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## ORIGINAL RESEARCH ARTICLE

### Analysis and Evaluation of the Science and Technology Parks Portals in Tehran Based on the K-ACT Model

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#### ABSTRACT

Aim: Observing the components and elements of knowledge management, including accessibility, creation, and transfer of knowledge on the website of science and technology parks, is very important and makes them more efficient. Therefore, this article has been prepared and compiled to identify and determine the application of knowledge management criteria in the portals of eight science and technology parks in Tehran province. Methods: This research was a descriptive survey with an applied purpose. Data were collected based on a checklist based on the model of availability, creation, and transfer of knowledge. The statistical population of this study includes the website of eight science and technology parks of Tehran province, including science and technology parks of Tarbiat Modares University and Tehran, Sharif Industrial, Pardis, Islamic Azad University, Shahid Beheshti, Iran University of Medical Sciences, and National Park of Sciences, Soft Technologies, and Cultural Industries of University of Science and Culture. It was a cultural industry. Results: The level of application of knowledge management criteria in the website of science and technology parks is in an unfavorable situation. Among the components of knowledge management, the component of knowledge creation with the lowest average compared to the component of knowledge transfer and availability needs to be fundamentally reviewed. Conclusion: The results showed that knowledge management criteria in these websites are not used properly. To eliminate this shortcoming and fill the gap in the current situation, the designers of science and technology parks websites should include the knowledge management approach among the main strategies of the park programs under their management. ©authors



## 1. Introduction

Science and technology parks are a social institution and a place for the development of knowledge-based innovations by helping to form and strengthen small and medium-sized enterprises (SMEs) and are part of a thoughtful and coordinated strategy for national development. Science, research, and technology parks play a very important role in advancing the world economy. Today, knowledge is an important source of competitive advantage. The product of science and technology parks is a mixture of knowledge and technology. Establishing knowledge management plays an important role in carrying out the assigned missions of the parks. Organizations have to manage their collective knowledge to beat each other. Science and technology parks are also formed to provide knowledge-based services, so they need a system to produce, strengthen, and disseminate knowledge (Fu, 2016).

This knowledge is the main factor in the productivity of science and technology parks, which leads to the creation of a higher quality product. Science and technology parks have to deal with knowledge in a way that leads to their core competencies to compete successfully in today's troubled economy.

The main foundation of science and technology parks is knowledge crystallized in their services and products, which requires integration in the production chain to implement knowledge. The purpose of the knowledge management cycle is to provide and maintain knowledge and business experiences within the organization and to create business objectives to transfer and share knowledge at the right time for its core audience. Websites and portals of science and technology parks that transmit the work done and their documentation can be the manifestation of the knowledge management chain. A website designed with a knowledge management infrastructure provides a tool for extracting, analyzing, and categorizing structured and unstructured information and determining the relationship between

content, people, topics, and user activities in the organization (Mahdizadeh, 2010).

Incorporating elements of knowledge management (accessibility, knowledge creation, and transfer) in the portal of Iranian science and technology parks is a very important issue because it makes it more efficient. Therefore, this study, to evaluate and determine the criteria of knowledge management in the portal of science and technology parks located in Tehran, provides the possibility for park managers to make better decisions to eliminate the existing shortcomings in terms of knowledge management processes.

The questions that are examined in this research are:

1. Are knowledge management criteria used in the portal of Tehran science and technology parks?
2. What is the ranking of the science and technology parks portal in terms of applying knowledge management criteria?
3. What is the observance of knowledge management criteria in the portal of science and technology parks?

## 2. Research Model

There are different models for examining knowledge management criteria in organizations, but the purpose of this article is to review knowledge management criteria in science and technology park portals. The knowledge management model developed by Schwartz and Tiwana is an important model for evaluating portals and is currently used. In this study, a consistent hybrid model was developed by Lee et al. (2010). This model is based on the model of Na, Siu, Tian Ling (2002) which is known as the model (K-ACT). To evaluate the ports of science and technology parks, a checklist was designed for research in this model. This model is made up of three dimensions including knowledge creation, knowledge transfer, and knowledge access.

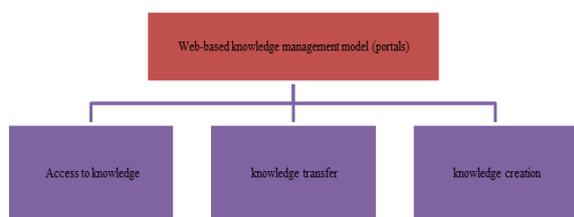


Figure 1. Research model

Dimensions of this model are:

- Knowledge creation: collecting user information, user feedback, collecting data around the site
- Knowledge transfer: online participation, awareness, user support, resource sharing
- Knowledge accessibility: Website accessibility, search, site browsing, personalization, accessibility, information delivery.

### 3. Literature Review

Sheikh Shoaie et al. (2016) in a study entitled "Survey of knowledge management criteria in selected digital library websites in Iran to identify and determine the use of knowledge management criteria in digital library websites in Iran Website 7 Digital Library Website" Payam-e-Noor, the Islamic Consultative Assembly, Tebyan, Did, Astan-e-Quds Razavi and the National Digital Library of Iran in the country. The findings of this study showed that the rate of application of knowledge management criteria in the website of selected digital libraries was moderate and the criterion of access to the website was the highest and online participation was the lowest. Tebyan Digital Library, with 56% of these criteria, ranked first among the 7 digital libraries in Iran. In general, knowledge management criteria in these websites are not used properly, which stems from their incompatibility with principles, rules, and standards. Therefore, digital library designers can be effective in promoting websites and increasing the quality of digital library services by being aware of the needs of users and paying enough attention to applying these criteria.

Ahmadi and Momeni (2020) in a study entitled Measuring Knowledge Management Criteria, on the Website of Tehran State Universities Based on the K-ACT Model The results showed that the website of the University of Tehran is in the first place in the component of accessibility of knowledge with 72.8% and the websites of Tarbiat Modares and Allameh Tabatabai Universities are in the second place with 63.4% each in this component. In the component of knowledge creation, the Website of Tarbiat Modares University with 83.3% is in the first place, the website of Allameh Tabatabai University with 50% of points is in the second place and the website of the University of Tehran with 33.3% is in the third place. The website of Tarbiat Modares University is in the first place with 86.3%, the Website of Allameh Tabatabai University is in second place with 54.5% and the website of the University of Tehran is in third place with 50% points. Accessibility is the creation and dissemination of knowledge), Tarbiat Modares University website b 76% of the points have the first rank, and the websites of the University of Tehran and Allameh Tabatabai also have the second rank with 58% points each.

In general, although the websites of the surveyed community appeared above the average in terms of knowledge management criteria, there is still a long way to go to reach the desired point and there are still many weaknesses in the use of new technologies, especially websites in Iran.

Mohsenzadeh and Behzadi (2012) in a study evaluated the websites of the units of regions, 14, 7, 15 of Islamic Azad University in terms of compliance with knowledge management criteria (Cactus model). , Islamic Azad University, Sirjan Branch is ranked first among all the studied universities. In the factor of creating knowledge, the Zahedan Branch, which is located in the district of 14 universities, has been able to meet the criteria of other university units in the three regions. Bardsir unit was also in the lead in knowledge dissemination, and the results of this study showed that although many academic units

compared to the use of the Internet and technology in general. The information has acted, but this action lacks specific scientific support and is more than providing general information from those universities.

Behzadi and Sanji (2009) in a study examined the level of availability, creation, and dissemination of knowledge in the portals of the ministries of the Islamic Republic of Iran using the K-ACT checklist.

In the fields of knowledge availability, knowledge creation, and knowledge dissemination they are respectively 26%, 34%, and 22%. Also, the ranking of the studied community in terms of compliance with the studied criteria showed that in the field of knowledge availability, the Ministries of Communications and Industries and Mines The Ministries of Economy, Health, Defense and Support of the Armed Forces, and Industries and Mines, and in the field of knowledge dissemination, the Ministry of Economy with the highest rate of compliance with the criteria under review is 41%. Also, the results of this study indicated that there are many weaknesses in the use of new technologies, especially portals, in Iran that should be studied and addressed through scientific planning and work and using the opinions of various experts.

Guo et al. (2007) conducted a study entitled Access to, Creation, and Dissemination of Knowledge in e-Government Portals between Asia and North America. The findings of this study indicate that e-government portals in the study areas have met only 36% of the criteria of the knowledge management model. In addition, no significant difference was found in the implementation of knowledge management mechanisms between the two regions.

Nadi Ravandi et al. (2014) evaluated the portals of the world's top hospitals with a knowledge management approach using the Ka-Act model. This study aimed to evaluate and analyze the three dimensions of knowledge creation, knowledge transfer, and knowledge access in the top 50 portals of hospitals around the world. The findings indicated that there is a significant difference between the three mechanisms of knowledge

creation, access, and knowledge transfer in different continental portals. A pairwise comparison showed that North America had a higher average than the other four continents, while there was no significant difference between the four continents. On the other hand, the second mechanism, the availability factor, shows a significant difference in hospital portals in different continents of the world. The pairwise comparison also shows that from this perspective, there was no significant difference between the continents of Asia and Oceania. In addition, there is a significant difference between continents in the mechanism of knowledge transfer. Although a pairwise comparison of hospital ports showed no significant differences between the three continents of Oceania, the Americas, and Europe, there is a significant difference between the continents of Asia and Africa. Perhaps the reasons for this difference are in the knowledge management mechanisms on different continents. This is most likely due to structural and infrastructure problems, network equipment and the Internet, filtering problems, especially on social networks in Asia and Africa.

Xi Xianli et al. (2010) analyzed knowledge management mechanisms in health care portals. In this paper, a comprehensive analysis of knowledge management mechanisms used by 60 health portals to access, create and transfer knowledge was performed. They selected healthcare portals from two geographic regions (e.g. North America and Asia) and three categories of healthcare portal providers (e.g. hospital, government, non-government). The results showed that health care portals from different geographical areas and portal providers are significantly different in terms of how to use their portals to access, create, and transfer knowledge. The results of this study can be used by healthcare portal providers to improve knowledge management practices and improve their customer service relationships.

Stuart J. Barnes, Richard Weidgen (2003) measured the quality improvement of the

Strategic Knowledge Management Exchange Dialogue website. Researchers believe that as organizations increasingly begin to communicate and interact with consumers through the Web, the proper design of offers has become a major issue. Attracting and retaining consumers requires an accurate understanding of user needs and the proper design of solutions. This article examines the results of examining the quality of a website provided by the OECD. The site was reviewed before and after a major redesign process. This paper provided a framework for evaluating e-commerce and provided suggestions for e-government. The criteria and findings of this study show not only the strengths and weaknesses of the sites but also the different effects of users in member countries.

A review of the literature shows that the components of knowledge management have been replicated on the websites of various organizations, including universities. But the science and technology parks website has not been reviewed yet.

Therefore, for the first time in Iran, using the knowledge management approach, the present study examines the eight websites of science and technology parks located in Tehran. It should be noted that the number of science and technology parks in Iran was 33, but for an in-depth and accurate study, only parks located in Tehran were evaluated by researchers.

#### 4. Method

The present research is an applied purpose that has been done using a descriptive survey method. One of the most complete models for evaluating the implementation of knowledge management on organizations' websites is the k-act or Knowledge-Access Creation Transfer model, which includes various elements of knowledge management including accessibility, creation, and transfer of knowledge. In this study, data collection was performed using a checklist based on the model of Lee et al., Using direct observation of portals. In the present checklist, three important factors of availability, knowledge creation, and transfer were examined in the

form of criteria. In the present study, no specific sampling was performed and all 8 portals of science and technology parks located in Tehran introduced by the Ministry of Science, Research and Technology were examined. Table 1 shows our research community.

**Table1.**

*List of science and technology parks located in Tehran*

List of science and technology parks located in Tehran	
1	Tarbiat Modares University Science and Technology Park
2	University of Tehran Science and Technology Park
3	Sharif Science and Technology Park (Sharif Techpark)
4	Pardis Technology Park (PTP)
5	Islamic Azad University Science and Technology Park
6	Science and Technology Park of Shahid Beheshti University
7	National Park of Sciences, Soft Technologies, and Cultural Industries of University of Science and Culture
8	Science and Technology Park of Iran University of Medical Sciences and Health Services

The scoring of the questions was done in the form of yes and based on observance by not observing the components in 1999. The obtained data were analyzed in SPSS software version 23 and finally, the status of the portals of science and technology parks was evaluated and ranked by the researchers of this research.

In the present study, the mean and standard deviation test has been used to evaluate the observance of knowledge management criteria (accessibility, knowledge creation, and transfer). The average compliance with the criteria was measured based on three levels of inappropriate (1-7), average (14-1.7), and appropriate (20-1.14). Friedman's test was also used to test the research hypotheses.

## 5. Results

### Q1: Are knowledge management criteria used in the portal of Tehran science and technology parks?

#### 1- Comparison results (Mean):

The results of Table 1 show the mean and standard deviation of compliance with the criteria of accessibility, creation, and transfer of knowledge in science and technology parks located in Tehran. According to the results of this table, the following can be mentioned:

- 1- The average of knowledge availability criteria for Tarbiat Modares University Science and Technology Park is equal to (Mean = 67.6, SD = 557.0) and the average knowledge creation criterion is equal to (Mean = 5, SD = 1) and at an inappropriate level (7 -1), is located. Also, the average knowledge transfer criterion is equal to (Mean = 33.18, SD = 577.) and is at the appropriate level (20-14.1).
- 2- The average observance of knowledge availability criteria for the Science and Technology Park of Tehran University is equal to (Mean = 8.33, SD = 557.) and is at an average level (7-14). Also, the average criterion of knowledge creation is equal to (Mean = 67.5, SD = 15.1) and is at an inappropriate level (7-1). The average knowledge transfer criterion is equal to (Mean = 33.18, SD = 15.1) and is at the appropriate level (20-1.14).
- 3- The average observance of knowledge availability criteria for Sharif University Science and Technology Park is equal to (Mean = 8, SD = 0) and is at the average level (14-1.7). Also, the average criterion of knowledge creation is equal to (Mean = 4, SD = 1) and is at an inappropriate level (1-7). The average knowledge transfer criterion is equal to (Mean = 67.16, SD = 15.1) and is at the appropriate level (20-1.14).
- 4- The average observance of knowledge availability criteria for campus science and technology park is equal

to (Mean = 67.4, SD = 557.) and the average knowledge creation criterion is equal to (Mean = 67.2, SD = 53.1) and at an inappropriate level (7- 1), is located. Also, the average criterion of knowledge transfer is equal to (Mean = 67.11, SD = 53.1) and is at the average level (14-1.7).

- 5- The average observance of knowledge accessibility criterion for Azad University Science and Technology Park is equal to (Mean = 6, SD = 1) and the average knowledge creation criterion is equal to (Mean = 5, SD = 1) and at an inappropriate level (7 - 1), is located. Also, the average criterion of knowledge transfer is equal to (Mean = 13, SD = 1) and is at the average level (14-1.7).
- 6- The average observance of knowledge availability criteria for Science and Technology Park of Shahid Beheshti University is equal to (Mean = 33.6, SD = 577. SD) and the average knowledge creation criterion is equal to (Mean = 5, SD = 1) and at an inappropriate level. (7-1), is located. Also, the average criterion of knowledge transfer is equal to (Mean = 67.16, SD = 557.) and is at the appropriate level (20-1.14).
- 7- The average of knowledge accessibility criteria for soft technology and cultural industries park is equal to (Mean = 67.4, SD = 577.) and the average knowledge creation criterion is equal to (Mean = 67.3, SD = 1) and at an inappropriate level (7-1), is located. Also, the average criterion of knowledge transfer is equal to (Mean = 67.13, SD = 577.) and is at the average level (14-1.7).
- 8- The average observance of knowledge availability criterion for science and technology park of Iran University of Medical Sciences and Health Services was equal to (Mean = 67.3, SD = 577. SD) and the average knowledge creation criterion was equal to (Mean = 67.3, SD = 15.1)

and it is at an inappropriate level (7-1). Also, the average criterion of knowledge transfer is equal to (Mean = 15, SD = 1) and is at the appropriate level (20-1.14).

**Table2.**

*Mean and standard deviation of the level of compliance with the criteria of accessibility, creation and transfer of knowledge in science and technology parks located in Tehran*

Criteria Park	Knowledge Accessibility			Knowledge Creation			Knowledge transfer		
	Mean	Std. Deviation	Decision	Mean	Std. Deviation	Decision	Mean	Std. Deviation	Decision
Tarbiat Modares University Science and Technology Park	6.67	0.557	inappropriate	5	1	inappropriate	18.33	.577	appropriate
University of Tehran Science and Technology Park	8.33	0.577	medium	5.67	1.15	inappropriate	18.33	1.15	appropriate
Sharif Science and Technology Park (Sharif Techpark)	8	0	medium	4	1	inappropriate	16.67	1.53	appropriate
Pardis Technology Park (PTP)	4.67	0.577	inappropriate	2.67	1.53	inappropriate	11.67	1.53	medium
Islamic Azad University Science and Technology Park	6	4	inappropriate	5	1	inappropriate	13	1	medium
Science and Technology Park of Shahid Beheshti University	6.33	0.577	inappropriate	5	1	inappropriate	16.67	0.577	appropriate
National Park of Sciences, Soft Technologies, and Cultural Industries of University of Science and Culture	4.67	0.577	inappropriate	3.67	2.08	inappropriate	13.67	0.577	medium
Science and Technology Park of Iran University of Medical Sciences and Health Services	3.67	0.577	inappropriate	3.67	1.15	inappropriate	15	1	appropriate

Key: Inappropriate (1-7), Medium (1.7-14) and Appropriate (1.14-20).

**Q2: What are the rankings of science and technology parks portals in terms of applying knowledge management criteria?**

The results of Table 3 show the mean and standard deviation of the general standard (all three criteria) in science and technology parks located in Tehran. As shown in the table; the total average of Tarbiat Modares University Science and Technology Park is equal to (Mean = 10, 577. SD =), the average of Tehran University Science and Technology Park is equal to (Mean = 78.10, SD = 509.), the average of Sharif University of Technology Science and Technology Park is equal to (Mean = 56.9, SD = 838), the average of campus science and technology

park is equal to (Mean = 33.6, SD = 15.1), the average of Azad University Science and Technology Park is equal to (Mean = 8, 667. SD =), the average of science and technology Park of Shahid Beheshti University is equal to (Mean = 33.9, SD = 666.), the average science and technology park of soft and cultural industries is equal to (33.7 = Mean, 881. SD =), and the average of science Park and The technology of Iran University of Medical Sciences is equal to (Mean = 44.7, SD = 770). Therefore, according to the results, it can be said that the Science and Technology Park of the University of Tehran has the highest average (Mean = 78.10) and vice versa, the Campus of Science and

Technology Park has the lowest average (= 33.6Mean) and is in an unsuitable condition.

**Table3.**

Mean and standard deviation of the general standard of knowledge management in science and technology parks located in Tehran

	Science and technology parks located in Tehran	Mean Rank
1	Tarbiat Modares University Science and Technology Park	5.17
2	University of Tehran Science and Technology Park	7.50
3	Sharif Science and Technology Park (Sharif Techpark)	7.50
4	Pardis Technology Park (PTP)	2.17
5	Islamic Azad University Science and Technology Park	2.17
6	Science and Technology Park of Shahid Beheshti University	5.17
7	National Park of Sciences, Soft Technologies, and Cultural Industries of University of Science and Culture	2.17
8	Science and Technology Park of Iran University of Medical Sciences and Health Services	4.17

**Q3: What is the observance of knowledge management criteria in the portals of science and technology parks?**

In this study, to properly and accurately rank each of the science and technology parks in terms of compliance with knowledge management criteria, the Friedman rank test has been used. This test does not need to assume that communities are normal and uses their rank instead of using the data itself. The assumption in this study for the Friedman test is as follows:

There is no difference between science and technology parks located in Tehran in terms of compliance with knowledge management criteria = H0

There is a difference between science and technology parks located in Tehran in terms of compliance with knowledge management criteria = H1

The following results (tables below) have been obtained by performing tests by SPSS software on the data.

**Table4.**

Output of inferential statistics based on Friedman test

Criteria Park	Total criterion (observance of all three criteria of availability, creation, and transfer)		
	Mean	Std. Deviation	Decision
Tarbiat Modares University Science and Technology Park	10	0.577	medium
University of Tehran Science and Technology Park	1087	0.509	medium
Sharif Science and Technology Park (Sharif Techpark)	9.56	0.838	medium
Pardis Technology Park (PTP)	6.33	1.15	inappropriate
Islamic Azad University Science and Technology Park	8	0.667	medium
Science and Technology Park of Shahid Beheshti University	9.33	0.666	medium
National Park of Sciences, Soft Technologies, and Cultural Industries of University of Science and Culture	7.33	0.881	medium
Science and Technology Park of Iran University of Medical Sciences and Health Services	7.44	0.770	medium

level obtained (sig = .005) is less According to the results of Table 4, the significance than 5% (p≤0.05), so the H0 hypothesis is rejected and the claim of the same rank (priority) of science and technology parks is accepted.

**Table5.**

Output of descriptive statistics (mean rankings) based on Friedman test

(Chi-Square) Test statistics	054.20
Degree of freedom (df)	7
Significance level (sig.)	0.005

According to the table5, it can be said that there is a difference between science and technology parks located in Tehran in terms of compliance with knowledge management criteria. Also, with the average rankings obtained, it can be said that the average rank of Tarbiat Modares University Science and

Technology Park is equal to (Mean Rank = 5.17), Tehran University Science and Technology Park is equal to (Mean Rank = 7.50), Science and Technology Park is equal to Sharif Industrial Equal (Mean Rank = 7.50), Campus Science and Technology Park (Mean Rank = 2.17), Islamic Azad University Science and Technology Park Equal to (Mean Rank = 2.17), Shahid Beheshti University Science and Technology Park Equal to (Mean Rank = 5.17), Science and Soft Technology Park and Cultural Industries is equal to (Mean Rank = 2.17), and Science and Technology Park of Iran University of Medical Sciences and Health Services is equal to (Mean Rank = 4.17).

## 6. Conclusion

The results show that the Science and Technology Park of Tehran University and the Sharif University of Technology have the highest average rankings and are ranked first. Also, the average rankings of Tarbiat Modares University Science and Technology Park and Shahid Beheshti University are equal and are in second place in terms of rankings. Science and Technology Park of Iran University of Medical Sciences and Health Services in the third place and average ranking of three parks: Pardis Science and Technology, Islamic Azad University and Soft Science and Technology and Cultural Industries are equal and in terms of rank in they are in the fourth place. Discussion and conclusion: Findings show that among the components of knowledge management, the criterion of knowledge transfer has a higher level than the other two components, namely accessibility and knowledge creation. Also, among the three components, knowledge creation with the lowest average is in the lowest rank. Findings show that the average knowledge transfer in the science and technology parks of Tarbiat Modares University and Tehran with a score of 18.33 is at the highest level and in the science and technology park of the campus with an average of 11.67 is lower. The component of knowledge availability is at the highest level in Tarbiat Modares University Science and Technology Park with an average of 8.33 and at the lowest

level in the Science and Technology Park of Iran University of Medical Sciences and Health Services with an average of 3.67.

The component of knowledge creation is in the highest level in the Science and Technology Park of the University of Tehran with an average of 5.67 and in the lowest level in the Science and Technology Park of the campus with an average of 2.67. Comparison of knowledge management components shows that the knowledge creation component in the portals of the eight science and technology parks is in an unfavorable situation. Therefore, strategies and strategies must be devised to solve this problem. Knowledge creation is a process that includes creating new ideas, recognizing new patterns and evidence, and combining them, which ultimately leads to the creation of knowledge in the work processes of the organization. All the tools used in science and technology parks can create knowledge. Park portals play a central role in creating knowledge as an interactive and shared tool. Park websites are an important tool in creating organizational knowledge.

It is possible to identify the training needs of entrepreneurial individuals and organizations, identify knowledge gaps within the organization, and acquire knowledge from outside the organization, spread creativity and innovation through organizational websites. The need to create knowledge is to create and spread a knowledge-based culture. Organizational culture in which creativity and innovation are the keys is one of the driving dimensions of knowledge management in knowledge-based organizations. The content of organizational culture can be created by individuals, employees, instructions, etc., and finally can be implemented on the organization's website and portal. All people in the organization at any level and with any knowledge must strive to create knowledge (Figure 2). The creation of organizational knowledge is manifested in websites. In websites where knowledge creation is the main focus of management, communication is team and interactive and there is a free flow of information. Therefore, to promote the component of knowledge creation in the

websites of science and technology parks, the following measures are necessary:

- Conducting research to assess the barriers to knowledge transfer on websites
- Examining the organizational culture of science and technology parks
- Expanding technical infrastructure and emphasizing virtual activities and
- Uploading experiences and lessons learned in the context of organizational websites.

Regarding the ranking of science and technology parks portal in terms of applying knowledge management criteria, the overall average of Tarbiat Modares University Science and Technology Park is equal to (10 Mean), the average of Tehran University Science and Technology Park is equal to (Mean = 78.10), the average park Science and Technology of Sharif University of Technology is equal to (Mean = 56.9, 838., The average of Pardis Science and Technology Park is equal to (33.6), The average of Science and Technology Park of Azad University is equal to (Mean = 8,) The average of Science and Technology Park of Shahid University is Beheshti is equal to (Mean = 33.9, 6), the average of soft science and technology park and cultural industries is equal to (Mean = 33.7), and the average of science and technology park of Iran University of Medical Sciences is equal to (Mean = 44.7). The findings of this section show that the Science and Technology Park of the University of Tehran has the highest average (Mean = 78.10) and vice versa. The following activities should be done: In the field of people in the organization, it is necessary to pay attention to awareness, reward, create and develop scientific groups, gain evaluation, knowledge distribution, support and application of knowledge. In the field of technology, system infrastructure and software network establishment, organizational knowledge storage, organizational information management, information sharing and communication networking and providing knowledge access infrastructure (Figure 2) in the field of management, creating a central knowledge management system, facilitating

communication and getting feedback is very important. In order to succeed in knowledge management, science and technology parks need to conduct assessments of the current situation in the field of technology including evaluating the organization's website and portal, examining existing gaps and barriers to communication and knowledge transfer, reverse engineering.

Examination of the hypothesis showed that there is a difference between science and technology parks located in Tehran in terms of knowledge management criteria. The average rankings show that the results show that the Science and Technology Park of Tehran University and Sharif University of Technology with a score of 7.50 have the highest average rankings and are ranked first. Also, the average rankings of Tarbiat Modares University Science and Technology Park and Shahid Beheshti University (5.17) are equal and are in the second place in terms of rankings. Science and Technology Park of Iran University of Medical Sciences and Health Services 4.17 in the third place and average ranking of three parks: Pardis Science and Technology, Islamic Azad University and Science and Soft Technologies and Cultural Industries with the same 2.17 and in terms of rank Are in fourth place. Among the researches, the present research is in line with the researches of Behzadi and Sanjati (2010), Ahmadi and Momeni (2020), Sheikh Shoaie et al. (2014), Go et al. (2007). In all these researches, the components of knowledge management (creation, transfer and availability) are in an unfavorable situation. In general, the websites of science and technology parks are not in a good position in terms of knowledge management components, and solutions should be considered to improve the current situation. Websites of science and technology parks are considered as a highway connecting parks with employers, job seekers and entrepreneurs in transferring the experiences of the organization and also receiving experiences from the success and failure of projects are important tools. In fact, science and technology parks are formed with the aim of reducing the distance between science and technology. A critical

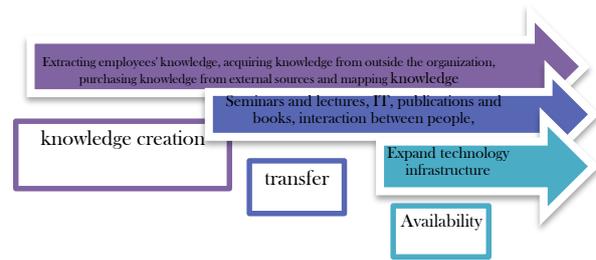
approach to success is the connection between science and practice and bridging the gap between these two knowledge managements. Without proper knowledge management, knowledge in the organization cannot be realized or transferred. Without a way to share and organize knowledge in the organization, it will be practically impossible to use knowledge. Therefore, the websites and portals of science and technology parks are bound to observe the components of knowledge management in their philosophy of existence. In the new world, technological competition is as an indicator of the superiority of nations. Science and technology parks, as a link between academia and industry, must make a continuous effort to innovate their websites and portals. In this regard, in order to achieve the desired position in the region and compete with foreign examples, it is necessary to make fundamental changes in the field of organizational portals with a knowledge management approach. Strategic knowledge management is a value creation that plays an important and fundamental role as a fundamental element in the competition of nations.

## 7. Recommendations:

Strategies to improve the components of knowledge management in the websites of Tehran Science and Technology are given.

- Review of science and technology parks in designing websites with emphasis on knowledge management approach by managers
- Develop short-term and long-term strategies based on creating sections on websites to foster ideas, scientific growth, teach product production strategies, market knowledge and marketing
- Designing sections on websites to provide technical, economic and information advice, legal and economic advice
- Hiring experienced consultants or researchers as web experts as consultants and liaisons of elements inside and outside the organization

- Annual or periodic evaluation of the scientific maturity of websites.



**Figure 2**

The need to pay attention to the component of knowledge creation

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## Reference

- Asghari, H, et all. (2016). Presenting a model for evaluating the performance of science and technology parks. *Ministry of Science & Technology*, 4(1), 11-34.
- Ahmadi Mirqaed, A., Momeni, R. (2020). Assessment of knowledge management criteria in the website of public universities in Tehran based on the K-ACT model (Case study of the website of Tehran universities, Tarbiat Modares and Allameh Tabatabai). *Information Management Science and Technology*, 6 (3), 107-130. doi: 10.22091 / stim.2020.5130.1367
- Barnes, S.J. and Vidgen, R. (2003), "Measuring Web site quality improvements: a case study of the forum on strategic management knowledge exchange", *Industrial Management & Data Systems*, Vol. 103 No. 5, pp. 297-309. <https://doi.org/10.1108/02635570310477352>
- Behzadi H, Sanji M. Survey of Knowledge Management in Portals of Iran Ministries. (2012); 27 (1): 5-27. URL: <http://jipm.irandoc.ac.ir/article-1-1739-fa.html>
- Ghaderi, F. and Niaei, M. (2005) Presenting the Performance Evaluation Model of Science and Technology Parks, Fourth National Conference on Industrial Engineering, Tehran. <https://civilica.com/doc/17650>
- Guo, D. H, et all. (2008). Knowledge access, creation and transfer government portals. online in *Information Review*, 32 (3): 348-369.

- <https://doi.org/10.1108/14684520810889664>  
Hsu, Shu-Ming (2006). Analysis on Knowledge Creation and Its Affecting Factors in the Asynchronous Web based Learning System. *The Journal of Human Resource and Adult Learning*, pp156-164.
- Jensen, Nina Kamp (2012). Repatriation and effective knowledge creation processes: Towards a communication platform for leading effective knowledge-creating processes through inpatriation, in global organizations. Master Thesis: Department of Business Communication. AU, Business & Social Sciences. Available in: <http://pure.au.dk/portal-asbstudent/files/50702798 MACC MA THESIS 2012.pdf>
- Lee, C.S.; Goh, D.H., and Chua, A. (2010). An Analysis of Knowledge Management mechanism in Health Care Portals. *Journals of Librarianship and Information science*, 42(1), 20-44.
- Mahdizadeh M.R. (2010). Look at the websites of the four major oil companies. *Human Resource Management in the Oil Industry* 4(11): 151-85[Article in Persian]
- Mahdavi, H., et all. (2011). Analysis of the effectiveness of science and technology parks using the results of the evaluation process of knowledge-based companies located in science and technology parks. *Technology Development Quarterly*, 7(27).
- Mohsenzadeh, F., and Behzadi, H. (2012). Evaluation of websites of units of regions 7, 14, and 15 of Islamic Azad University in terms of compliance with knowledge management criteria (K-ACT model). *Knowledge (Library and Information Science and Information Technology)*, 5 (19), 116-136.  
<https://www.sid.ir/fa/journal/ViewPaper.aspx?id=192178>
- Motameni, A., Hosseinabadi, M., and Hemmati, A. (2012). Evaluate the success rate of technology units located in parks and science and technology development centers. *Technology Growth*, 8 (32), 32-40.  
<https://www.sid.ir/fa/journal/ViewPaper.aspx?id=181976>
- Mousavi, S., Azar, A., and Elahi, S. (2013). Science, technology and urban, local and regional economics parks; identify the underlying factors influencing the performance evaluation of these emerging organizations. *Economics and Urban Management*, 1 (3), 45-55.
- <https://www.sid.ir/fa/journal/ViewPaper.aspx?id=226692>  
Ramezani,F, et all. (2013). Evaluation of the performance of science and technology parks in the consequences of park's presence in the region. *Roshdefanavari*, 10(37), 44-54.
- Ramezaniyan, M, et all. (2016). Investigating the effect of information management capability on organizational performance (Case study: companies located in Guilan Science and Technology Park). *Quarterly Journal of Industrial Technology Development*, 14(27), 17-26.
- Rashidi Nejad, M., and Sharifzadeh Kermani, Z. (2006). Evaluate the capability of science and technology parks using an innovative hybrid algorithm. *Technology Growth*, 3 (9), 34-41.  
<https://www.sid.ir/fa/journal/ViewPaper.aspx?id=98939>
- Ravandi SN. et all (2014). Analysis and Evaluation of the World's Top Hospital Portals from the Perspective of Internet-based Knowledge Management Model Retrieved from K-ACT Model - *Procedia-Social and Behavioral Sciences*. 12(3), 23-32.
- Safarzadeh, Hossein; Tadaion, Azam; Hormohammadi, Maryam (2011). Studying the Effects of Knowledge Management Strategies on Organizational Innovation and Performance (the case study related to northern Gulf of health care centers). *Toulouse Behdasht*, 11 (1) pp. 76- 86.
- Salami, S., and to Gozin, S., and Shafi'i, M. (2011). Identify and evaluate the critical factors for the success of science and technology parks in Iran from the perspective of experts. *Technology Growth*, 8 (29), 63-72.  
<https://www.sid.ir/fa/journal/ViewPaper.aspx?id=158090>
- Shadan S, et all. (2011). Analysis and design of appropriate structure of Iranian science and technology parks achieving a performance appraisal framework for science and technology parks. *Roshdefanavari*, 37(10), 22-33.
- Sheikhshoaei, F., & Zohreh Kermani, E., & ghamgosar, a., & sadeghi, t. (2016). Evaluation of knowledge management criteria in Iranian selected digital library's websites. *Payavard-salamat*, 10 (suppl.), 23-35.

<https://www.sid.ir/en/journal/viewpaper.aspx?id=509860>

- Sian, C., Goh, D. H.-L., & Chua, A. Y. K. (2010). An analysis of knowledge management mechanisms in healthcare portals. *Journal of Librarianship and Information Science*, 42(1), 20–44.  
<https://doi.org/10.1177/0961000609351371>