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Utilization Pattern of Information Communication Technologies (ICTs) among Farmers of District Kannauj in Uttar Pradesh

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ABSTRACT

The research study was conducted in 11 villages of district Kannauj in central Uttar Pradesh. A survey was done among a selected sample of 126 farmers with the help of an interview schedule. The farmers were asked questions regarding their usage pattern of various ICT tools. The findings of the study reveal that a sizeable number of farmers possess mobile phones, radio and television at home. Few farmers also have access to the computer and internet through the younger members of their family. The mass media (both radio and television) is popularly used for news and entertainment. A few respondents used to watch/listen agricultural programmes on TV/radio. It is important to note that a sizable number of farmers are aware of the SMS services being offered by the KVK and other departments for agricultural related advice. The computer and internet access was found to be in infantry stage in the villages, but farmers were aware that in future each and every problem can be solved through computer. The frequent interruption in power supply, difficulty in technical content, odd timings of broadcasting/telecasting are the major causes stated by the farmers for low popularity of broadcasting media. Radio remains a popular medium for weather and market related information. The older farmers facing limitations of language and technological barriers in operating mobile and internet.

Key words: information communication technologies , (ICTs), utilization pattern, rural society

INTRODUCTION

Dominance of information is a reality of our day-to-day lives in information revolution era. The application of Information Communication Technologies (ICTs) influencing all spheres of human life. On the other side of coin, as per a recent estimate made in a survey conducted by National Sample Survey Organization, about sixty per cent of the farmers did not access any source of information on modern agricultural technologies (NSSO 2005) which is culminating in a huge information gap, thus the agricultural extension system has to focus on filling up the information gap through ICTs. The ICTs in agriculture have the potential to facilitate greater access to information that drive or support knowledge sharing. ICTs essentially facilitate the creation, management, storage, retrieval, and dissemination of any relevant data, knowledge, and information that may have been already been processed and adapted (Batchelor 2002; Chapman and Slaymaker 2002; and Rao 2007).

It is quintessential for the extension system to deliver the right piece of information to the right person at the right time in least possible cost. Information empowerment of the farming community is inevitable as burgeoning population, shrinking of land holding and rapid changes in the climate posing a threat to the food security. Agricultural Information Empowerment is conceptualized as the process of seeking, processing and evaluating information on agricultural technologies thereby manipulating and reinventing agricultural practices by various users at a time they can most efficiently utilize it. The ICTs can play a role of catalyser in the field of agricultural development too. ICT based tools are very crucial in transfer of technologies for sustainable development of agriculture. These tools are helpful in generating, disseminating and utilization of value added information for farmers and other stakeholders in a hasty manner.

To make the rural society as informed, mobilized society through the revolution of ICTs, it is essential to

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create awareness among the farmers about usage of these emerging technologies in their daily life. The ICTs are like a basket of communication tools and channels which passes information to the audience through text, sound, picture and animation in relatively fast or less span of time. ICTs have tremendous power that could be harnessed by all the extremes for the benefit of mankind. The agriculture sector, specially farming community, need to be benefitted through popularization and reach of ICTs in far flung rural areas.

The challenge before the agricultural scientists is to nourish the massive population by increasing per unit production in reducing cultivable land. To meet this challenge, we have to awake and mobilize the farmers for becoming information literate, more responsive towards cutting edge agricultural technologies. It can be realized by appropriate dissemination of timely and relevant information through various ICTs. Moreover, serious efforts are also requisite to recognize the existing ICT utilization behaviour, pattern of the farming community for proper development and delivery of content for its effective use.

Keeping in view the importance of ICTs in disseminating information among rural population, a research study was conceptualized to assess the existing utilization pattern of Information Communication Technology (ICTs) among the farmers.

METHODOLOGY

The present investigation was carried out in eleven villages of Kannauj district of Uttar Pradesh. A sample of 126 farmers was drawn from the complete list of households of selected villages through systematic random sampling technique. The head of the families were interviewed thoroughly by using a well structured interview schedule consisting of the questions regarding utilization pattern of ICTs. The collected primary data were classified, tabulated and analysed using simple statistical methods *i.e.* frequency and percentage.

RESULTS AND DISCUSSION

Ownership/ Subscription

It is evident from table 1 that 68.25 per cent of the respondents possess/own radio at home followed by mobile phones (61.89 %) and television (48.41 %). Only 9.52 per cent respondent subscribe internet for using through computer or mobile phones. It indicates that the use of internet is still not much popular among villagers.

Sangha and Kalra (1993) also reported that a vast majority of respondents owned radio sets followed television at their home. Strategic reforms in telecommunications sector since 1990's, facilitates strong ICT infrastructure in India. As per the records of Telecom Regulatory Authority of India, the tele-density of the country has reached 76.99 (number of telephone subscribers per 100 individuals). However, there is a huge gap between urban and rural tele-density, 162.46 and 39.80, per cent, respectively. Despite several policy initiatives to promote rural ICT penetration, growth in tele-density continues to be skewed in favour of urban India (TARI, 2012).

Table 1: Ownership/ Subscription of ICTs

ICTs	Subscribers/Owners (N= 126)	
	Frequency	Percentage
Radio	86	68.25
Television	61	48.41
Mobile phones	78	61.89
Computer/Internet	12	9.52

Frequency of Utilization

The highest number of farmers (48.51 %) still uses radio on regular basis followed by mobile phones (47.61 %) and television (40.48 %). Use of internet is not a regular habit of most of the respondents. The data given in table 2 shows that total user of these electronic gadgets are more than the subscribers/owners. It was clarified through further questions which indicate that this is because of prevailing practice common use of radio & television at neighbours' place. In case of internet, it was found that it is commonly used in market/commercial places like cyber shops etc. An overwhelming majority of the respondents (88.09 %) were not using internet services.

Table 2: Frequency of utilization

Frequency	No of Respondents (N=126)			
	Mobile	Internet	Radio	Television
Total users	78 (60.90)	15 (11.90)	108 (85.71)	108 (85.71)
Regular	60 (47.61)	06 (4.76)	61 (48.51)	51 (40.48)
Sometimes	18 (14.28)	09 (7.14)	47 (37.30)	57 (45.23)
Non users	48 (38.10)	111 (88.09)	18 (14.29)	18 (14.29)

Note: Figures given in the parentheses are percentage.

Purpose of Utilization

The farmers use mobile phone mainly for sharing information with their family members and peer group where as radio and television is preferred for news (Table 3). Internet is in very infant stage in terms of reach and mainly being accessed through mobile and cyber shops in

the study area which is chosen for information sharing through e-mail, entertainment and on market and weather related information. Entertainment is the main purpose of using all kind of ICTs after sharing of information and news. As far as getting agricultural information through ICT is concerned, mobile phone and radio is significantly leading over TV and Internet which is because of its portability and operation friendly. It is be because of speeding SMS services on mobile through KVKs and other departments.

Shrivastava (1990) also reported that majority of the rural audience listened to radio for news and information followed by entertainment. Television is a preferred medium for entertainment based programmes (Varalashimi 1985). The findings of Laharia and Joshi (1992) indicate that more than half of the respondents watch Krishi Darshan Programme on television. The farmers appeared most swayed by videos of other farmers in the same socioeconomic strata as themselves who had local accents (Gandhi *et al.* 2009).

Table 3: Purpose of utilization

Purpose	No of Respondents (Users)			
	Mobile	Internet	Radio	Television
Information sharing/News	78 (100.0)	12 (80.00)	106 (98.15)	70 (64.81)
Entertainment	40 (51.28)	09 (60.00)	46 (42.59)	75(69.44)
Leisure time activity	25 (32.05)	04 (26.66)	05 (4.63)	22 (20.37)
Ag. Information	30 (38.46)	06 (40.00)	20 (18.51)	10 (9.25)
Others (Market information, weather forecast etc.)	16 (20.51)	10 (66.66)	10 (9.25)	26 (24.07)
N =	**78**	**15**	**108**	**108**

Note: Figures given in the parentheses are percentage.

Period of Utilization

The respondents of the study were head of the family who are mostly busy in various responsibilities; hence most of them (94.97 %) are using mobile phone only up to 15 minute in a day (Table 4).

Maximum number of respondents (42.5 %) listen to radio up to 15 minute simultaneously almost 39.5 per cent respondents uses radio for 30-60 minutes. As far as time devoted in watching television is concerned, 85.19 per cent respondents give 30-60 minute followed by 23.15 per cent who watch television for more than one hour. More than three forth of internet users (80.00 %) devoted half an hour to one hour time in surfing on internet.

Table 4: Period of utilization

Period	No of Respondents (Users)			
	Mobile	Internet	Radio	Television
Up to 15 Min.	74 (94.87)	05 (33.33)	46 (42.5)	05 (4.63)
15 -30 Min.	30 (38.46)	10 (66.66)	25 (23.1)	10 (9.26)
30 -60 Min.	10 (12.82)	12 (80.00)	43 (39.8)	92 (85.19)
60 -120 Min.	-	-	21 (19.4)	25 (23.15)
More than 120 Min.	-	-	04 (3.7)	-
N =	**78**	**15**	**108**	**108**

Note: Figures given in the parentheses are percentage.

Actual Time of Utilization

Actual timing of using ICTs is an important component in deciding utilization behavior of the farmers. Actual time segment of using a particular ICT was asked to the respondents during the study and the data obtained have been presented in Table 5. It is clearly visible in the table that an overwhelming majority of the respondents (89.74 %) use mobile phone when they feel need of it followed by those who prefer to use mobile during evening hours (56.41 %). It is indicating that there is no set pattern of using mobile phones as it is solely depends on need of the person who intends to use it. Almost similar trend was observed in use of internet as in case of mobile used by the respondents whereas in case of radio and television it is clearly indicating that night time (93.52 per cent and 95.37 per cent, respectively) followed by evening time (81.48 per cent and 72.22 per cent, respectively) is the most preferred time slots. The findings indicates that for most of the farmers evening time is the leisure time; hence the agricultural information delivery through various means of communications and progammes can be planned during these hours. Pandey (1997) stated in his findings that radio is preferably listened by majority of the listeners at the time when they are free and during evening hours.

Table 5: Actual time of utilization (Time slot during Day/Night)

Time segment	No of Respondents (Users)			
	Mobile	Internet	Radio	Television
Morning (6 am to 10 am)	39 (50.00)	0	15 (13.89)	46 (42.59)
Noon time (10 am to 2 pm)	27 (34.61)	2 (13.33)	22 (20.37)	19 (17.59)
Afternoon (2 pm to 5 pm)	16 (20.51)	8 (53.33)	45 (41.66)	24 (22.00)
Evening 5 pm to 7 pm)	44 (56.41)	4 (26.66)	88 (81.48)	78 (72.22)

Night	5	7	101	103
(7 pm to 10 pm)	(6.41)	(46.66)	(93.52)	(95.37)
Any time when	70	11	67	14
free/feel need	(89.74)	(73.33)	(62.03)	(12.96)
N =	**78**	**15**	**108**	**108**

Note: Figures given in the parentheses are percentage.

Reasons of less use of Internet and Smart phone

The reasons of no use of internet and mobile/smart phone were sought from the non-user respondents through open ended questions and depicted in Table 6. It is evident from the data that more than 90.09 per cent of the respondents considered higher cost as the main reason for non use of computer and Internet followed by difficulty in operation, lack of education and irregular power supply (85.58, 68.46 and 63.06 per cent, respectively). An overwhelming majority of non mobile/smart phone users (85.41 %) stated technical difficulties in language and contents followed by higher cost (62.50 %), lack of education (54.16 %), difficulty in operation (31.25 %), and Irregular power supply (8.33 %) as the major causes of non use mobile phone.

Table 6: Reasons of no use of internet and smart phone

Reasons	Non-users	
	Computer/Internet	Mobile/Smart Phone
Higher cost	100 (90.09)	30 (62.50)
Lack of education	76 (68.46)	26 (54.16)
Difficulty in operation	95 (85.58)	15 (31.25)
Technical difficulties(Language/content)	68 (61.26)	41 (85.41)
Irregular power supply	70 (63.06)	04 (8.33)
N =	**111**	**48**

Note: Figures given in the parentheses are percentage.

Reasons for non-use of radio

Despite the increasing popularity, accessibility and reach of Television in rural areas, the popularity of Radio remain high and even increased after approaching FM and community radio in selected areas. It is still one of the most credible sources of news, information and means of entertainment for the farmers. But it was found during the study that few respondents were not regular listener of radio. The actual reasons stated by the non-listeners were lack of time (72.22 %) followed by difficulty in tuning (61.11 %) and high cost of battery, difficulty in understanding technical content & less agriculture coverage (55.56 % each). Few non-listeners (44.45 %) also complained about poor reception of the radio signals in the village (Table 7).

Table 7: Reasons for non-use of radio

Reasons	Non-listeners (N=18)	
	Frequency	Percentage
Lack of time	13	72.22
Difficulties in tuning	11	61.11
High cost of battery	10	55.56
Difficulty in understanding the technical content	10	55.56
Less coverage on agriculture	10	55.56
Poor reception	08	44.45

Reasons for non-use of television

The reach of television in rural areas has increased rapidly in early nineties during the telecast of mythological programmes like Ramayan and Mahabharat whereas popularity of television attains a new stature after emergence of satellite TV. Watching television has become one of the most preferential leisure time activities of the villagers. In spite of ample popularity of television, it is evident from the data shown in Table 8 that still few legitimate reasons/perceptions like irregular power supply (83.33 %), lack of agricultural content coverage (77.78 %), adverse or ill effect of children/society (77.78 %), higher initial/running cost, lack of interest and time profoundly hampering the farmers' desire of watching television programmes.

Yadav (1985) pointed out that the television programme should be in line with the culture, aspirations and need of the audience. Non- availability of regular electricity is a major problem in receiving information through television mentioned by Maizy (1986).

Table 8: Reasons for non-use of television

Reasons	Non - viewers (N= 18)	
	Frequency	Percentage
Irregular power supply	15	83.33
Lack of agricultural coverage	14	77.78
Adverse effect of children	14	77.78
No Television at home	11	61.11
Lack of interest	8	44.44
Higher cost of TV set /Recharge/Cable	6	33.33
Lack of time	5	27.78

CONCLUSION

The findings of the study can be concluded that in terms of ownership/subscription of ICTs, Radio, Television and Mobile phones have occupied more space as compare to computer based internet in the study area.

Radio, mobile phone and television are regularly used ICTs by majority of the respondents while computer and internet is being used occasionally by few of the respondents. Mobile phone and radio is commonly used for information and news while television is preferred for entertainment purpose. For accessing agricultural related information mobile phone has emerged as preferred source over radio and television. It is because of Kisan Mobile Advisory Service (KMAS) which has a visible impact on farmers as they are waiting for timely messages regarding weather forecasting, market prices and plant protection issues etc. Furthermore, the radio and television are still powerful and popular sources of information but, can be revitalized by timely broadcast/telecast of content in prime time slot in an entertaining manner. It can significantly change the mindset of the rural masses towards use of radio and television for transfer of technology. FM and Community radio in the selected pockets of the country has caught the pulse of the listeners of all groups which need to be replicated through other channels having wide coverage. The agriculture based programmes may be given space in prime time of television to increase their viewership and benefits to the target audience. The quality of information, timeliness, and trustworthiness are important features that enable farmers to use the information (Mittal, Gandhi, and Tripathi 2010).

Non listeners of radio stated lack of time and problem in tuning as major reasons of not listening while non-viewers of television reported irregular power supply as a major reason for less viewership of television. The treatment of the general television programmes should also be in line with our rural culture and needs of the audience to leave a positive impact on society as whole and farmers in particular. The treatment of the content as per the understanding level of audience will be helpful in increasing the use of ICTs. In addition, farmers' interest depended on relevance to the current season and tangible benefits of the application of practice, whereby some immediate benefits could be gained (Gandhi et al. 2009). Localization of content is important in all initiatives through ICTs.

The e-literacy of the farmers is essential for access and adoption of digitalized knowledge available online/offline. The KVKs can take some initiatives towards capacity building of farmers as master trainers in application of digital knowledge and those master trainers with the help of frontline extension machinery can duplicate their skills among the fellow farmers. Creation of better infrastructure for uninterrupted electricity supply, broadband internet can speed up the access and use of modern ICTs among the farmers. The functional networking of institutions engaged in farmers' welfare from grassroots level to apex level would certainly make a pathway for customary information flow and feedback towards desired end.

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