

Investigation of Social, Economic, and Physical Effects of ICT on Rural Regions Development

(Case Study: Gorgan County)

Anabstani A.A.*

Associate Prof., Geography Dep., Ferdowsi University, Mashhad

Vaziri S.

M.Sc. Rural Planning, Ferdowsi University, Mashhad

Received: 21/10/2010

Accepted: 27/05/2011

Extended Abstract

Introduction

Information and communication technology (ICT) is now one of the criteria for measuring the economic and industrial development, in a way that it has had significant effects on different aspects of socio-cultural, economic and political life of people and human communities. In this study, the authors have tried to investigate the economic, social and physical effects of ICT centers on rural development in Gorgan as a leading zone in construction of rural ICT centers in Iran. For this purpose, at first step, they assessed the level of rural population access to ICT and the way they could benefit from it. Then the effects of ICT centers on rural development were examined in two main groups of villages: those which had ICT centers, and those which lacked them.

* Responsible Author: anabestani@um.ac.ir

Methodology

This study was carried out using the descriptive-analytical method. Some parts of the data were collected through field study and questionnaires and interviews. Other parts of the data, for example, data needed for theoretical and conceptual framework, documents and census were collected through library research. To estimate the number of participants, Cochran sampling formula was used with a confidence level of 70% and error level of 55 %. The sampling was carried out in simple random method. In this study three groups were questioned or interviewed: 1. the inhabitants of the villages (husbandmen) 2. Heads of self-reliant rural management (Dehyari) and members of Islamic council of the villages; 3. The experts and specialist employed in the ICT centers of the Golestan province and Gorgan County. To compare some of the parameters of the villages, in this study they were divided into two groups:

- 1) Villages in which ICT has proven successful. There were a total number of 67 villages in which ICT was successful; considering the probability coefficient of 20 percent and population groups, 14 villages were selected randomly. According to Cochran sampling, the sample size tuned out to be 276 participants (husbandmen which were chosen in simple random order and questioned).
- 2) Villages lacking ICT centers. Considering the probability coefficient of 20 percent and population groups, 6 villages were selected randomly. According to Cochran sampling, the sample size tuned out to be 60 participants (husbandmen) which were chosen in simple random order and questioned.

Having collected and processed the data in ArcGis, SPSS etc. the authors turned to data analysis and exploitation.

The following hypotheses were proposed to account for the study questions:

- * It seems that rural ICT centers increase rural participation, hygiene, welfare, and decrease migration, and also decreasing the information gap between rural and urban areas.
- * It seems that rural ICT centers pave the way for rural development, increasing products, improvement of marketing for the rural product and rise in employment rate in rural areas.
- * It seems that rural ICT centers have changed the patterns of housing, rural communication and way of life.

Results and Discussion

Efficiency coefficient of ICT in economic, social and physical aspects of Gorgan villages in two groups of having and lacking ICT collected in questionnaires shows that the average of the economic aspect of 4.44, average social aspect of 4.87 and average physical aspect of 4.43. These indexes are well indicating that ICT has had significant and positive effects on villagers' way of life. While in villages lacking ICT, in view of the average villagers, the average of the economic aspect was 2.42, average social aspect was 2.28 and average physical aspect was 2.33, which shows the significant effects of ICT centers in rural development. In villages having ICT centers, in all the variables, weight mean was higher than 4 and close to 5, which indicates that villages having ICT had favorable conditions in the variables (of participation, level of hygiene, migration, information gap, rural development, product increase, marketing, employment rate, housing pattern, the way of life and communication) which all prove the positive effects of ICT in the villages. While in the villages lacking ICT centers, all the variables had an average between 2 and 3, which shows that villages without ICT were in poor conditions in the variables examined.

Conclusion and Remarks

Information and communication technology have created new opportunities for different communities. The sooner, these opportunities are created, the faster the communities can accelerate structural progress and cover up imperfections and deficiencies. In the Gorgan County in Iran, ICT has significantly progressed.

At the end, the authors tested the hypothesis of the study, and it turned out that:

1. In villages having ICT, the weight median of (4.87) ICT effect on the social aspects shows that this parameter had considerable effects on rural development in the villages of the study area; while in the villages lacking ICT, the villagers' view does not confirm its effect on the social aspects of their life. As a result, the authors' first hypothesis suggesting that "rural ICT centers increase the rural participation and hygiene and decrease migration and knowledge gap between rural and urban areas", has been confirmed.

2. In the villages having rural ICT centers, the weight median of ICT effect (4.44) on the economic aspects confirms the effect of this parameter on rural development, while in villages lacking ICT, the villagers' view does not confirm its effect on the economic aspects of villagers' life. Therefore, the authors' second hypothesis suggesting that "ICT centers pave the way for rural development, increase in products, improvement of marketing for the rural product and rise in employment rate in rural areas" has been confirmed.

3. In the villages having rural ICT centers, the weight median of ICT effect (4.43) on the physical aspects confirms the effect of this parameter on rural development, while in villages lacking ICT, the villagers' view does not confirm its effect on the physical aspects of villagers' life. Therefore, the authors' third hypothesis suggesting that "rural ICT centers has changed the patterns of housing, rural communication and way of life" has been confirmed.

Considering the study results, the authors propose that operational procedures

such as public administrative services be provided in rural ICT centers which would facilitate the communication between local rural managers and administrative organizations through the facilities provided in rural ICT centers.

Keywords: Villagers, Information and communication technology, Specialists, Rural development, Accessibility.

References

- Akshay Mathu, Dhirubhai Ambani, 2005, **ICT and Rural Societies: Opportunities for Growth**, The International Information & Library Review No. 37, PP. 345–351.
- Alexandru Adriana, 2006, **ICT and Its Impact upon the Globalization and Accessibility of the Education in the Health Domain**, online in: www.ici.ro.
- Annam, S., 2002, **ICT as Tool for Rural Development**, Available: www.thinkcycle.media.mit.edu/public.www.mazandnume.com
- Cigdem, Aricigil Cilan, 2008, **Analyzing Digital Divide within and between Member and Candidate Countries of European Union**, Government Information Quarterly, GOVINI-00529, PP. 4-7.
- Czeynel Cebecin and Aykut Gul, 2003, **Information and Communication Technology in Turkish Agriculture**.
- Faraji Sabokbar. H.A. Khaki, A. & Nemati, M., 2009, **Evaluated the Role of ICT in Empowering Rural Women**, Journal of Geography, No. 22, PP. 173-159.
- Hafkyn, N. & N. Tagart, 2004, **Analysis on Gender and IT in Developing Countries**, translated by Shabanali Ghomi and others, Alzahra University, Tehran.
- Hamshahri Newspaper, 2002, **Internet Village in Ozas Land**, No. 2730, Thursday 12 June.
- Jalali, A.A. 2003, **The Role of ICT in Villages**, Proceedings of Conference on ICT and its Role in the development of Golestan.

- Jalali, A.A. Rovhani, S. & Zare, M.A. 2006, **Village Electronic**, Iran Science and Technology University Press.
- Khajeh Shahkuhi, A.R. Rezvantalab, N. JalalShahkuhi, H. & Taghavi, A.A. 2005, **ICT and the Need for Attention to Rural Development**, ICT Applications Conference on Local Development - Gharnabad Village.
- Khosravi, A. 2003, **ICT's in Agriculture and Rural Development**, Conference on ICT applications in villages, University of Iran Science and Technology - Electronics Research Institute.
- Motiei Langroodi, S.H., Rezvani, M.R., Faraji Sabokbar, H.A. & Nemati, M. 2010, **Analysis of Social and Economic Effect of Rural ICT (Case Study: Central Part of Gorgan County)**, Journal of Geography, No. 22, PP. 33-59.
- Motiei Langroodi, S.H., Rezvani, M.R., Faraji Sabokbar, H.A. & Nemati, M., 2010, **Analysis of Correlation Pattern between Social and Economic Extent Affecting of ICT in Rural Life (Case Study: Central Part of Gorgan County)**, Journal of Studies & Researches of Urban & Regional, No. 3, PP. 71-90.
- Nouri, M., 2003, **ICT and Rural Poverty**, Conference on ICT Applications in Villages, University of Iran Science and Technology, Electronics Research Institute.
- Okhovvat, M.R. & Abedi, G.A. 2003, **Role of Information Technology in Economic and Social Development of Rural Community (Case study - Golestan Province)**, Conference on ICT applications in villages, University of Iran Science and Technology - Electronics Research Institute.
- Pitikorn Tengtrakul, Jon M. Peha, 2011, **Access to and Penetration of ICT in Rural Thailand**, Telecommunications Policy, No. 35, PP. 141–15.
- Rama, Rao, T.P. 2004, **ICT and E-Governance for Rural Development**, Center for Electronic Governance, Indian Institute of Rural Management, Ahmedabad, Poetics, 34, PP. 211-235.
- Rezaie, R. 2006, **ICT Tools for Sustainable Rural Development**, Journal of Geographical Studies, No. 1, PP. 124-103.

- RiyahiVafa, A. & Hedayati, M.R., 2006, **Rating & Ranking Villages in Tehran Province for Conversion Rural Post Offices into ICT Offices with the Aim of Rural Development and Using of Numerical Taxonomy Classification**, Journal of Rural & Development, Year 9, No. 4.
- Saeedi, A., 2000, **Fundamentals of Rural Geography**, SAMT press.
- Sepehri, M.R, 2001, **The Role of IT in Human Resource Development and Increase Job Productivity**, Proceedings of the role of Information Technology in employment, University Jihad, Tehran.
- Statistic Center of Iran, 2006, **Country Vilaages ID – Gorgan County**.
- Suzangar, A., 2003, **Required Guidelines for Entry and Development ICT in Villages and Familiarity with Internet Bus Projects**, Conference on ICT applications in villages, University of Iran Science and Technology, Electronics Research Institute.
- Taghavi, M. A. & Garzin, Z., 2003, **Challenges of ICT Development in Rural Areas, Conference on ICT Applications in Villages**, University of Iran Science and Technology, Electronics Research Institute.
- Telecommunication Company of Golestan Province, 2010, **Active Rural ICT Offices in Gorgan County**.
- The Governor of Golestan, 2010, **Latest Status Divisions Gorgan County**.
- Vehovar, V., Sicherl, P., Hüsing, T., & Dolnicar, V., 2006, **Methodological Challenges of Digital Divide Measurements**, The Information Society, 22 PP. 279-290.