

The effect of the application of ICT skills on the process of knowledge management components and the effectiveness of creativity indicators for the improvement of employees' performance system in the Ministry of Sports and Youth

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Abstract

The purpose of this study was to examine the effect of the application of Information and communication technology (ICT) skills on the process of knowledge management components and the effectiveness of creativity indicators for the improvement of employees' performance system in the Ministry of Sports and Youth. This study was an applied and correlational research. The statistical population of this study was all employees in the Ministry of Sports and Youth of Guilan province. The collected data were analysed by K-S tests, the Kruskal-Wallis test, the Mann-Whitney U test, Spearman correlation coefficient and regression analysis. The results showed that 54.43% of subjects were men and 40.57% of them were women, 52.85% of them had associate and bachelor's degrees, 38.85% of them had a master's degree and 1.72% of them had doctorate and were PhD students. The results also showed that the correlation coefficient of the relationship between ICT with knowledge management components was 0.369 and ICT with creativity indicators was 0.291. Since there is a significant relationship between the research variables, so it is suggested to use online methods, multimedia methods, virtual trainings and virtual libraries to increase employees' knowledge management components and creativity indicators in the Ministry of Sport and Youth.

Keywords: Knowledge acquisition, knowledge sustainability, Ministry of Sports, fluidity, innovation, ICT.

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1. Introduction

Information and communication technology (ICT) play a vital role in the survival of executive organisations at a macro level in the era of environmental accelerator developments and changes. ICT provides this possibility for organisations and executive institutions that have the ability for the control and coordination of more complex structures by a rapid information processing. In addition, ICT causes that the performance of the organisation and its management is carried out with a coherence and a quick feedback (Jafari, Rokni, & Yazdani, 2011). The new phenomenon of ICT and its effective relationships on various aspects of life has led to the emergence of some fundamental changes in the relations of human societies (Akhavan & Doost Mohammadi, 2011). This phenomenon has affected human demands with a remarkable speed and has created new needs. The development of software based on these technologies and the high speed of its adaptation to human needs has created a new form of innovative, interactive, creative, active and inclusive environments. The experience of countries of the world shows that innovation and the creation of development are not possible without managers and employees' attendance and acceptance (Ataran & Ayati, 2006). Information technology (IT) is a tool in employees' hands to increase their knowledge (Bayir & Keser, 2009). In this regard, executive employees are considered as the resources of the organisation and it is also necessary to pay attention to them in order to achieve the goals. Employees will be able to do their task properly by accessing the correct information and ICT will provide this facility for the provision, processing and keeping of information (Nadifard & Shahtalabi, 2016).

IT is closely linked to all aspects of our lives in recent decades due to the increasing use of computers in the work environment. Computer skills and literacy are important for every person and every organisation (Afkhami Aqda, Kamali Zarch, & Shokorawa, 2013). The emergence and acceptance of ICT have accelerated world developments in the age of information and knowledge and affected the various areas of life of societies (Ataran & Ayati, 2006). The acceptance of ICT is a powerful and effective tool for the development of countries in the world and plays a decisive role in organisations (Bayir & Keser, 2009). Executive organisations have invested heavily for the application of ICT due to the capabilities of ICT in the creation of value for them. One of the most important values that organisations can create in their subsystems using these technologies is the knowledge enhancement of their subset using these tools (Chizari Movahed & Lindner, 2003). Successful managers use ICT to increase their employees' knowledge and creativity in order to achieve organisational goals due to the potential of these technologies to meet the needs of the organisation in this field (Kaewchur & Phusavat, 2013). Today, knowledge management is considered as one of the beneficial tools for the qualitative improvement of organisational productivity and the increase of organisational effectiveness. Government organisations need all employees' knowledge, ideas and creativity from front line employees to top-level managers to succeed in the environment. The executive organisations of the country proceed to accomplish this through the knowledge management of the relevant subcategory to encourage them to initiate without pressure, the respect for the collective interests of the organisation with minimal supervision and performing their duties as the owners of the organisation (Jafari, Rokni, & Yazdani, 2011).

The knowledge management process has specific attitudinal and behavioural outcomes for organisations and it adds to their potential and power in the field of domestic and foreign competitions. Knowledge management is an important strategy for the development of different organisations to adapt to external changes and is one of the main issues of organisations. This has led that successful organisations try to provide subcategory knowledge programs using various tools and mechanisms (Ming & Guanglee, 2007). Successful managers use ICT to develop their employees' knowledge management to achieve organisational goals due to the potential capabilities of these technologies to meet the executive needs of this field (Davoodi Poor, Ahanchian, & Saidi Rezvani, 2008).

Knowledge management is a process that creates a sense of self-efficacy in a set and identifies the conditions that cause disability in individuals and eliminates these conditions through organisational formal technologies and informal techniques (Moosivand & Farazyani, 2016). A look at the past tells us that human have used some kind of IT since creation to now. Diversity and development of IT began in the late-twentieth century. The most important feature of IT is that it continuously increases its technological capabilities and reduces the cost of its use. The investment in this sector is currently associated with a considerable speed, so that the cost of the purchase of technology products assigns itself more than 50% of the costs of the organisation in the United States (Glaveanu, 2010). The dominance of ICT and its use in strategic and important executive centres is one of the important components of power in the present era. Communications are expanding rapidly. The phenomenon of information based on technology has now been addressed by the growing competition of societies and institutions in the world (Neels & Johnson, 2010). ICT as a modern approach is a complementary for managers to improve the system. The purpose of its development is the improvement and effectiveness of resources especially human resources. The development of ICT and the use of modern tools and concepts has provided the field of information expansion and easy and low-cost access for learners including managers at the macro level and employees online and provides a quick exchange of information and cultural interactions (Akhavan & Doost Mohammadi, 2011). Knowledge management is a set of ultra-structural and technical performance and management tools, a design for the creation of a position, participation and application of knowledge and related knowledge across all organisations (Shih & Ching, 2005).

The application of knowledge management in organisations depends on some prerequisites. The use of information and communication domain is one of the most important prerequisites for knowledge management (Mahboubi, Zandi, Maleki, & Karimi, 2011). The understanding of the real role and place of knowledge in organisations helps to find the answer to this question that why some organisations are always successful. It seems to be necessary to understand what underlying factors create the possibility of vivacious survival for organisations. The age of knowledge or the age of information that is the result of human's passage from the industrial age and its entry into the third millennium requires a different training from the past (Afkhami Aqda, Kamali Zarch, & Shokorawa, 2013). ICT that is increasingly expanding can effectively influence executive organisations and change its strategies and methods (Nourimal, 2014).

Today, a variable world requires that executive organisations look for new tools for survival at the macro level. Knowledge management is one of the tools that can help organisations to achieve these goals, so that executive institutions can easily change. Despite many scientific researches, many views of organisations have a passive and static state (Schulze & Hoegl, 2006). A dynamic set must recognise and obtain the components of its knowledge and store them to use them in the required cases (Vanderlinde, Aesaert, & van Braak, 2014). Knowledge management includes processes of the creation of knowledge, the validation of knowledge, shaping it, the distribution of knowledge and its scientific use in an organisation (Vahedi & Rahbari, 2013).

Knowledge management is a new way of thinking about organisation and sharing intellectual resources and a way to improve productivity and performance. The attention to the optimisation of organisational knowledge for the improvement of performance is through different procedures in this management. Today, intelligent and knowledgeable employees as the most important assets of an organisation with the creativity and innovation power, the creation of new organisational processes and new technologies lead the organisation to a sustainable competitive advantage (Qudah & Melhem, 2011). Today, knowledge is one of the important factors in organisations with an increasing emphasis on knowledge-based organisations rather than production-oriented organisations and updated knowledge and information is an undeniable necessity for the continuation of the life of executive organisations (Nemamyian, & Emami, 2016). Therefore, management of organisations and institutions should rely on superior knowledge, the adoption of more reasonable decisions on important issues and the improvement of knowledge-based performances (Hemmati, 2008). The

creation of innovations and new knowledge is considered as one of the most important functions of government organisations. It should be noted that government organisations as important and effective centres in executive affairs require to implement knowledge management along with creativity more than any other organisation (Vanderlinde, Aesaert, & van Braak, 2014).

The necessity of ICT use in the governmental and executive system has led to a special transformation of cultures in today's societies. Technology may be considered as an accelerator factor (Li, Liu, Wang, Li, & Guo, 2009). Today, many countries consider ICT as a potential source of creativity and innovation and they invest heavily in ICT integration. For example, Turkey allocated 11.7% of its budget to ICT. This percent was equivalent to \$4,000 for every person in 2006. European countries and Central Asian countries also allocated 22% of their budget to the development of ICT (Gokalp, 2011). Evidence showed that each of the centres pioneered for ICT use. There was a growing development in creativity (Thahir et al., 2010). On the other hand, we observe the relationship between ICT and creativity (Choi, Lee, & Yoo, 2010). Creativity is achieved through the use of innovative ICT. These technologies help the development of innovation and creativity opportunities and help employees to develop their skills. Research evidence show that the correct use of ICT can have a positive effect on employees' involvement with creativity (Dewettinck & van Ameijde, 2011).

Today, the concept of creativity is not considered as a requirement for the survival of any organisation or society, but it has been emphasised on the acquisition of necessary skills to utilise this particular human talent and it is one of the key issues in our society and in all developing societies (Wang, Klein, & Jiang, 2007). Therefore, ICT as an effective resource and a way for the quick sharing of information in today's society can be effective in the increase of creativity in society (Lau & Cheung, 2010). The transformation such as the huge storm of the world has changed in an unimaginable way at the beginning of the third millennium. The speed of these changes is so high that researchers believe that change is constantly changing. In this context, creativity and innovation are the only way to the survival of organisations that are synchronised with environmental changes in this variable environment. Today, this process is a new tool for the adaption with changes and the creation of change in changes (Hemmati, 2008). In fact, the speed of changes is unimaginable in today's political, economic and social world and only organisations can hope to continue their lives in the field of competition (Zhou, Chen, & Luo, 2014) that have intellectual capital, leading human resources, knowledgeable, creative, initiator and innovator employees as the most important intangible assets (Goktas, 2012).

Creativity is an element that emphasises abilities (Karadal & Saygin, 2011). Creativity is the ability to combine and integrate materials and objects in different ways to achieve a new goal for communication between different ideas (Jong, 2008). Creativity means the creation of something from something else in a unique way from a psychological perspective. In other words, creativity means the reduction or increase of a phenomenon and its transformation or combination with other phenomena and objects or things. One of the effective factors on creativity of a community is to create and establish a field and a platform among humans in order to create a culture that everyone tries to grow another and help the advancement of society by effectiveness on each other (Kamalian, Salarzahi, & Olyaei, 2013).

ICT enables decentralisation in decision making and powers by centralised control and employees to access required information for quick decision-making. In addition, ICTs are able to provide new tools that enhance employees' creativity and quality of work (Jafari, Ghayebzadeh, Akbari, & Sadegpour, 2017). The complex life of today is constantly being upgraded and creativity and innovation are a necessity for the continuation of active life. Humans need innovation and initiative to create vitality and dynamism in life in order to satisfy their diverse motivation. Human society needs change and innovation to survive and escape from death (Yarahmadi, 2012). Today, if managers and employees are not creative and innovative in organisations, the slogan of destruction will be waiting for them (Johnson, 2005). However, the responsibility of executive organisations especially at the head of the Ministry of Sport and Youth that is responsible for children's happiness and motivation

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takes on another direction. Therefore, executive organisations need creativity and innovation at their organisational levels for their own dynamism in addition to their responsibility for the creation of a field for the growth and development of creativity and the proper use of individuals' talents and abilities. This is the basis of cultural, economic and social development in society (Qudah & Melhem, 2011). Research evidence show several studies that have been conducted in relation to the variables of the present research. Tseng (2008) examined the relationship between ICT and knowledge management in Taiwanese companies. He concluded that there was a significant relationship between ICT and knowledge management (Tseng, 2008). Niels (2010) surveyed the status of knowledge management in the South African industry (Nemamyán & Emami, 2016). He concluded that IT can be effective on the role and reinforcement of knowledge management.

Sport organisations and institutions of the present age change constantly and the use of modern communication tools is an obligatory requirement of education centres (Nemamyán & Emami, 2016). Chen (2012) examined synergistic effects of IT-enabled resources on organisational competitive advantage and performance. The output of data showed that investment in the field of technology such as information systems affected organisational capability and performance and competitive advantage (Chen, 2012). Kaewchur and Phusavat (2013) examined the role of knowledge sharing on IT and innovation. The results of research showed that executive organisations should educate people who have the ability of classification, the analysis and combination of information, problem-solving, discussion, negotiation, management skills and technological skills, so that they can have an effective alignment with technological, industrial and social quick changes (Jong, 2008). Creativity is one of the basic pillars of dynamic management in organisations. Managers of the ministry play an important role in the growth or suppression of creativity of their subset (Heidari, Orof Zadeh, & Dadkhah, 2011). Creativity is creation approach or identification of ideas and probabilities that is useful in problem-solving or in human communication. Individuals should be able to look at the issues from a new perspective and create innovative possibilities and alternatives (Tseng, 2008). Creative and innovative employees are vital in the executive system in the country because ministries can play an important role in fostering creative thinking, hardworking people and problem-solvers due to the need and dependency of the community to it (Zohreh Dehdashti, Abdollahi, & Mohammad Pour Doost Kouhi, 2010).

Achieving this requires dynamic, creative and thoughtful managers in executive systems. This study examined the effect of the application of ICT skills on the process of knowledge management components and the effectiveness of creativity indicators for the improvement of employees' performance system in the Ministry of Sports and Youth due to the important role of the Ministry of Sports and Youth in the development of society and the great importance of the issue. This study can provide appropriate strategies to improve and promote these skills and increase the quality of the subset of affiliated organisations.

2. Method

2.1. Purpose of the study

This study was an applied and correlational research that was conducted through field method. The statistical population was all employees in the Ministry of Sports and Youth of Guilan province.

2.2. Participants

According to the statistics of the Department of Youth and Sports of Guilan province, employees' number was 310. The statistical sample was equal to the statistical population and the whole number. According to the Morgan table, 175 employees completed the questionnaire.

2.3. Research strategy and instruments

The research data were collected by library and field methods. According to the research objectives, the appropriate measuring instrument was also used to test the research hypotheses and collect the required data. Valid questionnaires were used to collect the required data for this study. Karghar's ICT questionnaire (2014) included 18 questions and four subscales (software, information systems, organisational automation and information network system). Ranjbar's knowledge management questionnaire (2009) included 20 questions and four subscales (knowledge application, knowledge record and sustainability, knowledge acquisition and knowledge transfer). This standard questionnaire has sufficient validity to conduct research. Torrance's Creative Scale (1979) included 60 questions and four parts. Each of the components of this questionnaire includes fluidity (the power of idea production and many answers), flexibility (the ability for the change of intellectual direction or the ability of production of diverse ideas), innovation (the ability of production of new or and innovative product: it means that the person's answers have not been seen before and be new) and the development of creativity (the ability of attention to the related details to an idea: it means that creative people pay more attention to the details of an idea). This questionnaire has high validity and accuracy to satisfy the creative variable and most researchers use this questionnaire to evaluate employees' creativity. Cronbach's alpha coefficient was reported above 90% in all three questionnaires to investigate the reliability of the research instrument.

2.4. Procedure

The purpose of this study was explained to subjects. The participants were assured that their data will be kept confidential and those will not be available to anyone. All subjects completed a consent form for the participation in this study and they attended in this study with the complete satisfaction. The researcher distributed questionnaires among subjects. He explained the inventory for the subjects before the questionnaire completion. Then, researchers collected completed questionnaires. The library and field methods have also been used to collect data in this study.

2.5. Data analysis

The collected data were classified by descriptive statistical methods and were analysed by K-S tests, the Kruskal-Wallis test, the Mann-Whitney U test, Spearman correlation coefficient and regression analysis. Kolmogorov-Smirnov test was used to determine the normal distribution of data. The SPSS software (version 23) was used for data analysis ($\alpha \leq 0.05$).

3. Results

The results in Tables 1 and 2 show subjects' gender status and their demographic characteristics.

Table 1. The subjects' gender status

Gender	N	Percent
Men	104	59.43
Women	71	40.57

The results in Table 1 showed that 59.4% of subjects were men and 40.57% of them were women.

Table 2. The subjects' demographic characteristics

Variable	Employment status/age/education	N	Percent
Employment status	1-10 years	61	34.85
	11-20 years	29	16.58
	21-30 years	85	48.57

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Age	Less than 30 years old	41	23.42
	31–40 years old	31	17.72
	41–50 years old	53	30.28
	51–60 years old	50	28.58
Education	Diploma and under the diploma	12	6.85
	Associate and bachelor's degree	92	52.58
	Master's degree	68	38.85
	PhD student and doctorate	3	1.72

The results in Table 2 showed that 34.85 % of subject had 1–10 years of service history, 16.58% of them had 11–20 years of service and 48.57% of them had 21–30 years of service history. About 23.42% of subjects had less than 30 years old, 17.72% of them were in the age group of 31–40 years old and 28.58 of them were in the age group of 41–50 years old. About 6.85% of subjects had diploma and were under the diploma, 52.58% of them had an associate and bachelor's degree, 38.85% of them had a master's degree and 1.72% of them were PhD student and doctorate.

Table 3. The outputs of descriptive statistics of knowledge management components, creativity indicators and ICT components

Variables	Subscales	N	Mean	SD
Knowledge management components	Application of knowledge	175	3.9	0.71
	Knowledge recording and sustainability	175	3.1	0.78
	Knowledge acquisition	175	4.1	0.79
	Knowledge transfer	175	3.2	0.61
Creativity indicators	Fluid	175	4.1	0.53
	Flexibility	175	3.8	0.68
	Innovation	175	3.9	0.71
	Creativity development	175	3.5	0.49
ICT	Network system	175	3.4	0.81
	Organisational automation	175	3.5	0.51
	Information systems	175	2.1	0.71
	Software	175	3.1	0.76

The results in Table 3 show descriptive statistics of knowledge management components, creativity indicators and ICT components.

Table 4. The statistical output of the Mann–Whitney U test based on subjects' gender

Variable	Gender	N	Output of mean	Mann–Whitney U test	Sig
Knowledge management components	Men	104	39.11	691.2	0.411
	Women	71	35.47		
Creativity indicators	Men	104	42.01	521.9	0.421
	Women	71	47.29		
ICT	Men	104	49.11	709.1	0.611
	Women	71	41.07		

The results in Table 4 showed that the mean of creativity indicators in female employees was 47.29% and it was 42.01% in male employees. This shows that the creativity rank is high among other variables.

Table 5. The statistical output of Kruskal–Wallis test for the examination of subjects' employment status

Variable	Employment status	N	Output of mean	Chi-square test	Sig
Knowledge management components	1–10 years	61	38.21	0.829	0.81
	11–20 years	29	42.71		
	21–30 years	85	41.29		
Creativity indicators	1–10 years	61	31.83	0.911	0.14
	11–20 years	29	40.29		
	21–30 years	85	39.22		
ICT	1–10 years	61	46.11	0.722	0.12
	11–20 years	29	43.59		
	21–30 years	85	48.69		

The results of the Kruskal–Wallis test showed that there was no significant difference between ICT, knowledge management components and creativity indicators in terms of employment status in employees of the Ministry of Sports and Youth (Table 5). The results in Table 5 showed that there was the highest mean in knowledge components in the service history of 11–20 years with a mean of 42.71, creativity indicators in the service history of 11–20 years with a mean of 40.29 and ICT variable in the service history of 21–30 years with a mean of 48.69.

Table 6. The statistical output of Kruskal–Wallis test for the examination of subjects' age

Variable	Age	N	Output of mean	Chi-square test	Sig
Knowledge management components	Less than 30 years old	41	40.11	4.11	0.51
	31–40 years old	31	39.71		
	41–50 years old	53	50.11		
	51–65 years old	50	53.77		
Creativity indicators	Less than 30 years old	41	39.11	3.89	0.49
	31–40 years old	31	41.62		
	41–50 years old	53	42.88		
	51–65 years old	50	38.22		
ICT	Less than 30 years old	41	43.27	4.21	0.59
	31–40 years old	31	46.12		
	41–50 years old	53	39.11		
	51–65 years old	50	47.22		

The results in Table 6 showed that there was no significant difference between ICT, knowledge management components and creativity indicators in terms of age in employees in the Ministry of Sports and Youth ($p \leq 0.05$). These results showed that there was the highest mean in knowledge management components in the age range of 51–65 years old with a mean of 53.77, creativity indicators in the age range of 41–50 years old with a mean of 42.88 and ICT in the age range of 51–65 years old with a mean of 47.22.

Table 7. The statistical output of Kruskal–Wallis test for the examination of subjects' education level

Variable	Age	N	Output of mean	Chi-square test	Sig
Knowledge management components	Diploma and under the diploma	12	39.21	3.19	0.29
	Associate and bachelor's degree	92	40.61		
	Master's degree	68	40.53		
	PhD student and doctorate	3	41.72		
Creativity indicators	Diploma and under the diploma	12	30.26	3.8	0.49
	Associate and bachelor's degree	92	36.71		
	Master's degree	68	39.11		
	PhD student and doctorate	3	40.29		

ICT	Diploma and under the diploma	12	45.21	3.11	0.64
	Associate and bachelor's degree	92	46.39		
	Master's degree	68	44.78		
	PhD student and doctorate	3	45.26		

The results in Table 7 showed that there was no significant difference between ICT, knowledge management components and creativity indicators in terms of education level in employees in the Ministry of Sports and Youth ($p \leq 0.05$). These results showed that there was the highest mean in knowledge management components in PhD student and doctorate level with a mean of 40.29, creativity indicators in PhD student and doctorate level with a mean of 40.29 and ICT PhD student and doctorate level with a mean of 45.26.

Table 8. The results of Spearman correlation coefficient between knowledge management components and creativity indicators with ICT

Variables	<i>r</i>	<i>p</i>
ICT knowledge application	0.311	0.03
ICT record and knowledge sustainability	0.319	0.05
ICT knowledge acquisition	0.119	0.014
ICT knowledge transfer	0.221	0.04
ICT fluidity	0.211	0.02
ICT flexibility	0.198	0.04
ICT innovation	0.172	0.03
ICT creativity development	0.199	0.06

The results in Table 8 showed that the obtained correlation coefficient between the components was positive and there was a significant and direct relationship between ICT and knowledge management components in the employees of the Department of Youth and Sports in Guilan province. In addition, the observed significant level between ICT and creativity indicators was a significant level in all components and there was a direct and significant relationship between these two variables. The linear regression was used to test this hypothesis that ICT can predict the variable of knowledge management and creativity indicators. According to the amount of coefficient of determination, it can be said that 45% of changes in variables of knowledge management and creativity indicators are predictable by ICT variable.

Table 9. The results of Spearman correlation coefficient between knowledge management components and creativity indicators

Knowledge management components	<i>p</i>	0.044	There is a significant relationship
	<i>R</i>	0.369	
Creativity indicators	<i>p</i>	0.019	There is a significant relationship
	<i>r</i>	0.291	

The results in Table 9 showed the observed correlation coefficient between ICT and knowledge management components in the employees of the Department of Youth and Sports in Guilan province ($p \leq 0.05$). The results showed that there was a significant relationship between ICT and knowledge management components in the employees of the Department of Youth and Sports in Guilan province. The observed correlation coefficient between ICT and creativity indicators was 0.291 and there was a significant relationship between ICT and creativity indicators in the employees of the Department of Youth and Sports in Guilan province ($p \leq 0.05$).

4. Discussion

The purpose of this study was to examine the effect of the application of ICT skills on the process of knowledge management components and the effectiveness of creativity indicators for the improvement of employees' performance system in the Ministry of Sports and Youth. The current world indicates the explosion of information from ICT developments (Olatokun, 2007). The movement of industrial societies has started towards the information society and has accelerated in these decades, so that the speed of this movement is well known in the less developed countries (Pebrianto & Djamhur, 2013). Acceptance of the transformation in the present world is one of the most important factors in the survival of organisations. The intensity and depth of these changes are such that they require new and evolved techniques for coping, coordination and adaptation (Glaveanu, 2010). This approach would increase the need for the use and application of ICT in different fields, as it seems that IT is one of the tools that we can win today in the field of competitive arena through its proper and quick application. Today, sports organisations expose to discontinuous changes. The communication and interaction of these organisations with various factors such as the government, sponsors and other national and international sports organisations and the social, economic, political and cultural factors have created a turbulent environment for these organisations. The creation of knowledgeable and creative organisations in sport can protect sports organisations against environmental changes to a large extent (Jafari, Ghayebzadeh, Akbari, Sadegpour, 2017). ICT developments in the executive field have created a new form of training in the name of online training or simultaneous training that its goal is the provision of access to knowledge by different learners around the world (Chen, 2012). The findings of the present study indicate a strong relationship between the variables of this study. The results of this study are consistent with the results of Johnson (2005), Wang et al. (2007), Walsh, Bhatt, and Martunek (2009), Ming and Gwo (2007), Dewettinck and van Ameijde (2011) and Kamalian et al.'s (2013) study. It can be concluded for the explanation of the consistency of the results of this study with the results of other researches that knowledge is the focus of all activities in the new approach of dynamic organisations and human resources have a particular importance than natural and financial resources, so that the role of knowledge, information, innovation, creativity, discipline and management is recognised as actual sources of the creation of economic and social values in this system of thought (Zarezadeh & Kadivar, 2006). This has put heavier responsibility on the part of ministries and research centres, so that the need for the creation of intellectual transformations in the management and review of the missions has become a fundamental necessity (Afkhami Aqda, Kamali Zarch, & Shokorawa, 2013). Therefore, the creation of a suitable platform for the establishment of IT systems in organisations is a factor for the creation and development of employees' creative thinking in the departments. It increases employees' attention to the details of a problem and employees examine the root of issues are rooted and the attention to the details of a problem along with the whole aspect of the questions leads to the emergence of employees' system thinking (Bayir & Keser, 2009). The dramatic growth of ICT and its effect on all aspects of human life are the most important phenomena of the third millennium. The discussion of important sports organisations at the executive level is one of these aspects that is heavily affected by this phenomenon.

Today, we can find through a look at these changes that organisations have changed fundamentally in a variety of ways such as speed, accuracy and easiness of doing things. Thus, the traditional structures of organisations have been broken and undergone fundamental changes (Nadifard & Shahtalabi, 2016). when we look from the organisational perspective to the use of ICT in organisations, it should be acknowledged that officials who accept the changes of this important phenomenon and adapt their organisation to it can have a successful management in sports organisations due to the importance and position of ICT at different levels of societies (Hollisopple, 2005). The sport field also pays attention to the maximum utilisation from this powerful technology. Several factors have affected the increase of sport popularity across the world including information by mass media and internet and satellite networks that report events and sports events (Mohades

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Kassai, 2008). The managers and employees of the Ministry of Sports and Youth as the people who will shape the sport future of the country play an important role in the scientific development of sport in the country. The use of ICT functions in three areas of training, communication and research can have a significant effect on the quality of individuals' perception of the state of knowledge and creativity. However, there are always challenges in this way (Li et al., 2009).

The findings of this study showed that there was a significant relationship between the use of ICT and creativity. It can be concluded that ICT development has created new conditions in the world and has positive effects on behaviours, skills, relationships and social interactions in micro and macro dimensions especially among managers and employees in the Ministry of Sport and Youth. This result of the present study is consistent with the results of Kaewchur and Phusavat (2013), Heidari et al. (2011) and Karadal and Saygin's (2011) study. One of the reasons for the significant relationship of these two variables in this study can be the easy access to the needed information at all times that it can change the way of innovation and create a significant relationship between these two variables (Johnson, 2005). One of the other reasons for the explanation of this is a significant relationship that can be the provision of the appropriate substrates by the Ministry of Sports and Youth to use ICT to help the creation of creativity and the increase of the ability of thinking and innovation at managers and employees' level (Goktas, 2012). ICT is a new paradigm that has played a key and sustainable role in the transformation of sports organisations and its remarkable developments have opened the doors of science to all and provided the field for the flourishing of talent and creativities (Choi et al., 2010). A more complicated world needs to cultivate more creative minds. The complex life of today is constantly changing and creativity is a word that is beyond the slogan and has become a vital factor in the success of sports organisations. The creation of creativity and innovation in sports organisations is affected by factors such as training, flexibility, appropriate organisational environment and social and organisational factors. Since the structure of the external variables of ICT also includes these factors, so this variable was an explanation for employees' creativity of the Ministry of Sports and Youth in the first step (Walsh et al., 2009). The emphasis on the training of ICT skills in provincial departments has also led to that employees are familiar with ICT and use it for the creativity growth. Therefore, the holding of training workshops during in-service training based on the scientific need for employees' familiarity with the innovative approach using ICT has led to the increase of creativity and a significant relationship between ICT and creativity (Zhou, Chen, & Luo, 2014).

5. Conclusion

According to the significant relationship between the use of ICT and knowledge management components, it is recommended that the Ministry of Sports and Youth and Provincial Departments pay attention to the online methods, multimedia, virtual training, virtual library, virtual lab and interactive environments and use modern teaching methods such as group methods and projects to encourage employees to accept collaboration with others using modern technology. In addition, it is recommended to create a suitable platform for employees' innovation to gain experience and to do group activities in order to increase creativity indicators.

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