and help people's knowledge creation. Diverse opinions in the communities create new knowledge.

In this regard, the results of Spearman's correlation coefficient in Marincioni's (2007) study did not show a significant relationship between knowledge sharing culture and knowledge creation, but the relationship between knowledge sharing culture and knowledge transfer and its high level was correlated with knowledge transfer high level and this is in line with the present studies' research results. This discrepancy may be due to the low sample size of this study compared to other studies.

The knowledge sharing culture weaknesses in this hypothesis could be one of the causes of knowledge management cultural failure, but it is expected that increasing

knowledge sharing in different ways such as membership in professional societies will increase knowledge creation.

According to this study results, it can be said that using appropriate information systems in an organization information culture is expected to increase its knowledge creation level. Organizations need to rely on information systems to create more knowledge and create a competitive advantage for themselves. The more the information system in an organization give services to users, the more important it will be in creating knowledge. Kelly and Bibli (2016) showed that information system relationship with each dimension of knowledge management in the digital age is clear.

The results of this study indicate a direct relationship between the information in information culture and knowledge creation among top Iranian researchers. Therefore, it can be said that information plays a vital role in research, development and training work. Creating knowledge seems necessary. Vick, Nagano & Ballucci & Campbell's (2015) research also shows the results of acceptable relationships between culture and knowledge without risk taking and shows that culture is based on relationship and social knowledge which is in line with the results of the present study. These alignments may be due to the fact that the implementation of knowledge management, especially knowledge creation, requires that organizational factors such as structure, culture, technology, human resources are interconnected and have specific characteristics, and it can be concluded that the knowledge management process can Including creation, transfer, utilization and absorption which is considered to be a unified process that can work together in the right environment and culture.

Based on the confirmed hypotheses in this study, it was found that there is a relatively strong relationship between the elements of existing information culture with the components of knowledge creation. Generally speaking, the more employees in an organization with more capabilities and competencies and the appropriate information culture facilities and environments, the more knowledge creation capacity in the organization will be developed. Employees who are well aware of the goals and strategies of the organization have access to high quality information easily, use advanced and appropriate information systems and engage in professional knowledge exchange. They have access to knowledge, skills, experience and ability to create knowledge and they also have more valuable work experiences they can share with others, and ultimately, will increase the knowledge creation in the organization. As a result, the organization's efforts to improve the

organization information culture can be an important facilitator of the knowledge creation capacity development in the organization and thus increasing the competitiveness of the organization.

Organizations must prioritize the way in which they create knowledge creation, taking into account the nature of their business and the business knowledge. To this, we should add how to make the best use of open and hidden knowledge in the long run by formulating the organization's strategy and goals. Next, for successful and sustainable knowledge-based competition, organizations need to align their strategy with the knowledge and intellectual capabilities needed to support an optimal strategy. This is how one can expect to increase knowledge creation by escalating the strategy amount and information culture goals. This study results indicate the significant role of information culture communication in enhancing organization knowledge creation. Managers must communicate with people at different levels. The manager's relationship with the employees may be the most important type of communication, because some job aspects such as training, mission referrals, and performance appraisal are communicated. Therefore, communication exists in many of organization's activities. Most importantly, communication is the process through which individual and group activities and interactions are coordinated to enhance knowledge creation. By recognizing the factors affecting the organization's communication, it is better to analyze organizations' communication processes and also, to facilitate and streamline the communication flow in organizations and providing the necessary mechanisms for knowledge creation. Many of the problems in relation to organizations' knowledge creation stem from the inaccurate communication context and lack of attention to organizational communication subtleties, and if managers were aware of this, they would probably be doing their jobs more effectively.

The right environment leads to an information culture development. An environment where there are open and transparent working relationships, a trusting atmosphere and a sense of security. It is in this environment that researchers' knowledge creation is also enhanced. Providing an organization with the right environment and devising the right solutions can encourage many people to acquire and create knowledge and respectively, to create more knowledge and benefit from it. Focusing on the barriers and work environment motivating factors can help managers to create an appropriate environment in an organization because these factors can ultimately enhance or diminish the knowledge creation among employees. Of other useful measures could

include reducing environmental uncertainty and designing a countermeasure. Long-term and mid-term plans are also revised in the short run.

Accordingly, organizational knowledge creation is facilitated by professional societies with specific characteristics (Beck et al., 2017). A professional community should include people of different backgrounds who complement each other, striving to achieve a common goal, sharing responsibility, and creating fundamental values. These include the common language of members, effective leadership, strong communication within the community, and members' cohesion and coordination. Organizations that want to have effective professional societies should work on individuals' amalgamation and help the community understand their own behaviors and that of other members. Communities should therefore be kept in a clear task structure and often be expert members, roles should be divided and dependencies identified by the needs and requirements of the work to be done. The numerous guides through which members' contributions to a community's results are identified having a significant impact on the formation of a professional community with appropriate output.

The results show that there is a direct and meaningful relationship between information systems of information culture and knowledge creation among top Iranian researchers. Organizations need information systems for transparent and seamless access to information. Therefore, researchers should have the ability to use information systems to access essential information, so that using information systems' skill can be an important factor in enhancing researchers' knowledge creation. Organizations need information systems with specific knowledge creators' characteristics (such as one's position in the organization, one's competencies, stylistics, and one's interests and motivations) to maximize the quality of people's work for knowledge creation. Information-backed information systems mean providing support for receiving, storing, filtering and tracking information that provide significant support for knowledge creation in an organization and provide conditions for an increasing knowledge creation.

Quality information is critical to achieving the organization's strategic goals and knowledge creation in the organization, as all decisions to achieve the strategic goals and knowledge creation of the organization are made known to individuals. The existence of quality information in the organization enhances the knowledge creation of researchers in the organization. The quality of knowledge created depends on the quality of information that flows in the information culture of the organization.

Finally, it can be concluded that this study hypotheses confirm that there is a relatively strong relationship between the elements of existing information culture with the components of knowledge creation. Generally speaking, the more employees in an organization have the more capabilities and competencies and the appropriate information culture facilities and environments, the more knowledge creation capacity in the organization will be developed. Employees who are well aware of the goals and strategies of the organization, have access to high quality information easily, use advanced and appropriate information systems and engage in professional knowledge exchange and exchange; knowledge, skills, experience and ability to create knowledge And they also have more valuable work experiences that they can share with others, and will increasingly increase the knowledge creation in the organization. As a result, the organization's efforts to improve an organization information culture can be an important development facilitator for knowledge creation capacity and thus, the increase to the competitiveness of the organization.

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