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Research Paper

Personal, socio-economic profile and attitude of farmers towards ICT usage for transfer of agricultural technology: A study of North Kashmir J&K State, India

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ABSTRACT

The study on personal, socio-economic profile and attitude of the farmers using Information and Communication Technology tools in transfer of Technology of North Kashmir, J&K State, was carried out in all the three (03) districts of North Kashmir (Baramulla, Kupwara and Bandipora. Out of a list of 11855 farmers who were directly connected to Krishi Vigyan Kendras (KVKs), State Development Departments, SKUAST - Kashmir Agromet Field Unit sample of 350 farmers was selected through Stratified Random Sampling proportional to size from each district with the condition that the selected respondents had atleast utilized two ICT tools during 2020. A well-structured interview schedule was prepared keeping in mind the objectives of the study. It was pretested in a non- sampled area and minor refinements were made to perfect the schedule. Personal interviews were used to gather data, which was analyzed using appropriate statistical tools/tests. The findings revealed that majority of the respondents (53.43% and 50.00%) had formal schooling of below 6 years and operational holdings of below 6 kanals. Furthermore majority of the respondents (65.71% and 47.43%) had extension contact scores below 18 and were below 41 years. The findings with respect to annual income and experience in farming revealed that the majority of respondents (52.57% and 43.43%) had annual income below ₹ 3, 49, 107 and having 21-38 years of farming experience. The data further revealed that the majority of the respondents (63.43%) had 7 to 13 years of experience using ICT tools and majority of respondents (50.29% and 44.00%) were in procession of 4 and above ICT tools with one training attendance one training. Almost an equal percentage of respondents (39.71 and 37.72) had unfavourable and neutral attitude toward ICT tools. Further it was observed that only 22.57 per cent had a highly favourable attitude toward ICT tools.

Key words: Farmers, ICT tools, respondents, stratified random sampling,

Information and Communication Technology (ICT) is a broad term that encompasses all technologies for manipulating and communicating data, such as computers, mobile phones, hardware and software, satellite networks, radio, television. One of the United Nation's Sustainable Development Goals is to "significantly increase access to information and communication technologies" and provide free and open access to the internet in least developed countries by 2020 (SDG). This can be seen in computers, the internet, geographic information systems, mobile phones and traditional media such as radio and television (Stienen *et al.* 2007). Accordingly to the Indian Market Research Bureau, rural India has 109 million mobile internet users though the vast majority of them use the internet mainly for social networking and email. (Maghura Swaminathan et al. 2018). The present study was planned with the following measurement of objectives:

1) To study the personal and socio - economic profile of the respondents using ICT tools in transfer of agricultural technology
2) To determine the attitude of farmer's towards ICT use for transfer of agricultural technology

MATERIALS AND METHODS

The research was carried out in all the three (03) districts (Baramulla, Kupwara and Bandipora) of North Kashmir in the state of J&K. A list of 11855 farmers who were directly connected to KVKs, State Development Departments of North Kashmir, Agromet Field Unit of SKUAST-Kashmir and were receiving updates through the Farmer's Portal was collected. A sample of 350 respondents was drawn through Stratified Random Sampling proportional to size from each district with the condition that the selected respondent had utilized atleast two ICT tools during 2020. A well-structured interview schedule was prepared and pre-tested, in a non-sampled area keeping in mind the objectives of study. The data was collected through personal interviews and every effort was made to clarify the questions posed to the respondents in their mother tongue. The scoring procedure for each socio- economic variables is depicted in Table 1. Likert scale technique for the assessment of attitude was formulated after thorough discussion with the Subject Matter Specialist/ experts and respondents were asked to respond to each statement /item which was finalized by the following the informal criteria of selection given by Edward and Kilpatrick (1948) in terms of several degree of agreement or disagreement and scores were assigned (Strongly agree-5, Agree-4, Undecided-3, Disagree-2 and Strongly disagree-1). The respondent's response was taken on five point continuum scale and scoring was done in such a way that the most favourable attitude towards ICT tools was given the highest score and the least favourable was given the least score and the total score of a respondent was worked out. The scoring was reversed in case of negative statements. Besides, validity and reliability of the scale was also worked out.

Table 1: Scoring procedure for measurement of independent and dependent variables

Variables	Scoring procedure	➢ Categories *
Independent variables* The categories were made by following cumulative cube root method as given by Singh (1969)		
i) Age (years)	Corresponds to the respondent's chronological age at the time of the interview and it was rounded to the nearest whole number	➢ Below 41 years (Young Aged) ➢ 41 - 61 years (Middle Aged) ➢ 61 years and above(Old Aged)
ii) Education (no. of years of formal schooling)	One score was given for each year of formal schooling	➢ Below 6 years of schooling (Low) ➢ 6-13 years of schooling (Medium) ➢ 13 and above years of schooling (High)
iii) Operational holding (kanals)	Measured in terms of number of kanals owned plus rented in, minus rented out	➢ Below 6 kanals (Small) ➢ 6-19 kanals (Medium) ➢ 19 and above (Large)
iv) Annual Income (₹)	Applies to the average profits gained over the course of a year	➢ Below ₹ 3, 49, 107 (Low) ➢ ₹ 3, 49, 107 - ₹6, 60, 820 (Medium) ➢ ₹ 6, 60, 820 and above (High)
v) Extension contacts (scores)	Measured on four point continuum as follows : Frequency of contacts: Once in a week 4 Once in a fortnight 3 Once in a month 2 Once in a season 1 Never 0 A sum of scores of extension contacts of a respondents gave the total score	➢ Below 18 (Low) ➢ 18-31 (Medium) ➢ 31 and above (High)
vi) Experience in farming (years)	Number of years a person was involved in agriculture	➢ Below 21 years (Low) ➢ 21- 38 years (Medium) ➢ 38 and above years (High)
vii) Experience in usage of ICT tools (years)	Person's accessibility to ICT tools for the purpose of obtaining information	➢ Below 7 years (Low) ➢ 7 - 13 years (Medium) ➢ 13 and above years (High)
viii) Possession of ICT tools	Owning of information and communication technology (ICT) tools	➢ Below 3 (Low) ➢ 3 - 4 (Medium) ➢ 4 and above (High)
ix) Training/ Trainings	Process of teaching or improving abilities, experience in order to increase one's capability, power, competitiveness and success	➢ No training (Low) ➢ One training (Medium) ➢ More than one training (High)

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Dependent variables		
i) Knowledge of Information and Communication Technology (Scores)	Measured in terms of number of knowledge scores obtained in the test	➢ Below 6 (Poor) ➢ 6 -10 (Good) ➢ 10 and above (Excellent) ➢ Also, ➢ Below 6 (Poor) ➢ 6 -9 (Good) ➢ 10 and above (Excellent)
ii) Attitude of farmers towards ICT use	An appropriate attitude scale was established by adopting the guidelines set out by Edwards and Kilpatrick (1948) in order to test respondent's attitudes toward ICT use	➢ Below 175 (Unfavorable) ➢ 175-251 (Neutral) ➢ 251 and above (Favourable)
ii) Extent of use of ICT tools	Frequency at which farmers used ICTs to collect information on various aspects of agriculture was operationalized as the extent of ICTs use	➢ Daily (Based on the usage of ICT tools used) ➢ Weekly ➢ Fortnightly ➢ Monthly ➢ Once in a crop season ➢ Never

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RESULTS AND DISCUSSION

A pursual of data presented in Table 2 revealed the majority of the respondents (47.43%) were below 41 years, followed by 29.71% in the age group of 61 and above years. Only 22.86 per cent of respondents were between the ages of 41 and 61 years. Majority of the respondents (53.43%) had formal schooling of below 6 years, followed by 25.14 per cent who had formal schooling of 13 years and above only 21.43 per cent respondents had completed 6-13 years of formal education. The majority of respondents (50.00%) had an operational holding of below 6 kanals while 38.86 per cent had an operational holding of 6-19 kanals. The respondents with an operating holding of 19 kanals and above constituted 11.14 per cent of the total.

Table 2: Profile of the respondents **(N=350)**

S. No.	Particulars	Category	Number of respondents	Percentage
1.	Age (years)	i) Below 41	166	47.43
		ii) 41 – 61	80	22.86
		iii) 61 and above	104	29.71
2.	Education (no. of years of formal schooling)	i) Below 6	187	53.43
		ii) 6 -13	75	21.43
		iii) 3 and above	88	25.14
3.	Operational holding (kanals)	i) Below 6	175	50.00
		ii) 6 – 19	136	38.86
		iii) 19 and above	39	11.14
4.	Annual Income (₹)	i) Below ₹ 3, 49, 107	184	52.57
		ii) ₹ 3, 49, 107 - ₹ 6, 60, 820	111	31.72
		iii) ₹ 6, 60, 820 and above	55	15.71
5.	Extension contacts (scores)	i) Below 18	230	65.71
		ii) 18 – 31	61	17.43
		iii) 31 and above	59	16.86
6.	Experience in farming (years)	i) Below 21	108	30.86
		ii) 21- 38	152	43.43
		iii) 38 and above	90	25.71
7.	Experience in usage of ICT tools (years)	i) Below 7	83	23.71
		ii) 7 – 13	222	63.43
		iii) 13 and above	45	12.86
8.	Possession of ICT tools	i) Below 3	85	24.28
		ii) 3 – 4	89	25.43
		iii) 4 and above	176	50.29
9.	Training/ Trainings	i) No training	117	33.43
		ii) One training	154	44.00
		iii) More than one training	79	22.57

The findings with respect to annual income revealed that the majority of respondents (52.57%) had annual income below ₹ 3, 49, 107 followed by 31.72 per cent with annual income between ₹3, 49, 107- ₹ 6, 60, 820. The respondents with an annual income of ₹ 6, 60, 8 20 and above constitute 15.71 per cent of the total. So far as the extension contacts are concerned, that majority of respondents (65.71%) had scores below 18, followed by 17.43 per cent who had scores between 18 and 31. Only 16.86 per cent respondents had extension scores of 31 and above.

The data with respect to experience in farming revealed that maximum respondents (43.43%) had 21-38 years of farming experience, followed by the respondents who had below 21 years of experience in farming. The respondents having 38 years and above experience in farming constituted 25.71 per cent. The data revealed that the majority of the respondents (63.43%) had 7 - 13 years of experience using ICT tools, followed by 23.71 per cent respondents who had below 7 years of using ICT tools. 12.86 % had 13 and above years of experience of using ICT tools. The data presented in Table 4.1 further reveal that majority of respondents (50.29%) were in possession of 4 and above ICT tools. Almost an equal percentage of the respondents were in possession of below 3 and 3-4 ICT tools. Further it was revealed that majority of the respondents (44.00%) had attended one training. 33.43 per cent respondents had not attended any training. The respondents who had attended more than one training constituted 22.57 per cent.

Table 3 revealed that 72.00 % of farmers possess radio, followed by newspaper (66.86%), television (66.00%), CD/ DVD player (66.00%), internet facilities through mobile phones (GPRS), Wi-Fi, broadband etc (34.57 %) and bulletins (34.00%).

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Table 3: Respondents distribution with respect to Possession of ICT tools **(N=350)**

S. No.	Communication tools	Number of respondents	Percentage
1.	Radio	252.00	72.00
2.	Television	231.00	66.00
3.	Newspaper	234.00	66.86
4.	CD/ DVD player	231.00	66.00
5.	Internet facilities through mobile phones (GPRS), Wi-Fi, broadband etc	121.00	34.57
6.	Bulletins	119.00	34.00

The findings with respect to respondent's distribution according to their attitude towards ICT tools depicted in Table 4 reveals that almost an equal percentage of respondents (39.71 and 37.72) had unfavourable and neutral attitude toward ICT tools. Further it was revealed that only 22.57 % respondents had a favourable attitude toward ICT tools.

Table 4: Respondents' distribution according to their Attitude towards ICT tools **(N=350)**

S. No.	Attitude score		No. of respondents	Percentage
1.	Below 175	(Unfavourable)	139	39.71
2.	175-251	(Neutral)	132	37.72
3.	251 and above	(Favourable)	79	22.57

CONCLUSION

The findings revealed that the respondents possessed unfavourable and neutral attitude towards ICT tools. So extension personnel should organise exposure visits of farmers to the areas where the farmers are earning manifold and are role models in the respective areas by availing the benefits of usage of such
ICT tools.

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