



Assessing The Status Of Ict In Improving The Quality Of Life In Rural Areas (Case Study: Firuz Abad Village Of Rey City)

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Abstract. Information and communication technology is one of the indicators of sustainable development and we can support it, eliminate the many needs of the community and provided its movement toward sustainable development. In addition, ICT has this potential, if the use of suitable play a stable role in accelerating social and economic development and dynamism of the developing countries. Research methodology in this study was a descriptive-survey, based on the model of SWOT and in this regard, by identifying and careful analysis of various aspects, especially the study of the strengths and weaknesses and also were considered opportunities and threats, and after analysis the results showed that village of Firuz Abad, in terms of strengths and opportunities for development of ICT has great potential and an aggressive strategy has been set as the highest priority strategy for intervention in improving the quality of life in this village and more presented proposals to further develop of the industry in this village.

Keywords: ICT Technology; quality of rural life, Firuz Abad village

Introduction

Developments of the last decades of the twentieth century AD, is unprecedented in the history of science and industry. Toffler, an American scientist said the twenty-first century is the century of information explosion, because the achievements of the industrial revolution and the revolution in electronics mixed together with developments in information technology and seeks to shed ICT. Strengthening of this theory starting from the beginning of the last decade of the twentieth century and today has reached a place that used to terminate most remote parts of the world and will benefit all the people of his blessings. (Phahlevanian, 2005, 1). In other words, ICT is a product that, its achievements and its consequences, does not fit in the minds of a large group of authors and each day a new aspect to his head to a new of ICT, and it seems that the extent of its influence to be held the universe and man. (Ibid. 2). So that also formed a new and massive wave of information technology development in Third World countries, especially in the rural areas of these countries. Currently, there are few nations in the world, which has no experience in the field of information and communication technology development in its rural areas. (Shakeeli, 2000: 6 Hurley and). The dominant form of access to information technology in rural areas is a telecommunications center that in Iran has been introduced called the Center for Information and Communication Technology. (Information and communication technology) (Shokouhi Khajeh, 2013, 104). Many experts and scholars in the development of third world countries and in rural areas believe that with proper use of information and communication technology and learning new techniques and methods can be added to improve the quality

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of life and various productions in villages. (Bahramian, 2009, 37). On the one hand, the introduction of science and technology in several aspects of the development of industries in rural areas, and its design, as well as an extensive and comprehensive production process and in the role of complementary and supporting agriculture and increasing the income of employees this section, as well as a strong alternative to absorb surplus agricultural labor force in rural areas are the main objectives of the development of rural industry. Such attitudes to the role of industrial development in rural areas is due to the profound impact that this may have on it, in the construction of economic and social of rural community. (Fathi, 2010, 49). With regard to the issues raised, the main purpose of this study was to analyze the role of information technology in improving the quality of life in the village of Firuz Abad, and the aim of this study was to answer the question whether ICT in this village has been able to improve the quality of life?

The importance and need for research

- Theoretical perspectives: Rural Development Opinion Survey is indicates that the issue of technology and rural development is still seriously, do not enter this debate that this issue is indicative of delayed rural development experts in understand the importance of the role of technology information to accelerate growth and rural development.
- On the domestic aspect, currently, running programs and various projects at the national level and rural for the rapid development and access to information technologies, which unfortunately, do not follow a specific model and approach, and therefore all pre-hypothesis and the various aspects that must be considered in the information development process in these programs and projects are not considered. Among these projects, we can mention to the project to equip tens of thousands of rural ICT center, which was prepared and conducted by communications technology.

Theoretical Foundations

One of the aspects of technology is information and communication technology. Today, ICT considered one of the most important criteria for development and economic and industrial development. Currently, ICT, so it has affected to different aspects of the political, social, economic and cultural life of individuals and communities, which cannot be neglected it. (Nouri, 2003; 9) Information and communication technology (ICT) consists of a set of innovations in microelectronics, computer science (software and hardware), telecommunications, micro-processors, which allow the possibility of production and data collection, organization, storage, retrieve and disseminate large amounts of information with an extensive and rapid distribution of information through the network. To put it simply, ICT can define the technologies and tools that people are using them to facilitate distribution and data collection and communication with others (whether individuals, groups or organizations) of computers and networks computer related. (Mazloumi, 2004, 15).

Using communications and information technology services in rural areas, in addition to organizations that can deliver their services in electronic form to the villagers and fixed many of the problems of the villagers, such as travel to the city for the use of government services would lead to employment, human resource development in information is available to the public, reducing transportation costs, saving time villagers and a more appropriate response to prevent congestion. (Sarrami et al., 2010; 137).

Table A. Status of the proposed information and communication technology in rural areas.

Threats	Opportunities	Weaknesses	Strengths
<ul style="list-style-type: none"> - Local disputes about the operation of the facility and its management - Lack of familiarity with the new technology sectors - The lack of support from project managers and local authorities - Not providing suitable and cost-effective communication platform to connect to the Internet - Lack of motivation over time due to lack of appropriate content to Centre - Improper use of center facilities 	<ul style="list-style-type: none"> - Try to do justice to the concept of providing equal opportunities for all in research - The creation of similar centers in other rural areas based on the pattern - Create the conditions for the realization of other components in the areas of project development - Preparing the grounds to new jobs - Preparing the grounds in order to create a Iran rural network - Study for the great support centers to launch similar initiatives in Iran and connect our centers 	<ul style="list-style-type: none"> - Lack of communication and telecommunication infrastructure in rural areas to access the Internet. - High distance from city centers to allow rural - Lack of local network to communicate between villages - Lack of adequate funding for financial support, hardware and software design center - Lack of funds to mobile set up systems to provide services such as Internet bus - The absence of electronic government structures in Iran to provide administrative services to the villagers through IT - Lack of adequate material for the villagers to provide it through IT - Lack of support centers and organizer to guide their development centers and providing IT services for local people 	<ul style="list-style-type: none"> - Providing IT services to the local population in rural - Mobilizing local village to adopt a new behavior - The use of local resources for local stabilization - The issue of information technology in rural areas - Local people familiar with computer and refine skills in the computer field - To provide training facilities for rural schools - Enhance the ability of the authorities and the local population in the planning and use of center - The presence of girls and women at the center of the village and use its features equally with men - The use of financial resources for the support and guidance of provincial and local facilities - Creating a successful model for rural information technology centers in Iran are run locally

Reference: Seydayi and others, 12.11: 2010

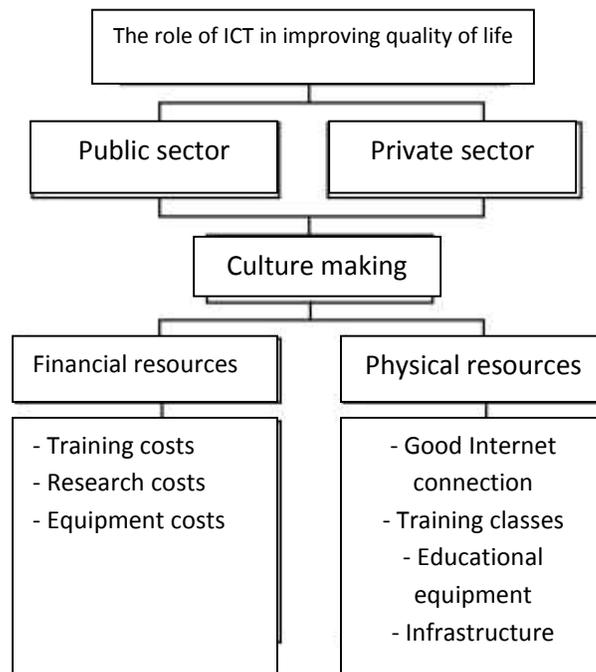
Role of ICT on the quality of rural life

In recent years, the use application of strategies related to ICT for rural development and improving the quality of life in developing countries has created a lot of potentials for creating a transformation. To the loss of many opportunities for most of the population in rural areas to cross the digital divide and access to information resources and the provision of services through information and communication technology is a first step in this evolution. (Mathur, 2005, 2). In this regard, we can acknowledge that digital development of rural areas that opens new doors for the use of villages from infinite possibilities and changes of rural

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communication in a manner that has not been thought so far. (Malecki, 2003, 211). Improve the quality of life is one of the major issues of society for all-round development. One of the main strategies to achieve improved quality of life is IT, in a way, many experts in development issues in developing countries believe that with the proper use of information and communication technology, we can come up to fight poverty and illiteracy, as well as the training techniques and methods in the form of information and knowledge in various fields, including industry, services, agriculture, horticulture, animal husbandry, adding on the quality of life and different products in urban and rural. (Khajeh Shokouhi et al., 2010; 2). The relationship between the quality of rural life and ICT has always been since the industrial revolution has been a long-standing issue for social critics and philosophers, such that at present, not possible to talk about quality of life without the use of IT tools. More important, thinking about technology alone is not correct, because people quickly adapt to the available technology, so that the lower use of these tools to create emotions in people and the main reason was to the use of technology as an integral part of the digital age in the quality of human life. So that one of the systems in recent years due to the growth and expansion of Internet networks has been noted the bases of ICT in rural areas, which is considered as a new paradigm and transition key of human resources to the Information Society. Therefore, the information technology products have driven the rural community towards a revolution (ibid.). To improve the quality of life using information and communication technology, must be united the public and private resources, in this way, because this important cannot be achieved unless there is both public and private sources. (Figure A).

Figure 1. The role of ICT in improving quality of life.



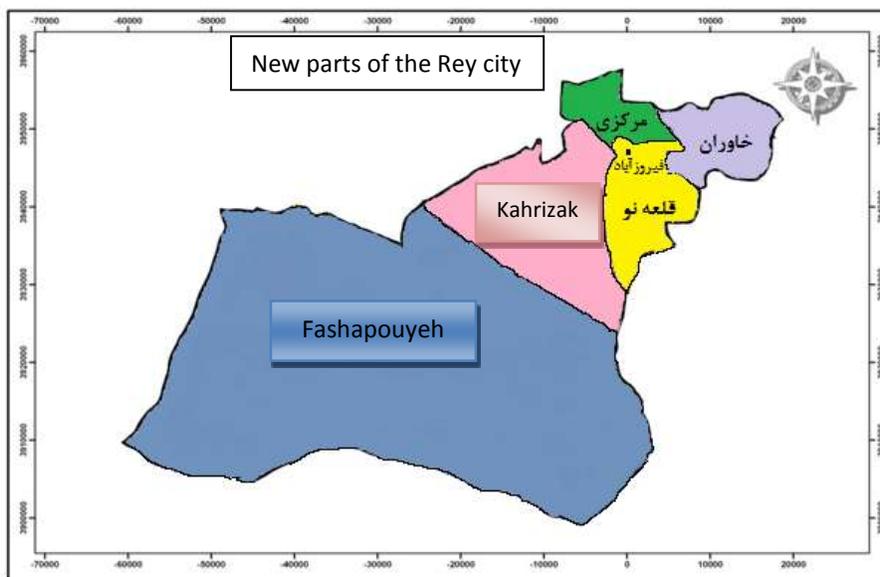
Reference: Shokouhi Khajeh et al., 2010; 2

Area of study

Firuz Abad Village is in the six-kilometer road axis of Rey-Varamin, as the largest and most populated village of Ghaleh No. According to the latest population and housing census in 2011, the population of

Firuz Abad are 2416 households and 8699 people, of which, 4578 people are males and 4121 people are females. A total of 2260 people working in the village, 120 people are working in agriculture, 1360 people are working in industry, and 780 people are working in the service sector, both inside and outside the village. Firuz Abad Village, according to the location in the communication path Rey-Varamin and enjoy convenient access to Rey and Tehran, as well as to land smoothly is more than reasonable price in the neighboring villages. (<http://dehyarifiruzabad.ir>).

Figure 2. The geographical location of the Rey city.



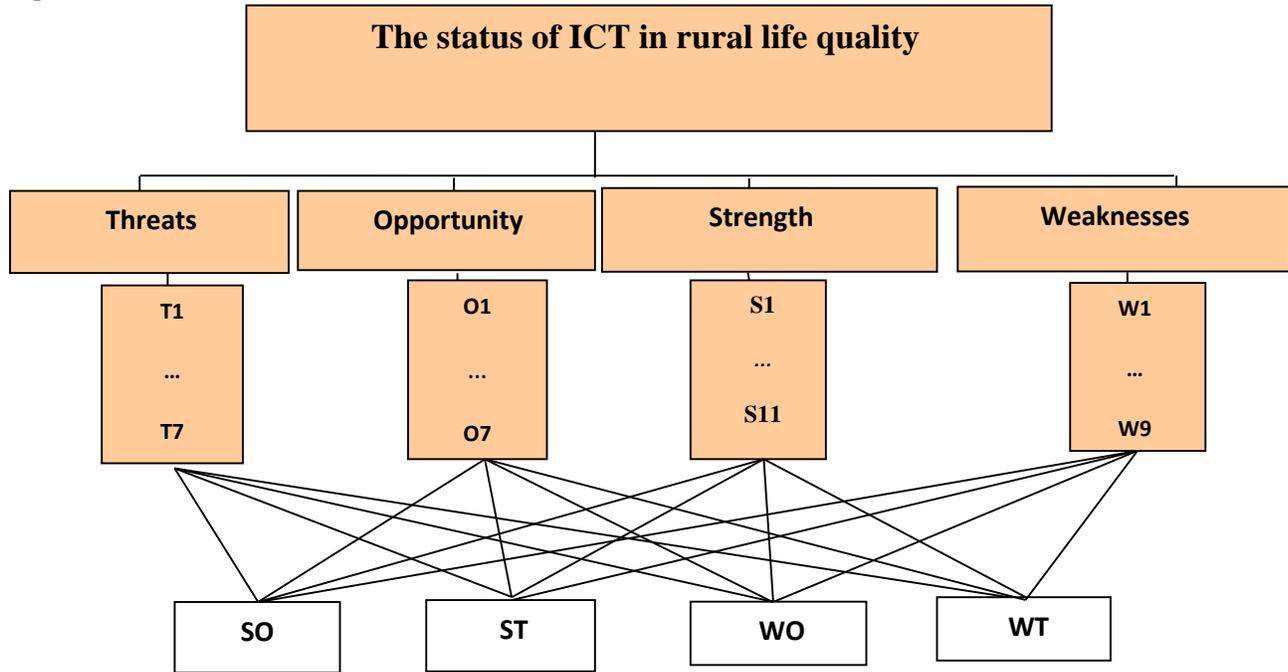
Reference: <http://dehyarifiruzabad.ir>

Methodology

Since the aim of this study was to investigate the role of information and communication technology on the quality of life in rural communities used descriptive and analytical techniques and carried out a survey based on a questionnaire to analyze the information and offered strategies and appropriate strategies to the circumstances in the region and prioritize enforcement strategies was used AHP -SWOT analytical method.

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Figure 3. Hierarchical structure research.



Reference: authors

Research findings

After the surveys and studies conducted by Delphi method collected the views of experts on the strengths, weaknesses, threats and opportunities of tourism in the region, rate and rank them. In this of research the raw material calculations and strategies related to the capabilities and potentials, extraction and were determined in the form of assessment tables of internal and external factors governing in the Firuz Abad village of Rey city. (Table 2).

Table 2. Status governing the proposed information and communication technology in Village Firuz Abad.

<i>Exterior parts</i>		<i>Interior parts</i>	
<i>Threats</i>	<i>Opportunity</i>	<i>Weaknesses</i>	<i>Strength</i>
<p>1 - lack of definition of metadata document associated with services ICT, is presented to the villagers and their awareness of such services</p> <p>2. High percentage of rural population below the poverty line, with have not ability to pay dues and the cost of services</p> <p>3. Lack of coherence, coordination and stability in policies in service (by the multiplicity of decision-making bodies and the need for integration of policies for rural services)</p> <p>4. Lack of understanding of the continuity and development of the potential benefits of ICT, and service offices in rural areas in economic and social development, and therefore, the organizational make changes required by the country's policymakers</p> <p>5. Neglect of making culture, in order to become familiar with information and communication technology, comprehensive and holistic form</p> <p>6. The lack of efforts to reduce the negative cultural effects of the use of ICT particularly in rural and traditional communities</p> <p>7. Continuity of basic services and lack of trend towards the use of ICT as a capacity</p>	<p>1. The use of facilities and networks of organizations and government departments at operational levels (local networks - physical facilities, human resources, technical and the like)</p> <p>2. improve the socio-economic development coefficient in the villages</p> <p>3. The increasing desire for change in government, about methods and processes of service delivery</p> <p>4. gradually ease access to technology and using it in rural</p> <p>5. The participation of public and private sector to undertake activities of rural services</p> <p>6. the availability and development of rural and agricultural upstream documents and the possibility of concentration of rural ICT programs and awareness of it</p> <p>7. gradual increase of culture of the ICT use and acquisition services in the country</p>	<p>1. Inadequate public understanding of rural outreach office</p> <p>2. The scope of services provided (banking, education, economy, health, electronics, etc.), without specific services defining by the duty public sector for provided</p> <p>3. Lack of coordination and balanced growth of services by four sector of postal, e-banking, data and telecommunications services in rural offices</p> <p>4. Information and limited awareness of villagers with the emphasis on infrastructure approach, and less attention to capacity-building approach</p> <p>5. The low Relationship and Assistant activity executive agencies are responsible for providing services in the field of rural ICT</p> <p>6. The lack of a strong organized courses to update their knowledge with the aim of using computers and ICT in departments and ministries responsible for services at the village level</p> <p>7. Low information or not to know the most of the executives of ministries to rural services offices and functions of their</p> <p>8. The lack of long-term policy awareness and empowerment of villagers in rural ICT</p> <p>9. Lack of system-oriented approach in determining the needs, capabilities and desired constraints of villagers to services by rural ICT</p>	<p>1. Introduction villagers with information and communications basic services, as well as posts, telecommunications (despite the background of basic services)</p> <p>2. The extent of the use of media in the country and high coverage even in rural areas</p> <p>3. Establishment, Development and Planning Service to provide information about one third of the population of over one hundred villages in the country</p> <p>4. The possibility of expansion and diversification of services trends and areas Notifications</p> <p>5. Assignment of activities related to the management of rural service centers and offices to the private sector and non-governmental</p> <p>6. Existence many and varied aspects for the definition of services in the context of ICT in rural and agriculture areas</p> <p>7. Existence education personnel and job-seekers in rural areas (growth in the number of graduates in rural areas)</p> <p>8. Existence different parts in the village that are inclined to accept responsibility Notifications (cooperatives, NGOs, local indigenous sectors, private companies)</p> <p>9. Creating equal opportunities available to all citizens</p> <p>10. The development of e-learning for all</p> <p>11. Increasing the speed of information and data processing</p>

Evaluation of internal and external factors

Assessment of the external environment

In the external factors evaluation matrix, regardless of the number of factors that are leading to opportunities or threats, never final overall score for that purpose does not more than 4, or less than one. Whatever total

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final score closer to 4 (greater than 2.5) meaning that the village against the factors that are causing a threat or an opportunity as it shows great reaction. Close final score to the number 1 (below 2.5) indicating that the village has failed to exploit from the factors that create the opportunity or position or avoid of the factors that are causing threat. The total final score of external factors is for the neighborhood structure in the evaluation matrix external factors (1.44). This score, which means that stating that ICT of the village could not the operation of the factors that create the opportunity or position or avoid of the factors that are causing threat. (Table 3).

Table 3. External factors evaluation matrix governing on the ICT of Firuz Abad village (EFAS)¹.

Score (final score)	Ranking (Factor)	Importance (weight)	Factors	Factors
0.117	4	0.029	The use of facilities and organizations networks and government departments at operational levels (local - physical networks, facilities, human resources, technology and the like)	<i>Opportunity</i>
0.134	4	0.033	Improving the socio-economic development coefficient in the villages	
0.157	4	0.039	Increasing desire for change in government, about methods and processes of service delivery	
0.137	4	0.034	Gradually ease access to technology and using it in rural	
0.127	4	0.032	The participation of public and private sector to undertake activities of rural services	
0.13	4	0.033	The availability and development of rural and agricultural upstream documents and the possibility of concentration of rural ICT programs and awareness of it	
0.14	4	0.035	Gradual increase of culture of the ICT use and acquisition services in the country	
0.12	4	0.03	Lack of definition of metadata document associated with services ICT, is presented to the villagers and their awareness of such services	
0.095	3	0.031	High percentage of rural population below the poverty line, with have not ability to pay dues and the cost of services	
0.095	3	0.032	Lack of coherence, coordination and stability in policies in service (by the multiplicity of decision-making bodies and the need for integration of policies for rural services)	
0.154	4	0.038	Lack of understanding of the continuity and development of the potential benefits of ICT, and service offices in rural areas in economic and social development, and therefore, the organizational make changes required by the country's policymakers	
0.095	3	0.031	Neglect of making culture, in order to become familiar with information and communication technology, comprehensive and holistic form.	
0.134	4	0.033	The lack of efforts to reduce the negative cultural effects of the use of ICT particularly in rural and traditional communities	
0.147	4	0.037	Continuity of basic services and lack of trend towards the use of ICT as a capacity	
1.44	-	-	Total	

¹ External factor analysis summary

The final conclusions of the external factors evaluation matrix related to governing on the ICT of Firuz Abad Village (total final score 1.44) is that the threats facing the area under study, it was more about the opportunities. After entering the data in Expert Choice software and the calculation of the hierarchical model, extraction of final scores factors including the following:

Table 4. External factors to calculate the final score based on SWOT-AHP model.

Factors	O1	O2	O3	O4	O5	O6	O7
The final score model OF AHP	0.132	0.108	0.168	0.124	0.142	0.141	0.149
Rank	7	11	2	9	4	5	3
Factors	T1	T2	T3	T4	T5	T6	T7
The final score model OF AHP	0.067	0.093	0.099	0.176	0.111	0.131	0.14
Rank	14	13	12	1	10	8	6

Source: author's calculations

Assessment of the internal environment of ICT in Firuz Abad Village

The total final scores of internal factors for the ICT structure in Firuz Abad Village is in internal factors evaluation matrix (2.19). Close to the number 1 final score (less than 2.5) indicate that this village could not exploit of factors that generate power or position or avoid of the factors that are weakened. (Table 5).

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Table 5. Internal factors evaluation matrix governing on the ICT of village (IFAS).

Score (final score)	Ranking (Factor points)	Importance (weight)	Title	Factors	
0.156	4	0.039	Introduction villagers with information and communications basic services, as well as posts, telecommunications (despite the background of basic services)	Internal strengths	S1
0.154	4	0.039	The extent of the use of media in the country and high coverage even in rural areas		S2
0.085	3	0.028	Establishment, Development and Planning Service to provide information about one third of the population of over one hundred villages in the country		S3
0.162	4	0.04	The possibility of expansion and diversification of services trends and areas Notifications		S4
0.086	3	0.029	Assignment of activities related to the management of rural service centers and offices to the private sector and non-governmental		S5
0.049	2	0.024	Existence many and varied aspects for the definition of services in the context of ICT in rural and agriculture areas		S6
0.158	4	0.04	Existence education personnel and job-seekers in rural areas (growth in the number of graduates in rural areas)		S7
0.071	2	0.036	Existence different parts in the village that are inclined to accept responsibility Notifications (cooperatives, NGOs, local indigenous sectors, private companies)		S8
0.07	2	0.035	Creating equal opportunities available to all citizens		S9
0.114	3	0.038	The development of e-learning for all		S10
0.103	3	0.034	Increasing the speed of information and data processing		S11
0.066	2	0.033	Inadequate public understanding of rural outreach office	W1	
0.151	4	0.038	The scope of services provided (banking, education, economy, health, electronics, etc.), without specific services defining by the duty public sector for provided	W2	
0.061	2	0.031	Lack of coordination and balanced growth of services by four sector of postal, e-banking, data and telecommunications services in rural offices	W3	
0.025	1	0.025	Information and limited awareness of villagers with the emphasis on infrastructure approach, and less attention to capacity-building approach	W4	
0.047	2	0.024	The low Relationship and Assistant activity executive agencies are responsible for providing services in the field of rural ICT	Internal weaknesses	W5
0.082	3	0.027	Low information or not to know the most of the executives of ministries to rural services offices and functions of their		W6
0.1	3	0.033	The lack of a strong organized courses to update their knowledge with the aim of using computers and ICT in departments and ministries responsible for services at the village level		W7
0.16	4	0.04	The lack of long-term policy awareness and empowerment of villagers in rural ICT		W8
0.113	3	0.038	Lack of system-oriented approach in determining the needs, capabilities and desired constraints of villagers to services by rural ICT		W9

2.19	-	-		Total
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After entering the data in the Expert Choice software and the calculation of the hierarchical model the factors final scores were identified as follows:

Table 6. Calculate the final score based on internal factors (SWOT-AHP) model.

Factor	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11
Score	1.192925	4.360346	3.373097	6.293706	3.784451	3.990128	4.401481	2.221308	3.002879	3.290827	2.673797
Rank	20	6	10	1	8	7	5	18	12	11	15
Factor	W1	W2	W3	W4	W5	W6	W7	W8	W9		
Score	2.097902	5.100782	2.797203	2.46812	2.303579	4.977376	2.838338	5.635541	3.455368		
Rank	19	3	14	17	16	4	13	2	9		

Based on internal and external factors evaluation matrix and SWOT analysis model, the final score for the assessment of internal factors is equal to (2.19), and the final rating assessment of external factors is equal to (1.44). On the other hand, the positions of obtained scores from the matrix evaluation of internal and external factors are listed below in the first quarter (offensive strategy).

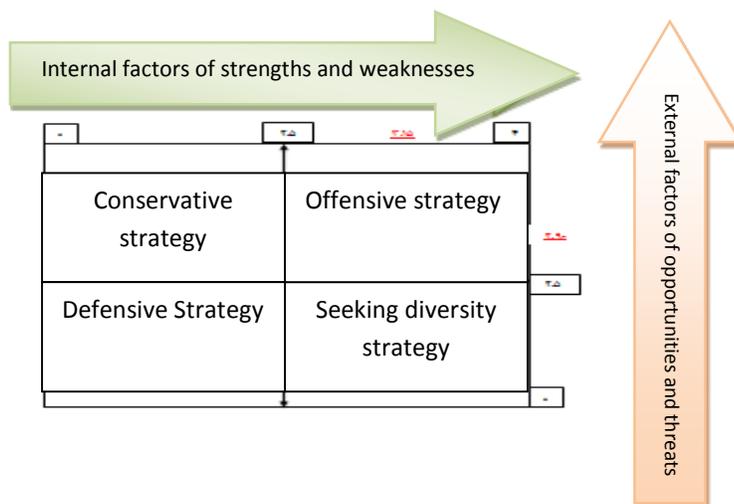


Figure 4. Assessment of internal and external factors.

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Conclusions and suggestions

ICT has created new opportunities for communities. Communities that quickly identify these opportunities could be mutate structural compensate for their backwardness and be effective in improving quality of life for residents. According to the matrix evaluation of internal and external environment of the Firuz Abad village on the ICT, has been able to put affected the quality of life in this area and the results showed that:

- Among the factors related to the weaknesses the factor of “the lack of long-term policy awareness and empowerment of villagers in rural ICT” is considered as the most important weaknesses in the village. "Lack of system-oriented approach in determining the needs, capabilities and desired constraints of villagers to services by rural ICT" is the second impact on quality of life in the village. Also, low information or not to know the most of the executives of ministries to rural services offices and functions of their, lack of coordination and balanced growth of services by four sector of postal, e-banking, data and telecommunications services in rural offices, the lack of a strong organized courses to update their knowledge with the aim of using computers and ICT in departments and ministries responsible for services at the village level, are located next rank impact on the quality of life in the village.

- Also, the possibility of expansion and diversification of services trends and areas notifications in the area, which has the greatest impact, and is the most important strengths of the village. Also, factor of “Existence education personnel and job-seekers in rural areas (growth in the number of graduates in rural areas)”, “the extent of the use of media in the country and high coverage even in rural areas” and the factors of “existence many and varied aspects for the definition of services in the context of ICT in rural and agriculture areas” respectively, received the rank of second, third and fourth impact among the strengths of influence.

- The factor of "the increasing desire for change in government, about methods and processes of service delivery” and the factor of “gradual increase of culture of the ICT use and acquisition services in the country” respectively, are known as the first and the second opportunity. The factor of "the participation of public and private sector to undertake activities of rural services”, “The use of facilities and networks of organizations and government departments at operational levels (local networks - physical facilities, human resources, technical and the like)” are in the next priority.

- At the same time, the factor of “lack of understanding of the continuity and development of the potential benefits of ICT, and service offices in rural areas in economic and social development, and therefore, the organizational make changes required by the country's policymakers” and also the factor of “continuity of basic services and lack of trend towards the use of ICT as a capacity” is the biggest threat facing the village by this way. Also, “the lack of efforts to reduce the negative cultural effects of the use of ICT particularly in rural and traditional communities”, “neglect of making culture, in order to become familiar with information and communication technology, comprehensive and holistic form” is considered next ratings among the factors threatening the village ICT.

Accordingly, in order to take advantage of these regions from the benefits of information and communication technologies in order to grow and develop, and out of the current situation of the Firuz Abad village, the following measures are proposed:

- Provide favorable conditions to benefit from the experiences of successful villages on the use of information and communication technologies in order to improve the quality of rural life.

- Accelerating the development of communications infrastructure required to deliver IT services in the village.
- Training to staff and rural organizations, in order to update the information and how the right information and step by step to the clients and users of Office Online Web site.
- Making culture using ICT tools in the rural areas.
- Raise the educational level of rural communities, through the adoption of appropriate strategies, such as training teachers and students and all rural residents.
- Use of the scholars and clerics of the region in line with the making culture development of using the information and communication technologies in rural areas.
- Organizing training courses in technology to improve the knowledge of the villagers.
- Personal provide services access to information networks in rural areas, mail service to the villagers in the sector of health, the production of information, education, government services, experiences and creating job opportunities in the field of rural confidence.

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