

Challenges Facing the Application of ICTs in Rural Areas of Iran

M. Niknami^{1*}

1: Department of Agricultural Extension and Education, Garmsar Branch, Islamic Azad University, Garmsar, Iran

Received: October, 17, 2011

Accepted: November, 8, 2011

ABSTRACT

The major purpose of this study was conducted to identify the challenges in application of ICTs in rural areas of Iran. A questionnaire was developed and data collected from 187 extension specialists. The challenges was categorized by using factor analysis and results show challenges were classified into organizational, technical, social, financial, regulatory and human factors by order of their impacts.

Keywords: ICT; Rural development; Challenges; Iran

*Corresponding Author Email: M.Niknami@yahoo.com

INTRODUCTION

During the last two decades, the world witnessed an unprecedented growth in area of information and communication Technology (ICT). ICT helps people to communicate effectively, overcomes the limitations of time and space, empowers people by providing information and knowledge, provides income generating and learning opportunities, increases government transparency and efficiency and enables people to express their concerns and to actively participate in decision making processes (Asian Development Bank, 2004).

Evidence shows that even small efforts to put rural telecommunication policy on the national agenda can have big results. Civil society advocacy efforts to improve telecommunication policy and bridge the digital divide in El Salvador, Guatemala, Trinidad and Tobago, Canada and Australia have yielded impressive results (Richardson, 2003).

In terms of rural development, ICT can play an important role in improving the quality of life for rural people. However, the promise has yet to be realized due to the lack of connectivity and accessibility to universal service and markets among rural communities. Therefore, it is necessary to remove the impediments faced by the developing rural economy and provide basic infrastructure in rural areas to enable the spread of ICT. This would enable ICT to be part of a comprehensive socio-economic development strategy for rural development as a means, not an end (Lee & Lee, 2004).

Access to information by rural population is often very limited, hindering the use of new technology and information by them. The World Summit on Information Society (WSIS) has targeted by 2015 in that half of the world's population will have access to the internet.

Rural and remote areas have less access to ICTs compared to their urban counterparts. With respect to ICT, rural areas are characterized by low infrastructure for ICT usage; long distance to maintain and repair ICT; Small market size; low affordability, literacy and ICT literacy; low awareness of opportunities and benefits of ICT (Asian Development Bank, 2004).

However, bridging the digital divide between urban and rural areas is one of the challenges facing governments and policy makers today. Factors that contribute and exacerbate this divide include economic: ICT infrastructure remains cost-prohibitive for many communities and nations; geographic: terrain, distance and infrastructure; technological: increasing skills required to participate in the ICT economy; cultural: inequalities in access and participation and political: long-term investment versus short-term political cycle (Kushner & Chong, 2004).

In Iran due to centralized planning and as a part of national development program, a radical approach to establish the community e-centers (CeCs) by the government in the rural areas is underway. For instance, the Ministry of Agriculture along with the Ministry of Communication and Information Technology have established more than 6000 CeCs in rural areas, and more than 52000 villages in Iran have access to telephone. The goal is to establish more than 12000 CeCs by the end of Fifth National Development Program (Iran ICT News, 2008).

The central question of this study was to determine the challenges in the application of ICTs in rural areas of Iran.

MATERIALS AND METHODS

A pilot study was conducted with 25 extension experts that were not included in the sample population to determine the reliability of the questionnaire for the study. Computed Cronbach's Alpha was 91.0% which indicated high reliability of the questionnaire.

The research population included all agricultural extension experts in Iran (N=2024). Using the stratified sample technique and result with pilot test, 187 experts were surveyed. The data was collected by mailing the questionnaire across the country and was analyzed by using ordinal factor analysis technique.

RESULTS AND DISCUSSION

The results of descriptive statistics indicated that majority of extension experts are male with a mean age of 39 years old. Majority of respondents had a degree with major in agriculture.

The variables were classified into organizational, technical, social, financial, regulatory and human challenges. The basic idea of factor analysis is to find a set of latent variables that contain the same information. The classic factor analysis assumes that, both observed and the latent variables are continuous variables. But, in practice, the observed variables are often ordinal.

Table1: Classification of challenges by using ordinal factor analysis

| Challenges | Variance by Challenge |
|-------------------|------------------------------|
| Organizational | 31.30% |
| Technical | 6.19% |
| Financial | 5.38% |
| Social | 4.32% |
| Regulatory | 3.75% |
| Human | 3.12% |
| Total | 54.09% |

CONCLUSION

ICTs have tremendous potential to help improve living conditions of rural population in Iran and it is evident now that ICTs will change the way people live, work, and learn.

As the ordinal factor analysis showed, challenges were categorized into six challenges namely, organizational, technical, financial, social, regulatory and human challenges, ordered by their impact.

The findings also reflect an important fact that positive attitude, knowledge and skills of experts directly impacts the application of ICT. This is in corroborating with the findings of Lynch (2002).

The results of study pointed out to this fact that there was relationship between social factors and application of ICTs in rural areas of Iran. The findings are in accordance with the studies by Sullivan (2002), Samak (2006) and Tyan (2003).

To achieve the goal of application of ICTs as an adaptable, available, accessible, affordable and extendable technology to deliver information to rural population, financial, social, human, and organizational sustainability need to be assured over a period of time. Technology options that provide affordable access need to be carefully examined.

Therefore innovative technologies and applications need to be developed that cater specifically to rural areas. The financial burden on developing ICT for rural areas has been mainly on the governments and it is important to help and introduce NGOs and private sector to participate in developing ICTs in rural Iran.

REFERENCES

1. Asian Development Bank. (2004). *Building e-community centres for rural development*. Report of the regional workshop, Bali: Indonesia.
2. Iran ICT News. (2008). Retrieved from: <http://iranictnews.ir>.
3. Kushner, J., Chong, P. (2004). *Conducive environments for promoting community e-centers*. Asian Development Bank Regional Workshop. Bali: Indonesia.
4. Lee, J. D., Lee, H. (2004). *Economic analysis of community e-centers for rural development*. Asian Development Bank Regional Workshop. Bali: Indonesia.
5. Lynch, M. M. (2002). *The online educator: A guide to creating the virtual classroom*. London: Routledge Flamer.
6. Richardson, D. (2003). *Agricultural extension transforming ICTs! championing universal access*. CTA's 6th consultative Expert Meeting of Its Observatory on ICTs. CTA, Netherlands.
7. Samak, Z. A. (2006). *An exploration of Jordanian English language teacher's attitude, skills and access as indicator of ICT integration in Jordan*. Ph.D dissertation, The Florida State University.
8. Sullivan, C. (2002). *Getting the organization to adopt e-learning from challenge to action*. Technical report printed to Hathworne associate white.

9. Tyan, K. J. (2003). *Diffusion barriers to e-learning in corporate Taiwan: A factor analysis of practitioner's perspective*. Ph.D dissertation, Indiana University.