

ICT based initiatives for Rural Development in India

Raffan Ali¹ and Dr.Shyna Saif²

¹Research Scholar, Department of Social work, A.M.U., Aligarh,

²Assistant Professor, Department of Social work, A.M.U., Aligarh.

ABSTRACT

India still breathes in villages, and this becomes a fact when it is taken into account that nearly 68% of Indian population lives in rural areas and mostly dependent on the stressed agrarian economy. But after independence, rural India characterised by severe poverty, illiteracy, lack of health facilities, lack of job opportunities etc. and above all backwardness. The current approach for rural development focuses primarily on poverty alleviation, better livelihood, the arrangement of essential convenience and infrastructural facilities. Rural areas are often seen as poorly informed and the provision of information has often been a key component for rural development. In this context, several e-governance projects have implemented to improve reach, enrich the base, increasing transparency and reduce the cycle of time. For example, the introduction of computer and e-chaupal by the government has taken the rural population in contact with the information technology, up to a certain extent. Hence, ICT can be an easy set of tool that as a springboard for the democratic and sustainable development of rural India. The opportunities for ICT application in rural development are immense, but the government is also facing many challenges. This paper focuses on ICT based initiative for rural development in India and the challenges faced by the government for its implementation.

Key words: *Information and Communication technology, Rural Development, E-governance.*

INTRODUCTION

The rural development is paramount for the progress of a nation which has mainly agriculture based economy such as India. India is a second populated nation in the world and its maximum population lives in villages. The country people groups are engaged with customary agribusiness as far as production, social association and political assembly in this manner the rural sector are very backward. Also, the specialized technical development in the field of farming has additionally expanded the gap among rich and poor. The rural areas regularly fall behind urban areas as far as fundamental framework and administrations, for example, transportation, health, education, and government services. Beside the rural segregation and deprivation can impact negatively on the execution of sustainable inclusive growth objectives. The all India Rural Credit Review Committee in its report cautioned. "If the fruits of development continue to be denied to the large sections of rural community, while prosperity accrues to some, the tensions social and economic may not only upset the process of orderly and peaceful change in the rural economy but even frustrate the national affords to set up agricultural

production”(Sunita, 2017).Therefore, the decade long constrains on rural development, resulted due to the lack of awareness in different sectors such as education, current socio-economic scenario, technological, health and lack of opportunity and accessibility, can be overcome with the use of Information and Communication Technology (ICT). The ICT occurred as a strategic source for achieving macro goal of economic development. It is the most effective tool to be used in the process of development that can assist environment favourable to lead a better life of rural people (A.Sangita, 2016).

Here, we undertook the role of ICT for rural development in terms of agriculture, education, women empowerment and health etc. This study is based on only secondary data collected from different sources. The data was retrieved from different online sources such as Science Direct, Google Scholar, Emerald, SSRN, Google search engine, and the websites like Ministry of rural development of Government of India and department of IT.

RURAL DEVELOPMENT

There overall rural development means socio-economic and cultural development. Anytime, anywhere feature of ICTs is the capacity to excel time and space (Roy, 2012). Discipline and literacy, both education and computer literacy, are essential for development right now because in order to implement ICT, the individuals should know its purpose and why it is being applied. There are numerous perspectives where ICT can be viably utilized such as agriculture, improving way of living, conferring education, empowerment of women and many more.

ICT AND RURAL DEVELOPMENT

ICT play a vital role in rural development. If we ensure communication in local language so that rural people can understand easily for encourage and improve learning and their skills. Advancements in ICTs have offered huge number of chances in rural regions. ICTs can possibly encourage information sharing and it can be effectively traded by ICTs for rural development. This information could be promptly accessible and utilized by the policy makers who develop policies for rural development (Ahamad & Pandery, 2014). Indian industry has experienced through numerous revolutions. The achievement of the Indian IT industry has profited just urban India (J. Ashok, Narasimbhan, & Ramchandran, 2004). The rural India was denied from this advantage. Even though, the essential asset for industry is from agriculture. In developing nations like India the idea of development is connected with the rural development (Chitla, 2012).Likewise, the streets for transportations are not appropriately developed. The Indian government has stepped up to connect the India via roads. It can encourage rapid, straightforward, responsible, productive and able interaction between the public, citizens, business and different organizations (Kelles & Viitanen, 2005). There was a circumstance when we needed to send a letter or message, several days were required. Today it is possible to cover a large distance in very small time via email facility and social media. ICT as an empowering agent has broken all limits of cost, distance and time (S. R. & Dhanabalan, T. 2013). In rural region, one cyber café is adequate to make aware the people about ICT. The ICT kiosk movement has been unable to generate a stir in local communities in terms of knowledge and know-how to use of technology for accessing information and using it as a resource to a better livelihood (Arvind & Gaurav, 2009).

The world associated with one term globalization. So, rural areas should be providing training to make good entrepreneurship. The availability of natural resources is in plenteous quantity. The current time of globalization, marketization and expanding seriousness needs that each citizen must be creative to run their Enterprises of livelihood (Puneet, K.K.D, & K.N.,2013). ICT is the quickest mechanism for communication. From the point of view of information technology, India has its good influence on global market in the field of software and service sector (Bussel, 2014). We can provide chance to rural market of India to trade in abroad. ICT is a significant apparatus to use the plan for guaranteeing access to the target group of recipients (Meenakshi & Murgan, 2014). The Information and Communication Technologies have encouraged the structure of solutions to provide government facilities for social development at the door step of rural people(Gera, Parvej, & Rai, 2012)While there is a solid connection between access to ICT and development, it is not solution, but instead an amazing asset to handle development challenges. A solid communication channel can be set up with the assistance of cell phones. Rural people can utilize the toll free numbers to call and leave messages about any issue concerning their locality and listen/learn from messages left by others from a similar community.

GOVERNMENT INITIATIVE FOR RURAL DEVELOPMENT THROUGH ICT

There are many initiatives taken by government for rural development through ICT like agricultural, educational, women and health etc.

ICT AND AGRICULTURE: The primary occupation in rural India is agriculture however in recent year the financial position of farmer is not so good. Information technology can be used in many ways to float the information about one person to another. It is not only providing services related to exchange information but also provide effective communication from expert groups, which provide not only the basic information but it also help in determining marketing information, fluctuation, better strategies for improving agricultural productivity as well as crop management information (Saurabh, 2017). There are several information and communication tools are as follow:

- **Kisan SMS Portal:** farmers from the rural area are not much aware about the latest technologies which are developing for improvement of agriculture. In this portal farmer get relevant information in their own or regional language.
- **Kisan Call Centre:** It is a consultative system of experts. This is helpful to provide appropriate information about agriculture activities to farmer. If farmers required then call to a toll free no 1800-180-1551 to seek expert advice related to agricultural activities.
- **Kisan Vikas Kendras:** It is the spine of information and technology distributing in India. At present, around 630 KVKs are in activity while a few new ones are being set up. These KVKs function as a connection between scientific community and the Indian farmer by exhibiting new technology at district level. The current Government has asked KVKs to utilize progressively more ICT instruments in their work to arrive at the remotest farmers. Abundant financing is being accommodated for this.
- **E-Nam:** It is a big electronic market platform about agricultural product. This incorporates product appearances and costs, purchase and sell trade offers, provision to react to trade offers, among different

facilities. It gives the straightforwardness on sale transaction and value revelation at first in controlled markets(Saurabh, 2017)

- **E-Governance:** It is also known as electronic governance. It is an application of information and communication technology for exchange information from government to our citizens. With the help of this, the government services or administration will be made available to citizens in a convenient and transparent manner. (Tiwari & Duvey, 2017)

(f) E-Choupal: It is an activity of ITC Limited, a conglomerate in India, to directly connect with rural farmers by means of the Internet for acquirement of farming products. It handles the difficulties presented by Indian agribusiness, described by divided farms, frail infrastructure and the involvement of middleman. The program introduces PCs with Internet access in rural regions of India to offer farmers up-to-date information about agriculture and marketing.

ICT AND EDUCATION: In this global era, the ICT uprising has influenced each circle of life and has been of huge advantage to the individuals (M.S, 2012). Education is one of the strong tools to build up the country. The necessities are will to learn and a decent teacher to educate. Web based learning exercises encourage more compelling education and offer important advantages over traditional techniques (T and D, 2000). Women don't know about the presence of national associations to help and ensure them since awareness campaigns don't appear to contact them. In rural areas, it is seen that teacher are not very interested to teach the students. Furthermore, teachers need to give a plenty of learning systems for the students to study, how to choose the one that is generally proper for their ideal learning result. Guardians don't have an idea about the significance of education for their children. Web is probably the strongest tool to confer education. Education in computerized rural is an undeniable step forward to enable rural communities with capacities building and training programs and make them digitally proficient. It encourages deployment of rural people facilities through computerise mean. To coordinate with need of the day, it is significant to make a computerized information house at each rural community level to make them financially viable, and digital rural education is the correct method to move toward that. It is without a doubt a fundamental move to make social, cultural and monetary advantages for rural communities. It is essential to execute the new digitalized education devices in rural India. Introduction of such devices can resolve the issues of mass reach quality and significant education. Teacher will be accessible by means of virtual classrooms, in this way plugging the issue of reluctance educationists to be physically present from several ways. There are many initiatives taken in the field of education by the government like

- **E-Basta.** This project has made a framework to make textbooks accessible in computerized structure as digital books to be read and utilized on tablets and PC, the primary thought is to bring many publishers (free as well as commercial) and schools together on one platform.
- **National Digital Literacy Mission.** This programme being launched with a aim of not only bringing the dynamic and integrated platform of digital literacy awareness, yet in addition to shape education and capacity programs that will assist the rural communities with taking lead in the worldwide digitalized

economy and help them in keeping up the competitiveness and furthermore shape a technologically enabled society.

- **SWAYAM.** India enters new age of digitized education through its drive named as swayam (study web of dynamic learning for youth aspiring mind). It is launched by HRD ministry and aims offering on the web courses to Indian citizens by teachers of recognized educational institutions like IIT, IIM, and other central universities. It is a made in India platform which offers interactive courses liberated from cost from class IX to post graduation, which can be get access by anybody, anyplace whenever and so on (Kathuria and Mukharjee, 2017).

ICT AND WOMEN EMPOWERMENT: A true measure of evolution of a society is represented by the status of women, society have. In this regard, the approach of successive governments in our country has changed from welfare to development to the empowerment of women to ensure gender equality in society. While, gone are the days of protective patronage and subjective equality, the present society cannot prosper unless a holistic development based approach is successful to ensure economic independence and empowerment of women. Women are a dynamic character of the society. Gender imbalance is certainly not a major issue in the present 21st century. There are also chances to prepare a portion of these rural women for independent work in the IT division (Michael et al., 2014). The handicraft art is protected by the Indian rural women. Four highlights that have portrayed India since Independence keep on describing India's elementary education system: inadequate enrolment, inequities, low quality, and inadequate school performance. We simply need to inspire them. Technology based social empowerment particularly for rural women are new emerging concern in the present information world (Arivanandan, 2013). The trouble she faces directly from her childhood is risky feeling and absence of inspiration. Great quality training is likewise a definitive intervention regarding the advance empowerment: it endows people with abilities and a feeling of their privileges.

Various initiatives are taken by government for the empowerment of women like, “Rashtriya MahilaKosh”, “Dhanlakshmi”, “Swadhar” and “Ujjawala” are very good example for women empowerment (kumar, 2017). They have a lot of intensity that they can contribute to the Indian economy.

ICT AND HEATH: Health care is one of the most encouraging zones for poverty alleviation. ICT are being utilized in India to assist remote consultation, identification and treatment. Government took several initiative of rural health care like.

- **NATIONAL HEALTH PORTAL (NHP).** It is working as citizen portal for health related information in six unique dialects. Voice portal giving information through a toll free number and App also launched.
- **ONLINE REGISTRATION SYSTEM (ORS).** It is a framework to link hospital for online registration, payment of fees and appointment, online diagnostic report etc. Around 71 hospitals on board. Mobile academy launched in 2016 for free audio training course to enhance the knowledge base communication skills of ASHAs. Approximately 84% ASHA have completed the course (Kurukshetra 2017).

- **MOTHER AND CHILD TRACKING SYSTEM IN RCH.** It is an individual focused tracking system over all the States and UTs of India to improve the IMR and MMR and morbidity. Purpose of this portal is to enable delivery of antenatal and post natal care services and immunization to children. Around 12.08 crore pregnant ladies and 10.56 crore kids were enlisted.
- **NIKSHAY.** Tracks people for treatment adherence of TB. Missed call facilities with toll free no started to reach TB Patient for advising. It is executed in all states. Many other apps have been launched by the government namely as Indradhanush immunization, India fights dengue, NHP swasth bharat, No more tension mobile app and PradhanMantriSurakshitMatrivvaAbhiyan App etc.

CHALLENGES AND ISSUES IN IMPLEMENTING ICT FOR RURAL DEVELOPMENT

The basic challenges and issues faced by the usage of ICT for rural development are-

- **Illiteracy.** Illiteracy is a massive problem of people from the rural areas.
- **Language barrier.** The information accessible on web is in English as it is an overall acknowledged International language. Along these lines, education status is basically should have been improved. India is a prosperous country as far as assets
- **Financial difficulties.** Financial problems faced by the local grass root level institutions as well as by the state governments. Drastic steps are needed to inject funds for the development of the ICTs in the rural areas and increasing participation of the private sector.
- **Professionals Scarcity.** Acute shortage of project leaders and guides who could ensure implementation of the ICTs at the grass root levels. Unfortunately most professionals want to work in the urban areas where there are ample opportunities available to them for growth as well as prosperity. In the absence of these 'techno-catalytic' resources; development of ICTs in the rural areas will always be very slow
- **Connectivity is not available in most rural areas.** Major power cut in rural zone. Even though uninterrupted power supply systems are used; yet they demonstrate inadequate to cope up with the power breakdowns. We have to concentrate on this too rural development is a very huge matter which covers all the socio-economic, cultural and technological development and that's what the rural development is. ICT does not include only the Internet but a range of other devices which could be used individually or in convergence with each other (Ghosh, 2003). There ought to be a significant improvement in the connectivity.
- **Problems in establishing network:** This is a technical issue to set up a system. The primary point is the huge investment expected to build up a solid system with infrastructure. To accomplish the balance among rural and urban areas, communication is significant (Deshpande & Sambhe, 2015).
- **Management is the ultimate solution for it.** Several industries can be stabilised in rural India like paper industry, handloom ventures, etc. As such, the worldwide ICT industry is fast changing because of evolving technologies, monetary, social and business patterns.

SUGGESTIONS:

The fundamental success guideline of analysed projects is the extraordinary effort made to define goals that think about the socio-economic context of target zone. In order to have a strong connection among ICT and rural economy following points can be recommended (Cauzanet, 2013).

- **LAN Connectivity:** The local area network must be set up in the low cost. Modem, Telephone connection is required for wired system and Dongle is additionally the choice for LAN network. User friendly and cheap PCs: Desktop PCs are accessible at reasonable price.
- **Wireless Network Designing:** The network failed regarding power, data loss, security and reliability till now. Designer must focus on the conventions and Designing a very efficient, reliable and cheap network to interface the rural areas. Wireless Mesh Networks (WMN) evolve as a solution for understand the dreams to associate rural areas to the rest of the world. The most widely recognized means for internet access is through fixed phone lines utilizing dial-up in regions where the phone network has infiltrated (Rao, 2007)(Deshpande & Sambhe, 2015).
- ICT in rural regions must be work oriented that improve the quality of life and generate more opportunities for work of the rural people.
- ICT must be used in like a manner that brings transparency and responsibility in several economical and development welfare programmes of government.
- This is the need to evaluate the requirements of the rural people with respect to information technology for example linkage between demand and purpose behind these facilities and products.
- In order to execute ICT, People of rural regions must be educated to utilize ICT successfully and efficiently and take advantages of technology (Sunita, 2017).

CONCLUSION

In the closing comment of my paper, Technological progression in ICTs have diminished the expense and expanded the limit and promptness of information transfer significantly. Obviously, ICT in rural zones is the solution for steady elimination of conventional obstructions for development by upgrading access to information, spreading their business sectors, increasing openings for work and better access to the government facilities. India is a rapid developing economy on the globe and to keeping up its progress in various sectors including rural development. Urban development is as quick as contrast with rural development. Government is actualizing numerous policies and projects yet rural development is still moderate. According to perception it is discovered that absence of awareness and information about the services and plans of the government is main reason of backwardness of rural areas (Ahamad & Pandery, 2014). Information Technology ultimately affected the rural economy and aiding in rural development which is significant issue for developing countries like India. Rural people are most significant resource of India as the Indian economy is an agrarian one, however rural people are past from benefits. It is need of India to engage its rural people in getting to and utilizing the IT in order to

associate them with the rapidly developing economy of the nation. However, it is significant that the government should take more efforts to utilization of ICT in its development programs. This paper featured some ICT advancements particularly intended for application in rural sector thinking about cost, network and information base of potential end client and furthermore talked about the several uses of ICT in the fields concerning rural regions, for example, e-administration, health, farming, education, and women empowerment and so on. The general analysis in this paper shows that effective applications and channels have been utilized to advantage rural economy.

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