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Attitude of Agricultural Extension Functionaries towards Information and Communication Technology Tools

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ABSTRACT

The present study was carried out during 2016-17 in four southern districts of Karnataka state to analyze the attitude of agricultural extension functionaries towards Information and Communication Technology tools (ICTs). The total sample constituted 80 Agricultural Officers (30 nos) and Assistant Agricultural Officers (50 nos.) representing 43 Raitha Samparka Kendras of Mysuru, Hassan, Mandya and Tumakuru districts. The results revealed that as high as 36.25 per cent of the agricultural extension functionaries had more favourable attitude towards ICT tools, while 33.75 per cent of them had favourable attitude and the remaining 30.00 per cent of them had less favourable attitude towards ICT tools. Training on ICT tools was having a highly significant association with the attitude of agricultural extension functionaries towards ICT tools at one per cent level of probability. Whereas, education, achievement motivation, innovative proneness, job involvement, accessibility to ICT tools, e-readiness and mass media utilization of extension functionaries had significant association with their attitude towards ICT tools at five per cent level of probability. All the 14 independent variables fitted together in the regression model explained 71.00 per cent of the variation to the attitude towards ICT tools.

Keywords : Attitude, ICT tools, extension functionaries, mass media use

INFORMATION and Communication Technology (ICT) can be broadly interpreted as technologies that facilitate communication, processing and transmission of information by electronic means. It is defined as the technologies involved in collection, processing, storing, retrieving, dissemination and implementation of data and information using microelectronics, optics, telecommunication and computers. The ICT is gaining prominence as an engine for economic growth, it also promises to have far reaching potential for the delivery of social services and enhancing the effectiveness of government administration. Large scale investments are being made to enhance the potential of the ICT sector in India. Such investments would prove most cost effective if the resources of the IT sector are blended with the agricultural sector, making the two ends of the thread meet.

The Karnataka Government has initiated 'Raitha Mitra Yojane' during 2001 for providing an effective extension services to the farmers. Raitha Samparka Kendras also known as Agricultural Extension Centers are established under Raitha Mitra Yojane at hobli or sub-block level to address a wide range of local issues related to agriculture. Presently there are 745 Raitha Samparka Kendras (RSKs) in 220 taluks of 30 districts in Karnataka state. The RSKs act as a common platform for farmers to access and interact about agriculture based technology and information at the grass root level. All farmers of the State are the beneficiaries of the scheme and both the private and public sector agencies engaged in agriculture and related activities are also the potential beneficiaries of the scheme.

Each RSK is headed by an Agricultural Officer (Agricultural Graduate) duly supported by Assistant Agricultural Officers. These technical staff are vested with the responsibility of disseminating agricultural technologies to the farming community from time to time. The application of ICT offers excellent possibilities for strengthening the transfer of technologies between the research and extension system and further onward transmission to the end-users. Favourable positive attitude of extension personnel towards ICT tools helps in effective and efficient utilization of ICT tools for upgrading and dessemeniation of agricultural technology to the farming community. In this backdrop, the present study

has been carried out with the following specific objectives:

1. To analyse the attitude of agricultural extension functionaries towards ICT tools
2. To know the association between the personal, socio-economic, psychological and communication characteristics of agricultural extension functionaries with their attitude towards ICT tools.

Methodology

The present study was undertaken in Mysuru, Hassan, Mandya and Tumakuru districts of Karnataka state during 2016-17. The four districts *viz.,* Tumakuru (146 nos.), Mysuru (92 nos.), Mandya (78 nos.) and Hassan (66 nos.) were having higher number of Agricultural Officers (AOs) and Assistant Agricultural Officers (AAOs) among 11 southern districts of Karnataka state. Hence, these four districts were purposively selected for the research study. Agricultural Officers / Assistant Agricultural Officers (who were willing to provide the required information voluntarily) from four sampled districts were chosen for the study. The data was collected from the respondents during the bimonthly meetings held at respective district headquarters of the four sampled districts. Twenty one extension functionaries from Tumakuru district, 20 from Mysuru district, 22 from Mandya district and 17 from Hassan district provided the required information. The total sample constituted 80 Agricultural Officers (30 nos.) and Assistant Agricultural Officers (50 nos.) representing 43 Raitha Samparka Kendras of four sampled districts.

Attitude towards ICT tools (Dependent variable): It is the degree of positive or negative feeling towards symbols, phrases, slogans, persons, institutions or ideas towards which people can differ in varying degrees from the point of view of social psychology. It is the preparedness of people to respond in a certain way towards social objects or phenomena. Further, the attitude towards ICT tools was operationalized as the positive or negative mental predisposition of respondents towards ICT tools. The respondent's attitude was measured using the scale developed by Joy Mathews and Nagireddy (1990).

Information on personal, socio-economic, psychological and communication characteristics (independent variables) of extension functionaries were collected using a structured schedule with suitable scales. The collected data was scored, tabulated and analyzed using frequency, mean, standard deviation, chi-square test and multiple regression analysis.

Results and Discussion

Statement-wise attitude of agricultural extension functionaries towards ICT tools

It is observed in Table I that among the twelve statements, the statement 'I like using Internet and

Table I

Statement-wise attitude of agricultural extension functionaries towards ICT tools (n=80)

Attitude statements	Extension functionaries	
	Mean attitude score	Rank
I like using internet and other ICT tools	4.70	I
We can get any information from internet	4.55	II
Modern ICTs are better than older methods	4.41	III
Use of ICT provides opportunity for agriculture development	4.28	IV
I will try to learn more about new ICT tools	4.19	V
Modern ICT will provide accurate and updated information	4.15	VI
ICTs have no role in agriculture*	3.87	VII
ICTs can reduce vulnerability of the farming community	3.56	VIII
Farmers feedback is fast through ICTs than traditional methods	3.44	IX
Use of ICT will reduce job opportunities	3.24	X
Wider ratio of the farmers to the extension worker (1000:1) cannot be bridged by using ICTs*	2.93	XI
'ICT services' is a distant dream for resource poor farmers*	2.44	XII

*Negative statements

other ICT tools' obtained a mean attitude score of 4.70 and was accorded the first rank by the extension functionaries. The statement 'We can get any information from the internet' received a score of 4.55 and was ranked second. The statement 'Modern ICTs are better than older methods' obtained a mean attitude score of 4.41 and was ranked third by the extension functionaries. 'Use of ICT provides opportunity for agriculture development' was ranked fourth with a mean attitude score of 4.28. The statement 'I will try to learn more about new ICT tools' received a mean attitude score of 4.19 and was ranked fifth. 'Modern ICT will provide accurate and updated information' obtained a mean attitude score of 4.15 and was ranked sixth. The negative statement 'ICTs have no role in agriculture' obtained a mean attitude score of 3.87 and was ranked seventh. The statement 'ICTs can reduce vulnerability of the farming community' received a mean attitude score of 3.56 and was ranked eighth. The statement 'Farmers feedback is fast through ICTs than traditional methods' obtained a mean attitude score of 3.44 and was ranked ninth. The remaining three statements, namely, 'Use of ICTs will reduce job opportunities', 'Wider ratio of the farmers to the extension worker (1000:1) cannot be bridged by using ICTs' and 'ICT services is a distant dream for resource poor farmers' were ranked tenth, eleventh and twelfth with mean attitude scores of 3.24, 2.93 and 2.44, respectively.

The findings indicated that the extension functionaries have favourable attitude towards various aspects of ICT tools. It evidently proves that the ICTs are very beneficial to the extension functionaries for seeking / updating agricultural information and dissemination of the same to the farming community.

Overall attitude of agricultuaral extension functionaries towards ICT tools

The results in Table II reveals that as high as 36.25 per cent of the extension functionaries had more favourable attitude towards ICT tools, while 33.75 per cent of them had favourable attitude and the remaining 30.00 per cent of them had less favourable attitude towards ICT tools. It can be concluded that a majority (70.00%) of the extension functionaries had favourable to more favourable attitude towards ICT tools.

TABLE II

Overall attitude of agricultural extension functionaries towards ICT tools

(n=80)

Categories	Extension functionaries	
	Number	Per cent
Less favourable (< 43.70 score)	24	30.00
Favourable (43.70- 47.78 score)	27	33.75
More favourable (> 47.78 score)	29	36.25
Total	80	100.00

The ICTs can be used by the extension functionaries to disseminate real time information rapidly to the farmers. It also allows easier contact of extension functionaries with the farmers and farm scientists in helping the extension functionaries to bridge the gap between research and farming. Hence, the extension functionaries viewed ICTs as useful tools which could enhance the quality of extension activities and save time and money. Similar findings were reported by Hassan *et al*. (2011) and Verma *et al.* (2012).

Association between personal, socio-economic, psychological and communication characteristics of agricultural extension functionaries with their attitude towards ICT tools

The results in Table III reveals that training on ICT tools is having a highly significant association with the attitude of extension functionaries towards ICT tools at one per cent level of probability. Whereas, education, achievement motivation, innovative proneness, job involvement, accessibility to ICT tools, e-readiness and mass media utilization of extension functionaries had significant association with their attitude towards ICT tools at five per cent level of probability. Age, rural urban background, job experience, scientific orientation, perceived workload and organizational climate of extension functionaries were found to be having non-significant association with their attitude towards ICT tools. Similar findings were reported by Kumar and Ratnakar (2011) and Raksha *et al.* (2015).

TABLE III

Association between personal, socio-economic, psychological and communication characteristics of agricultural extension functionaries with their attitude towards ICT tools (n=80)

Independent variables	Contingency co-efficient	Chi square value
Age	0.18	6.18 NS
Education	0.29	12.22 *
Rural urban background	0.17	5.99 NS
Job experience	0.20	6.98 NS
Achievement motivation	0.27	9.96 *
Innovative proneness	0.29	10.11 *
Scientific orientation	0.19	6.99 NS
Perceived work load	0.20	8.00 NS
Job involvement	0.28	11.62 *
Accessibility to ICT tools	0.27	10.69 *
e-readiness	0.31	12.99 *
Organizational climate	0.25	7.16 NS
Training on ICT tools	0.33	15.99 **
Mass media utilization	0.26	9.26 *

NS=Non-significant, * Significant at 5 percent level, ** Significant at 1 per cent level

The explanation for the personal, socio-economic, psychological and communication characteristics of extension functionaries having significant to highly significant association with their attitude towards ICTs is presented in the ensuing paragraphs.

Education provides an opportunity for the extension functionaries in knowing more about the advantages of using ICT tools, which in turn has led to developing favourable attitude towards ICT tools among extension functionaries. As the extension functionaries gain more education, they bound to develop favourable attitude towards ICT tools. Extension functionaries with higher achievement motivation will obviously develop favourable attitude towards ICT tools. They try to learn more about ICTs through practical experience, trial and error, referring mass media and internet and by attending workshops, seminars, training programmes etc.

The extension functionaries who are more innovative and having high job involvement generally have higher orientation towards doing their joband perform their duty effectively by utilizing various ICT tools for saving time and money. Extension functionaries with e-readines and have more accessibility to ICT tools will frequently use social media, ICT gadgets, software and apps for seeking and disseminating the agricultural information to the farming community. Extension functionaries who have received training on ICTs will know how to use ICT tools effectively in their job. Hence, extension functionaries who have undergone training have developed more favourable attitude towards ICT tools than the extension functionaries who have not obtained any formal training on ICT tools. Extension functionaries who use mass media like radio, television and newspaper to a greater extent would be more updated about the latest technologies and gadgets. They are more likely to watch TV shows on ICT usage, read newspaper articles on ICTs and listen to radio talks of eminent scientists explaining the benefits of using modern day ICTs in agriculture.

Extent of contribution of personal, socio-economic, psychological and communication characteristics of agricultural extension functionaries on the attitude towards ICT tools.

All the 14 independent variables fitted together in the regression model explained 71.00 per cent of the variation to the attitude towards ICT tools (Table IV).The results reveal that education, e-readiness and training on ICT tools of extension functionaries were significantly contributing to their attitude towards ICT tools at one per cent level, while innovative proneness, accessibility to ICT tools and mass media utilization of extension functionaries were significantly contributing to their attitude towards ICT tools at five per cent level of probability. However, age, rural-urban background, job experience, achievement motivation, scientific orientation, perceived work load, job involvement and organizational climate of extension functionaries did not significantly contribute to their attitude towards ICT tools.

It could be concluded that education, e-readiness, training on ICT tools, innovative proneness,

TABLE IV

Extent of contribution of personal, socio-economic, psychological and communication characteristics of extension functionaries on the attitude towards ICT tools (n=80)

Independent variables	Regression co-efficient	SE of regression co-efficient	't' value
Age	0.059	0.094	1.57 NS
Education	0.061	0.193	3.123 **
Rural-urban background	0.351	0.028	0.08 NS
Job experience	0.740	0.821	1.11 NS
Achievement motivation	0.357	0.461	1.29 NS
Innovative proneness	0.257	0.547	2.12 *
Scientific orientation	1.875	0.112	0.06 NS
Perceived work load	0.293	0.358	1.22 NS
Job involvement	0.288	0.116	0.70 NS
Accessibility to ICT tools	0.104	0.277	2.62 *
e-readiness	0.071	0.206	2.886 **
Organizational climate	0.151	0.286	1.89 NS
Training on ICT tools	0.165	0.682	4.131 **
Mass media utilization	0.105	0.276	2.61 *

NS=Non-significant, * Significant at 5 per cent level, ** Significant at 1 per cent level, SE= Standard Error; R^2= 0.710; F = 8.19**

accessibility to ICT tools and mass media utilization of extension functionaries have synergic effect on one another influencing the extension functionaries in developing a favourable attitude towards ICT tools.

The ICT tools should be made available in the Raitha Samparka Kendras by the Department of Agriculture for improving the performance of the extension functionaries in the effective transfer of farm technologies. There was a significant association between mass media utilization of extension functionaries with their attitude towards of ICT tools. Hence, the mass media should carry messages on using new ICT tools available in the market for developing favourable attitude among extension functionaries in the usage of ICT tools effectively.

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