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The Role of Mobile Communicative Technology on the Performance of Health Workers in Mazandaran Province

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ABSTRACT: The aim of this research was to study the impact of mobile communicative technology on the performance of health workers in Mazandaran province. The research was conducted based on the descriptive (survey) method. The population included all health workers of Mazandaran province working with a population of 2012 in 2016. The sample was 360 health workers selected randomly. Two instruments of collecting information including library research and standard questionnaire of the adoption of mobile services (Mohamedpour et al., 2010) (containing 21 questions with Likert range0 were used in this research. Data were analyzed in two descriptive level (using frequency distribution tables, frequency and plot) and inferential statistics (using X2, U, K). The major findings of this research are that perceiving usefulness of mobile communication technology, easing the use of mobile communication technology, subjective norms of mobile communication technology of bottleneck and perceived behavioral controlling mobile communication technology with increasing the performance of health workers has been effective so much. This effectiveness has been the same among gender (male and female), area of residence, education, and work experience.

Keyword: Mobile Communicative, Health Workers, Performance

INTRODUCTION

Advance in communications technology in organizations has created a lot of changes which as a result, the structure and how to manage organizations are affected. The use of communications technology such as mobile phones and the Internet are rapidly progressing. IT allows the staff that more accurate and faster planning and decision-making are applied by fast data processing, controlling and coordinating in the organization and but they receive more rapid feedback. Managers have recognized the value of communication technology and at the same time, they have recognized that this technology should be managed properly and advanced proportional to the speed of technological change (Khajehzadeh, 2014).

The emergence of new technologies leads to important changes in organizational and the organization need to comply with the new technology to survive. In this regard, future needs should be emphasized for growth and comprehensive development of the country (Motoharu et al., 2009). Therefore, the growth and development of

communication technology has revolutionized the different aspects of human life and the performance of the organizations. This technology has changed methods, attitude of individuals, organizations and governments and this has led to creating new industries, new jobs and creativity in doing affairs (Hassani et al, 2008; quoted by Sanaeemehr, 2011). Developed countries due to a long history on determining the need and use of technologies can determine properly needs, skills and ability to use technology. Efficiency, relevance and value of technology depend on the relevance of the processed, developed and delivered information with timeliness, quality, consistency and consideration of the needs and skills of real users. In many cases, developed countries discussed to save costs, adapt technology to the needs of consumers and convenience to its production in developing countries. These kinds of productions can have many benefits such as job creation, training and performance improvement, and ultimately strengthening the country's economic fundamentals (Henson & Rola, 2009).

According to available statistics, the use of mobile penetration is higher than any other technology and this has created mobile commerce in the form of a world revolution which is also developing with the same speed of the developed countries in developing countries (Joseph & Stone, 2003).Technologies and policies that affect their innovations and applications are considered specifically as factors of changing. In the meantime, technology is the main force which leads to breaking legal, geographic and industrial barriers and created new products and services (Dandapani, 2008; Suoranta & Mattila, 2007).

Thus, the evaluation and selection of appropriate technology become more complex every day. In the evaluation and selection of the most appropriate technologies, it must be attempted so that all the goals of the organization are provided in relation to the use of technology and risks associated with technology are considered (Mehregan et al., 2010). In addition, the assessment of technology includes functions such as developing information sources, helping build long-term policies, technological awareness of possible adverse outcomes in the early stages, encouraging the public to adopt and raise awareness of social responsibility and development of knowledge (Farnoudi, 2009). Also, technology selection is very important in creating and managing competitive advantages of the organizations (Torkkeli & Tuominen, 2002).

Today, the organizations know communication technology as tools which people raise them by helping the performance and adapt by changing. But since these organizations change the performance of their people more effective in terms of educational and professional level, they should encourage their employees in using technology par with the speed of technological change (Daft, 2005). Mohammadi (2003) believes that the application of IT in each organization among the units in order to increase efficiency and effectiveness create a coordination by developing organizations and becoming their environment and also increasing competition among organizations.

Related studies also show that the use of communications technology provides better and faster access to information and leads to developing human resources through savings in time, cost and manpower and directing beneficial activities. In many studies related to the user, communication technology is confirmed that this technology helps to added growth of the organization (Fathi et al., 2007). The studies of the studies of C Lavden and Price (2010) also state that communication technology reduces the cost of obtaining and analyzing information and this allows that the organization reduces the costs related to the collection and distribution of information and also the indiscriminate cost management. Sibley (1977) of communication technology concluded that the use of information technology was led to increasing the satisfaction of the user, cohesion of easier and faster programs, quick response and easier operational process. The studies and research on the effectiveness also show that communication technology has an impact on their performance and staff performance is improved by training and passing the training periods has had a positive effect on employee performance and leads to their more efficiency (Mahdavi, 2006). Therefore, there is no doubt that mobile has provided tremendous benefits for the users that people use this technology not only to advance their intentions but also the technology change people complying with certain rules of their performance (Garcia montes, 2006; quoted by Kalantari & Hassani, 2008) and the basic features are information and turning it into knowledge. Therefore, new communication technologies by offering a wide range of information and communication to the public transform the nature of the human environment because these kinds of productions can have many benefits such as job creation, training and development of professional skills, contributing to the institutionalization of change and innovation which finally strengthening the economic base in these countries may be imperative for the growth and improvement of the country. Therefore, the aim of this research is to seek the question that to what extent is mobile communicative technology effective on the performance of health workers in Mazandaran province?

Research questions

1. To what extent perceiving usefulness of phone communication technology is effective on the performance of health workers in Mazandaran province?
2. To what extent easing the use of phone communication technology is effective on the performance of health workers in Mazandaran province?
3. To what extent subjective norms of phone communication technology are effective on the performance of health workers in Mazandaran province?
4. To what extent perceived behavioral controlling of phone communication technology is effective on the performance of health workers in Mazandaran province?
5. Is there any difference between health workers' views about the role of mobile communication technology based on demographic characteristics?

MATERIALS AND METHODS

The research was conducted based on the descriptive (survey) method. The population included all health workers of Mazandaran province working with a population of 2012. 360 people have been determined based on Morgan table for the sample size and they have been selected by random sampling method. In this study to collect information, two methods of library (the use of library books, theses, magazines, periodicals and electronic journals valid and relevant research) and field with a questionnaire consisting of 21 questions of the researcher made were used that they were regulated based on hypotheses. The validity of the questionnaire was approved by the experts concerned. To examine the reliability, after experimental implementation among 30 people, Cronbach's alpha for this scale was obtained 0.81. To analyze research data from two statistical methods, descriptive and inferential statistics were used. The statistical characteristics such as frequency, percentage and diagrams were used for descriptive analysis. In inferential analysis to analyze the data with nominal scale, test of Chi-Square is used and tests of U mann-whitney and Kruskal-wallis are used in connection with the data with relative scale, according to independent groups (two-group and multi-group).

RESULTS

First questions: To what extent perceiving usefulness of phone communication technology is effective on the performance of health workers in Mazandaran province?

Table 1. Frequency distribution and chi-square test results.

Variable	Very low	Low	Somewhat	High	Very high	Total	df	X2	sig
Frequency	0	1	25	236	98	360	4	17.171	0.000
Percent	0	0.27	6.94	65.55	27.22	100.0			

According to the data in Table 1, of the total number of respondents, 0 percent responded to very low options, 0.27 percent to low option, 6.94 percent to somewhat option, 65.55 percent to high option and 27.22 percent to very high option that the highest frequency is related to the high option. Also, Chi-Square calculated (17.171) is higher than the value of the square of Table (13.27). Therefore, we can say with 99% confidence that there is a significant relationship between the observed frequencies and the expected frequencies and this result indicates that perceiving usefulness of phone communication technology is effective on the performance of health workers in Mazandaran province.

Second question: To what extent easing the use of phone communication technology is effective on the performance of health workers in Mazandaran province?

Table 2. Frequency distribution and chi-square test results.

Variable	Very low	Low	Somewhat	High	Very high	Total	df	X2	Sig.
Frequency	1	2	8	200	115	360	4	14.971	0.000
Percent	0.27	0.55	3.33	61.94	33.88	100.0			

According to the data in Table 2, of the total number of respondents, 0.27 percent responded to very low options, 0.55 percent to low option, 3.33 percent to somewhat option, 61.94 percent to high option and 33.88 percent to very high option that the highest frequency is related to the high option. Also, Chi-Square calculated (14.971) is higher than the value of the square of Table (13.27). Therefore, we can say with 99% confidence that there is a significant relationship between the observed frequencies and the expected frequencies and this result indicates that easing the use of phone communication technology is effective on the performance of health workers in Mazandaran province.

Third question: To what extent subjective norms of phone communication technology are effective on the performance of health workers in Mazandaran province?

Table 3. Frequency distribution and chi-square test results.

Variable	Very low	Low	Somewhat	High	Very high	Total	df	X2	Sig.
Frequency	1	7	11	203	108	360	4	15.768	0.000
Percent	0.27	1.94	5.27	59.72	32.77	100.0			

According to the data in Table 3, of the total number of respondents, 0.27 percent responded to very low options, 1.94 percent to low option, 5.27 percent to somewhat option, 59.72 percent to high option and 32.77 percent to very high option that the highest frequency is related to the high option. Also, Chi-Square calculated (15.768) is higher than the value of the square of Table (13.27). Therefore, we can say with 99% confidence that there is a significant relationship between the observed frequencies and the expected frequencies and this result indicates that subjective norms of phone communication technology are effective on the performance of health workers in Mazandaran province.

Fourth question: To what extent perceived behavioral controlling of phone communication technology is effective on the performance of health workers in Mazandaran province?

Table 4. Frequency distribution and chi-square test results.

Variable	Very low	Low	Somewhat	High	Very high	Total	df	X2	Sig.
Frequency	2	3	20	163	93	324	4	14.471	0.000
Percent	0.47	2.22	7.5	63.61	25.83	100.0			

According to the data in Table 4, of the total number of respondents, 0.47 percent responded to very low options, 2.22 percent to low option, 7.5 percent to somewhat option, 63.61 percent to high option and 25.83 percent to very high option that the highest frequency is related to the high option. Also, Chi-Square calculated (14.471) is higher than the value of the square of Table (13.27). Therefore, we can say with 99% confidence that there is a significant relationship between the observed frequencies and the expected frequencies and this result indicates that behavioral controlling of phone communication technology is effective on the performance of health workers in Mazandaran province.

Fifth question: Is there any difference between health workers' views about the role of mobile communication technology based on demographic characteristics?

Table 5. U mann-whitney test results in relation to gender.

Feature		Frequency	Average ratings	Total Ratings	U mann-whitny	Sig.
Gender	Woman	108	158.38	0.021469	1.246	0.214
	Man	252	163.89	0.33781		

To determine the relationship between gender and the performance of health workers in Mazandaran province, Mann-Whitney test using gender component is used (Table 5). In this test, whatever the average rankings is closer together, the less likely hypothesis is rejected. Here, the average for women is 158.38 and for men 163.89. This means that in this research, the use of mobile communication technology in men is more than women. But given that U mann-whitney is reported 1.243 and the significance level 0.214 and since the significance level is more than 0.05, the hypothesis can be rejected. Therefore, there is no significant difference between improving the performance of health workers of men and women in terms of the use of mobile communication technology. This

means that there is no significant difference between improving the performance of health workers of men and women in terms of the use of mobile communication technology and the performance of health workers did not result in the use of mobile communication technology for none of these groups.

Table 6. U mann-whitney test results in relation to gender.

Feature		Frequency	Average ratings	Total Ratings	U mann-whitny	Sig.
Place of living	City	240	159.11	0.34049	0.11044	0.516
	Village	120	166.24	0.17954		

To determine the relationship between gender and the performance of health workers in Mazandaran province, Mann-Whitney test using the component of place of living is used (Table 5). In this test, whatever the average rankings is closer together, the less likely hypothesis is rejected. Here, the average for place of living in the city is 159.11 and the average for place of living in the village is 166.24. This means that in this research, the use of mobile communication technology for lace of living in the village is more than place of working in the city. But given that U mann-whitney is reported 0.11044 and the significance level 0.516 and since the significance level is more than 0.05, the hypothesis can be rejected. Therefore, there is no significant difference between improving the performance of health workers of the city and village in terms of the use of mobile communication technology. This means that there is no significant difference between improving the performance of health workers of the city and village in terms of the use of mobile communication technology and the performance of health workers did not result in the use of mobile communication technology for none of these groups.

Table 7. The Kruskal-Wallis test results in relation to degree of education.

Feature		Frequency	Average of rankings	X2	df	Sig.
Degree of education	Under diploma	130	157.00	1.751	3	0.852
	Diploma	214	161.00			
	Associate degree	3	133.00			
	Bachelor degree	13	1153.31			

According to Table 7, X2 calculated (1.751) is smaller than the critical value of Table (7.81) with degree of freedom 3 at the level of 95 percent; therefore, it is not significant statistically and it can be concluded such that the impact of mobile communication technology on the performance of health workers in Mazandaran province is the same based on the degree of education.

Table 8. The Kruskal-Wallis test results in relation to work experience.

Feature		Frequency	Mean of rankings	X2	df	Sig.
Work experience	Less than 5 years	29	143.92	3.249	3	0.094
	From 5 to 10 years	74	151.81			
	From 11 to 20 years	148	160.12			
	More than 20 years	109	168.09			

According to Table 8, X2 calculated (3.249) is smaller than the critical value of Table (7.81) with degree of freedom 3 at the level of 95 percent; therefore, it is not significant statistically and it can be concluded such that the impact of mobile communication technology on the performance of health workers in Mazandaran province is the same based on the work experience.

DISCUSSION AND CONCLUSION

The aim of this research was to study the impact of mobile communicative technology on the performance of health workers in Mazandaran province. Accordingly, this study was analyzed using chi-square test. The results showed that in the first question of the research, given that the value of Chi-Square is larger than Chi-Square of the Table, there is a significant difference between observed frequencies and expected frequencies. This indicates that

perceiving the usefulness of mobile communication technology is effective in increasing the performance of health workers in Mazandaran province. However, this result obtained is consistent with results of the studies of Eftekhari and Zamani (2012), Niroumand and Bakhtavari (2011), Mohamedpour et al (2010), Hulme and Traxler (2011), Hem et al (2005), Nysveen et al (2005), Hung et al (2003) and Davis (1989). Today, mobile phones are changing the methods and speed of thinking, communications, design and construction, exploitation of resources and transform the entire way of life and performance such that perceiving the usefulness and the use of mobile have been a direct impact on the performance of the staff. Therefore, in today's evolving world, the success is for the societies which they have paid attention to the usefulness of mobile phone and its infrastructure and they have adapted to science and technology and they do their best to improvement of the performance based on new knowledge.

Among the other achievements of this study which can be discussed is that given that the value of Chi-Square is larger than Chi-Square of the Table, there is a significant difference between observed frequencies and expected frequencies. This indicates that easing the use of mobile communication technology is effective in increasing the performance of health workers in Mazandaran province. However, this result obtained is consistent with results of the studies of Mohamedpour et al (2010), Hulme and Traxler (2011), Hem et al (2005), Nysveen et al (2005), Hung et al (2003) and Davis (1989). In the age of communication, mobile technology and the growth of digital technology result in significant changes in the means of communications and signaling. Awareness and knowledge used are important to use the service (Mols et al., 1998). The usefulness refers to this that to what extent it is possible that the use of the mobile phone leads to the performance. Therefore, easing the use of mobile technologies in order to accelerate the implementation of decisions at different levels and speeding in customer service and staff training with an approach to learning organization are among the measurements which can be acted in order to improve the performance of health workers in Mazandaran province and the impacts of their performance can be increased.

According to the results of the third question, given that the value of Chi-Square is larger than Chi-Square of the Table, there is a significant difference between observed frequencies and expected frequencies. This indicates that subjective norms of mobile communication technology are effective in increasing the performance of health workers in Mazandaran province. However, this result obtained is consistent with results of the studies of Mohamedpour et al (2010), Hulme and Traxler (2011), Hem et al (2005), Nysveen et al (2005), Hung et al (2003). Subjective norm of the users is a combination of a sense of individual to people's expectations or dependent groups and also conforming to those expectations. In other words, the subjective norm is to feel the individual on that most people who are important to him how they think on doing that particular behavior (Fishbein & Ajzen, 1975). Combination of attitude of one person with subjective norms forms a behavioral intention (functional) that person. Therefore, it can be said that people use not only the mobile phone to advance their intentions, but the mobile phone changes people complying with certain rules of conduct.

By investigating the fourth question, we can obtain the results that given that the value of Chi-Square is larger than Chi-Square of the Table, there is a significant difference between observed frequencies and expected frequencies. This indicates that perceived behavioral controlling of mobile communication technology is effective in increasing the performance of health workers in Mazandaran province. However, this result obtained is consistent with results of the studies of Mohamedpour et al (2010), Nysveen et al (2005), Venkatesh and Davis (2000). Perceived behavioral controlling is related to the ability to perform a behavior desired. Perceived behavioral controlling includes understanding the resources or knowledge to use the technology, the conditions facilitating the technology and the ability of individuals to perform better performance with easing. Perceiving the staff control is a key predictor of acceptance of technology interactions. When employees understand that technology is in their control, they understand that they can control their duties and finally they can increase their performance.

In relation to the fifth question of the research, it is noteworthy that the findings indicate that mobile communication technology has had a great influence on the performance of health workers in Mazandaran province. This effect has been the same among health workers of men and women, place of residence, work experience and degree of education.

What can be deduced from this research is that mobile communication technology in the world is growing dramatically (Head & Ziolkowski, 2010; Mezei et al., 2007; Baron et al (2010). Mobile phones today are not just a means of voice communication among the users, but it has different applications such as access the Internet, sending and receiving text messages, photos and videos, watching movies online forms, information management, personal information management, information terminals and Entertainment database from other applications (Chakraborty, 2006; ICT news, 2010). Mobile phone has this capability raised as one of the main channels of information and knowledge transfer. Using a mobile phone has a substantial impact on the active participation of employees in the workplace as well as facilitating the speed of decision-making and risk and new thoughts and identifying the factors influencing the use of these services provide better planning capabilities to accelerate improvement of the performance of health workers.

Conflict of interest
The authors declare no conflict of interest

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