

**ASSESSMENT OF PATTERN AND USE OF ICT FOR
RURAL DEVELOPMENT, A CASE STUDY VILLAGE
NALAS IN CITY SARDASHT OF IRAN**

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Abstract

ICT, are considered one of the main criteria development economy and industry. At present ICT affected so on, various aspects of political, social, cultural and economic development of individuals and communities, which cannot be neglected. In conclusion, the present study has been discussed character development - practical mechanisms to assess the impact of information and communication technology and its access to the mode of economic and social life in rural areas of this study. Study population was in this rural district Nalas, research methodology, and is survey. The information collection tool has been measured by using questionnaires given to 100 households, and 50 families did not have adaptive ICT technology and software spss chi-square test and Pearson type regression. The results are the mean contribution of information technology acceptance among rural, poor villages with more than technology. Health status of villages with information technology, are higher health and welfare levels. In addition, villages have access to the information, the information is below. Moreover, the level of agricultural development in rural areas to take advantage of information technology, it is no more than villages and ability to provide its products to consumer markets are higher, ICT are also villagers in villages with higher communication volume, and Finally affected, social indicators, the villagers live, users of this technology are the three areas of knowledge, attitudes and skills of ICT. And villagers less to Info Received and services by information and communication

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technology, socially and economically better off being dependence their action in subjective. Although it is expected to spread ICT in rural communities is reduced the villager's face to face communication.

Keywords: ICT, rural, rural development, Sardasht city, village Nalas

Introduction

There are 68,200 in the nearly 50 thousand villages, equipped with some sort of communication tools. Rural ICT have been expansion in the city Sardasht. By logging of information technology to villages in the city, Sardasht, members and non-traditional methods and modern methods of farming and ranching way to increase your income sources and this is rural. Internet developments in these areas have been eliminated; common borders and access to information and rural areas connect directly and easily to the world. ICT development in the city owes Sardasht has advantages compared with other rural communities are villages in the city. Young rural population having infrastructure facilities, fixed and mobile phone coverage in the province of Internet services centers across the province, the quality and variety of agricultural lands, and the development of agricultural economy, including the benefits are being achieved. This study tried is the effects of ICT on Rural Development be examined in the rural city of Sardasht functions.

Variables and indicators of research

To evaluate the impact of ICT were introduced eleven indicators on society after the main indices of economic, social and physical dimensions specified for measuring the impact of ICT in each of these dimensions. Total of 43 parameters by reagent (statements) were evaluated. All item based on likert spectrum (very low, low, medium, high, very high), and setting them on finals was confirmed with a Cronbach's alpha reliability. /847.

Social and economic indicators of rural life: Indicators of ICT, including usage patterns and practices using ICT access in rural areas. The first group of indicators, were extracted based on the literature, international experience, internal studies have been based on pre-test (with 9% reliability based on Cronbach's alpha test). These indices were investigated in three areas and several components: A - Consciousness (economic, political, social, and public), b - attitude (self-esteem, self-efficacy, independence of thought, a feeling of strength and hope for the future), c - Skills and activities (participation in social and political, economic, and educational activities activity). This group of indicators includes 48 indicators was operational that fit 66 items.

Materials and Methods

Methods are cross - analytical and data is collected through library research and interviews by the villagers. In Comparative study, were tested 100 households, and 50 families have benefited from the ICT technologies. Data obtained analysis is described by using SPSS software using mean statistics, statistic, t, using Pearson's chi-square and regression type.

Hypotheses

Hypotheses include the in three areas of social, economic and physical access to ICT for rural development and methods use in the study area:

Economical dimension

1. It seems there is a significant relationship between the information technology in rural and agricultural development.
2. It seems that by logging of information technology to rural increases employment.

Social domains

1. It seems, villages, information technology can have lower levels of immigration.

2. It seems that increases by logging information technology to rural villages to communicate with the outside.

Physical domains

1. It seems that there is relationship between information technology and communications volume in the village.
2. It seems that change by logging information technology in rural housing patterns.
3. Seems to be villages with information technology, greater changes in their lifestyle.

Theoretical Foundations Research

Information technology and communication technology, the new millennium is to reducing has been the calculation time, more accurate data processing, exchanging information and lessen the cost of trading. in fact Comprehensive concept of information implies time and place of unlimited access to information implies, in itself, is another concept called information gap also (Hedayatimoghaddam ,2008, 2) Information gap, in general, is refers the social and economic differences in the use of ICT(Khosravi, 2004). In general, has been achieved the interaction of three distinct computer information and communication technology, information communication (Alexandra, 2007: 2). In rural areas efforts to provide of central agencies and nongovernmental to care for residents in rural areas (Rezvani, 2009:2). Today, ICT is one of the main criteria is considered economic and industrial development. ICT have influenced so many different aspects of life in contemporary political, social, cultural and economic development of individuals and communities, which cannot be neglected, In this context, the villages also have influenced the development of the ICT (Nori, 2006: 9-10). A review of experiences in developing and developed countries shows in the use of IT in rural development and agricultural which is to fit the ability of these countries, is concerned almost all of them use information technology. In this context, there are many examples of actions and policies, including the development of IT strategies, at the same time, have been realized innovations and programs as well as specific subsets of macroeconomic policy (riyahi vafa et al, 2007). Several countries in the world have been in terms of ICT development in rural areas the major achievements Including those

countries that the United States of America, Nepal, India, South Korea, Malaysia and so on, they have From the 1990s to the development of ICT in rural areas (Jalali, 2007: 203-206). Iran inevitable sees over the other rural ICT deployment in different contexts. Because constitute a large part of Iran's population villagers will lack of attention to this group of countries seriously (Soznegar, 2005: 240). Expensive information technology on the one hand and the lack of adequate skills training among the poor on the other hand difference will be greater access to technology, While some Comments, reducing the increasing price trend of pervasive computing and software as a proof of knowledge of information technology, consider Unique opportunity for the survivors developed as it (Tavakoli, 2006:121). So, today is overcoming the digital divide is considered the most essential problems in developing countries, (Aqadavrdu, 2006: 7). However, there are within the phenomenon of the digital divide, under various sections according to region, gender, social class, race and ethnic origin (Saidi, 2009: 63). Evidence shows that despite the rapid growth of new technologies are bereft vulnerable and marginal sectors of society (Lynch, 2008:162-171). However, the opportunities of ICT Puts to overcome, the difference distance in which the people, Shows that this technology is an important relationship with rural areas (Holyfield & Donnermeyer, 2002: 383). ICT as a tool to enhance communication, can create the conditions to suit modern conditions of their villages to be developed and updated (Razaei, 2004, 157). It is said that the impact of ICT on rural and remote areas, imagine two ways: First, the concept of reducing the difference between how ICT can impact and second, through the promotion of rural (Ministry of Communications, 2005: 14).

Aka knows the benefits of information and communication technologies for rural areas, some form, such as e-commerce and business development activities for the villagers, village tourism potential introduced the transfer of information from the city to the village, contact, access to GIS for management of national resources (Aka, 2007: 408). Sims has been reviewed the rural landscape of the emerging information society, with regard to topics such as: the effects of central markets and increase educational opportunities in rural areas by expanding the availability of information (Sims, 2000).

Same relationship, kawasumi to be evaluated the study as the survey on Rural Community, after considering issues such as the status of women in rural areas, the income gap between rural and

urban services in rural areas, issues such as access to telephone and ICT in rural areas needs (Kawasumi, 2002).

So today, has found the importance of the information technology and communication in the rural areas this research is seeks to clarify the hidden aspects of ICT development in the region (the city Sardasht). ICT can be assessed coverage among the rural population to the city and identify the physical, social and economic effects on rural community development.

Data analysis

In this study, given that villages studied are located within the city Sardasht and are close together the environmental, economic and social conditions, is performed data homogenization. After data collection and processing in SPSS software explored for data analysis and explanation of the topic.

- A) Social dimension: ICT to influence social dimension, were evaluated the four indicators, participation, accountability, well-being and health, information and migration distance as follows, see Table (1)

Table 1: the impact of ICT on social indicators and statements

Indexes	Item
Participatory	Increased participation of villagers in rural
	Decision to increase rural villagers in current affairs
	Rural women's involvement in important decisions in rural
Welfare and Health	Improve the health of villagers life
	Increase the level of prosperity rural households
	Change the dimensions of rural households
	Declining Birth rates in rural households
Data distance	Interested in creating new possibilities for villagers development at the village level
	Increase the level of knowledge in the fields of

	production at the village level
	Access to the latest information on the country and the world
	Interest for the continuing education of rural children.
	The variability of non-native culture in rural
Migration	The migration from the village to the city in the last ten years

Reference: author's calculations

B) Economic dimensions: The impacts of ICT on the economic have been evaluated front four agricultural developments, increase productivity, product recovery and job creation. This is described below, see Table (2)

Table 2: the impact of ICT on economic indicators and statements

Indexes	Item
Agricultural Development	Correct management of agricultural lands in order to use existing resources
	The latest technological achievements in the manufacturing field
	Benefit from extension activities on agricultural production
Productions increases	In selecting new products for cultivated crops
	Correct use of fertilizers and pesticides and other inputs methods
	Achieving the modified seeds and efficient
	Better methods of farming in agricultural fields
	Achieving generate new forms of economic activity.
	Knowledge of consumer tastes in the manufacturing field handicrafts
Retrieve Products	Knowledge of modern methods of hand production
	Interested in creating new possibilities for villagers development at the village level
	Knowledge of market conditions and product demand
	Reduce the role of intermediaries in delivering the product to market

Employment generation	Creation of new employment opportunities in village
	Learning new job skills
	Learn new skills in the areas of economic activity

Reference: author's calculations

C) Physical dimensions : for ICT influence on the physical indices were evaluated of housing patterns, subsistence styles and communications that include, see Table (3)

Table 3: The impact of ICT on the physical indices

Indexes	Item
Housing Patterns	Changes in the kitchen but it includes elements of rural housing
	New means of rural homes like furniture, etc.
	Construction sustainable rural housing
	Knowledge of modern methods of construction of rural housing
Livelihoods style	To reduce the time spent in creating this life
	Save time and costs of daily living
	Changes in the pattern of villagers settlement
	Rural households benefit from new service
	Changes in rural life styles.
Communications	Change the look of villagers to life
	Declining commuting villagers to urban areas.
	More communication between the centers of adjacent rural
	Increase access to new communication facilities (telephone, satellite, etc.)
	Increased communication between rural households

Reference: author's calculations

Social effects of ICT in rural development

In studying the social effects of ICT, in the villages studied, shows the following table that the mean contribution to the plasticity of rural information technology, high above the village of poor technology, see Table (4)

Table 4: Effectiveness of ICT on the social aspects of rural development

Indicators	Type of village	Mean	Standard deviation	Standard error	T-statistics	Significance level
Ticipatory	Beneficiaries	5.25	.90581	.05661	23.054	.001
	Deprived	3.27	.52541	.06783		
Welfare and Health	Beneficiaries	4.34	.77204	.04825	32.094	.000
	Deprived	2.56	.33228	.4290		
Reduction migration	Beneficiaries	2.76	1.317	.082	19.567	.001
	Deprived	4.06	.733	.095		
Reduction information gap	Beneficiaries	3.59	.74377	.04658	32.034	.002
	Deprived	4.27	4.5569	1.09117		

Reference: author's calculations

Economic effects of ICT in rural development

In studying the impact of the economic effects of ICT on rural development, have been investigated agricultural development indices, increase production, marketing, and employment in the two groups have villages and lack. The results shows that the levels of agricultural development are in the villages of information technology, most of the villages lacking, see Table (5)

Table 5: ICT effectiveness of on economic aspects of rural development

Indicators	Type of village	Mean	Standard deviation	Standard error	T-statistics	Significance level
Agricultural Development	Beneficiaries	4.984	1.09117	.0682	32.456	.002
	Deprived	2.678	.35188	.04543		
Productions increases	Beneficiaries	3.543	1.20892	.07556	28.345	.001
	Deprived	3.674	.55784	.07202		
Retrieve	Beneficiaries	4.56	1.05164	.06573	23.456	.000

Products	Deprived	2.657	.49471	.06387		
Employment generation	Beneficiaries	4.789	1.2938	.08086	17.651	.000
	Deprived	3.567	.87753	.901123		

Reference: author's calculations

Physical effects of ICT in rural development

In studying the physical effects of ICT on the development of rural areas, were assessed three index model, rural housing, rural livelihoods and way of communication style in two villages, and the lack of benefit of this technology. The results show that in villages with information technology has occurred more change in housing patterns.

ICT impact on various aspects of rural development

Multiplier effect of ICT investment displays on economic, social and physical that is the overall response of the villagers in the village, average economic dimensions 44/4, the average social dimension 87/4, and the mean body 43/4, Status indicators show a relatively good way ICT and its impact on various aspects of rural residents live in aspects. While the villages are poor, rural perspective, the average economic dimension 42/2, the average social dimension 28/2 and mean body after 33/2, and this represents a major difference in the effectiveness of ICT on the development process in rural areas So that enjoys villages of in all indices, weighted average is greater than 4, nearly 5. This shows the enjoys of the villages of measures are in good condition. This shows positive impact of ICT in rural areas. While, there are the villages of poor in the entire minimal average index between 3-2 and this shows that the level enjoys villages of poor, the poor benefit from these measures.

Table 7: The average impact of ICT on rural development in economic, social - cultural and physical dimensions

Type of village	Participatory	Welfare and Health	Reduction	Reduction in information can	Agricultural Development	Productions increases	Retrieve Products	Employment generation	Housing Patterns	Livelihoods style	Communications
Beneficiaries	4.90 23	4.96 88	4.6 9	4.91 63	4.55 69	4.41 25	4.43 67	4.83 84	4.52 05	4.50 19	4.08 46
Deprived	2.18 44	2.51	2.0 7	2.38 52	2.22 96	2.3	2.53 67	2.36 33	2.74 26	2.27 5	2.31 67

Reference: author's calculations

According to the table is achieved of regression coefficients to zero significance level domains the amount is smaller of 0/05. Therefore, is confirmed the regression relationship with 95% confidence. Accordingly, amount coefficients are standardized regression coefficients for standard or technology indicators in three areas of knowledge, attitudes and practices in order to 0/479, 0/315 and 0/479. This represents the amount of change in these areas standard deviation per unit of technology.

Table 8: Regression coefficients between indices Technology (ICT) and the three domains of knowledge, attitudes and activity

Dependent variables	Independent variable	Regression coefficients	Standard error	T-statistics	Significance level	Beta Regression coefficient
Knowledge Field	Constant coefficient	2.353	.101	23.185	0.000	.479
	Technology Index	.255	.033	7.818	0.000	
Field of attitudes	Constant coefficient	3.252	.112	29.130	0.000	.351
	Technology Index	.171	.037	4.759	0.000	
Scope of	Constant	2.243	.108	20.738	0.000	.479

activities	coefficient					
	Technology Index	.271	.035	7.808	0.000	

Reference: author's calculations

For complete results and methods in order to meet the villagers access to information technology, rural studied were divided into seven groups: 1) the home, 2) work 3) Office ICT, 4) Work Office and ICT, 5) work and home, 6) home and office ICT and 7) home, work and the office into ICT. To test was used the influence of indicators (social, economic and physical) of the method of access to technology, ANOVA. The significance level of the test 003/0 is smaller of the 0/05, it means that 95% of the total, with the rest available at least one of the seven different groups

Table 9: ANOVA ways of access to ICT for social and economic indicators

Index	Relations	Sum of squares	DF	Mean squares	F-statistics	Significance level
Relationships and access ways	Intergroup	3.636	6	.607	3.469	.003
	Intragroup	21.857	125	.175	3.469	.003

Reference: author's calculations

Hypotheses testing

Hypothesis testing is in three domains (economic, social, and physical) as follows.

Economical dimension

1. It seems there is a significant relationship between the information technology in rural and agricultural development. In studying impact of the economic effects of ICT, the development of rural areas, the results show that the level of agricultural development in rural areas benefit from information technology, higher than the villages, without this technology. And considering that

less than 5% significance level to test this hypothesis is it can be said that is accepted the research hypothesis.

2. It seems that by logging of information technology to rural increases employment.

According to the results, the average employment indicators, which are higher in villages ICT in villages that do not have the technology. Since is less than 5% significance level to test the hypothesis Results obtained generalize to the population and is confirmed the research hypothesis.

Social domains

1. It seems, villages, information technology can have lower levels of immigration. Index of immigration shows that the reduction in migration of rural information technology over the villages without this technology. Since is less than 5% significance level to test the hypothesis Results obtained generalize to the population and is confirmed the research hypothesis.
2. It seems that increases by logging information technology to rural villages to communicate with the outside.

The results suggest that internal and external interactions, the villagers have the technology, is more compared to villages without ICT. The significance level of the hypothesis test is less than 5%. And is confirmed the research hypothesis.

Physical domains

1. It seems that change by logging information technology in rural housing patterns. Results obtained show that changes in housing patterns, in villages with ICT, most of the villages are deprived of this technology. Since is less than 5% the significance level to test the hypothesis, is confirmed the research hypothesis.
2. Seems to be villages with information technology, greater changes in their lifestyle.

According to studies on how changes in rural livelihoods of the rural poor are happening faster than IT. So, given is less than 5% significance level, the results generalize to the statistical population and is confirmed the assumption. The assumptions are summarized as follows. See Table (10).

Table 10: Assumptions of ICT indicators for the overall social, economic and physical

Indexes	A value	k Test criterion	The critical zone value	Result	Accept or reject hypothesis
Improving the efficiency of agricultural products	A=.05	20/195	9/49	k€w	Was accepted
Creation of employment opportunities	A=.05	30/08	12/59	k€w	Was accepted
Development of e-commerce	A=.05	62/48	12/59	k€w	Was accepted
Reduce migration	A=.05	31/35	12/59	k€w	Was accepted
Participation boost morale	A=.05	15/02	12/59	k€w	Was accepted
Increasing education	A=.05	18/96	12/59	k€w	Was accepted

Reference: author's calculations

Conclusions

The results of this study showed the use of information and communication technology, a wide impact has on the social and economic characteristics of rural life In other words; villagers living indicators of user are the technologies affected the ICT the three fields of knowledge, attitudes, and activities. In other words, users are more aware of ICT through the use of this technology to the social and economic; this awareness led to a change in their attitude and ultimately increases their activity skills. ICT has established relationships with two other areas so on. However, the

analysis conducted in Tables 4, 5, 6, 7, 8, and 9 villages in the text that have this technology in all aspects of research results and the growing changes in comparison the villages were deprived of this technology. That shows impact and importance of ict in rural areas. Also, all of the assumptions raised in the study emphasized the possibility of meaningful relationships in hypothesis testing; the significance level was established and accepted. The results of this study, it is considered the proposal for the development of this technology in rural areas, it shows the importance of planners and officials to develop the appropriate infrastructure to expand and improve rural access to technology.

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