

## **The Study on Knowledge and Adoption of ICT Application by Rural Communities: A Case Study of Belagavi District in Karnataka**

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### *Abstract*

Information is the key to democracy. With the advent of Information Technology (IT), it has become possible for common man to access global information. Information in a broader sense includes oral communication, voice in telephony, text in fax and newspapers, images in video and television broadcasting, and data in computers. All information can be digitized, transported, stored, retrieved, modified and then distributed. Emerging digital techniques, new network alternatives including intelligent networks, high bandwidth communication technology and state-of-the-art software for network functions and services, are the new technology trends evident in the development of electronic communication systems. The swift emergence of a global “information society” is changing the way people live, learn, work and relate. An explosion in the free flow of information and ideas has brought knowledge and its myriad applications to many millions of people, creating new choices and opportunities in some of the most vital realms of human endeavor. Yet most of world’s population remains untouched by this revolution. This study is largely based on primary data, along with some amount of secondary data. The primary data has been collected from 200 rural respondents in Belgaum district. Collected primary data were analyzed by using descriptive statistics, namely Tabular and Graphical data analysis methods. The data have been presented using frequencies and percentage further analysis was carried out using statistical methods.

*Key Words: IT, Communication, Computers, Digital and Development*

### **Introduction**

Creating information-rich societies is a key element of poverty alleviation and sustainable development. To empower poor people and to reduce digital divide, ICTs projects should be developed in local language prioritizing local needs and content; be a model of low cost solution so that poor people can replicate this model or can own or share the system; be owned and participated by community in general; be sustainable in long terms; be able to adopt and utilize innovative ICTs; and be supportive to local and public access points as in rural areas where divide is the widest. A national agenda on a C-8 thrust towards: Connectivity provision, Content creation, Capacity augmentation, Core technologies’ creation and exploitation, Cost reduction, Competence building, Community participation and Commitment to deprived and disadvantaged would definitely help in meeting the socio-economic aspirations of rural communities.

ICTs generally refer to an expanding assembly of technologies that are used to handle information and aid communication. These include hardware, software, media for collection, storage, processing, transmission and presentation of information in any format (i.e., voice, data, text and image), computers, the Internet, CD-ROMs, email, telephone, radio, television, video, digital cameras etc.

While radio, television and print media were primarily used to perform these tasks earlier, with the advent of the new ICTs, these have now been considered as traditional ICTs. However, many of these traditional ICTs are effective than web-based solution, as they can resolve issues such as language, literacy or access to the Internet.

The new ICTs are commonly referred to evolving applications or technologies that rely on the Internet, telecommunication networks, mobile phones, personal computers and databases. These new ICTs have the potential of getting vast amounts of information to rural population in a more timely, comprehensive, cost effective and interactive manner. With new applications emerging and the costs of owning and accessing technologies reducing, the world is witnessing a growing convergence in the technologies of broadcasting, communication and information.

India has been a major hub for rural ICT experiments for more than two decades. Many of these initiatives have clearly revealed the huge potential of new ICTs in improving efficiency, effectiveness and reach of rural (as well as urban) service delivery. They also highlight the scope in ensuring the much needed transparency in both government and business. But before we go into the details of new ICTs, it is pertinent to briefly discuss about India's long experience of using some of the traditional ICTs in bringing new technological information on agriculture and other allied subjects to rural communities.

The inventive march of human efforts in Information and Communications Technologies (ICT) in the "post-modern" and "post-colonial" era have shown new dimensions to the development work, knowledge and information exchange and many others networking facilities. As the era of cyber extension comes into being, which drives clients to use effective Information Communication Technologies (ICT) national and international net works, conventional approaches to agricultural production may lead to failure. To this effect and to develop a greater self confidence in facing the present day competitive agriculture and better sense of dignity in being good farmer, he requires the right information at the right time. It's a matter of fact that still 70% of India's population resides in villages. And the huge contribution this percentage can make in the developmental field shall, in no case, be ignored. There has been an upsurge in public outcry over the deprivation of yet to be deemed fundamental right, the right to information in the rural areas. Some already advanced areas in their race to cope with the west, have so far denied the rural areas of their want - modernization and technology.

India is confronted with in terms of economical and technological growth. At the outset, concentration should be managed on the main occupation of rural people. Agriculture must be the first thing to have an introduction with information technology to meet the expected outcome. Frankly speaking IT has been now replaced by ICT, so it is foolhardy to talk about computers as the sole representative of IT. At the zenith of the ICE (Information Communication Entertainment) age, convergence is the talk of the globe. Installation of an IT network at the village level means access to the world within seconds. Through internet, mobile phones, TV, radio, etc. one can know the Latest developments in the fields of agriculture, horticulture to name a few. We need to commit ourselves to a greater level of action in response to increased food production requirements.

### Objective of the Study

The main objective is to study the knowledge and adoption of ICT (Information Communication Technology) by rural communities. The specific objectives of the study includes,

1. To study the efficient ICT services for rural communities
2. To access the vast ICT education in content for improving literacy
3. To evaluate the farmers with value based information to improve their productivity and provide timely information.

### Methodology

This study is largely based on primary data, along with some amount of secondary data. Primary data collection work could be carried out at the household level in Belgaum district. The primary data were collected on variable such as General information, Knowledge about ICT, Adoptions of ICT, ICT in Education and other ICT applications related to farmers from the respondents. The secondary data were collected from National Council for Applied Economic Research (NCEAR), Census of India, National Sample Survey Organisation (NSSO), Central Statistical Organisation (CSO), District Rural Development Authority (DRDA), District Statistical Handbook.

The present research was conducted in Belgaum district of Karnataka. The District has been purposefully selected due to it stands first among the districts of North Karnataka in all development indicators.

The present investigation was under taken in Belgaum district of North Karnataka. The district is bounded n the north by Sangli and Kolhapur district of Maharastra, Bijapur district in the East and Dharwad and Uttar Kannada districts in South and Goa and Maharashtra state in the west. Belgaum district consist 10 taluks namely Chikodi, Athni, Raybag, Gokak, Hukeri, Belgaum, Khanapur, Savadatti, Bailahongala and Ramdurg. The climatic conditions in the district are characterized by general dryness except during the monsoon season. The actual rainfall of the district was 594.9 mm with the temperature ranging from 14°C to 39°C. The major rivers flowing in the district are Ghataprabha, Krishna and Malaprabha. The major portion of the district is covered by medium to deep black soils and some portion with the red sandy soilsand sandy loam soils. This district was purposively selected because it stands first among the districts of Karnataka with regard to number of Rural Population was highest and first in the state as a whole.

**Table 1: Brief description of selected district**

Sl.No	Particulars	Belgaum
1	Total geographical area(ha)	1344382
2	Rain fall(mm)	
	Normal	835
	Actual	951
3	Total number of taluks	10

4	Total number of cities/towns	20
5	Total number of villages	1164
6	Population in number(2011 census)	
i	Rural population	3567739
ii	Urban population	1210700
iii	Total	4778439
7	Percentage of literacy	
i	Male	82.90
ii	Female	64.74
iii	Overall	73.94
8	Number of regulated markets	
i	Main markets	10
ii	Sub-markets	33
iii	Total	43
9	Area not available for cultivation	113409
10	Other uncultivated land excluding fallow land (ha)	38769
11	Fallow land (ha)	273307
12	Net sown area (ha)	728473
13	Net irrigated area (ha)	338605
14	Area under cereal crops (ha)	411626
15	Area under fruit crops (ha)	4075
16	Area under vegetable crops (ha)	122668
17	Gross cropped area (ha)	870100

*Source:* District at a glance, by (2011-2012), by District Statistical office, Belgaum

### **Sample Size**

The primary data has been collected from 200 rural respondents in Belgaum district. Selections of individual and household samples are taken from Belgaum district through purposive sample

technique. The primary data has been collected from respondents through structured interview schedules.

In order to collect primary data on selected variables, 200 samples House holds are chosen randomly, and 20 household from each village for the study on the basis of the accessibility of the ICT, purchasing power of the household and human resources development.

### **Techniques of Data Analysis**

The study proposes to use SPSS for data analysis. Data were analyzed by following methods.

1. Descriptive Statistics
2. Regression Analysis using both quantitative and qualitative Variables

Collected primary data were analyzed by using descriptive statistics, namely Tabular and Graphical data analysis methods. The data have been presented using frequencies and percentage further analysis was carried out using statistical methods as follows.

1. Mean and standard Deviation were used to categorize the rural community into groups having low, medium and high scores with respect to knowledge and adoption.
2. To know the association between the selected personal characteristics of the respondents with the knowledge and adoption, the correlation co-efficient is used.

### **Measurement of variables of the study**

#### **A. Independent variable**

The independent variables of the study were Age, Education, Occupation, Income level, Family pattern, Family type, Land holding and Sources of information.

#### **B. Dependent variable**

The dependent variables of the study were Knowledge and Adoption. Quantification of dependent variables: knowledge and adoption of Information Communication Technology.

### **Knowledge**

In the present study knowledge refers to the information gained regarding Information Communication Technologies applications by rural communities. The knowledge test composed of fifteen questions or statements. The statements were prepared after the review of literature.

The collection of statements was done keeping in view of knowledge and adoption of Information Communication Technologies applications. Totally Fifteen statements were collected. All the statements were provided with yes or no answers. In the view of nature of the subject it is made to provide the 'Yes' or 'No' options and the scores were assigned to the statements. The knowledge test thus developed was used to measure the knowledge of rural community about ICT application. A score of one was given if the respondents had answered for the question 'YES' and the score zero was given for the question answered 'NO'. the summation of scores for the correct answers of all the items for a particular respondents indicate the level of knowledge regarding ICT Applications. The maximum score that one could get was fifteen and minimum was zero.

Knowledge level categories based on mean and standard deviation of knowledge level of respondents, they were grouped into three categories as follows.

<i>Category</i>	<i>Knowledge</i>
Low Less than	(Mean - SD)
Medium Between	(Mean $\pm$ SD)
High More than	(Mean + SD)

### **Adoption**

The respondents were asked directly to mention whether they are adopting these selected ICT applications for their better survival. The results were expressed in mean and standard deviation.

<i>Category</i>	<i>Adoption</i>
Adoption More than	(Mean + SD)
Partial adoption Between	(Mean $\pm$ SD)
Non adoption less than	(Mean – SD)

### **Personal or General Information**

The data in the table 2 revealed that age, education, occupation, income level, land holding, family size and family pattern along with socio-economic condition of the study area

**Table 2 Personal characteristics of respondents** **n=200**

<b>Sl.No.</b>	<b>Characteristics</b>	<b>Frequency</b>	<b>Percentage</b>
1	Age		
	Young ( Upto 35 years)	100	50.00
	Middle ( 36 to 50 years)	66	33.00
	Old ( 51 and above)	34	17.00
2	Education		
	Illiterate (can't read and write)	34	17.00
	Primary + Secondary (1-7 std)	30	15.00
	High School (8-10 std)	59	29.50
	PUC + Graduate	74	37.00
	Others	3	1.50

3	Occupation		
	Agriculture	65	32.50
	Agri.Labourer	55	27.50
	Cooli	29	14.50
	Business	27	13.50
	Govt. Servant	11	5.50
	Others	13	6.5
4	Income Level		
	Low (Up to Rs.17,000)	110	55.00
	Semi Medium (Rs. 17,001 – Rs.34000)	42	21.00
	Medium (Rs. 34,001-51,000)	25	12.50
	High (Above Rs.51,000)	23	11.50
5	Land holding		
	Land less farmers (No land)	59	29.50
	Marginal farmers (<2.5 acre)	40	20.00
	Small farmers (2.5 to 5 acre)	52	26.00
	Semi Medium farmers (5.01 to 10 acre)	30	15.00
	Medium (10.01 to 25 acre)	19	9.50
	Big (>25 acre)	00	0.00
6	Family pattern		
	Nuclear	172	86.00
	Joint	28	14.00
7	Family size		
	Small(< 3members)	5	2.50
	Between 4-5 members	61	30.50

	Between 6-10 members	108	54.00
	Large (> 10 members)	26	13.00

Sources: Collected by filed survey

### Sources of information on ICT application

The sources of information consulted for seeking the knowledge of ICT application is presented in the table 3, 4 and 5 results indicated that majority of the respondents consulted the informal and formal sources than the mass media.

**Formal sources:** The formal sources include Govt. Offices, Officials, Govt. Letters and others. From the table 3, it was clear that 81 per cent of the respondents get the benefit from Govt. Offices, except Belgaum and Raybag remaining all the taluks respondents are get 100 percent benefit. And also 80 percent of respondents are get the benefit from Officials, here also except Belgaum and Soudatti remaining all the taluks respondents are get 100 per cent benefit, totally rural people are well aware about ICT facilities and they are enjoying from this facilities.

**Informal sources:** In case of the informal sources, 82 per cent and 18 per cent of the respondents consulted the family members regularly and occasionally respectively. Whereas, in case of friends it was 50.50 and 26 percent had consulted regularly and occasionally neighbours was consulted by 44.50 percent and 47.50 per cent of the respondents regularly and occasionally respectively.

**Mass media:** In case of the mass media 78.50 per cent of the respondents were not reading the new paper and only 7.50 per cent of the respondents were reading the news paper regularly, 14 percent of the respondents were reading the news paper occasionally. Very few respondents (3.50 percent) used radio regularly and 8 per cent of respondents used it occasionally. Nearly, one fourth (24 %) of the respondents used television regularly and 18 percent used it occasionally.

**Table 3: Formal Sources of Information (Percentage)**

Formal Sources			
Category	Regular	Occasional	Never
Govt. offices	59.50	22.00	18.50
Officials	58.00	30.50	11.50
Official letters	52.50	27.50	20.00
Others	0.00	10.50	89.50

Sources: Collected by filed survey

**Table 4: Informal Sources of Information (Percentage)**

Informal Sources			
Category	Regular	Occasional	Never
Family members	82.00	18.00	0
Friends	50.50	26.00	23.50
Neighbour	44.50	47.50	8.00

*Sources: Collected by filed survey*

**Table 5: Mass media Information (Percentage)**

Mass media			
Category	Regular	Occasional	Never
News papers	7.50	14.00	78.50
Radio	3.50	8.00	88.50
Television	24.00	18.00	58.00

*Sources: Collected by filed survey*

The data from the table 3, 4 and 5 indicated that, most of the farmers regularly consulted the informal most of the farmers regularly consulted the informal sources like neighbors (44.50%), friends (50.50%), family members (82%). The possible reasons for the greater use of informal sources might be easy accessibility and close and intimate contact of the respondents with the family members, neighbours and friends. Majority of the respondents might have considered friends as best source to seek solutions to the problems than neighbours.

With regard to formal source more than half (59.50%) of the respondents often consulted Govt. offices followed by Officials (58.00%) and Official letter (52.50%). This implied that formal sources like Govt. Offices, Officials and Official Letters might have developed very good rapport with the people and gained their confidence. As a result rural people might have attached more to them. Further the results showed that in general mass media was less utilized by the respondents regularly and occasionally regarding ICT facilities, though they possess radio or television. The reasons might be that since, the ICT facility programmes were not broadcasted every day. Another reason was that people were showing more interest in viewing and listening the television and radio for the entertainment purpose only.

### **Knowledge about ICT application in the study area**

It was observed from the table 7 the knowledge of respondents about ICT application by rural community here 22.5 percent of respondents are having Knowledge about different govt. programmes, 77.5 percent of respondents are not having the knowledge about the ICT related

govt. programmes, but in case of the Knowledge about other ICT application such as mobile, TV, Video and internet related 76.5 percentage of the respondents are having the knowledge, 23.5 percent of respondents not having the Knowledge about other ICT Application, 83.51 percent of respondents are having knowledge about about Nemmadi Kendras, 6.5 percent respondents are not having the knowledge about nemmadi kendras, related to Radio ICT Programmes and TV ICT programmes only few respondents are aware having knowledge (33.00 and 27.5percent) The respondents are knows (96.5percent) the computer but they don't now how to operate Computer only 14.5 percent of the respondents are having Internet Knowledge remaining 85.5 percent respondents are not aware about this internet, In csase of the mobile and TV connection maximum respondents are having the knowledge (97.00 percent) only young generation are having the knowledge about Education related ICT Programmes that is 12.5 percent, remains are not aware. ICT or Computer training taken by only 14.5 percent all are youngster remain 85.5 percent of respondents are not taken any training. 83.50 percent respondents are Land Document accessing through ICT, the farmers and other respondents are having less awareness about (8.00 percent) Marketing information through ICT and finally only 5.5 percent respondents are having knowledge about Whether Forecasting Information. Here the youngsters are active than the others because they are accessing all type of the ICT application.

The remaining percent of each statement shows that the respondents did not have the knowledge about ICT application.

**Table 6 Overall knowledge level of respondents about ICT Application**

Category	Percentage
Low (<15.91)	19.33
Medium (15.91-18.61)	49.34
High (>18.61)	31.33

*Mean: 18.61, SD: 5.404*

The results in the table 6 indicated that, majority (49.34%) of the respondents had medium level of knowledge with a mean score of 15.91 to 21.31 about ICT application. While, 19.33 percent and 31.33 percent of the respondents had low and high level of knowledge with a mean score of 15.91 and 21.33 respectively. When medium and high knowledge levels of respondents were combined together the percent comes to 80.67 percent which is good sign and speaks of interest of respondents to know the recommended ICT application.

The personal and socio-economic characteristics of the respondents in the table, revealed that 41.33 percent of the respondents were primary level education. Because of good education of respondents, more knowledge about ICT application. Further, majority of the respondents also consulted formal and informal sources of information which have helped them to gain more knowledge ICT application.

**Table 7 Knowledge level of rural community about ICT Application (Percentage)**

**n=200**

Sl.No.	Statement	Known	Unknown
1	Knowledge about different govt. programmes	22.5	77.5
2	Knowledge about other ICT Application	76.5	23.5
3	About Nemmadi Kendras	83.5	16.5
4	About Radio Programmes related to ICT	33.00	67.00
5	About TV Programmes related to ICT	27.5	72.5
6	Computer Knowledge	96.5	3.5
7	Internet Knowledge	14.5	85.5
8	Mobile	97.00	3.00
9	Different Mobile connection	53.00	47.00
10	Different TV Connection	83.00	17.00
11	Education related ICT Programmes	12.5	87.5
12	ICT or Computer training	14.5	85.5
13	Land Document accessing through ICT	83.5	16.5
14	Marketing information through ICT	8.00	92.00
15	Whether Forecasting Information	5.5	94.5

*Sources: Collected by filed survey*

**Adoption of respondents about ICT application in the study area**

**Table 8 Overall adoption of respondents about ICT application**

Category	Percentage
Not Adopted (<49.37)	36.67
Partially adopted (49.37-55.26)	42.67
Adopted (>61.14)	20.66

*Mean : 55.26, SD : 5.88*

It could be seen from the table 8 that majority (42.67 percent) partially adopted the ICT

application, whereas, 20.66 percent of the respondents were fully adopted and 36.67 percent of respondents had not adopted the ICT application. The reasons for majority in the partial adoption category might be their medium level of knowledge, less social participation, less exposure to mass media, less participation in extension activities. All these factors might have contributed for this kind of trend. That most of the rural community were having partial adoption level.

Knowledge is the pre-requisite to do anything. Lack of insufficient knowledge about any idea prevents an individual in availing benefits. Full knowledge of a practice help an individual to relate it to his needs in terms of benefits. This is true even in case of adoption of ICT application. Hence rural community needs sufficient knowledge for adoption of improved agricultural practices.

**Table 9 Adoption level of respondents about ICT application (Percentage) n=200**

Sl.No.	Statements	Adopted	Partially Adopted	Not Adopted
1	Different govt. ICT programmes	12.00	35.00	53.00
2	Other ICT Application	56.00	22.00	22.00
3	Nemmadi Kendras	83.5	16.5	-----
4	ICT related Radio Programmes	12.00	27.00	61.00
5	ICT related TV Programmes	7.5	32.5	60.00
6	Computer Knowledge	8.5	23.5	68.00
7	Internet Knowledge	14.5	5.5	80.5
8	Mobile	92.00	5.00	3.00
9	Different Mobile connection	53.00	44.5	2.5
10	Different TV Connection	83.00	15.5	1.5
11	Education related ICT Programmes	12.5	7.5	80.00
12	ICT or Computer training	14.5	-----	85.5
13	Land Document accessing through ICT	62.5	8.00	29.5
14	Marketing information through ICT	8.00	26.00	66.00
15	Whether Forecasting Information	5.5	12.5	82.00

*Sources: Collected by filed survey*

Adoption level of rural community about selected ICT facilities. The data presented in table 9 revealed that, detailed adoption level of ICT application by the rural community here 12.00 percent of respondents fully 35.00 percent of respondents partially have adopted different govt.

ICT programmes in the same way other ICT Application are fully adopted by 56.00 percent respondents and 22.00 percent respondents adopted partially, maximum number (83.51percent) of respondents adopted the Nemmadi Kendras less number of respondents are adopted ICT related Radio Programmes (12.5percent), ICT related TV Programmes (7.5percent) Computer Knowledge (8.5) and Internet Knowledge(14.5 percent). But in case of Mobile 92.00 percent of respondents are fully adopted, 53.00 percent of respondents are fully adopted Different Mobile connection and 83.00 percent respondents are fully adopted Different TV Connection, rural people are adopted the Education related ICT Programmes (12.5 percent) and ICT or Computer training(14.5percent) through ICT land document accessing adoption is 62.5, but finally in case of marketing information through ICT adoption (8.00percent) whether forecasting information adoption (percent) is very poor in the study area. The reasons for above findings might be due to illiteracy, and less participation in extension activities, less exposure to mass media, low economic status. Moreover, still the elder people in rural areas are traditionally oriented to believe about these type new facilities. So they might not have felt the importance of scientific knowledge regarding information communication aspects to improve their standard life as well as their family members.

#### **Relationship between personal and socio-economic characteristics of the respondents and their Knowledge level of ICT application**

The results indicated in the table 10 reveals that the variables namely, education, occupation, land holding, Income level and sources of information had positive and significant relationship with the knowledge level of the rural community about information technology.

**Table : 10 Relationship between personal and socio-economic characteristics of rural community with their knowledge level n=200**

<b>Independent variables</b>	<b>'r' value</b>
Age	-0.056 NS
Education	0.260**
Occupation	0.170*
Family Pattern	-0.052 NS
Family Size	0.036 NS
Land holding	0.236**
Income Level	0.327**
Source of information	0.234**

\* Significant at 5% level of probability  
 \*\* Significant at 1 % level of probability  
 NS Non significant

**Relationship between personal and socio-economic characteristics of the respondents and their adoption level of ICT Applications**

The results indicated in the table 11 reveals that the variables namely, age, education, occupation, land holding, income level and sources of information, had positive and significant relationship with the adoption level of the rural community about ICT application.

**Table 11 Relationship personal socio-economic characteristics with the adoption level of rural community n=200**

Independent variables	'r' value
Age	0.026 NS
Education	0.212**
Occupation	0.210*
Family pattern	0.036 NS
Family size	0.028 NS
Land holding	0.239**
Income Level	0.245**
Source of information	0.253**

*Sources: Collected by filed survey*

\* Significant at 5% level of probability  
 \*\* Significant at 1 % level of probability  
 NS Non significant

**MAJOR FINDINGS OF THE STUDY**

- The present study shows more than 50 percent respondents are less than 30 years old youngsters normally all the youngsters are very much attracted by this ICT and also they are getting more benefit from this Information Communication Technology. Remains 33 percent and 17 percent respondents are respectively between 31 to 50 years and above 50

years older.

- In case of education 28.00 per cent of the respondents studied upto high school level, followed by 23.33 per cent of them with primary level and 16.67 per cent with middle school level and 13.33 per cent of them were illiterates, whereas 11.33 per cent and 7.33 per cent of them had PUC and degree level of education, respectively. This situation might have aroused due to non realization of importance of education in one's life. Illiteracy of parents might have come in the way of getting them better education to their children. Another reason could be the distance of schools for higher study and financial constraints might have prevented the parents from providing higher education to their children.
- The majority of the respondents (32.50%) were involved in Agriculture, followed by 27.50 per cent of the respondents were working as a Agri labourer, and 14.50 per cent of the respondents were involving in Cooli. Remains involved in Business, Govt. Service and other activities. In case of family pattern majority of the respondents (61.33%) were from nuclear family, whereas 38.67 percent of the respondents were from joint type of family. Because of the people prefer to live in the nuclear families for the sake of better satisfaction of family needs. Better harmony and higher satisfaction by limited number of the members under one roof could be the possible reason for the finding nuclear families.
- Family Size indicated that, 2.50 per cent of the respondents had less than 3 members in their family followed by 30.50 per cent of the respondents had between 4-5 members, 54 percent between 6-10 members, 13 percent more than 10 members in the family. The possible reason for the above result might be that, better harmony and higher satisfaction by limited number of the members under one roof and found to be better standard of living was one of the reasons.
- The majority of the respondents (29.50 per cent) were having small land holding(2.6 to 5 acres), 20 per cent were marginal farmers (<2.5 acres) 26 per cent of the respondents were land less farmers, 15 per cent of the respondents had semi medium land holding (5.1 to 10 acres), 9.5 per cent of the respondents belonged to the medium size land holding (10.1 to 25 acres) and zero per cent of the farmers had big land holding(>25 acres).
- The possible reasons that could be attributed for having small land holding by the majority of the respondents, might be the agriculture is the main occupation of the family and depend largely on their lands for their employment. So they always try to possess more acres of land. It could be due to their ancestor's property got through inheritance. Those who had other occupation other than agriculture might have less acres of land holding since; they may not find sufficient time to devote for agriculture which is a labour intensive activity. The other possible reason could be the existence of nuclear family where the ancestral land holdings were broken into smaller and smaller sized land holding.
- Annual income of the respondents is an important factor influencing pattern of food consumption and standard of living. The study indicate that majority (55 percent) of the families of the respondents had an annual income below Rs.17,000, 21 percent had annual income between Rs.17,000 to Rs.34,000 nearly 12.50 and 11.50 per cent of the respondents had an annual income between Rs.34,000 to Rs.51,000 and above Rs. 50,000 per annum respectively.
- It might be due to the majority of them were agriculture labourers and depending

upon the agriculture for their income. Results showed that 29.50 per cent of the respondent did not possess land holdings as a result the income earned could naturally be lower.

- The results in the study indicated that, majority (49.34%) of the respondents had medium level of knowledge with a mean score of 15.91 to 21.31 about ICT application. While, 19.33 percent and 31.33 percent of the respondents had low and high level of knowledge with a mean score of 15.91 and 21.33 respectively. When medium and high knowledge levels of respondents were combined together the percent comes to 80.67 percent which is good sign and speaks of interest of respondents to know the recommended ICT application.
- It could be seen that majority (42.67 percent) partially adopted the ICT application, whereas, 20.66 percent of the respondents were fully adopted and 36.67 percent of respondents had not adopted the ICT application. The reasons for majority in the partial adoption category might be their medium level of knowledge, less social participation, less exposure to mass media, less participation in extension activities. All these factors might have contributed for this kind of trend. That most of the rural community were having partial adoption level.
- Relationship between the knowledge and adoption with the independent variables, The variables namely, education, occupation, land holding, income level, and sources of information had positive and significant relationship with the knowledge level of the rural community about ICT application, and the age had negative and non-significant relationship with the knowledge level, family type had non significant relationship with the knowledge.
- The variables namely, education, occupation, land holding, income level and sources of information had positive and significant relationship with the adoption level of the rural community about health and nutritional practices, and the age had negative and non-significant relationship with the knowledge level, family type had non significant relationship with the adoption level of the respondents.
- The factors that contributed to the success of select projects are: (i) for e-choupal – ease of replicability and scalability model, customization of technologies to meet specific local needs, organizational commitment to success, involving local community members for training and selecting one of them as a coordinator and infusing high trust by profit sharing between platform holder and beneficiaries; (ii) for Information Village Research – community readiness to accept innovations, economic benefits, high trust among the community, inclusion of gender sensitivity to take care of women empowerment and assurance of equitable benefits to the participants; (iii) for AsCent - intensive skill development efforts, high returns from new technology and reputation of implementing agency; etc.
- The content creation in local language is a prerequisite for project success. It is imperative to develop locally relevant content in local language and to present it intelligibly as well as offering suitable and adequate training.
- ICTs projects have assisted rural communities by providing them with news, information, advice and knowledge that has hitherto been inaccessible to them. This information has allowed rural citizens/consumers to make more informed economic decisions: landless laborers have negotiated their daily wages more effectively; and tractors, threshers, old television sets, cattle and motorcycles have all been traded across

towns and villages due to online advertisements. Until the cost of basic IT devices that deliver the 'last mile' of connectivity and local language software is lowered, the goal of wiring rural India will remain a dream.

## **RECOMMENDATIONS**

- Majority of the respondents had medium knowledge level about ICT applications it calls for intensification of the ICT educational efforts by local Grama panchayath agents so as to increase the knowledge about the ICT facilities.
- Majority of the respondents were in the partial adoption category. So the efforts could be made to motivate the people in adopting the ICT applications by conducting the educational programmes with effective use of audio visual aids.
- Informal sources and formal sources were consulted by almost all the respondents. So these sources can be better utilized for credible and quick dissemination of knowledge and adoption of ICT application among the rural community.
- In general mass media were less utilized. So efforts could be made to chalk out effective programmes on ICT aspects in order to increase the knowledge of rural community.
- It was evident from the results that a very few used ICT facilities. So more number of exhibitions, meetings, lectures etc. has to be organized about the importance of ICT applications in the common life.
- The basic requirements for successful implementation of rural ICTs initiatives are electricity, hardware, appropriate software, telephony, network connectivity and policy guidelines.
- The electrical supply in many rural areas will be restricted to only 6 or 8 hours with varying voltage and frequency that are far outside the acceptable limits of hardware. Often grounding is not available. For most rural ICTs projects, battery back-ups, universal power supplies, solar power panels, circuit breakers and voltage stabilizers are necessary. Several hardware innovations are emerging in the country to function for 4 hours and more without recharging.
- Many villages lack landline telephones still. If they are available, they often go down for weeks at a time and may involve various kinds of incompatibilities that prevent data transfer.
- Next best thing is women in empowerment and emancipation by means of ICT. Education, vocational training, cooking lessons, economic and social independence - all in the reach. Pro-school development classes for infants and child care classes for mothers are a few more advantages to add.

## **Conclusion**

Creating information-rich societies is a key element of poverty alleviation and sustainable development. To empower poor people and to reduce digital divide, ICTs projects should be developed in local language prioritizing local needs and content; be a model of low cost solution so that poor people can replicate this model or can own or share the system; be owned and participated by community in general; be sustainable in long terms; be able to adopt and utilize innovative ICTs; and be supportive to local and public access points as in rural areas where divide is the widest. A national agenda on a C-8 thrust towards: Connectivity provision, Content

creation, Capacity augmentation, Core technologies' creation and exploitation, Cost reduction, Competence building, Community participation and Commitment to deprived and disadvantaged would definitely help in meeting the socio-economic aspirations of rural communities.

Although there are huge expectations of teachers, head teachers, students, parents and education system officials from ICT programmes, these are yet to be fulfilled. Teacher's capacities have not been built with respect to this and nor have they been trained on using these tools (whether it be computer, radio, TV), optimally to suit their curricular and teaching needs. Teachers should be given a space to collaboratively construct the curriculum which can be taught through digital resources. Computer or ICT enabled teaching and learning should be brought into the design of these programmes. This requires that the programme design move from a ICT (technology) orientation to a pedagogic one and from centralised design to a hybrid mix of centralised norms and decentralised design and implementation of programmes. This would also change the resource investment from largely being on hardware, to teacher training (preceded by teacher educator training) as well as support and facilitation. As the Kerala IT@Schools programme shows, these changes can indeed lead to significant impact on teaching learning processes and outcomes.

Information is perhaps the most important resource that our farming systems are impoverished off. The farmers are impoverished of the information about potential demand for their crops in a specified time schedule, prices prevailing in different places, availability of agricultural inputs, weather conditions etc. Consequently farmers have not been able to tune themselves to cover their land area with appropriate crops that might minimize risks and maximize their profits. In consequence, it has resulted in agonizing scenes where farmers are forced to dump their products along roadsides and dumping yards.

And last but not the least, in respect of entertainment, youth activity and sports ICT is going to be a key player. Village youth good in art, theatre, sports will never get a better opportunity than this to come to the mainstream activity and sports industry. Also pursuit as a means of recreation will give a sigh of relief for working class people.

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