

Role of Information, Communication and Technology (ICT) in Rural Development

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ABSTRACT

The legislature of India has been giving high need to country improvement with the goal to accomplish rustic – urban reconciliation in development forms. The focal point of advancement is to incorporate burdened areas of society for example it incorporates 'fairness in development' and 'balance of chance' to all. This paper presents a survey of the different examination made by various specialists, scientists, and organizations with respect to ramifications of ICT Tools on provincial social orders of India, criticalness and job of ICT in Rural Development; Rural Community improvement and subsequent to realizing the perceptions made by different analyst, agent and specialists presumed that ICTs assume a significant job in naturally feasible rustic turn of events and country network advancement. ICTs have astounding commitment towards progress of monetary and social advancement of social orders in country India. In creating nation like India, to make data rich social orders, to enable needy individuals, to diminish advanced partition, economical improvement of rustic network's scattering of ICT in grassroots degree of country towns is essential.

Keywords : Communication and Technology, Information Technology, Rural Development

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Introduction

Mahatma Gandhi had said that "India lives in its villages", "On the off chance that we need to construct our Nation, we need to begin from villages" and "The spirit of India lies in its villages". In spite of the fact that the significance of science and innovation for rustic India was acknowledged during the 1930s by Gandhi, offering ascend to crafted by the Center for Science for Villages, propelled establishments of education, science and innovation directed their concentration toward this territory just around 40 years after the fact during the 1970s. Indeed, even today, following quite a while of quick urbanization, around 70 percent of Indians live in excess of 1000 villages, is the thing that we accept

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rural economy. In this manner for the Agriculture despite everything utilizes half of the work power. With these insights, clearly India can't create without building up its villages.

India comprises of in excess of 50,000 villages. It is referred to as a rural economy as 60 percent of its populace dwells in the villages. For the improvement of the nation, rustic recreation and advancement has been a significant push of financial arranging. The administration of India has been giving high need to rustic advancement with

the goal to accomplish rural – urban combination in development forms. The focal point of improvement is to incorporate distraught segments of society for example it incorporates 'correspondence in development' and 'balance of chance' to all. The current procedure of rustic improvement is to give better foundation, for horticulture advancement, general wellbeing administrations, business and budgetary administrations in provincial regions. In this specific circumstance, data innovation holds the possibility to offer another way to deal with country based turn of events. Today IT has risen as a key hotspot for accomplishing full scale objectives of the financial advancement process. It is the best instrument to be utilized in the procedures of advancement that can encourage condition helpful for have a superior existence of a rustic people.

Government plans, for example, Deendayal Upadhyaya Gram Jyoti Yojana (for rustic electrification), Pradhan Mantri Gram Sadak Yojana, Rurban Mission are centered around country advancement. Successful execution of these plans would rely upon the productivity of our regulatory apparatus at ground level, yet one more factor that can put forth or blemish the administration attempts is accessibility of right innovation for country needs. Therefore, this paper is an endeavor to investigate the job of ICT in country improvement.

Problem Discussion and Objectives

Rustic advancement is the way toward improving the personal satisfaction and financial prosperity of individuals living in country zones, frequently generally confined and inadequately populated territories. Country advancement has generally fixated on the abuse of land-concentrated characteristic assets, for example, agribusiness and

ranger service. Rustic advancement fuses cultivating improvement, setting up of money related and social structure, sensible wages as moreover housing and house goals for the landless, town orchestrating, general prosperity, preparing and utilitarian capability, and correspondence, etc. The adage of the country advancement is in order to accomplish the accompanying four factors, for example, raised financial development, raise in pay of the rustic masses, autonomy of provincial masses both political insightful just as conservative shrewd lastly to empower simple access to different assets like instruction, clinical consideration, openings for work, etc. There is a requirement for exploiting the ongoing improvements in information, communication and technology (ICT) in country territories which is the need of great importance to build the financial status of the provincial populace. Science and innovation are two vital parts of all endeavors planned for cultivating development and financial advancement of countries (Herz, 1993). Many creating nations face the test of expanding livelihoods of rustic segment through various methodologies and to minimize the hole between the urban and country. The inquiry before us is that how successfully ICT to be applied in country parts - provincial regions. Nonetheless, there are various ways as indicated by the specific situations. This paper centers around the job of ICT in taking care of the issues of rustic economy in India. Its principle point is to investigate the utilization of ICT on rustic turn of events. In light of above conversation, the goals of this paper are recorded underneath:

- a. Explore the job of ICT in Agriculture
- b. Explore the job of ICT in Diary Sector
- c. Explore the job of ICT in Effective usage of Welfare Schemes

- d. Explore the job of ICT in Rural Education and Skill Training
- e. Explore the job of ICT in Rural Health
- f. Explore the job of ICT in Marketing Needs in Rural India

Methodology

The examination depends on secondary data. The examination utilizes broad secondary data gathered sites, different national and worldwide diaries, articles, distributions, meeting papers, reports. The system utilized was that of a basic audit.

Review of Literature

The audit of past examinations features that ICTs has demonstrated, to be important commitment for taking care of advancement related issues and issues of society and perform fruitful assignment in Agriculture, Education, Industries, Banking, Governance, Business, Health, Tourism, and so on in rustic and urban territory of nation and thus ICT turns into a most well-known apparatus of every single individual part of life in country and urban culture. Audit introduced beneath incorporates writing relating to ramifications of Information and Communication Technology and its Tools on country society just as utilization of Information and Communication Technology for Rural Development and related angles.

World Bank (2002) expressed that " Information and communication Technology comprises of equipment, programming, systems, and media for assortment, stockpiling, handling, transmission and introduction of data voice, information, text and pictures". *Atul (2016)* passed on that Information and communication Technology

(ICT) is the mix of three enchantment progressive words, 'Data', 'Correspondence' and 'Innovation'. 'Data' is spreading and advanced utilizing 'Correspondence' and transmitted through 'Innovation'. The term 'Data and Communication Technologies' (ICT) can be utilized to grasp a huge number of independent media, including phone, TV, video, tele text, voice data frameworks and fax, just as those requiring the utilization of a PC fitted with a modem. The last can incorporate direct dial-up administrations, for example, electronic banking, document trade and shut data administrations.

Kumaresan and Chitra (2003) concentrated to evaluate the need of provincial data habitats in the towns of Tamil Nadu. As per the creators the residents who are subject to various callings other than horticulture for vocation have no such office that satisfies their data prerequisites from data focus. Creators considered twenty villages in the territory of Tamil Nadu to get to the requirement for country data centers.

Simone and Scott (2003) concentrated to recognize whether the data and communications innovation applications add to neediness decrease from Indian viewpoint. As per the creators ICT can diminish neediness by improving destitute individuals' entrance to instruction, wellbeing, government and monetary administrations. In this examination creators talked about some ICT ventures for neediness decrease in country India and inferred that ICT can engage the poor by extending the utilization of taxpayer driven organizations and to arriving at poor people and understanding the capability of ICT in the territory of chance, strengthening and security is a troublesome undertaking.

Prasad K. N. (2004) in his article entitled as "computerized separate in India narrowing the

hole; an evaluation" expressed that the Modern ICTs can add to determine the issues of a rustic culture of India and the significant hindrance which has kept provincial regions from profiting completely from the incredible capability of ICT is the low entrance of media transmission administrations. Creator likewise mentioned objective fact that the rustic network and people should be engaged by upgrading their ability to get to, select and use data for advancement endeavors, regardless of whether they identify with proficiency, food, wellbeing and family government assistance, populace development, condition, exchange business, and so on.

Asheeta Bhavnani (2008) directed an investigation to look at the job of cell phones in feasible destitution decrease among the rustic poor and presumed that financial and social advantage of versatile will be most elevated in provincial regions, which as of now have constrained or less communication administrations. The enlistment of cell phones positively affects maintainable neediness lightening. The various advantages to the cell phone: from lessening negative viewpoints, for example, debasement, wrongdoing, significant expenses, and so forth and to expanding positive perspectives, for example, levels of training, effectiveness, wellbeing.

Shukla and Gautam (2008) made an investigation to inspect advanced gap in provincial regions of Uttar Pradesh. As indicated by the creators, ICTs can assume a significant job in feasible provincial turn of events, and by setting up tele-focuses in the rustic territory which encourage financial strengthening. The creators likewise noticed that the nearness of more current ICTs, for example, email or the Internet was less contrasted with more seasoned ICTs like radio, TV and landline telephone and recommended that on the off chance that appropriately arrangement of ICTs in CICs,

Panchayat Offices then these workplaces will become data center points or booths and it tends to be deciphered that more extensive inclusion, upgrade and up degree of ICT activities required, particularly for the individuals who can't bear the cost of it and don't approach the data that is probably going to improve their wellbeing, instruction, job, and can ensure them against helpless circumstances.

Rasheed Sulaiman (2011) investigated the job of Information and Communication Technologies in engaging Indian provincial ladies through an audit of ICT activities in India and inferred that, numerous ICTs based tasks are spreading helpful data, information for country ladies, however a large number of them can't utilize that data, because of constrained or no entrance to wellsprings of help and benefits; and furthermore noticed that the network radio was found to have the best potential in arriving at ladies with locally applicable substance; ICT can possibly make new business open doors for rustic ladies and to contribute noteworthy increases in proficiency and adequacy in provincial ladies undertakings; endeavors are additionally made to connect the various kinds of advanced gap, for example, ruralurban ;men-ladies.

Leisa Armstrong and N. Gandhi, (2012) made an examination to research the elements impacting the utilization of Information and Communication Technology (ICT) Tools by the ranchers of rustic towns of Ratnagiri area of Maharashtra state, India. Creators were chosen 100 respondents from one Tehsil Ratnagiri region and key partners government authorities and horticultural industry laborers. Two unique polls were given to ranchers and key partners. The examination was uncovered that, country ranchers of Ratnagiri area still not been embraced ICT completely and there is a huge chance to improve the telecom of horticultural

related data that ranchers get from government officials, individual ranchers and family members. A large portion of the ranchers were utilized TV and cell phone to gather rural related data and furthermore noticed that number of components obliging the scattering of ICT in Ratnagiri District, for example, the hole between the at present utilized innovation and the innovation inclination just as the variables, for example, sexual orientation and land possession didn't altogether influence the utilization of ICT apparatuses and furthermore compelling utilization of innovation is an essential for the effective utilization of ICT by the ranchers. Fortifying and inspiring rancher gatherings to utilize the advancements, for example, web, home telephone is imperative to encourage access for ICT offices. Additionally, the creators opined that building up IT based data communities in provincial regions could support access to advertise data.

Balwant Singh Mehta, (2013) led an examination by utilizing field Survey technique to investigate the financial effect of cell phone utilization in provincial territories of the two Indian States, for example, Punjab and Bihar and the study uncovered that, cell phones have diminished the expense of getting to data and helped clients to make correspondence with their family members and transient relatives and to accumulate convenient data related with rural and nonagricultural purposes and furthermore Mobile clients get advantage by acquiring ideal data on an assortment of subjects, remembering for business openings and advanced education for their youngsters, reserves move, and so on. The creator additionally noticed that in Punjab state, people groups were early received new advancements and consequently there is high use of mobile value-added services (MVAS) and inventive uses like exchange of assets and farming related data. At last the writer made end, With the spread of portable

use, almost certainly, it could be a field of imaginative action, lessening expenses and in this manner expanding livelihoods at the 'base of the pyramid'.

Jayade, K.G (2014) distributed an article entitled as "Investigation of Information Communication Technology in Agriculture in Vidarbha Region of Maharashtra State of India." and reasoned that ICT has improved the monetary state of the ranchers in Vidarbha Region of Maharashtra state; ICT is propelled apparatuses to spread the cutting edge horticultural information to the ranchers and it assumes a significant job for the advancement of economy by upgrading the adequacy of farming business sector, efficiency and intensity in Vidarbha locale of Maharashtra state. ICT and Mobile innovation improved the bundle of practices as well as improved the horticulture through information scattering by e-agribusiness yet in addition diminished the hole among rural researchers, augmentation laborer and ranchers.

Writing survey above features that we should see by and large effect of Information, correspondence and innovation on rustic culture. We should gauge the upsides and downsides of the new innovation and settle on the correct decisions remembering the social and natural effects. A balanced choice on the innovations for maintainable advancement might have the option to take our towns, and henceforth India, forward.

Analysis and Discussion of ICT Applications for Rural Development

There is a genuine requirement for IT based and electronic improvement in country India, in order to connect the advanced separation. To connect the current separation, Information Technology (IT) and different projects of Information Communication Technology (ICT) assumes a

crucial job in building the hole made by the advanced partition made because of un correspondence improvements of Urban and Rural India and in the long run set of neediness mitigation undeniably as rustic India is concerned. Provincial advancement can be accomplished by improving different offices of Information Communication Technology (ICT). By methods for Awareness and use of Various ICT programs among the country masses prompts productive outcomes that is raise in social and monetary prosperity and job. Improved agrarian practices with high efficiency, gainfulness and promoting of rural yields by methods for utilization of new trend setting innovation and ICT empowered devices. We will break down and talk about such application in this segment.

ICT in Agriculture

E-Agriculture focus on the overhaul of cultivating and common headway through upgraded information and correspondence structures (IT and ICT). One of the difficulties for ranchers in country India is their absence of access to advertise data. This makes an awkwardness in bartering power with urban purchasers which are large organizations that have the assets and data to impact the market. Other than showcase data, a rancher has to think about climate on an everyday premise, about new innovations and different government plans for rancher government assistance. Up till now in India among different media, radio, TV, writing and papers are surely generally used by the augmentation laborers to move farming innovation to the tremendous unskilled and proficient portions of the provincial people. In any case, this methodology has some significant downsides one, there is restricted extension to get input from ranchers and second it isn't request driven. One rancher may require data about new rice assortment, yet radio and paper

might be giving data about sugarcane. These oddities can be viably comprehended by utilizing IT apparatuses. Through these, we can give careful data that a rancher may be searching for immediately. Additionally, it very well may be a two-way process utilizing intelligent apparatuses and ranchers' sentiments and inquiries would arrive at the ideal official s in practically no time. With the utilization of ICT, this data asymmetry can be fathomed successfully. Some of Smart Mobile Application and E-Agriculture are:

SRIJAN (self-Reliant Initiatives through Joint Action) in Madhya Pradesh, India.

It is an Agricultural shrewd portable application.

Its point is for checking Soya beans creation.

The aftereffect of this application is expanded efficiency, productivity and proficiency.

Jayalaxmi Agrotech

It is an Agricultural shrewd portable application.

Refreshing ranchers crop explicit data by methods for Audio/Visual instruments. Works without web.

Data were being given in local dialects according to the client decision.

M-Kissan

It is an Agricultural shrewd portable application.

Data were being given in local dialects according to the client decision.

Refreshing ranchers crop explicit data like vermin control, crop design, soil type, climate data, closest commercial centers, current market costs, etc.

M-ARD

It is an Agricultural keen versatile application.

Data were being given in territorial dialects according to the client decision.

Refreshing ranchers crop explicit data like, climate data, closest commercial centers, horticultural market costs, taxpayer driven organizations and expansion administrations.

M-AGRI (IKSL, IFFCO, GSMA), M-Krishi

It is an Agricultural savvy versatile application.

Data were being given in territorial dialects according to the client decision.

Refreshing ranchers crop explicit data like irritation control, crop design, soil type, climate data, closest commercial centers, current market costs, etc.

Life Lines

It is an instructive shrewd versatile application.

Instructive Information were being given to the country educators to showing the provincial ranchers

On the off chance that any inquiry is raised, for the raised question, the suitable arrangement would be given at the soonest.

Krishi Ville

It is an Agricultural keen portable application.

Data were being given in territorial dialects according to the client decision.

Refreshing ranchers crop explicit data like, climate data, closest commercial centers, farming business sector costs and augmentation administrations.

Nokia Ovi Life Tools (OLT)

It is an Agricultural brilliant versatile application.

Rural Service gives ranchers customized data relating to showcase costs of closest mandis (commercial centers), nearby news, climate alarms/conjectures, significant data on plans and endowments, thorough and restricted harvest and warning all the time.

ICT in dairy Sector

Emphasizing on the 'White Revolution', GoI (Government of India) have started four projects - *Pashudhan Sanjeevani*, *Nakul Swasthya Patra*, *e-Pashudhan Haat*, and *National Genomics Center*. *Nakul Swasthya Patra* is a 'wellbeing card' that can help the dairy rancher to track his domesticated animals, just as prepared data on the age and dates on which he ought to get his animals inoculated and inseminated. The card would monitor the veterinarian who has given the medication, inoculation, planned impregnation and hereditary foundation of the bull or semen utilized. Then again *e-Pashudhan Haat* needs to make an online stage to purchase and sell steers. Farmers rely upon casual channels, for example, companions and family members to purchase and sell their cows. In this way, a requirement for a virtual domesticated animals advertise was for some time felt. 'Wellbeing Card' of an animal incorporated with *ePashudhan Haat*, can help ranchers in purchasing the ideal dairy cattle. This can be related with *Pashu Posahn* application too. Likewise, ranchers would have the option to keep the previous record of their dairy cattle for example wellbeing, fruitfulness, creation, and so forth. Along these lines, numerous

ideas of hereditary qualities and rearing could be urged to create dairy part. Another territory for IT application in dairying can be programmed draining frameworks which are PC controlled independent frameworks that milk the dairy cows without human work included.

ICT for Effective Implementation of Welfare Schemes

Consistently, government burns through billions on the government assistance of poor people. As around two-third of the all-out populace and enormous number of the poor dwell in country territories, a large portion of these government assistance plans are focused at the rustic populaces. Utilization of ICT can improve the adequacy of these plans, plug spillages and kill defilement. A few models are depicted as follows:

- i. ICT will be utilized in Pradhan Mantri Fasal Bima Yojana in a major manner. In this, a rancher should send the photograph of his harmed yield to experts on net. At that point the legislature will likewise get to harm through satellite symbolism of the field. After that protection guarantee will be straightforwardly moved to ranchers' record. Consequently, deferrals and defilement in installment of cases would not be there. This plan can possibly change the way ranchers' glance at crop protection.
- ii. The Government is putting a great deal in water system through Pradhan Mantri Krishi Sinchai Yojana. It very well may be utilized here likewise for Smart Agriculture by estimating soil dampness through and afterward consequently providing water through dribble water system.
- iii. Leakages in Public Distribution System can be

stopped by interfacing the apportion shop through web and utilizing biometric verification arrangement of recipient.

- iv. Through Direct Benefit Transfers, the legislature is attempting to give sponsorship legitimately in the financial balance of the recipient. This has successfully halted dark showcasing of sponsored LPG chambers.

ICT in Rural Education and Skill Training

Because of the determined endeavors by the administration and plans like early afternoon supper, India has accomplished all-inclusive enlistment at essential level. Yet, one stressing certainty is that learning results of selected kids are exceptionally appalling. Consideration should be centered around this now. Utilizing ICT apparatuses in instruction can help improve the learning among the children for example through projector and PC, educators can cause kids to comprehend complex ideas without any problem. However, issue here is train the instructors being used of ICT apparatuses so their disposition towards educating might be changed. The Government is advancing utilization of ICT through Rashtriya Madhyamik Shiksha Abhiyan. Under this following advances are being taken:

The foundation of smart schools, which will be innovation demonstrators.

Arrangement for commitment of a select instructor for ICT, preparing all educators being used of ICT.
Improvement of e-Content.

National Award for educators utilizing ICT in schools in the showing learning process.

Likewise, a task called e-Basta is imagined under Digital India Initiative to make textbooks open in

advanced structure as digital books to be perused and utilized on tablets and PCs. Further, ICT can be utilized in skilling rustic youth under different Government skilling programs for example Aptitude India, PM Kaushal Vikas Yojana.

ICT for Rural Health Sector

Human services is the privilege of each person yet absence of value foundation, deficiency of qualified clinical functionaries, and non-access to fundamental meds makes it hard for the poor to get to Medicare. There are not many Primary Health Centers in towns and huge numbers of them don't have specialists as nobody needs to be posted in far off country regions. This can be illuminated adequately through Telemedicine in which a specialist sitting in a city can connect with the patient in the distant town and recommend drug. This isn't just modest yet in addition helpful and less tedious. Additionally, applications like 'MeraDoctor' are propelled by private area which offers WhatsApp-like visit meetings among patients and authorized specialists to respond to questions. Government has additionally embraced ICT in wellbeing by giving biometric smartcards to the recipients under Rastriya Swasthya Bima Suraksha Yojana.

ICT for Marketing Needs in Rural India

ICT in rustic zones will give interesting chances to makers of country items, agribusiness/agro-preparing items, provincial painstaking work and so forth to have direct access to business sectors. It can likewise be utilized to advance Village and legacy the travel industry. Numerous antiques are made by the ladies in the towns which can be offered online to external world. One significant change attempted by the Government in the field of agri-marketing is National Agriculture Market. It is an all-around characterized plan to incorporate

the mandis through web. It empowers a rancher to sell his produce anyplace in India relying upon the most significant expense which implies a broker in Mumbai can purchase a rancher's produce kept in a mandi of Delhi. Conclusion

Conclusions

Thus we see that ICT has gigantic potential. In the event that this potential is utilized successfully, it can inspire the lives of the provincial masses in a major manner by spanning the social hole between various pieces of the nation. In view of above conversation and discoveries, we can close this examination as follows:

1. ICTs can assume a significant job in naturally practical country advancement; provincial network improvement.
2. ICTs have surprising commitment towards progress of financial and social advancement in India and have positive effect on rustic culture.
3. In the creating nation like India, to make data rich social orders, to enable destitute individuals, to lessen advanced partition, maintainable improvement of rustic network's spread of ICT in grassroots degree of towns is essential.
4. E-agribusiness administrations give a few advantages like expanded profitability, expanded quality in items, high salary, expanded effectiveness, raised Profit, simple information gathering about climatic condition, dampness, soil type, crop design and so on and can share horticultural Information in a quick way. E-agribusiness encourages opportune and exact updates with respect to current market cost and market request to ranchers at lower cost and at lower chance by

methods for ICT empowered gadgets, for example, cell phones, radio and TV and through internet providers.

5. Information innovation has affected the rustic economy in a roundabout way. It is seen that that viable applications and channels have been utilized to profit the provincial economy by government and corporates. Be that as it may, it is fundamental that the legislature should show more drive to build the utilization of this innovation in its advancement programs and teach individuals so as to utilize ICT successfully and effectively.

ICT has huge potential. In the event that this potential is utilized viably, it can elevate the lives of the provincial masses in a major manner by spanning the social hole between various pieces of the nation. There is a need to survey the requirements of the rustic individuals as to data innovation for example linkage among request and reason for these administrations and item.

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