

Full Length Research Paper

Analysis of Factors Affecting on the Adoption of Information and Communication Technology (ICT) by Farmers(A Study in Cis district of Shabestar City, Eastern Azarbaijan Province)

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Benefits of ICT and Infrastructure services of that, it is not equally divided between the areas and Without a coordinated strategy, there will be the risk of unequal developing of ICT in rural and urban areas. The present research aimed at explain of Factors Affecting on the Adoption of Information and Communication Technology (ICT) by Farmers in Sis district of Shabestar city, eastern Azarbaijan Province. This cross-sectional research is a correlational-descriptive study. About 270 households with main job farming, work in this area. Using the Table of Morgan, 160 households were selected as the sample The data were collected by using structured interview and questionnaire (with confirmation of validity and reliability). Results of Path Analysis showed that Radio and Television, Highest educational level of the household, Family, friends and relatives, access to Internet, subjectivity of sub-jobs of household superintendent and Jobs of household members have the greatest impact on ICT adoption.

Keywords: ICT, Farmer, Path Analysis, Adoption

INTRODUCTION

ICT contribute in managing climate change, natural disasters, water supply, food security, dealing with hurricanes, capacity building of drought management, capacity building of local (individual, organizational and institutional) knowledge sharing and integration of traditional knowledge and indigenous knowledge.

Now three Challenge of access, cost and quality there is in rural areas. this research seeks to answer the question that has been done on what factors are influencing the adoption of ICT.

Twentieth century industrial society and twenty-first century is information society (ICT) are caused related interaction domains of telecommunications, information and computers (Annam, 2002).

Innovation is idea, method, object or thing that is that is considered new from opinion of person (Rogers And Shoemaker, 1997; Van Den Ban & Hawkins, 2006). The communication process is whereby messages are transmitted from the source to the receiver. The main elements of the diffusion process is 1. Innovation 2. by certain channels 3. Within frame of the time 4. Between and among members of a social system is released.

In the present study, ICT as a set of technologies of ICT centers, Internet, telephone and computer are examined

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and to measure the ICT adoption by farmers of Rogers' innovation adoption process is used. Rogers in latest his book with title of diffusion of innovation, the innovation adoption process is outlined as follows:

1. Awareness 2. Persuasion 3. Decision 4. Execute 5. Affirmation (Rogers And Shoemaker, 1997; Van Den Ban & Hawkins, 2006).

In this study, adoption of ICT is dependent variable and its dimensions, including telephones, computers, the Internet and ICT centers. Individual- social characteristics is the independent variable its dimensions, including age, education, income level and the amount of land, being mentally sub-job families and occupations of household members, the amount of cosmopolis, values of social systems, and Achievement Motivation. information sources are as independent variable and its dimensions, including family, friends, relatives, colleagues and neighbors, brochures, newspapers, magazines, radio and television. ICT features is the independent variable and its dimensions include relative advantage, compatibility, complexity, Visibility and Testable. Existing facilities in the community is the independent variable and its dimensions, including access to a telephone (fixed or mobile), access to computers, access to Internet and access to ICT centers.

MATERIALS AND METHODS

This research is of descriptive-correlative type. This research relates to farmers and its space domain is Sis city located in Shabestar township of Azarbaijan shargi Province. The main occupation of agriculture in this region is now about 270 families are involved, which make up the total population of the study. Due to time and cost problems that are difficult to access for all farmers using Morgan as the sample size was 160 households.

Data have been collected using structured interview technique and questionnaire instruments (by observing its validity confirmation). In this research, content validity method has been utilized to determine validity of the research instruments and the questionnaire was tested by professors and members of faculty board of Agricultural Promotion and Education Department of University of Tehran to measure content validity. After necessary corrections, it was confirmed that the present questionnaire tested the desired cases of the research. To measure reliability of the questionnaire items, Cronbach's alpha test was used. Cronbach's alpha coefficients between 0.73 and 0.97 indicated acceptability of reliability of the studied constructs in research instruments. multiple regression analysis and path analysis were applied using spss software, version 15.

RESULTS AND DISCUSSION

Studying Effect of Independent Variables of Research on adoption of ICT (Dependent Variable)

Path analysis and joint multiple regression (Enter) were used to study effect of independent variables on dependent variable and relationship between the independent variables which had theoretical effect on the dependent variable was studied using path analysis method. In the next stage, relationship between each one of the independent mediating variables and other factors was studied to test direct and indirect effect of variables. According to Table 1 which shows results of this analysis, Fisher Statistic with numerical value of 18.517 ($F=18.517$) with confidence level of 99% was fully significant and indicated significant relationship between independent and dependent variables. Coefficient of determination of R^2 which refers to suitability of the model with numerical value of 0.689 indicates average rate of dependent variance which is explained by independent variables included in the model and indicates that 68.9% of the total variations of dependent variable is explained by the analytical model of the present research. evaluation of the beta regression coefficients show, radio, family, friends, relatives, internet access, access to ICT facilities and the highest level of education among households have a most direct impact on ICT adoption.

Some independent variables included in the model were affected by other factors and effect of these factors was studied through simultaneous multiple regression and its results are given in Table 2 and Figure 2. By measuring effect of mediating and independent concepts on adoption of ICT and based on conceptual framework of the research, path diagram of the research was drawn as Figure 1. To test effect of independent variables on adoption of the ICT, direct and indirect effect of each factor was separately studied. According to Table 2, information source of radio and television with impact factor of 0.561, Highest level of education among household members with impact factor of 0.326 and information source of families, friends and relatives with impact factor of 0.278 had the highest effect on performance of cooperatives.

CONCLUSION AND RECOMMENDATIONS

Radio and television as an information source community have the greatest impact on ICT adoption and this can be due to the function of advertising, educational, cultural transmission, the transmission of new ideas and the introduction of new technologies widely used in the areas of the two media is rural.

Highest education in the household also has the second priority in influencing the adoption of ICT. This could be due to the role of education and training on the other hand is also linked to the urban educated people.

Family, friends and relatives, as well as the source of the personal data are the third priority in influencing the adoption of ICT, and concluded by referring to systematic effects (the social impact of the transfer of ideas and

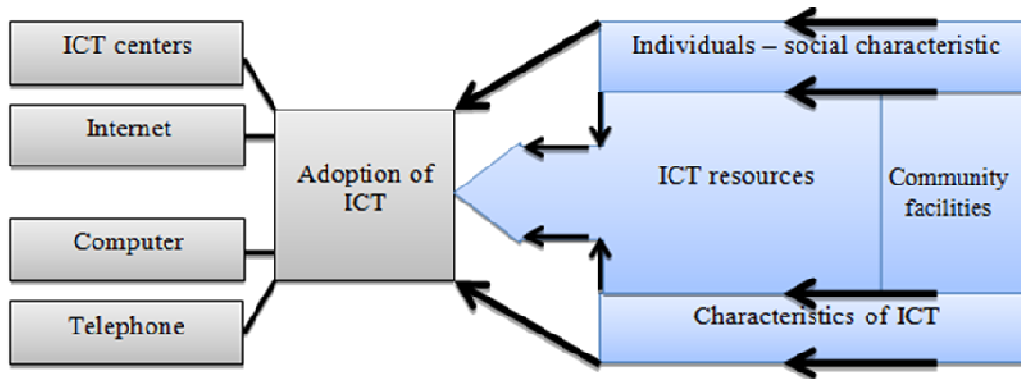


Figure 1. Conceptual framework of study

Table 1. Multiple Regression for Studying Effect of Independent Variables of Research on Adoption of ICT (Dependent Variable)

Variables	B	Std. Error	Beta	t	sig
Constant	1.929	2.360		0.817	0.287
age	-0.423	0.424	- 0/111	-0.999	0.129
Highest level of education among household members	- 0.405	0.187	0.202	2.162	0.089
Mental level of sub-jobs of Head and jobs for family	0.600	0.268	0.128	2.241	0.111
Achievement Motivation	-0.047	0.318	-0.010	-0.148	0.381
income	0.048	0.032	0.110	1.532	0.145
Values of the social system	0.350	0.313	0.094	1.119	0.121
The amount of cosmopolis	0.488	0.422	0.072	1.156	0.101
Access to telephone	-0.222	0.388	0.059	0.573	0.219
Internet access	0.687	0.307	0.212	2.239	0.090
Having a computer	0.377	0.403	0.054	0.935	0.213
Access to ICT centers	0.705	0.303	0.203	2.325	0.083
Comparative advantage	0.467	0.225	0.109	2.077	0.074
observability	0.157	0.559	0.040	0.280	0.421
testable	0.185	0.228	0.052	0.811	0.301
complexity	-0.426	0.660	-0.102	-0.645	0.190
Family, friends and relatives	1.230	0.266	0.278	4.624	0.021
Radio and TV	1.872	0.269	0.406	6.955	0.019
R ² = 0.689	F= 18.517	Sig= 007			

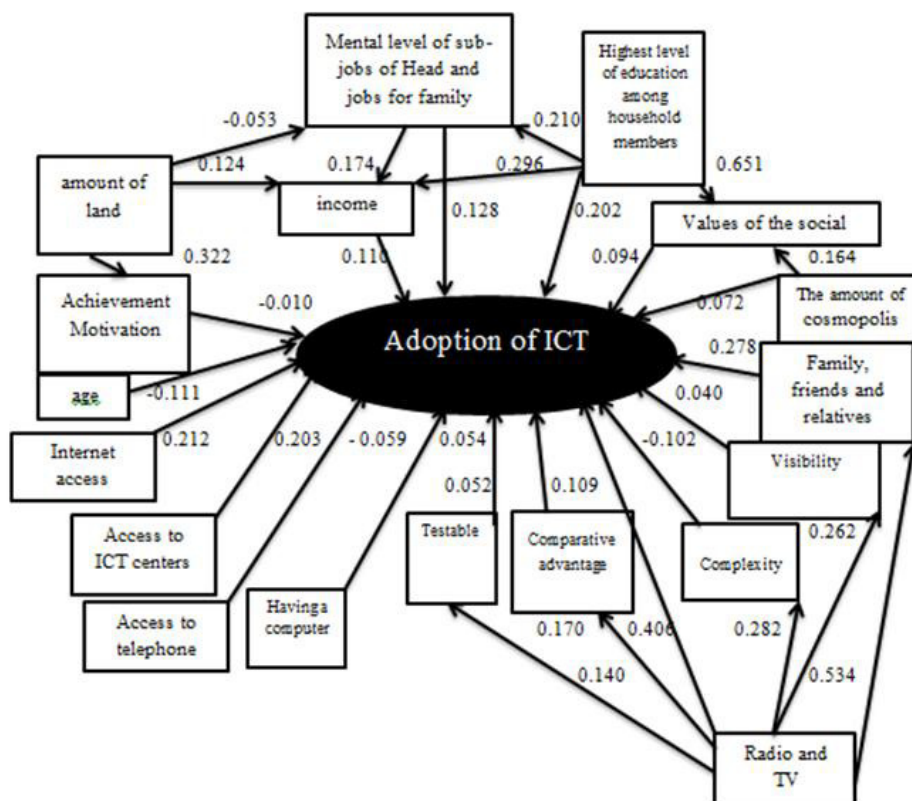


Figure 2. Path diagram to measuring effect of mediating and independent concepts on performance of cooperatives

Table 2. Studying Total Effect of Independent Variables of Research on Performance of Cooperatives (Dependent Variable)

Variables	Direct	Indirect	Total
Highest level of education among household members	0.202	0.124	0.326
age	-0.111	-	-0.111
income	0.110	-	0.110
amount of land	-	0.002	0.002
Mental level of sub-jobs of Head and jobs for family	0.128	0.019	0.147
Achievement Motivation	-0.010	-	-0.010
The amount of cosmopolis	0.072	0.015	0.087
Values of the social system	0.094	-	0.094
Access to telephone	0.059	-	0.059
Internet access	0.212	-	0.212
Having a computer	0.054	-	0.054
Access to ICT centers	0.203	-	0.203
Comparative advantage	0.109	-	0.109
Visibility	0.040	-	0.040
Testable	0.052	-	0.052
complexity	-0.120	-	-0.120
Family, friends and relatives	0.278	-	0.278
Radio and TV	0.406	0.155	0.561

innovations among individuals) (Rogers And Shoemaker, 1997) .

According to recent research findings , to promote ICT adoption among farmers proposals are outlined below :

- village-level facilities , such as ICT centers and establishing dealers sell computers at low prices and low interest and installments of special initiatives , such as free Internet free for one year and training
- Developing training centers, computers, the Internet and the creation of facilities for the farmers and their children in these centers.

REFERENCES

- Annam S (2002). ICT as Tool for Rural Development, Available: www.thinkcycle.media.mit.edu/public. Available in: <http://www.mazandhume.com>.
- Rogers EM, Shoemaker FF (1997). *Communication of Innovations: A Cross-Cultural Approach*. New York: Free Press. (In Farsi).
- Van Den Ban AW, Hawkins HS (1996). *Agricultural Extension*. Oxford: Wiley-Blackwell Ltd. (In Farsi).