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**Uzma Rashid**

Ph.D scholar, Sher-e-Kashmir  
University of Agricultural  
Science and Technology of  
Kashmir, Jammu and Kashmir,  
India

**Sheikh Muzaffar Ahmad**

Scientist, Sher-e-Kashmir  
University of Agricultural  
Science and Technology of  
Kashmir, Jammu and Kashmir,  
India

**HA Malik**

Scientist, Sher-e-Kashmir  
University of Agricultural  
Science and Technology of  
Kashmir, Jammu and Kashmir,  
India

**Zahida Rashid**

Scientist, Sher-e-Kashmir  
University of Agricultural  
Science and Technology of  
Kashmir, Jammu and Kashmir,  
India

**Showkat Maqbool**

Scientist, Sher-e-Kashmir  
University of Agricultural  
Science and Technology of  
Kashmir, Jammu and Kashmir,  
India

**Mohammad Anwar Bhat**

Scientist, Sher-e-Kashmir  
University of Agricultural  
Science and Technology of  
Kashmir, Jammu and Kashmir,  
India

**Corresponding Author:****Uzma Rashid**

Ph.D scholar, Sher-e-Kashmir  
University of Agricultural  
Science and Technology of  
Kashmir, Jammu and Kashmir,  
India

## Knowledge level of the farmers using information and communication technology tools in transfer of technology of North Kashmir, J&K State

**Uzma Rashid, Sheikh Muzaffar Ahmad, HA Malik, Zahida Rashid, Showkat Maqbool and Mohammad Anwar Bhat**

**Abstract**

The study on knowledge level of the farmers using Information and Communication Technology tools in transfer of Technology of North Kashmir, J&K State was conducted during the year 2020. A sample of 350 farmers was drawn through Stratified Random Sampling technique proportional to size from 11855 respondents provided by respective KVKs, Development Departments and Agromet Field Unit SKUAST-Kashmir. The study revealed that about 42.43 per cent of the respondents had good knowledge of various ICT tools (radio, television, newspaper and public addressing system). It was further revealed that almost one - third respondents were utilizing bulletins and internet facilities by mobile phones (GPRS), computers (Desktop/Laptop/Tablets) had excellent knowledge scores. The results of the study will help extension personnel to formulate strategies for imparting skill of the farmers in the usage of various ICT tools for transfer of technologies developed by researchers and their ultimate adoption by boosting their production and productivity at farm level. It can also help the extension personnel to formulate strategy to exploit the strong area of knowledge and develop the weak knowledge of farmers of the study area.

**Keywords:** knowledge, ICT tools, respondents, extension personnel and farmers

**Introduction**

Information and Communication Technology (ICT) has become the cornerstone of agricultural development in contemporary times. ICT can increase the efficiency, productivity, sustainability of agriculture sector and can provide income for a large segment of the population in developing countries. The role of ICT to enhance food security and support rural livelihoods is increasingly recognized and was officially endorsed at the World Summit on the Information Society (WSIS) in 2003-2005. This includes the use of computers, internet, geographical information systems, mobile phones, as well as traditional media such as radio or television (Stienen *et al.* 2007)<sup>[3]</sup>. Data from the Indian Market Research Bureau, suggest that there were estimated 109 million mobile internet in rural India, though the large majority of them use the internet mainly for social network websites and for the email (Maghura Swaminathan *et al.* 2018)<sup>[1]</sup>. Due to technology the distance between the nations is reduced and now world is becoming a global village. In order to minimize the gap between technology generation and its adoption, modern communication media seems the only answer to the problem. Despite the fact ICT plays an important role in the transfer of technologies and its ultimate adoption by the farmers, yet it has been observed that farmers possess varying degree of knowledge of the various ICT tools. The present study was planned to know the usage and knowledge of ICT tools possessed by the respondents of North Kashmir, J&K State with the following objectives:

- 1) To know about the ICT tools used by the respondents in transfer of technology
- 2) To know the level of knowledge of ICT tools possessed by the respondents in transfer of technology

**Material and Method**

The present study was conducted in all districts of North Kashmir, J&K state. For the drawl of the sample list of progressive farmers of three (03) districts (Kupwara, Baramulla and Bandipora) who were in constant contact with KVKs, State Development Departments and Agromet Field Unit of SKUAST-Kashmir and receiving alerts through Farmer's portal was obtained. Out of 11855 farmers, a sample of 350 respondents was drawn from each district through Stratified Random Sampling proportional to size with the condition that the selected

respondents has utilized atleast two ICT tools during 2020 (Fig.1). A Special knowledge test was developed and standardized for this purpose. In the knowledge test there were 44 items /questions pertaining to ICT tools (radio, television, newspaper, bulletins, internet usage by mobile phones (GPRS), computers, desktop, laptop, tablets) and public address system. The list of farmers obtained from various stakeholders depicted that some farmers were utilizing ICT tools (radio, television, newspaper and public address system) and other were utilizing internet facilities through mobile phones (GPRS), computers, desktops, laptop, tablets and bulletins. To devise the knowledge test for the final study, the test was first administered to 18 farmers each selected at random from the non-sample area. The responses were then quantified by giving a score of one to the correct answer and zero to incorrect answer. The total score of a

respondent was obtained by adding his score of all items. The questions for the final test for the farmers utilizing ICT tools (radio, television, newspaper, bulletins and internet facilities using mobile phones (GPRS), computers, desktop, laptop and tablets) were retained on the basis of 'Difficulty index' and 'Discrimination index'. The final knowledge test each with 16 items was administered for 231 respondents and 119 for other respondents based on use of various ICT tools. The coefficient of reliability of the test/s came out to be 0.83 and 0.87. The intrinsic validity was calculated by taking the square root of the reliability co-efficient and came out to be 0.91 and 0.93. The data was collected through personal interviews and analyzed by applying suitable statistical tools/tests and the categories were made by following cumulative cube root method as devised by (Singh 1969)<sup>[2]</sup>.

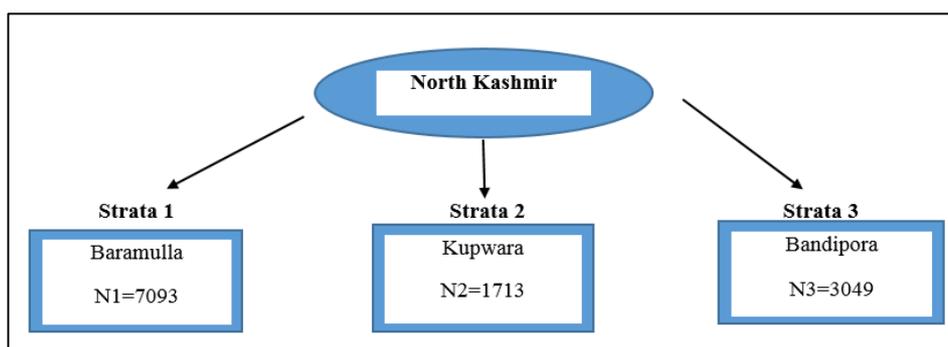


Fig 1: Sampling plan

**Total = 11855 (Total population)**

**Proportionate allocation:**

$$n_1 = \frac{N_i}{N} \times n = \frac{7093}{11855} \times 350 = 209$$

$$n_2 = \frac{N_i}{N} \times n = \frac{1713}{11855} \times 350 = 51$$

$$n_3 = \frac{N_i}{N} \times n = \frac{3049}{11855} \times 350 = 90$$

**Total sample size = 350 (respondents)**

**Result and discussion**

It has been observed from the presented data in Table 1 that majority of the respondents (42.43 %) were having knowledge scores of 6-10 followed by 37.66 per cent respondents having below 6 knowledge scores. The data further revealed that one-fifth respondents had 10 and above knowledge scores. The study implies that there is the need to create awareness campaigns on benefits of ICT tools, provide training and strengthen the internet connectivity and also providing of internet facilities.

**Table 1:** Distribution of respondents with respect to knowledge scores utilizing ICT tools (radio, television, newspaper and public addressing system) (N=231)

S. No.	Knowledge score	Number of respondents	Percentage
1.	Below 6 (Poor)	87	37.66
2.	6 - 10 (Good)	98	42.43
3.	10 and above (Excellent)	46	19.91

The data presented in Table 2 indicated that almost an equal number of respondents (40 and 43) were having equal knowledge scores (below 6 and 6 - 9). It was further revealed that 30.25 per cent respondents were having excellent scores (9 and above). The study implies that farmers need to be educated regarding usage of smart phones, tablets, computers

and laptop for internet facilities and its optimal usage for gathering more and more information and ultimate adoption of technologies disseminated through these ICT tools.

**Table 2:** Distribution of respondents with respect to knowledge scores utilizing ICT tools (internet through mobile, computer and bulletins) (N=119)

S. No.	Knowledge score	Number of respondents	Percentage
1.	Below 6 (Poor)	40	33.61
2.	6 - 9 (Good)	43	36.14
3.	9 and above (Excellent)	36	30.25

**Conclusion**

It has been concluded from the study that majority of the farmers have good level of knowledge of use of ICTs tools. The extension agents should make efforts to provide adequate, timely and useful information regarding usage of various ICT tools so that the farmers get the relevant information of technologies developed by researchers and judiciously use the information for boosting their production and productivity and increase their income by adopting the technologies in their farm. Besides, they should impart skills to the farmers in using various ICT tools so that the farmers ultimately adopt the relevant technologies for sustainability and profitability at their farms.

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