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Perceived Use of Computer in Extension Activities by the Extension Officials

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ABSTRACT

Continued rapid developments in computer based information technology are probably the biggest factor for the change in extension system. The computer based technologies provide numerous opportunities to obtain a variety of information for successful attainment of the role of extension professionals which largely depend on their operational competency of these computer based Information communication technological equipment. The study conducted with 40 KVK scientists and 174 extension officials from 11 districts covering all the 10 Agro-climatic zones in Odisha during 2019 revealed that computer use increases self-productivity, easy to learn and operate, useful in job performance as it saves time, easy to document data, collect and transfer of information. Extension officials need facilities to use computer, ensuring power supply, training and guidance, other related infrastructural facilities and fund allocation which may bring computer use in extension activities at a higher level. Place of service, communication channels used, education, age and computer devices used had exhibited significant influence in use of the computer.

Keywords: Computer use, Extension officials, Extension system

INTRODUCTION

Development of Agriculture though largely depends on a number of interactive factors, the roles of agricultural extension professionals remains fundamental in making agriculture amenable to a given agro-climatic situation. Information and Communication Technologies (ICT) offers, the advantage of providing up-to-date information required by the extension officers quickly and increases the efficiency of the extension services (Bheenick and Brizmohan, 2003). Application of ICT has been found as the best method for bridging the information gap for rural farmers on innovative practices, technologies, Government policies, credit facilities and market (Chilimo and Sanga, 2006). Developing the capability of agro-based rural communities through cyber extension with the use of information and communication technology would create the opportunities of growth and prosperity along with creating a more efficient information and knowledge networks (Ahuja, 2011). Therefore, computer and internet use in agriculture especially in extension services had increased tremendously because of the advancement made in information technology (Gregg and Irani, 2004). The usage of ICT tools and services by the extension personnel in dissemination of agriculture information was positive and significantly correlated with the availability ICT services (Shashidhara, 2020). Computer could play an integral role in achieving much needed improvements in agronomic practices such as precision farming, crop

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scheduling, support traceability of the product, inputs management, transport and distribution system as well as disaster loss reduction (Bilbao *et al.,* 2013). It was also found that successful attainment of the role of extension professionals largely depend on their operational competency of production equipments. Application of Information and communication technology (ICT) also support, improve, and optimize the delivery of information in different systems (Kumar *et al.,* 2019). A research was therefore designed to study the extent of perceived computer use by professionals in their various extension activities.

METHODOLOGY

The study was undertaken in Odisha during 2019. A sample size of 174 extension professionals of state government and 40 KVK scientists from 11 districts covering all the 10 agro-climatic zones of Odisha were selected randomly as the respondents for the study. A questionnaire was developed after pilot study and was pre-tested. The questionnaire was mailed to all the extension professionals working in the department of Agriculture, Horticulture, Soil Conservation (Watershed Mission) as well as KVK scientists working in the districts of Balasore, Baragarh, Bhadrak, Bolangir, Cuttack, Kalahandi, Kendrapara, Keonjhar, Mayurbhanja, Nabarangpur, and Sambalpur. After repeated follow-up, 174 extension professionals and 40 KVK scientists responded and send the filled questionnaire. Usefulness of computer, operational mechanism, extension activities undertaken with computer, advantages of computer in job performance and extent of support required were selected as the variables for the study. The perception of extension personnel was measured with a scale strongly agree, agree and disagree with scoring 3, 2 and 1 respectively over the framed statements. Statistical tools such as mean score, critical ratio, gap percentage and path analysis were employed to reveal the results.

RESULTS AND DISCUSSION

Computer based technologies offer wide range of capabilities that can be used for diversified applications, functional interactions, providing services to a mass, being used at the convenience as well as to meet challenges imposed upon the extension system.

Table 1 reveals that the respondents had better opinion about the usefulness of the computer particularly usefulness in job performance. It increase self-productivity, job performance becomes easier, better organizing job work, enhance professional image and help in better decision making.

Knowledge and skill competency on computer operational mechanism are very much required for effective use of computer for extension activities. Both the KVK scientists and extension functionaries agreed for easy to operate computer. Though, they had favorably opinion for easy to learn computer and acquired skills, flexibility to interact with others and mistakes easily detected, comparatively low mean score value indicated for further enrichment of knowledge and skills. Computers have suitable applications in agriculture particularly accounting and financial information, book keeping and enterprise recording, pay roll and budgeting, farm automation, decision support system, production monitoring and control, information management and dissemination as well as data bases etc. The p on extension activities undertaken revealed that the respondents had positively opined for the storing of official information, preparation of official reports and to some extent collecting latest technological information, storing of personal information as well as database for operational area. Though, KVK scientist responded positively for the designing extension materials, preparation of scientific extension presentation, preparation of scientific and popular articles, the responses of the extension functionaries were not encouraging. Therefore, further training and exposure are necessary to develop their competency to undertake various extension activities with the computer.

Computer has the benefits of acquisition, storage, recovery, transfer, manipulation and delivery of data, sound and graphics including video. The respondents prioritised the advantages of computer in job performance such as storing information for future use, easy to document data, saving time, easy to collect information, easy to transfer information and to some extent guiding in day-to-day activities. It indicate that both KVK scientists and KVK functionaries had good understanding and realized the benefits of computer use for their better

Table 1: Opinion about usefulness of the computer

S.No.	Usefulness	Mean Score		Pooled mean score (n = 214)	Gap (%)
		KVK Scientists (n = 40)	Extension functionary (n = 174)		
1. Opinion about usefulness of the computer					
i.	Useful in job performance	2.70	2.68	2.68	10.67
ii.	Increase self-productivity	2.70	2.62	2.64	12.00
iii.	Job performance become easier	2.65	2.60	2.61	13.00
iv.	Work done related information	2.65	2.51	2.54	15.33
v.	Help in better decision making	2.35	2.41	2.40	20.00
vi.	Enhance professional image	2.48	2.47	2.47	17.67
vii.	Better organisingjob work	2.50	2.49	2.49	17.00
2. Doubt operational mechanism.					
i.	Easy to operate	2.55	2.43	2.45	15.00
ii.	Easy to learn computer	2.30	2.32	2.31	23.00
iii.	Easy to acquired skills	2.25	2.36	2.34	22.00
iv.	Flexibility to interact with others	2.28	2.22	2.23	25.67
v.	Mistakes easily pointed	2.28	2.24	2.24	25.33
3. Extension activities undertaken with computer					
i.	Data base for operational area	2.48	2.32	2.35	21.67
ii.	Preparation of scientific extension presentation	2.43	2.29	2.31	23.00
iii.	Designing extension materials	2.48	2.26	2.30	23.33
iv.	Collecting up to date technological information	2.43	2.35	2.37	21.00
v.	Preparation of official reports	2.43	2.44	2.44	18.67
vi.	Preparation of scientific and popular articles	2.43	2.21	2.25	25.00
vii.	Storing of official information	2.43	2.47	2.46	18.00
viii.	Storing of personal information	2.38	2.37	2.37	21.00
4. Advantages of computer in job performance					
i.	Save time	2.45	2.56	2.54	15.33
ii.	Easy to document data	2.58	2.55	2.56	14.67
iii.	Storing information for future use	2.50	2.60	2.58	14.00
iv.	Easy to collect information	2.45	2.54	2.52	16.00
v.	Easy to transfer information	2.45	2.53	2.51	16.33
vi.	Guide in doing day to day activities	2.40	2.39	2.39	20.33
5. Support received for effective use of computer					
i.	All cooperation from superiors	1.90	2.09	2.06	31.33
ii.	Scope for outside training	2.0	1.91	1.93	35.67
iii.	Recognition and encouragement for expertise	1.98	1.93	1.94	35.33
iv.	Providing funds for repair and maintenance	1.80	1.86	1.85	38.33
v.	Ensure power supply and other facilities	1.88	2.05	2.02	32.67
vi.	Providing facilities to use computer in extension work	2.13	2.10	2.11	29.67

(Maximum obtainable score – 3)

job performance which may be helpful in effective implementation of computer assisted extension system.

Successful implementation of computer assisted extension system require effective extension system, organizational environment, qualities of the information materials provided and cost effective technologies used in extension. The extension officials therefore need facilities like; computer with accessories, ensuring power supply, fund allocation for; stationaries, repair and maintenance; cooperation among colleagues, supervising officers and top level management for successful transfer of the technologies. But, the respondents had very poor opinion about all these supports. However, the respondents had agreed for the facilities to use computer in extension work.

Comparative analysis revealed that (Table 2) the opinion of the KVK scientists and extension functionaries were at par as significant differences were not observed through critical ratio (CR) value. The respondents need more support on facilities to use computer in extension work, all cooperation from colleagues and superiors as well as ensuring power supply and other facilities. Necessary supports are to be provided to use computer by the extension personnel for transmitting technological information to the users easily and timely. Since, extension works are mostly off time in nature, power supply to be

Table 2: Comparative analysis of different aspects of computer use in extension activities

S.No.	Use	Max. score	Mean Score		Diff (%)	C.R. value	Pooled mean score (n=214)	Gap (%)
			KVK Scientist (n=40)	Extension Functionary (n=174)				
1.	Usefulness of computer	3	2.58	2.54	1.55	0.022	2.55	15.00
2.	Operational mechanism	3	2.33	2.31	0.86	0.012	2.31	23.00
3.	Support extended	3	1.95	1.99	2.01	0.028	1.99	33.67
4.	Activities undertaken	3	2.44	2.34	4.10	0.057	2.36	21.33
5.	Advantages in job performance	3	2.47	2.53	2.37	0.033	2.52	16.00
6.	Time spent on computer use	6	5.25	4.70	10.48	0.146	4.80	20.00
7.	Frequency of computer use	6	5.58	5.16	7.53	0.105	5.23	12.83
8.	Support required	3	2.47	2.49	0.80	0.011	2.49	17.00
9.	Benefits of computer	3	2.66	2.49	6.39	0.089	2.52	16.00

Table 3: Path analysis of socio-economic attributes influencing computer use

S.No.	Attribute	Total effect	Total direct effect	Total indirect effect	Substantial effect		
					I	II	III
X_1	Age	-0.158	-0.205	0.047	$0.119 x_2$	$0.087x_4$	$0.023x_6$
X_2	Education	0.095	-0.129	0.224	$-0.234x_8$	$0.115x_6$	$-0.006x_{94}$
X_3	Annual income	-0.039	0.085	-0.124	$-0.145x_1$	$0.103x_7$	$0.084x_9$
X_4	Experience	-0.133	-0.139	0.006	$0.092x_4$	$0.077x_5$	$-0.036x_2$
X_5	Extension activities undertaken	-0.205	-0.091	-0.114	$-0.155x_3$	$-0.122x_9$	$-0.091x_5$
X_6	Places of service	-0.059	0.216	0.275	$0.212x_5$	$0.104x_7$	$-0.074x_8$
X_7	Hours work on each day	0.058	-0.042	0.100	$-0.145x_9$	$0.103x_1$	$0.084x_3$
X_8	Computer devices used	0.370	0.300	0.070	$0.136x_4$	$0.075x_2$	$-0.028x_6$
X_9	Communication channel used	0.344	0.274	0.070	$-0.159x_6$	$0.140x_3$	$0.088x_4$

Residual effect: 0.022, Highest indirect effect: Place of service

ensured all the time to meet the queries of the farmers immediately. They need all cooperation from colleagues and superiors for information sharing and immediate problem solving. These facilities are most essential for effective dissemination of technologies.

Path analysis was made to decompose the socio-economic attributes of the respondents into direct, indirect and residual effect. It is observed (Table 3) that computer devices used had the highest direct effect followed by communication channels used and age. Similarly, places served by the respondents exhibited highest indirect effect followed by educational status. The variable places of service had association with communication channels used, education, age and computer devices used. Hence, the variable place of service, channelized through communication channels used, education, age and computer devices used had exhibited significant influence in use of the computer. The residual effect being 0.022 inferred that 2.20% of the variation in this relation could not be explained.

CONCLUSION

The respondents opined that computer use increased self-productivity, useful and easier in job performance as well as easy to learn and operate. They had used computer for database of the operational area, collecting latest technological information, storing of information and preparation of all kinds of reports. It saved time, easy to document data, collect and transfer information. However, they need all facilities to use computer, ensuring power supply and all cooperation from colleagues and superiors for effective use of computer. The findings therefore conclude that despite inadequate infrastructure; extension personnel use computer at a reasonable level. Adequate organisational support particularly training, guidance, computer facilities and fund allocation can bring computer use in extension activities at a higher level.

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