

Study on the Impact of Technology on Rural Development: Information and Communication Technology

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Abstract: The present study focuses on finding out the impact of information and communication technology on rural development. Rural development is very crucial for overall development of nation. As 65.07% of total population are living in rural areas and it is equally important to strengthen the rural economy which contribute significantly to the GDP of the country. Before the introduction of ICT rural people were facing many obstacles in day-to-day life as well in selling their Agri products and availing benefits of government schemes. Through ICT they are getting ample of opportunities, still the rate of growth is not satisfactory. So, the present paper focuses on impact of effectiveness of ICT policy on agriculture development, education, rural economic development and e-governance in rural development and providing appropriate suggestions & strategies for the development in rural areas.

Findings: Introduction of ICT in rural India is proving them ample of opportunities with autonomy in conducting their daily affairs. Impact is significant and positive, still it is not satisfactory as infrastructural set up of technologies is not up to the mark, and peoples are not aware about ICT in all respect. It acquainted new challenges for its successful implementation.

Conclusion: this paper concludes that ICT is crucial for rural development, with proper knowledge and complete awareness it can be implemented successfully. Proper policy and framework will enhance rate of growth and development.

Key words : ICT(information and communication technology), Rural development

1.INTRODUCTION

The soul of India lies in its villages: Mahatma Gandhi

This famous citation made by Mahatma Gandhi decades ago, still has its applicability. In the country

Several tools of ICT for rural citizens:

ICT TOOLS		
KISAN SMS PORTAL Provide latest news and information in local language	KISAN CALL CENTER Expert advisory system for farmers	KISAN VIKAS KENDRA Serve as backbone of ICT, Link scientific community and rural citizens/ farmers.

like India where rural population is the core of society and actual representatives of real India. Being an Indian it is our responsibility to cooperate Indian Government to build a system that ensures basic technological infrastructure to the rural people in an effective and efficient manner. The fruits of nation's progress should be shared by all sections of the society without any bias for this The Ministry of Rural Development in India, the apex body for framing policies, regulations and acts regarding development of the rural sector.

(Census of India, 2011) According to the provisional population count released by the census of India, India's total population in 2011 was 1.21 billion, up from 1.03 billion in 2001 adding 181 million people in one decade and India's total rural population was 0.83 billion which is 68.8% to the total India's population. The rural poverty is mainly due to the lack of proper infrastructural facilities in rural India ICT is major key factor in development of our nation. Deprived of the help of government it cannot be implemented in rural areas. As Government grants the authority to the organizations for implementing the technology in rural areas with this it also provides various other services to the citizen through internet or other media like markets, health, and education.

ICT is applicable since 1990's. while providing information to citizens it also generated advanced concepts for wealth generation for rural citizen. A study by Wilson (2000) concludes that in a developing economy like India, ICT has developed an education, governance, health, human rights promotion, communication, economic growth and other areas. Its implementation in supply chain of farm products reduced cost by great margins.

E-NAM	E-GOVERNANCE	E-CHAUPAL
Virtual market platform for Agri products	Application based service to connect rural citizen & government	Conglomerate to link farmers directly to internet

Technology plays vital role in the advancement of living standard in rural areas. As its major function in enhancement of rural life it deliver information and create awareness in all respect. Every individual need information, because it is indispensable for development. For instance, ICT enables farmers in rural areas to become aware about advanced techniques and various resources of farming that leads to further production and thus more income. The Department of Information Technology (DoIT) has been established in January, 2004 with the vision of promoting expansion of technology for overall development and growth of the country. ICT has always been prolific for rural development in India.

2.REVIEW OF LITERATURE

Numerous studies have been conducted on this issue, and respective researchers presented their different perspectives. Few of them have been reviewed.

- Rao, T.P. Rama (2004) studied that the rural e-Governance applications in the recent past have presented the important role the Information and Communication Technologies (ICT) in the realm of rural development. This paper presented a brief review of the technologies, the rural ICT projects and the issues associated with the use of ICT for rural e- Governance applications.
- Boateng, M.S. (2012) has stated the Information and Communication Technologies (ICTs) hold incredible potential for rural development in Ghana in the areas of agriculture, health, Micro and Small Enterprises (MSEs), and education. Using the theoretical sampling method, this paper took closer look at the ICT scene in Ghana from 2000 to 2011 with emphasis on the role of ICTs in rural development.
- Patel, Sami and Sayyed, I.U. (2014) their study revealed many ways in which ICT is useful in exchanging information with effective communication like information kiosks which provide not only the basic services like email, helps in education, health services, Agriculture and Irrigation, online trading, community services etc. ICT is useful in predicting the results related to the agriculture specially plant physiology. Leaf protein study is an important study which helps to solve protein deficiency and malnutrition. Present study

deals with role of IT in Agriculture.

- Sharma, Parveen (2011) [6] this paper focused on the examination of several ongoing projects which were aiming to provide IT-based services to rural populations in India. These projects are distinguished by the goal of commercial sustainability, which supports scalability and, therefore, more widespread benefits. How can information technology (IT) impact on rural economy and life of rural India to rural development?
- Matto, Asra (2015) studied that the Information Technology in present era and is helping to exchange the information in faster and efficient way by the right time. Information Technology is taking lead in all the agricultural activities of a nation and has transformed the whole world into a global village with a global economy. Information technology has played a significant role in enhancing the quality of life in rural areas and guided Indian farmer to get relevant information regarding agro-inputs, market support, management of farm, agri business, agro finance, crop production technologies and agro processing.
- Anwsha Banerjee, ICT in agriculture: BRIDGING BHARAT WITH INDIA. This study focused on state of rural development through ICT. It examined different initiatives with their impact, i.e. how these changed the agriculture scenario.

3.OBJECTIVES

objectives are like driving and motivating factors which assist and direct researcher to conduct study effectively. The key objectives this research study is to examine the current status of awareness and usage of ICT in the rural areas. The objectives are as stated below–

- To ascertain the level of awareness regarding ICT in rural areas.
- To identify the importance of Information technology is to helpful in the growth of agriculture.
- To disclose the influence of ICT in the development of rural activities.
- To find digital resources used by rural people.
- To recommend suitable strategies for enhancing the effectiveness of ICT in rural development.

4. RESEARCH METHODOLOGY

Research Methodology is the specific procedure or technique used to identify, select, process and analyze information about a topic. Descriptive and qualitative method was used by researcher to identify and describe the characteristics of population. In order to achieve the research objectives secondary methods were used. The data has been collected from different sources like articles, research paper, government websites, etc.

5. DATA ANALYSIS

5.1 Different Rural Activities and ICT

- **ICT and Agriculture**
Agriculture primary sector of economy, provide employment to the majority of the rural population in country like India. In Indian scenario, where the agriculture sector contribute in nation's GDP to great extent. As per latest data 70% of rural citizen's livelihood is dependent on agriculture. In past decade, with the arrival of ICT tools, significant contribution of ICT is realized in achieving agricultural development objectives.
ICT empowered rural people by providing better access to natural resources, improved agricultural technologies, effective production strategies, markets, banking and financial services; local and national policies related to agriculture etc.
Advent of ICT resulted in
 - Enhanced knowledge of crop cycle, use of new techniques, various fertilizers, methods of cropping and many more.
 - Increase in public investment.
 - E-market for Agri products, as 585 Agricultural Produce Market Committee (APMC) markets which were linked to Electronic National Agricultural Market (eNAM) in 14 states in India by 2018.
 - ICT empowered farmers with climate forecasting measures and techniques to solve them. With help of ICT accuracy of information increased .
 - Extended the reach of farmers at national as well as international level.
 - Various initiatives have been taken like Gyandoot project (MP), Center for Alternative agriculture media, I kisan project (Andhra Pradesh), Automated milk collection (Gujrat) and many more.
- **ICT and animal husbandry**
Animal husbandry is another major activity in rural areas, it is concerned with the management, rearing

and breeding of domestic animals, which aims to improve their quality. It is the second major source of livelihood in rural areas. There are various technologies available which make this work easier and efficient, like remote monitoring technologies ,pasture and feeding technologies, automated dairy installations, herd management systems.

Mobile based applications are also there which is specifically designed for this like e-Gopala, Farm GRAZE, I Livestock , so on.

5.2 ICT and Rural Schools of India

In present era ICT has become significant part of education, it includes ICT education, ICT enabled education, ICT aided education. The ICT revolution has changed the learning process of childhood up to the real world. It extended the reach of students, empowered them with ample of opportunities and sources of information and knowledge.

Even after advent of ICT students are facing several challenges, even I witnessed it when I went to my village, i.e. Pandoli (Chittorgarh, Rajasthan). Students have to travel many kilometers as there is no school in their village, if it is there then not equipped proper facilities. Condition of ICT in this area is very poor.

Problems faced in rural education in Rural India

- Lack of teachers due to low pay scale
- Unskilled tutors , not skilled to teach ICT enabled education.
- Most of the schools don't have proper infrastructure .
- In proper Transport facility.
- Lack of funds to install new technologies

5.3 ICT and Rural Economic Development

If we have look over past decades there are substantial evidence available of positive and significant impact of ICT on economic development by refining the business environment in rural areas. ICT provided easy access to market and business information, extended the reach of rural customers to financial services, as well as guided the local communities to organize and link themselves to external world.

In rural areas of country like India , the advancement and economic development is directly associated with level of income generation and Livelihood opportunities. ICT enhanced it by improving access of rural people and small business to wider market area. It

benefited them by allowing them to get advantage of increased new market areas, ample of opportunities and various sources of income. ICT infrastructure not only enhances income sources but also help in getting economies of scale, as it reduces many cost associated with business activities. It promoted greater inclusion of individuals by overcoming barriers like physical

distance, time and social standing. The immediacy and scope of ICTs also promoted faster, more efficient, and ultimately better decision making across all fields in rural regions. Figure 2 tries to conceptualize how the driving forces behind ICT adoption translate into economic and social benefits.



5.4 ICT and livelihood assets

ICT impacted livelihood assets in numerous ways depending on their context and localities. Some of these are.

- **Human capital** : Enhanced access to education and training through distance learning Programs and educational tools for wide range of formats. The impact of increasing information flow resulted in well trained and educated youth, not only equipped to perform rural activities but in effective manner by using latest methods,
- **Financial Capital**: ICT strengthened rural financial institutions and rural bank by enabling them to stay connected to external world. Due to this people are well informed and aware about various financial services and government schemes. this provided them with adequate funds to purchase new equipment for farming and to invest in small industries.
- **Social Capital**: to some extent ICT reduced social gap as Improved ‘networking’ connected rural India with urban India. The reduction in the cost and time taken to pursue social networking goals have a positive impact at a household level with family members spending less time away and less money on transport. Expanded social networks also resulted in increased opportunities for employment both locally and away.
- **Physical Capital**: Communication channels established by ICT are used for access to the markets and market information helps to improve choices for the sale of goods on local

markets as well as global market, these channels increased the reach of rural people as now they can connect to outer world easily.

Key Findings from Data Analyzed

- ICT is providing ample of opportunities in all respect to rural people.
- Enabled people to connect with local, regional and national economy, access to market. A
- Facts showing sources of information: 8% of farmer rely on television, 13 % on radio and input supplier each, 17 % on other Farmer and remaining on kisan partals as source of information.
- There are about 13, 03, 996 schools in 6 38000 village of India only 9 % of these have access to Internet.
- Technology based infrastructure is unsatisfactory.
- E- governance enhanced relationship between rural people and government of India.
- Reach to all financial and banking services.
- It uplifted the livelihood of rural people to good extent.

6. CONCLUSION AND RECOMMENDATIONS

Is can be concluded that ICT is the key factor for rural development. With its use rate of growth can easily be increased with development in all respect. The awareness of ICT is crucial for increasing the interest of people in ICT who belongs to rural areas. As awareness only can result in positive impact.

Some ways are there to increase the awareness among rural people and ensuring successful implementation of ICT, such as

- Rural development policy and involvement of local governments
- Formation of young farmer association
- Establishment of direct connection between Rural centres and external agencies
- For schools: more ICT supported education, proper teacher training programs, engaging students to use ICT tools, introducing parents about benefits of multimedia education.
- Establishment of community learning and Information Centers (CLIC) Market Information Centres and Tele Centres in remote areas.
- Reduction in taxation on ICT related components, products and services.
- Partnership with NGOs to encourage use of ICT by spreading awareness and educating them.

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