6731
Research Article
Journal of Extension Education
Vol. 33 No.4, 2021
DOI: https://doi.org/10.26725/JEE.2021.4.33.6731-6737

ICT Use Behaviour of Agricultural Line Department Officials Of Odisha

Bhavana Sajeev

ABSTRACT

Information and Communication Technology (ICT) tools will play a prime role in agriculture and allied sectors in future. This study was conducted in 2021 to examine the attitude of agricultural line department officials towards the use of ICT tools. Purposively Khordha district of Odisha was taken for the study. For the present study, 105 respondents (22 district level agricultural officials, 59 block level agricultural officials and 24 village level agricultural officials) were selected by following stratified random sampling method. The results revealed that the district level and block level agricultural officials have most favourable attitude towards almost all the ICT tools. In comparison, village level officials favoured only Mobile phone and Television. The study has recommended proper awareness, training and knowledge of ICT tools, and uninterrupted power supply in the offices to rectify the constraints in handling of ICT tools.

Keywords: *Information and communication technology;ICT use behaviour; Attitude; Department officials; Odisha*

INTRODUCTION

The application-level usage of ICT in various sectors of the global economy has been considered to have the upper hand in boosting productivity and work efficiency. The practicality of ICTs possesses the potential to identify and find a relevant solution to some of the major problems faced in the agriculture field, which include pest and disease outbreaks, prolonged droughts, seasonality and spatial dispersion of farming; information asymmetry, and high transaction costs (Anh et al., 2019). The use of ICT along the agricultural value chain (from farm to fork) could provide a stream of opportunities for actors within the chain to attain timely, accurate and relevant information; which will not only contribute to profitability, but also enhance food security, remunerative and sustainable agriculture (Purnomo and Lee, 2010). The ICT also has the prospect to ramify the challenges by farmers, governments and other land users in registration, valuation and land taxation. For instance, the digitalization of land administrative

Department of Extension Education, College of Agriculture, Odisha University of Agriculture and Technology, Bhubaneswar, Odisha - 751 003

Received: 14-02-2022; **Accepted:** 31-08-2022

activities in India relieved farmers approximately 1.32 million working days of man-hours and about 806 million rupees in bribe due to the improved system, thus reducing levels of corruption (Daum, 2020). Odisha has gone ahead as it could be the first state in the country which has adopted ICT as a state development tool for providing healthcare services at the door step of the citizen. There are several ICT tools and programmes in use throughout the world that have been designed to increase communication among extension workers and other stakeholders in the agriculture value chain.

Extension workers are mandated to deliver agricultural information to farmers related to pest, disease, climate, marketing availability of products etc. ICTs have the ability to close the communication gap between extension, research, and farmers. Extension workers have the skills and the ability but require a better pathway to acquire and propagate information to the allied subjects. Hence, the objective of this study was to determine how agricultural line department officials felt about the benefits of ICTs, how they used ICTs in their jobs, and how they disseminated and transferred innovations and technology for agricultural growth.

METHODOLOGY

The study had included all the agricultural line department officials such as District Agriculture Officer (DAO), Assistant Agricultural Officer (AAO), Assistant Horticulture Officer (AHO), Village Agricultural Worker (VAW), Women Village Agricultural Worker (WVAW) and Subject Matter Specialists (SMS) from Khordha district of Odisha State (India). A total of 105 respondents comprising 22 district level agricultural officials, 59 block level agricultural officials and 24 village level agricultural officials were selected using a stratified random sampling method. An interview schedule was constructed for assembling the data from the agricultural line department officials. The secondary source of data was combined from journals, theses, internet and official records retrieved from agricultural department.

The data collected from the sample respondents were coded, analysed and tabulated for comparative study. The conclusions derived from the data analysis were aptly construed and essential deductions and implications were brought in. Descriptive statistics and ranking were used for the data processing and analysis.

FINDINGS AND DISCUSSION

It could be observed from Tables 1, 2 and 3 that the district level and block level agricultural officials had 'most favourable' attitude towards almost all the computer related and internet related ICT tools whereas the village level agricultural officials were having most favouarble attitude towards audio related and audio-visual related ICT tools. The probable reason may be due to the lack of skill in

utilization of computer related and Internet related tools by the village level agricultural officials and the easiness in utilization of Mobile phone and Television. This finding is in line with the findings of Kabir and Roy (2015). The main constraint that limits the village level agricultural officials in the use of computer related and internet related ICT tools was the lack of exposure and training. Similar observation was also made by Naveenkumar and Philip (2020).

Table 1. Distribution of District Level Officials According to their Attitude towards ICT Tools

Sl.No.	CATEGORY	DISTRICT LEVEL OFFICIALS (n=22)						Mean	Rank
		Most favourable		Favourable		Unfavourable			
		F	%	F	%	F	%		
A	**Computer related**								
1	Microsoft package	22	100.00	0	0.00	0	0.00	3.00	I
2	Laptop	22	100.00	0	0.00	0	0.00	3.00	I
3	USB	17	77.27	5	22.73	0	0.00	2.77	V
4	Memory card	13	59.09	7	31.82	2	9.09	2.50	VIII
5	Fax	4	18.18	4	18.18	14	63.64	1.55	XIV
6	Digital camera	8	36.36	12	54.55	2	9.09	2.27	IX
B	**Internet related**								
1	Internet services	22	100.00	0	0.00	0	0.00	3.00	I
2	Social media	22	100.00	0	0.00	0	0.00	3.00	I
3	E-mail	22	100.00	0	0.00	0	0.00	3.00	I
4	Web based search engines	22	100.00	0	0.00	0	0.00	3.00	I
5	Modem	18	81.82	4	18.18	0	0.00	2.82	IV
6	e-journals	9	40.91	6	27.27	7	31.82	2.09	XI
C	**Audio related**								
1	Mobile phone	22	100.00	0	0.00	0	0.00	3.00	I
2	Microphone	6	27.27	8	36.36	8	36.36	1.91	XII
3	Landline phone	5	22.73	7	31.82	10	45.45	1.77	XIII
4	Bluetooth	17	77.27	5	22.73	0	0.00	2.77	V
5	Headphone	21	95.45	1	4.55	0	0.00	2.95	II
6	Radio	5	22.73	7	31.82	10	45.45	1.77	XIII
D	**Audio-visual related**								
1	Television	17	77.27	5	22.73	0	0.00	2.77	V
2	Video conferencing	19	86.36	3	13.64	0	0.00	2.86	III
3	Tablet device	16	72.73	4	18.18	2	9.09	2.64	VI
4	Smart TV	13	59.09	8	36.36	1	4.55	2.55	VII
5	DVD player	9	40.91	8	36.36	5	22.73	2.18	X

Table 2. Distribution of Block Level Officials According to their Attitude towards ICT Tools

Sl.No.	CATEGORY	BLOCK LEVEL OFFICIALS (n=59)						Mean	Rank
		Most favourable		Favourable		Unfavourable			
		F	%	F	%	F	%		
A	**Computer related**								
1	Microsoft package	53	89.83	6	10.17	0	0.00	2.90	IV
2	Laptop	54	91.53	5	8.47	0	0.00	2.92	III
3	USB	34	57.63	17	28.81	8	13.56	2.44	XI
4	Memory card	27	45.76	26	44.07	6	10.17	2.36	XIII
5	Fax	9	15.25	17	28.81	33	55.93	1.59	XVII
6	Digital camera	12	20.34	41	69.49	6	10.17	2.10	XIV
B	**Internet related**								
1	Internet services	51	86.44	8	13.56	0	0.00	2.86	V
2	Social media	59	100.00	0	0.00	0	0.00	3.00	I
3	E-mail	57	96.61	2	3.39	0	0.00	2.97	II
4	Web based search engines	59	100.00	0	0.00	0	0.00	3.00	I
5	Modem	23	38.98	36	61.02	0	0.00	2.39	XII
6	e-journals	13	22.03	38	64.41	8	13.56	2.08	XV
C	**Audio related**								
1	Mobile phone	59	100.00	0	0.00	0	0.00	3.00	I
2	Microphone	15	25.42	35	59.32	9	15.25	2.10	XIV
3	Landline phone	13	22.03	14	23.73	32	54.24	1.68	XVI
4	Bluetooth	45	76.27	14	23.73	0	0.00	2.76	VIII
5	Headphone	51	86.44	8	13.56	0	0.00	2.86	V
6	Radio	9	15.25	8	13.56	42	71.19	1.44	XVIII
D	**Audio-visual related**								
1	Television	34	57.63	17	28.81	8	13.56	2.44	XI
2	Video conferencing	49	83.05	10	16.95	0	0.00	2.83	VI
3	Tablet device	41	69.49	12	20.34	6	10.17	2.59	IX
4	Smart TV	49	83.05	8	13.56	2	3.39	2.80	VII
5	DVD player	34	57.63	20	33.90	5	8.47	2.49	X

Table 3. Distribution of Village Level Officials According to their Attitude towards ICT Tools

Sl.No.	CATEGORY	VILLAGE LEVEL OFFICIALS (n=24)						Mean	Rank
		Most favourable		Favourable		Unfavourable			
		F	%	F	%	F	%		
A	**Computer related**								
1	Microsoft package	11	45.83	7	29.17	6	25.00	2.21	XIII
2	Laptop	22	91.67	2	8.33	0	0.00	2.92	III
3	USB	7	29.17	8	33.33	9	37.50	1.92	XV
4	Memory card	5	20.83	10	41.67	9	37.50	1.83	XVI
5	Fax	0	0.00	8	33.33	16	66.67	1.33	XIX
6	Digital camera	3	12.50	14	58.33	7	29.17	1.83	XVI
B	**Internet related**								
1	Internet services	19	79.17	5	20.83	0	0.00	2.79	VI
2	Social media	21	87.50	3	12.50	0	0.00	2.88	IV
3	E-mail	13	54.17	9	37.50	2	8.33	2.46	XI
4	Web based search engines	17	70.83	7	29.17	0	0.00	2.71	VII
5	Modem	9	37.50	8	33.33	7	29.17	2.08	XIV
6	e-journals	6	25.00	6	25.00	12	50.00	1.75	XVII
C	**Audio related**								
1	Mobile phone	24	100.00	0	0.00	0	0.00	3.00	I
2	Microphone	3	12.50	4	16.67	17	70.83	1.42	XVIII
3	Landline phone	20	83.33	4	16.67	0	0.00	2.83	V
4	Bluetooth	15	62.50	7	29.17	2	8.33	2.54	IX
5	Headphone	20	83.33	4	16.67	0	0.00	2.83	V
6	Radio	16	66.67	8	33.33	0	0.00	2.67	VIII
D	**Audio-visual related**								
1	Television	24	100.00	0	0.00	0	0.00	3.00	I
2	Video conferencing	23	95.83	1	4.17	0	0.00	2.96	II
3	Tablet device	13	54.17	10	41.67	1	4.17	2.50	X
4	Smart TV	11	45.83	9	37.50	4	16.67	2.29	XII
5	DVD player	14	58.33	7	29.17	3	12.50	2.46	XI

CONCLUSION

E-agriculture encompasses a cascade of input process such as conceptualization, design, development, evaluation and application of innovative way to use ICT in the rural realm, with key attention on agriculture. ICTs are hence highly pertinent for agricultural line department officials, researchers, functionaries and organizations. The study has revealed that the district level and block level agricultural officials had the skills inbuilt in the use of the ICT tools when compared with the village level agricultural officials. Therefore, the district level and block level agricultural officials exhibited a most favourable attitude towards the computer related and internet related ICT tools where as village agricultural officials had a most favourable attitude towards audio related and audio-visual related ICT tools. The main reason behind this result was the lack of training given to the village agricultural officials in the use of ICT tools. Hence, proper knowledge and awareness must be disseminated to all the levels of agricultural officials for effective utilization of ICT tools. Staff working at the village level need to be made more skilled for use of ICT tools through frequent trainings. Further, village level staff could be provided with smart phones to work efficiently.

REFERENCES

Anh, N. H., Bokelmann, W., Thuan, N.T., Nga, D.T., & Minh, N.V., (2019). Smallholders' preferences for different contract farming models: Empirical evidence from sustainable certified coffee production in Vietnam. *Journal Sustainability*, *11* (14), 1-26.

Daum, T. (2020). *ICT applications in Agriculture. Hans-Ruthenberg-Institute of Agricultural Science in the Tropics*. University of Hohenheim, Stuttgart, Germany.

GoO [Government of Odisha]. (2018). *Orissa Trust of Technical Education & Training (OTTET) Report*. Available: https://ehealth.eletsonline.com/2013/04/odisha-adopted-ict-as-development-tool/. [26 August 2022].

Kabir, K., & Roy, D. (2015). Preferences of ICT Tools by the Upazila Agriculture Officers (UAOs) for the Information Exchange in Bangladesh. *Agriculture, Forestry and Fisheries*, *4*, 59–65.

Naveenkumar, M., & Philip, H. (2020). Constraints Faced in the Usage of Contemporary ICT Tools. *Journal of Extension Education*, *31*(3). https://doi.org/10.26725/JEE.2019.3.31.6320-6326.

Oladele, O.I. (2015). Effect of Information Communication Technology (ICT) on agricultural information access among extension officers in North West Province South Africa. *South African Journal of Agricultural Extension*, *43* (2), 30 – 41.

Purnomo, S.H. & Lee, Y.H. (2010). An Assessment of Readiness and Barriers towards ICT Programme Implementation: Perceptions of Agricultural Extension Officers in Indonesia. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, *6* (3), 19-36.