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Factors affecting Villagers use of Information and Communications Technology, Case Study: County of the Eastern Part of Meshginshahr City

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Abstract

Background/Objectives: The present study is to examine the factors influencing the villagers' use of information and communication technology. This study has been conducted based on a traversal questionnaire. **Methods/Statistical Analysis**: All the rural statistical population literate employed in agriculture or livestock sector city in East Meshginshahr, through a multi-stage sampling with probability proportionate reached to the number of 172 people. To describe and analyze the data SPSS software was used. **Findings:** Correlation analysis revealed a positive correlation between the variable of usage rate of rural ICT services with variables of age, education, working skills with computer, number of literate people in the household, and internet skills there were a significant level of 1%. Also, between variables of land area owned by the household, the area cultivated by household, number of livestock, income from agriculture, non-agricultural income, household size, residence distance from place of access to ICT services was not observed significant correlation with variable of using ICT services. **Application/Improvements:** Also, the results of regression analysis indicate that the variables of internet skills rate and attitude to the use of ICT are as the most important variables of affecting the use of ICT services. Finally, according to research findings practical suggestions are presented.

Keywords: Agricultural Development, County of Meshginshahr, Rural Development, Villagers

1. Introduction

Nowadays ICT applications, such as digital technology, communication tools and networks to access, manage, collect, evaluate and use information to build a knowledge-based society in the towns and villages are close to each other every day, but the benefits of these applications would be far more practical for the villagers[1]. In other words, ICT has benefits, and high potential for rural development, so that the development of ICT in rural areas, leads to increased rural incomes, higher quality of life for villagers, urban and rural equality in service delivery, and increased power of villagers to influence government policy[2,3]. In other words, the development of information and communication technology has an important impact in terms of economic, social and etc. in rural areas, that in the field of economy we can point out to handicrafts development, poverty reduction, flourishing agriculture, and in the cultural context to the changing status of women[4], in the social context, the strengthening of social welfare, social communication, social integration and social participation[5], in the field of psychology, promoting creativity, innovation, improving motivation and confidence[6], in the field of environment, helping to protect the natural resource base and reducing natural hazards[7], in the field of

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behaviors, improving technical and management skills, human relationship skills, exchanging information and knowledge[8], and in the physical field, improving physical infrastructure, and the development of transportation facilities. Numerous studies investigate the factors influencing the use of ICT by the villagers that some of them are mentioned below.

Anabestany and Vaziri[9] in a study entitled "Analysis of the economic, social and physical development of ICT in rural areas of the County of Gorgan," concluded that rural ICT in different aspects of social, economic, and physical, can have positive effects. Tarjomani and Roushani[10] in a study investigated the factors influencing the use of e-learning in training rural women in Ilam County. Results showed that among the factors of educational, cultural, social and economic and e-learning applications, there is a significant positive relationship. A study by Karimi et al.[11] entitled "Functional analysis of factors affecting teachers use of ICT in science - Applied educations of agriculture and natural resources" revealed that four elements of skills about IT equipment, are attitudes, conditions, facilities, and proficiency in the English language and these four factors explained about 64% of the variance of the factors affecting the teachers use of information technology educators. Gholi Nia and Salary Tabas[12] began in a study entitled "Factors influencing the use of villagers of rural offices in South Khorasan Province". The results showed that the more level of education and knowledge of villagers and the more obtained skills in order to increase the utilization of the services, the more extent of their knowledge of the provided services in the offices. Moghaddam[13] investigated in a study entitled "Exploring factors affecting the adoption of ICT in the ICT Service centre of the Gharn Abad". The results showed that there is a significant positive relationship between the level of ICT adoption and the variables of age, education, gender and users' level of computer skills, and number of administrative officers in the household[14].

With the attention to that rural ICT development is one of the basic strategies of rural services, with the arrival of ICT to rural areas and the subsequent expansion of services to rural villages, the development field of the villages can be provided. This study is seeking to investigate the villagers use of ICT to identify factors affecting the development of this technology in rural areas and thereby to provide approaches to the development the services through ICT.

2. Methodology

The study sample consisted of 1204 people of literate villagers that their jobs were farming or livestock and were living in the eastern part of Meshginshahr village, from this number, 172 people were selected by multi-stage sampling method with proportionate probability as the statistical sample. The main tool for this study was a preliminary researcher made questionnaire which was prepared after reviewing related researches. The content validity was confirmed with a poll of experts of promoting agricultural education and rural planning group of University of Mohaghegh Ardabili. To determine the reliability of the questionnaire, 30 questionnaires of respondents were filled and completed Cronbach's alpha was completed. Amount of Cronbach's alpha for the use of villagers of ICT services was equal to or 0.87, which was appropriate for the reliability of the present study. To measure the dependent variable, villagers usage of ICT, the 65 items in a specific order and regular expressions with equal rhythms were used and respondents stated their usage of ICT services to a five-part Likert scale (from very low to very high in the range 1 to 5). Then from the sum of responses to items, the score of villagers' usage of ICT services were obtained. In order to assess the attitudes toward ICT usage, 21 items of Likert were used. These items divided in a set of regular expressions in a particular order and with the same rhythm and respondents expressed their agreement rate with items on a 5-part Likert scale, of totally agree to totally disagree in the range of 5 to 1, for favorable items and totally disagree to totally agree in the range of 1 to 5, for unfavorable items. Then with sum of the responses given to the items, score of attitude to ICT use obtained.

3. Research Findings

The results from describing the characteristics in the study showed that the mean age of respondents was 42 years. In terms of education level the highest rate (39.5 percent) related to respondents who had the reading and writing literacy, and primary education. In terms of main occupation, 42.12% of farmers, 49% of self-employed, 4.5 percent state jobs and 4.38 percent of people had other jobs (Council rural municipality administrators, cooperatives, and clerics). In terms of computer skills 45.6% of respondents were with lack of the skills, 26.42 at least 21.2 moderate and 6.78 percent have had great proficiency in working with computers. In terms of internet skills, 72% of respondents were with lack

of the skills, 12.2% of low skilled, 10% of medium-skilled, and 5.8 with vast skills in working with the Internet.

Prioritizing utilization rate of ICT services according the villages of the study: According to the results in Table 1, villagers' utilization rate of information and communications technology services prioritized based on separated villages of the study, the largest utilization rate was related to Naghdi village and lowest cash was related to ArbabKanndy village.

Table 1. Average use of ICT services according the villages of study

Village	Average use of ICT services(person)	Priority
Naghdi	71.45	1
Anar	65.23	2
Bijag	61.24	3
Arbab Kandy	55.65	4
Sarbansalar	50.32	5

Source: Study findings, 2015.

3.1 Correlation between Research Variables and the Variable of Villagers' Utilization Rate of ICT Services

To determine the relationship between the correlated research variables according to study items Pearson and Spearman correlation coefficient was used. According to the results in Table 2, the correlation coefficients results showed that except for variables of land area owned by households, households cultivated area, number of livestock, the amount of agricultural income, non-agricultural income, family size, residence distance from place of access to ICT services among all the variables of research (including age, education, skills, working with computer, number of literate people in a household and Internet skills) with variable of usage rate of ICT services there is positive and significant level of one. Accordingly, when the respondents' age, distance from residence to place of access to ICT, literacy, computer skills, and Internet use and attitudes towards ICT were at a higher level ,the usage of ICT services was more.

Table 2. Correlation coefficients between research independent variables with the variable of villagers' utilization rate of ICT services

Row	variable	Type of scale	Type of test	The correlation coefficient	Significant level
1	Age	Distance	Pearson	0.74	0.000
2	Literacy	Sequential	Spearman	0.957	0.000
3	computer skills	Distance	Pearson	0.973	0.000
4	Internet skills	Distance	Pearson	0.642	0.000
5	Land area owned by the household	Comparative	Pearson	0.272	0.264
6	Cultivated area by households	Comparative	Pearson	0.164	0.491
7	Number of livestock	Comparative	Pearson	0.334	0.150
8	Agricultural income	Comparative	Pearson	0.384	0.095
9	The rate of non-agricultural income	Comparative	Pearson	0.270	0.249
10	Number of households	Distance	Pearson	0.212	0.370
11	Number of literate people in households	Comparative	Pearson	0.528	0.017
12	Distance from residence to place of access to ICT services	Distance	Pearson	0.669	0.001
13	Attitude towards the use of information and communication technology	Distance	Pearson	0.429	0.006

Source: Study findings, 2015.

3.2 The Rate of Research Variables Influence on usage of ICT Services by Villagers

To obtain degree of influence of each variable on the usage of ICT services in rural areas, multiple regression analysis (step by step method) is used. The results of Table 3 shows that in the first step variable of Internet skills and in the second step, variable of attitude to ICT use entered in the equation. The amount of R^2 according to the regression rate was 0.33 which indicates that the two variables entered in the regression analysis, explains a total of 33% of the variable factors affecting the use of ICT services. According to Table 4, given beta values (Beta), variables of "amount of Internet skills and attitude to ICT services usage" were considered as the biggest variables affecting the use of ICT services in rural areas. According to the results presented in Table 4, the regression equation can be written as follows: In this equation, the dependent variable of interest is the rate of rural ICT services.

$$Y = 1.049+0.923(x_1)+1.002(x_2)$$

The equation components includes (Y = villagers usage of ICT, X_1 = amount of Internet skills, X_2 = rate of attitude towards the use of ICT); It can be seen that in the variables of study, only two variables contribute in explaining the variability dependent variable of the rate of rural ICT services.

4. Discussion

Nowadays, information and communication technology is considered as a priority for policy makers, planners and rural development brokers in the world; it is certain that the development of ICT alone cannot provide the comprehensive development of villages. However, we can achieve largely to the development goals by rural ICT formulation and implementation of integrated programs and adoption of strategies appropriate to local conditions in each region. No doubt the first step in the development of this technology is recognizing factors affecting villagers' usage of information and communication technology services and providing effective solutions to improve usage and increasing productivity of this technology among the villagers.

Table 3. Coefficient of variables affecting rural usage of information and communication technologies

Model	The correlation coefficient R	The determination of coefficient R_2	The coefficient of determination adjusted AdR_2
First	0.50	0.225	0.284
Second	0.57	0.33	0.316

Source: Study findings, 2015.

5. Conclusions and Recommendations

Overall, these results show that literacy and awareness play an important role in the use of ICT which conforms to the other research[15]. Therefore it is recommend that the literacy level should be improved by holding literacy classes and motivating adults for learning literacy and providing easier conditions for continuing education for other people. Due to this that the existence of a literate people with requisite skills and high expertise flow is a necessary factor for development cycles of any country, the government should allocate more funding to this area.

Research findings show that between variable of computer skills and use of ICT services in rural area, there is a level of 1% significant positive relationship. This means that people who have higher computer skills their use of ICT services in rural area has been in more rate. The analytical part of these observations confirm the results of the regression part, which showed that one of the factors affecting changes in utilization of ICT is Internet skills. This issue shows the importance of enhancing Internet respondents' skills in using ICT. Given that the majority of respondents had no Internet skills, it is necessary to increase the villagers' Internet skills. For this purpose, relevant agencies should establish equipped centers with

Table 4. Effect of variables influencing in rate of information and communication technologies usage

Variables entered in the model	Non-standardized Coefficient of β	Standardized Coefficient of β	The amount of t	Significant level
Constant coefficients of bO	26.886	-	16.268	0.000
Internet skills	3.069	0.672	6.868	0.000
attitude towards ICT usage	-1.424	-0.320	-3.272	0.001

Source: Study findings, 2015.

computers and broadband Internet, and conducting training classes "Introduction to computer and Internet usage to achieve the needed information" in these centers and reduce the cost of Internet access in rural areas provide further use of this technology. Results of correlation analysis showed that between variable of attitude to Information and Communication Technology usage of ICT in rural serving and rate of ICT services usage, there was a significant positive correlation with a level of 1%. That is, people who had more favorable attitudes toward the use of ICT tools, have used it more - The result is consistent with research Roknoddin Eftekhari[2]. On the other hand, people who are using these tools their attitudes are more desirable as well as, because they have some understanding of the technology's performance.

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