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Research Article

COMPARING THE EFFECT OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) ON 21ST CENTURY MANAGERS IN MAZANDARAN AGRICULTURAL JIHAD ORGANIZATION AND SARI ISLAMIC AZAD UNIVERSITY

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ABSTRACT
In this study, the effect of information and communication technology (ICT) on 21st century managers in Mazandaran Agricultural Jihad Organization (MAJO) and Sari Islamic Azad University (SIAU) has been studied. Specific goals of this study were determining the effect of using ICT of 21st century managers on decision-making of organization managers, how to monitor the performance of human resource management, organizational planning, inter- and intra- organizational communications, the development of learning organization in the organization and development of knowledge-centered process in the organization. The method of this descriptive research is from the type of survey and it is functional in terms of the purpose. The statistical population of the study consisted of 245 professors and managers of Sari Islamic Azad University, and 130 managers of MAJO (a total of 375 persons). The statistical sample of the study consisted of 225 persons of the mentioned community members. Krejcie and Morgan table was used to choose the sample size, and the method of sampling was the stratified random sampling. A data collection tool was the standard questionnaire. This reliability index was calculated by Cronbach's alpha coefficient that was 0.87. The descriptive statistics were used to draw the tables, graphs, and percentage frequency for data descriptive analysis. In the comprehensive analysis, two-group t-test was used to study the research questions. The statistical analyses were conducted by using SPSS software. The results obtained showed that the studied factors are effective in using ICT.

Keyword: *Technology, Information, Communications, Agricultural Jihad and Islamic Azad University Managers*

INTRODUCTION
Information and communication technology has entered into the country more than two decades and nearly one decade the spread of the technology has accelerated in Iran proportional to its rapid growth in the world. Although the spread of the Internet and computers in the society was high, but the rate of utilization and efficiency of these systems in the country is quite low as well as the production and revenue-generation of this technology has been very low in the country (especially in the world) (Sarookhani, 2008). The education should be based on individual learning, because when we speak of learning, there is not a same method for everyone and we cannot consider all of them at one level and teach them. We should benefit from the latest modern technologies for making the executable plans more beneficial and achieving better results (Forghany, 2003). Information technology refers to a set of tools and methods that collect, store, retrieve, process, and distribute the information in various forms. Technology can be considered as a purposeful human activity that is used to design and manufacture the different products and a certain type of information knowledge that the technology uses it for solving scientific problem scientifically is called information technology (Mirza Mohammadi, 2004). The educational technology provides the grounds for the utilization because it makes the way of acquiring the information and knowledge and skills required for a successful life and the methods of using information and communication resources possible. IT plays an important role in the relationship between society and education (Eftekhar Zadeh, 2006). The changes in the society create new needs in people and the education is included among these needs and IT plays an important and critical role in this field. ICT

usually refers to production and processing, storage and distribution of information in large enterprises (Iran national development encyclopedia, 2009). Learning organizations are phenomena that were introduced by the beginning of the 90s. the reason of emergence of such phenomena was the conditions, theories, and changes in educational environments before the mentioned decade so that all educational experts had started the extensive efforts for the survival of their educational systems and they should be changed from the non-dynamic forms to learning organization to be able to maintain themselves in the turbulent environment around them (Ebrahim Abadi, 2003). Making decision by managers for more efficient use of manpower, equipment and other resources is necessary for any manager. Therefore, the manager always seeks to maximally utilize his/her opportunities and resources to achieve the predetermined goals (Deljoo, 2004). Also, in the study conducted in Japanese banks, it was determined that the capabilities of information technology and human resources should be managed more efficiently in order to gain maximum benefits (Swierczek and Shrestha, 2003). In a research as a suitable model for promoting innovation in Iran education system, Hassani (2010) stated that the acceptance of innovation in school is based on the engagement and consultation of school elements, i.e. manager, teacher and parents. This pattern is a promoter of participatory models in educational innovation. In a research as studying the functional results of ICT in Tehran high schools, Haj Froshan and Orangi (2009) stated that in order to achieve a desired model that is desirable and in accordance with the Notification Center characteristics and Tehran high schools, the student ultimately showed more motivation and interest to individual and group educational activities by creating the necessary infrastructure in the classroom, such as the physical facilities and conditions and equipment, software and access to the Internet for using ICT in schools, and training the teachers. By studying the role of ICT in empowering Iran rural women, Ayat and Azamian (2010) stated that in acceptance and spread of information technologies (IT) in Iran rural and agricultural areas, the issues such as attraction capacity (cost, complexity, dependence on infrastructural services, expensiveness, etc.) connection to the system, authorities, hierarchy, the digital divide between urban and rural areas as well as between different groups within a country as rich and poor, men and women and the role of IT in culture, politics and society of Iran, cultural factors in the acceptance of IT (language, nationalism, diversification, the legal framework for the use, confidence of people and authorities, kind of power relationships in the country, etc.), capital (internal, external, physical), control (the type of institutions that control IT, type of their control), skills and abilities of beneficiaries (level of education, the development of training courses, specialization, etc.) should be considered. In the study of ICT in teaching the theology, Vadadi (2007) stated: ICT enables the world educational systems to provide the educational opportunities to everyone with the least cost. These tools provide very diverse educations for all members of society. In our society, different groups have different educational needs in the field of science and theology. Some people are eager to learn theology and achieve expertise in its various fields; others have will to learn the laws and religious culture to the extent of meeting the religious needs of daily life; some are only interested in getting to know some fields of the religious sciences. All these people don't have the possibility to participate in the classroom setting - if there are all these classes. Thus, the needs can be met only by using ICT tools and creating the virtual educational systems. On the other hand, enhancing the efficiency and effectiveness of traditional education in the field of religion is one of the main problems and concerns of relevant authorities. ICT can be made as a powerful tool for improving the quality and efficiency of education. In a study entitled Informational capital and alignment with organizational strategies, Golpayegani (2006) stated that information systems must meet the needs of the organization at all levels. The strategy map and balanced scorecard as an important tool and the management system for implementing the strategies of organization plays an important role for alignment between the IT and business of 21st century. This alignment will ultimately lead to create the value in the process of converting the intangible assets to tangible results and profitability for the company and shareholders. In this regard, the first issue is the belief of senior managers of companies and organizations in the role of intangible assets. The second issue is the design and development of systems and indicators to measure these assets according to the cultural and local issues in Iran. In the end, it is necessary to provide the fields necessary to fulfill the issue by creating more interaction between these capitals and the

goals of organization and the social development of country by education, information transmission and acculturalization. In a study entitled evaluating ICT portals in the university portals and providing a suitable model, Zakeri Fard and Rezaee Sarifabad (2010) has stated that from 19 university portals studied, the Edinburgh University portal had 21 elements; Athabasca and Buffalo had 20 elements; Lazal, Rutgers and Virginia technology had 18 elements; and Sheridan College portal had 17 elements. Other university portals had less than half of the elements of evaluation list. The results obtained show the fact that most universities portals studied have minimally used the knowledge portal elements and have less used the elements that share and transfer the knowledge in their design. In the study entitled measuring ICT capabilities of governmental organizations in Iran and the analysis of their links (Niko Kar *et al.*, 2004) stated that indicators of content management, document management and security in the portals of Iran governmental organizations have the appropriate grades while other indicators such as cooperation and communication, experience management and user relationships and news have inappropriate grades. In comparing the portals with each other in terms of indicators, it was determined that the business bank portal in terms of content management, portals of planning assistance and strategic control of president, Industrial Development and Renovation Organization of Iran and Hamedan Municipality in terms of the indicator of document management, portals of Commerce Bank in terms of the indicator of cooperation and communications, the portal of PMO in terms of the indicator of experience management and user relationships, Hamedan Municipality in terms of the indicator of news and the portals of National Center of Iran service and product numbering, Kish Free Zone Organization, the Ministry of Communications and Information Technology, Department of Social Security, Iran Blood Transfusion Organization, Hamedan Municipality, Ministry of cooperation and the organization of Industries and Mines of East Azerbaijan in terms of the indicator of security have been the highest grades. Also, the portal of National Bureau of Iran Statistics has the highest number of pages and incoming links and the portal of the Ministry of Education has the highest web effect factor. In studying the correlation between the indicators and incoming links, it was determined that there is a significant correlation only between the indicators of cooperation and communications and incoming links. In 2006, Kozma studied the effect of ICT on 1,900 famous Cologne university professors in Cologne. In the research, he showed that the use of ICT had had very positive results on Germany high education system. People like Martin Rust and Adamz (1999) conducted a research and stated that considering the organized activities (such as searching for information, publication and presentation of scientific research works), it can be concluded that the effect of new teaching methods on student activities has been more than its effect on teachers. Students were more satisfied with modern teaching methods by using ICT than the old and existing methods. It is consistent with Louis and Miles (1990) based on the effect of technology on student learning because in this study it has been shown that the students are very active in it and are responsible for their learning. They did most of their works in groups and search for new resources and information in the form of project. Total objective of research was the comparative study of the effect of information and communication technology (ICT) on 21st century managers in Mazandaran Agriculture Jihad Organization and Sari Islamic Azad University. Its certain objectives also included: determining the effect of using information and communication technology (ICT) on the method of organizational planning, inter- and intra- organizational communications, development of learning organization in the organization, development of knowledge-centered process in the organization.

MATERIALS AND METHODS

The research is functional in terms of the purpose and descriptive-surveying in terms of data collection. It is functional in terms of the purpose because its results will be used in the Ministry of Agricultural Jihad and the central Organization of Islamic Azad University. The statistical population of the research is as follows: 130 senior and middle managers of Agricultural Jihad and 245 senior and middle managers and the professors of Sari Islamic Azad University (total statistical population was 375 persons). Also, the stratified sampling method was used to select the sample (225 persons were the statistical samples of the research). Krejcie and Morgan table was used to select the sample. In this study, two methods were used

to collect the data: using the method of standard documentary and library studies and the questionnaire (Bukowitz and Williams, 1999, questionnaire of educational manager competencies in the field of ICT; Randsip, 2007, standard questionnaire of evaluating the factors affecting the success of 21 century managers- Lee Pham James). A standard questionnaire was a questionnaire that its question had been designed according to previous studies of stating the problem, questions, partial and general objectives and research questions. The questionnaire had two parts as follows:

-Personal Information, age, educational level, place of employment, work experience, management experience

- Information and questions of questionnaire based on the specific questions and general and partial objectives

In order to verify the content and theoretical validity, several versions of the questionnaire were given to the professors and experts and after necessary corrections and revisions it was ensured that questions asked were able to measure the content and desired characteristics. Cronbach's alpha coefficient was obtained 0.87 which suggests that the questionnaire had good reliability. The descriptive statistics were used to draw tables, graphs, frequency. Two-group T- test was used for the comprehensive analysis of the research hypotheses and the SPSS software was used in all statistical calculations.

How to Implement the Questionnaire

After preparation of standard questionnaires, the questionnaires were distributed between samples in two phases. According to Table 1-3, this chapter was distributed two times (125 questionnaires at the first time and 100 questionnaires at the second time). Thus, from two fields of research, 225 questionnaires were collected and then analyzed.

RESULTS AND DISCUSSION

Results

The Descriptive Findings

The results are shown in table 1.

Table 1: Distribution of Subjects Based on Individual Characteristics and Education

Variable		Frequency	Percentage
Gender	Female	171	76
	Male	54	24
The Job Title	SIAU	111	47.65
	MAJO	114	52.35
Education	Bachelor(BA)	80	35.33
	Master(MA)	60	26.66
	PhD	85	37.00
Job Experience	Less than 5 years(SIAU)	23	16.89
	Less than 5 years(MAJO)	36	4
	5-10 years(SIAU)	10	18
	5-10 years(MAJO)	40	70
	10-15 years(SIAU)	156	56
	10-15 years(MAJO)	128	15.89
	More than 15 years(SIAU)	35	9.11
	More than 15 years(MAJO)	21	16.89

- Sari Islamic Azad University (SIAU), Mazandaran Agricultural Jihad Organization (MAJO)

Determining the Descriptive Attitude of Groups

The results are shown in table 2.

Table 2: Attitude Determines a Description of the Groups Studied

	Place of Work	**Number(N)**	**Mean**	**Standard Deviation**
1.Use of ICT in management decision making organization	SIAU	114	3.78	0.48
	MAJO	111	3.83	0.52
2. Use of ICT in the monitoring function of human resource management	SIAU	114	3.82	0.53
	MAJO	111	3.75	0.53
3. Use of ICT in the organization planning	SIAU	114	3.63	0.67
	MAJO	111	3.41	0.53
4. Use of ICT in the internal and external communications	SIAU	114	3.68	0.65
	MAJO	111	3.74	0.62
5. Use of ICT in the developing learning organizations in the organization	SIAU	114	3.65	0.62
	MAJO	111	3.31	0.76
6. Use of ICT in the process of knowledge based organization	SIAU	114	3.78	0.48
	MAJO	111	3.75	0.53
7. Use of ICT in the organization	SIAU	114	3.82	0.53
	MAJO	111	3.41	0.53

- Sari Islamic Azad University (SIAU), Mazandaran Agricultural Jihad Organization (MAJO)

Comprehensive Findings

According to the average calculated that is more than the theoretical average of 3, which represents the positive attitude of the participants descriptively about the research questions, next t-test was used to extend the respondents' views to the entire study statistical population and its results are presented in table 3.

Table 3: Analytical Results of the Study Groups

	Place of work	**Number(N)**	**df**	**t**
1.Use of ICT in management decision making organization	SIAU	114	113	8.93
	MAJO	111	110	9.51
2. Use of ICT in the monitoring function of human resource management	SIAU	114	113	9.67
	MAJO	111	110	8.37
3. Use of ICT in the organization planning	SIAU	114	113	7.34
	MAJO	111	110	5.48
4. Use of ICT in the internal and external communications	SIAU	114	113	7.69
	MAJO	111	110	8.26
5. Use of ICT in the developing learning organizations in the organization	SIAU	114	113	8.12
	MAJO	111	110	4.75
6. Use of ICT in the process of knowledge based organization	SIAU	114	113	8.93
	MAJO	111	110	8.37
7. Use of ICT in the organization	SIAU	114	113	9.67
	MAJO	111	110	5.48

- Sari Islamic Azad University (SIAU), Mazandaran Agricultural Jihad Organization (MAJO)

Given that in the table p-value is less than $\alpha = 0.05$. Also, also considering higher average value calculated from the theoretical value of 3 with 95% confidence in all cases, the null hypothesis (H_0) is rejected. The last question is a comparison between the managers of Islamic Azad University and Agricultural Jihad Organization in terms of the effect of ICT which is presented in the table 4.

Table 4: Comparison Between SIAU and MAJO Use of ICT

	Mean	**Standard Deviation**	**t**	**α**	**P-Value**
SIAU	3.83	0.72	0.83	0.05	0.12
MAJO	3.78	0.48	0.83	0.05	0.12

- Sari Islamic Azad University (SIAU), Mazandaran Agricultural Jihad Organization (MAJO)

So the research hypothesis is rejected with 95% confidence and it is concluded that there is no significant difference between using ICT in Islamic Azad University and Agricultural Jihad Organization.

Conclusion

Functions and successes of knowledge management in service and educational organizations are affected by the amount and quality of knowledge transfer. So despite "the tacit individual competitive advantage"

for detail, copying and distributing is very difficult and the available alternative source of knowledge is explicit and is kept secret from competitors. Employees often resist transferring and sharing the tacit knowledge with others and encounter the resistance of others when using the knowledge. They think that transferring and sharing the best thoughts and ideas lead to decrease the individual competitive advantage. The results show that the principle of using the new technologies in educational organizations such as universities, service organizations can have significant functions in the fields of ICT. As observed in the results of research backgrounds of researchers such as Hassani (2010), Haj Frosh and Orangi (2008), Vadadi (2007), Golpayegani (2006), Zakeri Far *et al.,* (2005) as well as Kozma (2006), Martin *et al.,* (1999), Louis and Miles (1991), there is consistency and it confirmed all the hypotheses or questions of this study.

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