Original Research Paper

Volume - 11 | Issue - 03 | March - 2021 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Social Science

# EFFECTIVENESS OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) FOR DIGITAL BANKING, E-COMMERCE AND PAYMENT GATEWAYS AMONG THE RURAL COMMUNITY IN ANANTHAPURAMU DISTRICT OF ANDHRA PRADESH

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**ABSTRACT** The rural communities have very different perceptions about ICT among them across various categories. There are various Information and Communication Technology (ICT) initiatives taken by the Government of India as well the Government of Andhra Pradesh. This perception of for 'digital banking and payments' user affects the digital transactions. Many rural people do not use digital banking and payments due to poor perception this may be because of lack of awareness and exposure to this banking applications. Due to this majority of rural population may not able reap the maximum benefits of E-banking and E-commerce initiatives in rural communities in various other knowledge and information related to digital transfers of various social benefits, pensions and other based direct benefit transactions. This study analyzes the positive and negative perceptions of the rural community in the study area with total sample size of 160, in four villages and 40 respondents were selected randomly from each village, two villages are from Itkalapalle and Rachanapalle of Anantapur Mandal, Peddapappur, Juttur of Pedapappur Mandal in Ananthapuramu District of Andhra Pradesh. This study focuses on effectiveness of ICT usage and giving suggestions for improving awareness of ICT programmes to enable the rural communities to benefit maximum from the Government ICT initiatives and schemes in Ananthapuramu District.

**KEYWORDS :** Digital Banking, Digital Payments, E-banking, E-commerce, E-governance, Farming Information, ICT, Rural Communities.

## INTRODUCTION

Information and Communication Technology (ICT) plays vital role in the rural communities'. As the most of the villages are in remote placed, less facilities and infrastructure is there in general in any village in India. ICT can play a major role like removing gap between in terms of remoteness and other infrastructure and rural India. It can be also noted that rural communities are the back bone of Indian society in terms the food security and other basic necessities.

Digital banking and E-commerce is a technology which can help people to access the services of banks and other financial related activities remotely though various ICT and devices or modern source of information like mobile, telephone, internet, computers/ desktop etc.

### Influence of ICT on Rural Community and Socio-Economic aspects

The rural life styles, problems, culture and the way they react to their ethnic factors such as caste and religion is very different. Population living at subsistence level and an insight into their lives. More than 1.1 Billion population live below the poverty line. To go into the influence and adversaries of poverty on technological adoption and its ability to virtual adaptation. Sociologist *Ericsson* has found that the urban population and the sociological dealing with them emerged out of criticalities of universe and civic life. The nature and scope of rural sociology is not only strikingly different but also squarely depended on, or influenced by the land holdings. Agriculture has the predominant presence, besides vocational groups. The caste groups and ethnicity behave very differently in rural society and are strongly led customs.

These social factors have been considered as one of the major objectives to high light the social life and the rapid change that has crept into with the advent of proliferation and progress and miraculous development in ICT. It is necessary to elicit relevance of impact of ICT on Indian society. To focus on the importance of effect of ICT on social factors like socio-economic factors. The ICT brought a change in the lives of people world over so also in India. However, we do concentrate on the development of ICT in India and more so on Indian rural society. ICT doesn't just affect individuals it also affects many people in rural areas around as the Broadband access is not available to them because they live too far from the area of coverage the telephone and cable companies feel it is too expensive to lay down cables. Often referred to as the last mile problem.

### Problems of Rural Communities

Many rural people are not aware of the digital banking and E-commerce application. Many still travel far distances for payments they still don't have basic knowledge that sitting at their home they can save lot of money in terms of travel and other time saved etc. It is observed that many farmers debt ridden made suicides as they could not repay their debts taken through many private financiers, chit fund and other private lenders etc. and could not meet their daily needs to survive due to lack of knowledge about government subsidies available for farmers and other farming loans.

### Review of Literature

*ClaireJ. Glendenning, Pier Paolo Ficarelli (2012),* in their paper "The Relevance of Content in ICT Initiatives in Indian Agriculture", emphasizes the Digital Green project. The case studies show that localization of content is important for dissemination of information and may require human intermediation to provide support on the basis of the information provided, and may also depend on the target users like the local farmer.

*Raksha, I. Sreenivasa Rao and Shaik N. Meera (2017),* in their paper "Preferential Perception towards use of ICTs in Agricultural Extension System: A Study from Telangana" that the emerging needs of farmers and the role of agricultural extension personnel has been diversified and widened. Their Findings showed that only implementation of ICTs are not sufficient for their success of any ICTs initiative. Instead issues like budget, policy, administration, infrastructural, capacity building and other soft issues has to be catering to make ICTs a more successful and profitable in agricultural extension system with the focus on sustainability.

*Surabhi Mittal, Sanjay Gandhi, Gaurav Tripathi (2010),* in their article "Socio- Economic Impact of Mobile Phones on Indian Agriculture". The authors bring out issues in physical infrastructure; problems with availability of agricultural inputs and poor access to agriculture related information are the major constraints on the growth of agricultural productivity in India. Rapid growth of mobile phones as compared to fixed line telephones and latest current mobile enabled information services provide a means to overcome existing information asymmetry. To bridge the gap between the availability and delivery of agricultural inputs and infrastructure, small farmers found increase in convenience and cost savings from using their mobile phones.

*Sangita Agrawal (2016),* in her study "Role of ICT in solving the problems of rural economy in India", examines the impact of ICT technology on rural infrastructural growth and development. It also discusses the various positive and negative trends of this technology to carry out various rural development operations. This paper discusses the role of ICT in terms of four factors, they are 'agriculture, rural health, business services and rural development'. Analyzing the role of ICT and rural connectivity, technology means the way we use information, the way we compute information and the way

we communicate information. It is vital to a nation, to connect the rural areas in this world of digitalization.

*Digital Panchayat Website (2019*), a national initiative of Digital Empowerment Foundation and National Internet Exchange of India (Dept. of IT, Govt. of India)". Recognizing the importance of E-governance, the Government of India has introduced various administrative reforms and initiated many interventions at the policy level and at institutional level. This Webpages explains how digital panchayat works for a country like India, where 70% of the population lives in village and rural areas. The government has been able to connect urban centric regions of the country, but still left with a major national gap as far as using ICT for the nation building is concerned.

**Need of the Study**

The need of the study is to how ICT intervention can help their household financial transactions and other related activities, farming related payments and loans activities, businesses develop or gain more benefits through online. To maximize their production with less investment. There are also many private popular ICT applications like Flipkart, Amazon, Snap deal, Paytm etc. which can be help full in procurement of raw material as well selling products with service charges.

**Objectives of the Study**

To understand the response of beneficiaries of ICT initiative awareness and usage in Peddpappur Mandal and Ananthapuramu Mandal rural areas and to assess the use of the ICT for marketing goods and procurement of raw material. The major aspects that requires focus for achieving a good ICT application for rural digital banking, payments and E-commerce as follows:

1) To developing localized rural businesses marketing information systems.
2) To establishment of digital market systems for local businesses to sell and transact with analytical capabilities using Internet of things.
3) To give suggestions to create awareness and perception for effective use of ICT for activities related to rural economy like digital banking, payments and e-commerce.

**Research Methodology**

The study involved in two research methods as follows below:

1) Participatory Rural Analysis (PRA)
2) Focus Group Discussions (FGD)

Participatory Rural Appraisal (PRA) recently renamed Participatory Learning for Action (PLA), is a methodological approach that is used to enable farmers to analyze their own situation and to develop a common perspective on natural resource management and agriculture at village level. A Focus Group Discussion (FGD) is a good way to gather together people from similar backgrounds or experiences to discuss a specific topic of interest.

**Study Area and Sample Size**

This study analyzes the positive and negative effects of ICT on rural community in in the selected mandals in the study area with total sample size of 160 respondents, in 4 villages 40 respondents was randomly selected from each village, 'Itkalapalle and Rachanapalle of Ananthapuramu Mandal', and 'Peddapappur, Juttur of Pedapappur Mandal' in Ananthapuramu District of Andhra Pradesh'.

**Data Analysis**

The Table 1 shows that the HIG among the BC, TVs were the most preferred sources of information and ranked first, followed by phone and internet. Among the OCs find that friends and neighbors and government functionaries TV, Phone and internet occupied first preference and rank accordingly. The SC did not have any kind of preference that indicated most of the sources of information were top of the list and ranked first, similar trends were observed among the ST also. It is evident that higher income with the user played a positive role in the ranking.

**Table 1**
**Information sources across Caste and Income Categories for E-Governance Sector**

| Income Category | HIG | | | | MIG | | | | LIG | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Source of Information | BC | OC | SC | ST | BC | OC | SC | ST | BC | OC | SC | ST |
| Friends/ Neighbors | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 7 | 8 | 1 | 1 |
| Govt. Functionaries/ Extensions | 7 | 1 | 1 | 1 | 6 | 1 | 1 | 1 | 5 | 1 | 3 | 1 |
| Local Input Dealers | 5 | 7 | 1 | 1 | 4 | 1 | 1 | 1 | 7 | 4 | 1 | 1 |
| News Papers/ Magazines | 5 | 1 | 1 | 1 | 6 | 1 | 1 | 1 | 1 | 4 | 3 | 1 |
| Radio | 2 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 |
| T.V | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 3 | 7 |
| Phone | 2 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | 5 | 1 | 3 | 1 |
| Internet | 4 | 1 | 1 | 1 | 6 | 1 | 1 | 1 | 1 | 4 | 3 | 8 |

**Source:** Primary Data.

Among the MIG, BC ranked Radio and TV as number one source of information followed by phone OC, SC, ST did not have any preference in the source of information for E-governance in the income group and ranked all the sources of information is one, thus giving it the same priority showing an attitude that they are willing to take whatever is available.

Among the LIG, BC ranked Newspaper, Radio, TV, Internet ranked as first source of information, while OC ranked Radio, Phone, TV, and Government as first source. Among the SC local input dealers and friends and neighbors were ranked as first source .the ST did not have preference as such and ranked all the sources as first, except for the internet which is difficult task for them to operate.

**Table 2**
**Information sources across Caste and Income Categories for Health related applications**

| Income Group Information | HIG | | | | MIG | | | | LIG | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Source of Information | BC | OC | SC | ST | BC | OC | SC | ST | BC | OC | SC | ST |
| Friends/ Neighbors | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 7 | 8 | 1 | 1 |
| Govt. Functionaries/ Extensions | 7 | 1 | 1 | 5 | 6 | 1 | 1 | 1 | 5 | 1 | 6 | 1 |
| Local Input Dealers | 5 | 7 | 1 | 5 | 4 | 1 | 1 | 1 | 7 | 4 | 1 | 1 |
| News Papers/ Magazines | 5 | 1 | 1 | 1 | 6 | 1 | 1 | 1 | 1 | 4 | 6 | 1 |
| Radio | 2 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| T.V | 1 | 1 | 1 | 5 | 1 | 1 | 1 | 1 | 1 | 4 | 6 | 7 |
| Phone | 2 | 1 | 1 | 5 | 4 | 1 | 1 | 1 | 5 | 1 | 1 | 1 |
| Internet | 4 | 1 | 1 | 1 | 6 | 1 | 1 | 1 | 1 | 4 | 1 | 8 |

**Source:** Primary Data.

The Table 2 shows the ranking of information sources across caste and income categories for health sectors. Among the HIG most of the income groups ranked internet as first source of information for the health sector. The BC ranked friends and relatives as seventh, followed by OC who ranked local input dealers as seventh rank. Among the MIG OC, SC, ST did not have any kind of preference pattern. The BC among the MIG group ranked friends and relatives as the first preferred source of information for the health. Among LIG the BC ranked internet as first source, the same trend was observed among SC and ST. The SC also ranked internet as the first source of information for health related application.

**Table 3**
**Information sources across Caste and Income Categories for Education**

| Income Group Information | HIG | | | | MIG | | | | LIG | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Source of Information | BC | OC | SC | ST | BC | OC | SC | ST | BC | OC | SC | ST |
| Friends/ Neighbors | 6 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 4 | 1 |
| Govt. Functionaries/ Extensions | 8 | 6 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 |
| Local Input Dealers | 6 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 1 | 1 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| News Papers/ Magazines | 5 | 3 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 4 | 1 | 1 |
| Radio | 4 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 4 | 5 | 5 |
| T.V | 2 | 5 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 4 | 5 | 7 |
| Phone | 3 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 5 | 5 |
| Internet | 1 | 3 | 8 | 8 | 1 | 1 | 1 | 1 | 4 | 4 | 5 | 8 |

**Source:** Primary Data.

In Table 3 ranking of information sources across caste and income categories for education sectors shows the ranking assigned by the respondents to various sources of information. It can be seen that in the HIG group BC gave the first rank to internet followed by TV, then Phone and Radio. The OC gave the rank one to Radio, Phones followed by Newspaper and internet, The SC ranked TV, radio, Newspaper, local input dealer as their first rank as they preferred conventional sources of information.

The ST ranked internet as the last and friends and neighbors government extension functionaries the local input dealers as first preferred rank. Among the MIG the BC, and OC did not have any preference rather expressed all sources of information and ranked them in the first rank category. In the LIG the BC gave the friend neighbors, Government extension first rank, followed by radio, TV, Internet, in that order of preference. OC gave first rank to phone followed by local input dealers as second rank. The SC gave Government extension functionaries the newspapers to be first rank followed by radio TV, phone and internet, in the case of SC the first rank was assigned to friends and neighbors, government extension functionaries and newspapers, they gave last preferential rank to internet indicating that for purpose of education in low income group, preference of internet is the least.

**Table 4**
**Information sources across Caste and Income Categories for E-banking and E-commerce**

| Income Group | HIG | | | | MIG | | | | LIG | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Source of Information | BC | OC | SC | ST | BC | OC | SC | ST | BC | OC | SC | ST |
| Friends and Neighbors | 7 | 7 | 7 | 2 | 7 | 5 | 1 | 1 | 5 | 8 | 1 | 2 |
| Govt. Functionaries/ Extensions | 6 | 6 | 8 | 1 | 7 | 8 | 2 | 7 | 1 | 7 | 3 | 1 |
| Local Input Dealers | 5 | 5 | 4 | 7 | 6 | 6 | 3 | 2 | 1 | 4 | 1 | 3 |
| News Papers/ Magazines | 8 | 8 | 1 | 8 | 5 | 4 | 8 | 7 | 4 | 1 | 3 | 6 |
| Radio | 1 | 1 | 1 | 3 | 2 | 6 | 6 | 3 | 3 | 5 | 5 | 4 |
| T.V | 3 | 3 | 5 | 5 | 1 | 1 | 6 | 4 | 7 | 6 | 6 | 5 |
| Phone | 1 | 1 | 1 | 3 | 3 | 2 | 5 | 5 | 8 | 3 | 7 | 7 |
| Internet | 3 | 3 | 5 | 5 | 4 | 3 | 4 | 5 | 6 | 2 | 8 | 7 |

**Source:** Primary Data.

The table 4 shows that the HIG class the BC gave first rank for the phones and radios followed by internet and by local input dealers for E-banking and E-commerce sectors. The OC followed similar trends the SC gave a fifth rank of preference for internet keeping radio and phones as first, ST preferred Government extension functionaries as their first preference for banking and ecommerce activities indicating that they had more confidence in getting their work done with government extension workers.

Among the MIG, BC prefer TV as first sources of information followed by radio, second rank phone third rank, internet as fourth the rank. The OC preferred TV to be first rank Phone to be second and internet as thirds, whereas SC preferred friends neighbors followed by government extension and local input dealers. There is a clear distinction between the preferences for the sources of information among the caste.

In the LIG category, the BC preferred Government extension workers and local input dealers, as first rank followed by Radio and friends and neighbors as second and third rank respectively. In case of the OC, newspapers was preferred as the first rank followed by internet as second and phones as third rank for the sources of information. The SC among LIG preferred to rank friends and neighbors and local dealers followed by government extension workers as second and third rank respectively. The BC and ST preferred to rank government extension workers as the first followed by friends and neighbors and local dealers. They did not rank internet or phones as they were not much well versed with these methods

**Discussions and Findings of the Study**

Perception of the respondents regarding usage of information from various ICT applications collected for the sectors like agriculture production systems, post-harvest systems, E-governance, ICT packages, E-health, E-education, E-banking and E-commerce services have been analyzed across castes of the sample respondents. The usage of ICT among the people and the intensity of usage, dependence on the perception and influences the adoption of information to their day to day activities in various sectors. Low income group (LIG) SC and ST especially not at all benefitted in observed villages of Ananthapuramu district of Andhra Pradesh.

Many of rural people felt that ICT Apps not tailored made for this section of people, because their transactions are very low and very far in between. Very rich people who are OC and BC they know the application but they are not using because they want to conceal things among low income group OC and BCs are better users of ICT.

Respondents said that Adhaar Based Subsidy and DBT is very good. High stress is felt due to ICT and majority said that ICT is mostly used for the entertainment than for livelihood or services. People feel that digital banking applications are not much useful for applying bank loans. Some business people buying raw material and other machinery parts selling goods online.

Majority of elders using with help of third party or some educated relative, friends or neighbors as source of their information for their day to day activities specific to rural areas. Technical problems like lack of power and assured connection all are not having data or internet connection due to high charges.

Middle and higher income groups are trying to use ICT Apps favoring them. It can be noted that simplification of the applications customizing to local needs may help rural community have more positive perception towards ICT.

Availability of ICT application does not ensure its utilization. It is also found that mostly educated people like teachers and neo-rich class are aware and using ICT. Many lower income group and middle income group accuses the ICT is causing class divide. Many said that people who don't have access to ICT they are able to compete with ICT users and felt inferior because of no smart phones.

Many are not aware of even popular schemes like 'Jan Dhan Yojana'. Ananthapuramu rural community looks to be using only application like Google pay, Phonepe, Paytm, Flipkart, and WhatsApp. Many of the respondents are wagers and dependent on government offered social welfare pensions. Most of the farmers say ICT causing digital divide and techno stress and say before ICT only there was equality and no class divide due to ICT gadgets.

Majority population use payments apps like Paytm, Gpay, Phonepay etc. from most of the sample it is noticed that mostly educated and young told that they are using ICT applications. Few people said they get SMS based information but the not sure where and which source they are getting. Majority of the farmers and all get information from friend's neighbors 70% and through ICT sources 20%. Mostly citizen services and monetary transactions done through Paytm, Phonepe is used by many people equally with same as part.

In terms of monetary transactions it is noticed that approximately around 30% use banking applications part and M-banking mostly through the help of their kids. It is observed citizen services like bill payments to electricity and municipal tax etc. Most of them using 80% for E-seva and bill payments and mobile applications. Few rural people alleged that there was reduction in fraud in terms of MGNREGS payments after their salaries and attendance have been made digitalized.

It can be observed that although many have ATM cards, it is observed that around 80% do not use ATM cards in fear of ATM charges and wrong perception that money may be lost in terms of bank charges and transaction charges etc. Majority of them are not aware for ICT applications for the agriculture and any ICT initiatives done in terms of

payments or any other information related to farming. Still many bill payments are done through bill collector mostly in all localities of villages, bank loans not sanctioned through ICT.

**Recommendations**

The Government agencies and NGOs should try creating awareness of various ICT Apps available for various digital financial activities. They should also simultaneously take feedback from rural users to make better ICT application for their specific rural financial activities, in terms transactions related to their business or farming anywhere any time online. The rural businesses also can check the status of their dispatched material status through these various kind of ICT applications like Amazon, Flipkart etc. The applications are useful to the rural communities using with key benefits of digital banking and E-commerce ICT Applications in the following manner:

- User access the information anytime anywhere,
- Users can place buy sell online and can see their status,
- Rural users can make the payments by online digital payment system and see the details of their earlier payments, and
- User can see their products bought or sold shipment status.

**Suggestions**

- Government should help rural communities by giving ICT applications, with help of ICT the traditional rural people can market their products and get good price easily compared to selling locally or use it for digital payments or transfer of payments etc. without travelling far distance.
- They can also procure raw material cheaper by comparing and researching about raw material online and also sell/ receive money through online with help of ICT applications.
- Rather just developing ICT Apps, Government should checking the actual problems of the users and their specific needs.
- Government should take user acceptance opinion of the ICT applications before developing and designing them.
- ICT Training and extensions should be designed specifically for rural communities needs and based on their skill, so this gap should be filled.
- Rural people can use ICT applications like Flipkart, Amazon, Snap deal etc. for their E-commerce activities and also use Government based BHIM UPI for transfer of payments and online banking with popular M-banking mobile and desktop applications

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