



## RESEARCH NOTE

### Uses of Different ICT Tools by the Agricultural University Teachers

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#### ABSTRACT

The present study was conducted in three purposively selected agricultural universities in Rajasthan; namely, Sri Karan Narendra Agriculture University, Jobner; Maharana Pratap University of Agriculture and Technology, Udaipur and Swami Keshwanand Rajasthan Agricultural University Three constituent colleges from each agriculture university were selected purposely on the basis of having maximum number of teachers. In this way a total nine constituent colleges were selected, 60 per cent of teachers were selected from every college by using simple random sampling technique. Agricultural university teachers most frequently used mobile phone (99.79 MPS) which was ranked first, followed by internet (MPS 96.85) and e-mail (MPS 94.60). There is no significant difference between teachers of SKNAU, Jobner, SKRAU, Bikaner and MPUAT, Udaipur with regard to frequency of use of different ICT tools.

**Key words:** ICT tools; Frequency; Teachers; Agriculture University.

**I**nformation and Communication Technology (ICT) in education is the mode of education that use information and communications technology to support, enhance, and optimise the delivery of information. ICT is often associated with sophisticated technologies. But ICT also includes the conventional technologies, such as, radio, television and telephone. In today's networked society, the technology used is often blended, and we use multiple technologies simultaneously. We use satellite, internet and video conferencing facilities to connect with people who may be across different geographical locations. Through the application of ICT, one can diminish the impact of space, time and distance. The results of this study in total will act as a guideline to

the educationists, policymakers, planners, administrators, agricultural universities, their academic institutions and other people who are engaged in the application of information and communication technology in one way or the other (Aboh, 2008 and Ann, 2013).

#### METHODOLOGY

The study was conducted in three purposively selected agricultural universities in Rajasthan; namely, Sri Karan Narendra Agriculture University, Jobner, Maharana Pratap University of Agriculture and Technology, Udaipur and Swami Keshwanand Rajasthan Agricultural University, Bikaner. These agricultural universities are well established and their constituent

colleges are regularly teaching the agriculture students from more than last 30 years and these agricultural universities have more number of constituent colleges as compared to other agricultural universities in Rajasthan. From the selected agricultural university separate lists of all the constituent colleges were procured, out of which three constituent colleges from each agriculture university were selected purposely on the basis of having maximum number of teachers. In this way a total nine constituent colleges were selected from these three agricultural universities for study purpose. The selection of teachers was made by using stratified Random sampling technique. For this purpose from the selected constituent colleges separate lists of all the teachers were prepared and out of these 60 per cent of teachers were selected from every college by using simple Random sampling technique. The data were collected by getting the responses filled from the respondents with the help of a questionnaire. The frequency of use of different ICT tools was measured on six point continuums, viz. every day, 2-3 times in a week, once in a week, once in a fort-night, monthly and never with scores of 5, 4, 3, 2, 1 and 0, respectively. The mean per cent score (MPS) for a particular ICT tool was worked out and ranked accordingly.

After collecting the data from respondents, the data were transferred to the work tables and tally sheets were prepared. The data were classified, analyzed and subjected to statistical analysis. The cross tables were prepared and the data were interpreted in light of the objectives of the study. To analyze the collected information several statistical tools were used. The following statistical measures were used for interpreting the data and testing the hypotheses.

Mean per cent score (MPS) was calculated by multiplying total obtained score of the respondents by 100 and divided by the maximum obtainable score.

$$MPS = \frac{\text{Total score obtained}}{\text{Maximum obtainable score}} \times 100$$

Ranks were accorded in the descending order according to the mean per cent score obtained. This was used to prioritize different items of the awareness, utilization, training needs and constraints to show their order of priority.

Analysis of variance ('F' test) in this study was used to test the significance of variance in teachers awareness about ICT tools, utilization of ICT tools,

Training needs and constraints perceived in use of ICT tools by teachers of selected agricultural universities i.e. SKNAU, Jobner, SKRAU, Bikaner and MPUAT, Udaipur. The following formula was used for calculating 'F' value :

$$F = \frac{\text{MSS between groups}}{\text{MSS within groups}}$$

It can be calculated as under :

$$C. F = \frac{(\sum x)^2}{N}$$

C.F.=Correction factor (C.F.)

Total sum of square (T.S.S.) = Sum of square of scores of variables – C.F.

$$T.S.S. = (x_1^2 + x_2^2 + \dots + x_n^2) - C.F.$$

Sum of square between groups (S.S.T.) =

$$SST = \frac{x_1^2}{N_1} + \frac{x_2^2}{N_2} + \frac{x_3^2}{N_3} + \frac{x_n^2}{N_n} - C.F.$$

Sum of square within group (S.S.E.) = T.S.S. - S.S.T.

Degree of freedom

Between group = k-1

Within group or error = N-K

Total = N-1

Mean sum of square for the group and error :

The level of significance at 5 and 1 per cent were used.

$$\sum x_1 = \text{Sum of observations}$$

$$\sum x_1^2 = \text{Sum of observations}$$

## RESULTS AND DISCUSSION

*Extent of frequency of use of ICT tools* : Table 1 indicate that agricultural university teachers most frequently used mobile phone (99.79 MPS) which was ranked first, followed by internet (MPS 96.85) and e-mail (MPS 94.60) which were ranked second and third respectively. The teachers were having least frequently used kindle (MPS 13.73) which was assigned rank last.

Data in Table 1 further indicate that regarding the university wise extent of frequency of use of ICT tools the agricultural university teachers the highest extent of frequency of use was found about mobile phone in all the agricultural universities i.e. MPUAT, Udaipur (MPS 100.00), SKRAU, Bikaner (MPS 100.00) and SKNAU, Jobner (MPS 99.38) and stood at first rank. The second most frequently used ICT tools by SKRAU, Bikaner (MPS 97.85), MPUAT, Udaipur (MPS 96.71 MPS) and in SKNAU, Jobner (MPS 96.00) was Internet which was assigned rank second. The least frequently used ICT tools in SKNAU, Jobner was digitizer (MPS

**Table 1. Frequency of use of ICT tools by the agriculture university teachers**

ICT Tools	SKNAU <sub>1</sub> =65		SKRAU <sub>2</sub> =28		MPUAT <sub>3</sub> =73		Total (N=166)	
	MPS	Rank	MPS	Rank	MPS	Rank	MPS	Rank
Mobile phone	99.38	I	100	I	100	I	99.79	I
Desktop	90.15	IV	96.42	III	92.87	IV	93.15	IV
Laptop	72.61	VIII	84.28	VI	74.79	VII	77.23	VII
Tablet	26.46	XVI	26.42	XVII	15.06	XIX	22.64	XVII
<i>Office tools</i>								
MS Word	91.38	i	95.71	i	94.79	i	93.96	i
MS Excel	74.76	ii	79.28	ii	74.24	ii	76.09	ii
MS PowerPoint	69.53	iii	72.85	iii	66.57	iii	69.65	iii
Office tools average	78.56	VI	82.61	VII	78.53	VI	79.90	VI
<i>Analytic packages</i>								
SPSS	32.61	i	26.42	i	24.10	i	27.71	i
SAS	23.07	ii	11.42	iv	10.95	ii	15.15	ii
STATA	12.00	iii	14.28	ii	4.10	iii	10.13	iii
R	12.00	iii	12.85	iii	3.28	iv	09.38	iv
Analytic packages average	19.92	XXI	16.24	XXI	10.61	XXI	15.59	XXI
Internet	96.00	II	97.85	II	96.71	II	96.85	II
e-mail	93.84	III	95.71	IV	94.24	III	94.60	III
<i>Storage devices</i>								
Video CD	38.46	iii	37.14	iv	34.52	iii	36.70	iii
DVD	38.46	iii	40.00	iii	30.41	iv	36.29	iv
Pen drive	87.07	i	81.42	i	88.76	i	85.75	i
Hard drive	64.61	ii	58.57	ii	66.02	ii	63.07	ii
Storage devices average	57.15	XIII	54.28	X	54.93	XIII	55.45	XII
e-Books	59.69	XI	53.57	XI	61.36	X	58.21	X
e-journals	58.15	XII	52.14	XII	60.54	XI	56.94	XI
e-agricultural Magazines	54.46	XIV	49.28	XIII	50.68	XIV	51.47	XIV
Kindle	21.84	XIX	7.86	XXII	11.50	XX	13.73	XXII
Web based search engine	73.53	VII	61.42	IX	73.97	VIII	69.64	IX
Web-based Agri. Info. portals	63.07	X	45.00	XIV	56.16	XII	54.74	XIII
Multimedia projectors	46.76	XV	40.71	XV	48.76	XV	45.41	XV
Printer	85.23	V	92.85	V	87.67	V	88.58	V
Scanner	69.23	IX	73.57	VIII	72.87	IX	71.89	VIII
e- Podium	26.15	XVII	34.28	XVI	27.94	XVI	29.46	XVI
Digitizer	19.38	XXII	23.57	XVIII	18.35	XVII	20.43	XVIII
Visualiser	20.30	XX	19.28	XIX	18.08	XVIII	19.22	XIX
Video-conferencing	23.38	XVIII	17.85	XX	15.06	XIX	18.76	XX
Overall MPS	54.79		53.40		52.48		53.55	

**Table 2. Analysis of variance of frequency of use ICT by the teachers of selected agriculture universities**

Source of variation	d.f	S.S	M.S.S	"F" cal
<b>Between the universities</b> (SKNAU, SKRAU and MPUAT)	2	412.7271	206.3636	0.436 <sup>NS</sup>
<b>Error</b>	163	77168.9837	473.4293	
<b>Total</b>	165	77581.7108		

NS= Non significant

19.38), kindle in SKRAU, Bikaner (MPS 7.86) and analytical packages in MPUAT, Udaipur (MPS 10.61) which were assigned last rank in the use of ICT tools in the respective universities These findings were partially supported by the reports of *Sharma, 2017* and *Malik et al., 2021*.

*Comparison of frequency* : The analysis of variance test was applied to see the significant difference in relation to frequency of use of ICT tools by the teachers of selected agriculture universities i.e. SKNAU Jobner, SKRAU Bikaner and MPUAT Udaipur. The results are presented in Table 2.

Table 2 reveals that the calculated 'F' value is (0.436) which is lower than the tabulated value at 5 per cent level of significance and 2 degrees of freedom. Thus, the null hypothesis ( $N_0$ ) entitled "There is no

significant difference between teachers of SKNAU, Jobner, SKRAU, Bikaner and MPUAT, Udaipur with respect to their frequency of use of ICT tools was accepted and research hypothesis ( $H_1$ ) was rejected. It infers that there is no significant difference between teachers of SKNAU, Jobner, SKRAU, Bikaner and MPUAT, Udaipur with regard to frequency of use of different ICT tools.

## CONCLUSION

University wise extent of frequency of use of ICT tools the agricultural university teachers the highest extent of frequency of use was found about mobile phone in all the agricultural universities i.e. MPUAT, Udaipur (MPS 100.00), SKRAU, Bikaner (MPS 100.00) and SKNAU, Jobner (MPS 99.38).

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