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## Utility pattern of ICT tools for transfer of technology by the extension personnel

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**Abstract**

The present study was undertaken in Rajnandgaon district of Chhattisgarh Plain during 2018-19 to ascertain the utility pattern of ICT tools for transfer of technology (TOT) by the extension personnel. Chhattisgarh is a new state and having faster growth rate in agriculture as well as access to different ICT tools Computer with Internet. Since the Chhattisgarh government has launched the SKY scheme to ensure the availability of internet connectivity to remote areas, so it was also necessary to study the utilization pattern of ICT tools for the execution and strengthen of the extension activities. Total 99 extension personnel were selected by using proportionate random sampling from four randomly selected blocks (Rajnandgaon, Dongargaon, Khairagarh and Chowki) and the total 08 ICT tools (mobile, computer, internet, telephone, teleconferencing, agricultural websites & portals, agriculture - based mobile apps and laptop) were selected for the study. The data were collected through a personal interview with the help of pre - structured interview schedule. The result showed that the majority (58.59%) of extension personnel had a medium extent of utilization of ICT tools. It is due to their accessibility to ICT tools in their level for transfer of technology. Regarding the purpose of utilization, they were using the mobile, computer, internet, telephone, agricultural website & portals, agriculture-based mobile apps and laptop for information purpose. For transfer of technology, the majority of them were using mobile, whereas internet and laptop for training purpose. Mobile was used by the majority of extension personnel for making / sending reports while mobile and internet were used by the majority of them for organizational communication. The level of utilization may be improved in both levels by providing more facilities by the government as well as proper training and extension strategies can be followed.

**Keywords:** ICT tools, utility pattern, technology, extension personnel

**Introduction**

Information and Communication Technology (ICT) in agriculture is an emerging field focusing on the enhancement of agricultural and other development in India. At present, the Information and Communication Technology (ICT) revolution has made the extension function more efficient and effective and provide extension systems with opportunities to deliver time - based latest information and services to the clients / farmers. Nowadays, it also provides a new option to access and disseminate the information among the farmers and rural households by extension agents, agribusiness and other intermediaries. Agricultural extension has a wider connotation, from providing non-formal agriculturally related continuing adult education for multiple audience viz., farmers, youth and community.

Today, educational programmes delivered by extension agents are more varied than ever and will continue to change to meet the needs of the clientele they serve. Given the need for sustainability in today's world, Agricultural Extension Agents (AEAs) are expected to know more and meet the increasing demands of a diverse farmer population. Extension workers at the grassroot level, who have direct links with farmers are well positioned to make use of ICTs to access modern knowledge or other types of information that could facilitate the accomplishment of their activities. In a modern agricultural extension system, they need to know how to use ICTs for facilitating innovations. The utility of the ICT tools by the extension functionaries play a very important role for the farming community to upgrade and update their knowledge and practices in agriculture.

**Materials and Methods**

The study was conducted in Rajnandgaon district of Chhattisgarh plain during 2018-19 which was selected purposively because of 2nd larger number of extension personnel working in this district and it's a very progressive district in the last ten years. The study covered 04 blocks (Rajnandgaon, Dongargaon, Khairagarh and Chowki) 99 respondents (Grassroot level workers -75% RAEO's and 75% RHEO's from each block) which was selected through proportionate

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random sampling method and the total 08 ICT tools selected for the study were - mobile, computer, internet, telephone, teleconferencing, agricultural websites & portals, agriculture based mobile apps and laptop.

Utility pattern were considered as dependent variable in the present study. It was measured with the help of range of scores. Overall distribution of extension personnel were grouped into three categories viz., low, medium and high according to their extent of utilization of ICT tools.

The data were collected with the help of pre-structured interview schedule. The collected data were processed and tabulated by using appropriate statistical tools such as range, frequency and percentage.

## Results and Discussion

The utility pattern was measured in terms of extent of utilization and purpose of utilization of ICT tools by the extension personnel. The data regarding the same were presented in following tables.

### Extent of utilization of ICT tools by the extension personnel

The data presented in [Table-1] indicates that Mobile was utilized by cent per cent extension personnel very frequently (68.69 per cent), frequently (28.28 per cent) and less frequently (03.03 per cent) whereas computer was used by majority of them very frequently (15.15 per cent), frequently (30.30 per cent) and less frequently (10.10 per cent). Further internet was used by majority of them very frequently (45.45

per cent), frequently (15.15 per cent) and less frequently (10.10 per cent). Whereas telephone was used by 20.20 per cent respondents frequently (09.09 per cent) and less frequently (11.11 per cent). Teleconferencing was used by 17.17 per cent respondents frequently (07.07 per cent) and less frequently (10.10 per cent). Further agri. website & portals was used by majority of them [mostly using- FARMERS' PORTAL (<https://farmer.gov.in>), agropedia ([agropedia.iitk.ac.in](http://agropedia.iitk.ac.in)), TNAU AGRITECH PORTAL ([agritech.tnau.ac.in](http://agritech.tnau.ac.in)), Soil Health Card (<https://soilhealth.dac.gov.in>), DEPARTMENT OF AGRICULTURE, COOPERATION & FARMERS WELFARE ([agricoop.nic.in](http://agricoop.nic.in)), <https://revenue.cg.nic.in>, [cg.nic.in/agrisubsidy](http://cg.nic.in/agrisubsidy) and CHAMPS ([champs.cgstate.gov.in](http://champs.cgstate.gov.in))] very frequently (20.20 per cent), frequently (30.30 per cent) and less frequently (15.15 per cent). Regarding agri. based mobile apps, it was used by majority of them (mostly using - MyAgriGuru- Agriculture app for Indian farmers, Plantix-grow smart, IFFCO Kisan- Agriculture app) very frequently (17.17 per cent), frequently (23.23 per cent) and less frequently (15.15 per cent) whereas laptop was used by majority of them very frequently (20.20 per cent), frequently (30.30 per cent) and less frequently (10.10 per cent).

Extent of utilization of individual ICT tools were measured in terms of frequency by the respondents and following categories were made and scored. The information on extent of utilization was obtained and presented in the following manner in [Table-1].

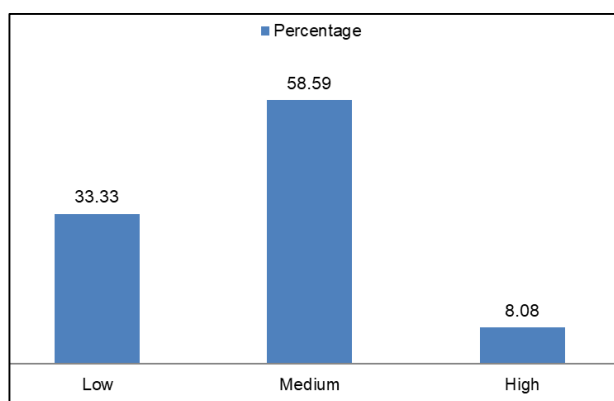
**Table 1:** Distribution of extension personnel according to their extent of utilization of individual ICT tools (N= 99)

S. No.	ICT tools	Extent of utilization							
		Very frequently		Frequently		Less frequently		Not at all	
		Freq.	Per cent	Freq.	Per cent	Freq.	Per cent	Freq.	Per cent
1.	Mobile	68	68.69	28	28.28	03	03.03	0	0.00
2.	Computer	15	15.15	30	30.30	10	10.10	44	44.45
3.	Internet	45	45.45	15	15.15	10	10.10	29	29.30
4.	Telephone	0	0.00	09	09.09	11	11.11	79	79.80
5.	Teleconferencing	0	0.00	07	07.07	10	10.10	82	82.83
6.	Agri. website & portals	20	20.20	30	30.30	15	15.15	34	34.35
7.	Agri. based mobile apps	17	17.17	23	23.23	15	15.15	44	44.45
8.	Laptop	20	20.20	30	30.30	10	10.10	39	39.40

**Table 2:** Overall distribution of extension personnel according to their extent of utilization (N = 99)

S. No.	Categories	Frequency	Percentage
1.	Low (Up to 8)	33	33.33
2.	Medium (9 to 16)	58	58.59
3.	High (Above 16)	08	08.08
	Total	99	100.00

Table-2 (Fig.-1) shows that out of the total respondents, majority (58.59%) of the extension personnel had medium, followed by low (33.33%) and high (08.08%) extent of utilization of ICT tools. This result is supported by the study of Ragul *et al.* (2016) <sup>[3]</sup>.



**Fig 1:** Overall distribution of extension personnel according to their extent of utilization of ICT tools

### Purpose of utilization of ICT tools by the extension personnel

Different tools of ICT might be used for different purpose by

the extension personnel hence the information regarding purpose of use of ICT tools under study was collected and furnished in [Table-3].

**Table 3:** Purpose of utilization of ICT tools by the extension personnel (N = 99)

S.N.	ICT tools	Purpose of utilization									
		For gaining the knowledge/ recent information		For transfer of technology		For training/ teaching		For making/ sending reports		For organizational Communication	
		Fq.	%	Fq.	%	Fq.	%	Fq.	%	Fq.	%
1.	Mobile	80	80.81	78	78.79	45	45.45	65	65.66	85	85.86
2.	Computer	20	20.20	25	25.25	18	18.18	30	30.30	22	22.22
3.	Internet	68	68.69	64	64.65	65	65.66	60	60.61	66	66.67
4.	Telephone	14	14.14	15	15.15	0	0.00	0	0.00	16	16.16
5.	Teleconferencing	0	0.00	0	0.00	08	08.08	0	0.00	10	10.10
6.	Agri. Website & portals	60	60.61	55	55.56	50	50.51	0	0.00	0	0.00
7.	Agri. based mobile apps	53	53.54	45	45.45	50	50.51	0	0.00	0	0.00
8.	Laptop	12	12.12	40	40.40	55	55.56	35	35.35	45	45.45
	Other	–	–	–	–	–	–	–	–	–	–

The data in [Table-3] portrayed 80.81 per cent extension personnel used mobile for purpose of gaining the knowledge or recent information followed by internet (68.69 per cent), agri. website & portals (60.61 per cent), agri. based mobile apps (53.54 per cent), computer (20.20 per cent), telephone (14.14 per cent), laptop (12.12 per cent) and none had used teleconferencing for the same purpose. Further the purpose of transfer of technology the extension personnel used mobile (78.79 per cent), internet (64.65 per cent), agri. website & portals (55.56 per cent), agri. based mobile apps (45.45 per cent), laptop (40.40 per cent), computer (25.25 per cent) and telephone (15.15 per cent) respectively. Regarding the training or teaching purpose they reported that internet (65.66 per cent), laptop (55.56 per cent), agri. website & portals and agri. based mobile apps were used by equal number (50.51 per cent), mobile (45.45 per cent), computer (18.18 per cent) and teleconferencing (08.08 per cent). Whereas, mobile (65.66 per cent), internet (60.61 per cent), laptop (35.35 per cent) and computer (30.30 per cent) were used for making or sending reports. Further, mobile (85.86 per cent), internet (66.67 per cent), laptop (45.45 per cent), computer (22.22 per cent), telephone (16.16 per cent) and teleconferencing (10.10 per cent) were used for the purpose of organizational communication respectively. This finding is in line with the findings of Manty (2011) <sup>[1]</sup> and Ragul *et al.* (2016) <sup>[3]</sup>.

### Conclusion

It was observed that the major ICT tools utilizing by the extension personnel were mobile, internet, agri. website & portals, laptop, computer and agri. based mobile apps, the reason may be due to accessibility to ICT tools. The further telephone was least utilizing due to lack of accessibility and lack of mobility. Whereas, teleconferencing was least utilizing due to some technical aspects as well as less cost - effective. The overall, majority of extension personnel had a medium extent of utilization of ICT tools. Mobile, internet, agri. website & portals, agri. based mobile apps, laptop and computer were major utilizing for different purposes (like – for gaining the knowledge / recent information, for transfer of technology, for training / teaching, for making / sending reports and for organizational communication). Further telephone and teleconferencing were least utilizing for the same purposes by the extension personnel.

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