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Farmers Attitude Towards the use of ICT Interventions in Khurda District of Odisha

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ABSTRACT: Agriculture sector is one among the foremost important sector in India. Keeping in view of the demand for agricultural growth, evolutionary changes have been made in transfer of technology to reach the farming community effectively. The technology revolution encompasses new ways of capturing, processing, storing, and displaying information and is capable of increasing productivity and competitiveness through information provision. Effective use of ICT tools in rural areas depends on the preparedness of people through proper knowledge and attitude in using these tools. The Information and Communication Technology (ICT) is one of these solutions and has recently unleashed incredible potential to improve agriculture in developing countries specifically. There in regards, extensive use of information technologies must be promoted to farm level for transfer of technologies. The study was conducted during the year 2019 to assess the attitude of farmers towards information and communication technology tools in two blocks i.e., Balianta and Balipatna of Khurda district of Odisha. Pre-structured interview schedule was used for data collection from the farmers and appropriate statistical tools were used to analyze the collected data. Proportionate random sampling was used in the selection of one hundred and twenty (120) farmers as the sample of the study. The outcomes confirmed that a half (50.00%) of the respondents opined that they got timely information on inputs through the ICT interventions and informed that they increased their knowledge on specification of prices. More than half (54.16%) of the respondents said that the available data through the station may not accurately represent the current weather condition on a farm. Majority of the respondents (56.68%) were happy, satisfied. Half (50.00%) of the respondents said that they were getting timely information on the demand of product and subsidies available in the market. An appraisal of the content analysis of the statements shows that the majority of the respondents had more favorable attitude towards ICT tools.

Keywords: Agriculture, Attitude, Farmers, ICT, Knowledge.

INTRODUCTION

Over the years, Agriculture Extension has been at the fore front within the delivery of adequate data to the farming community not just for increasing productivity however additionally to reinforce their standard of living. Keeping in-sight of the demand for agricultural growth, evolutionary modifications had been made in transfer of technology to succeed in the farming community effectively. The Information and Communication Technology (ICT) is one among the required counterparts which made the agriculture extension more realistic and quite interesting. The technology revolution encompasses new ways of capturing, processing, storing, and displaying information and is capable of increasing productivity and competitiveness through information provision (Mangesi 2010).

The economy of the developing country like India predominantly depends on agriculture and development of it emphasizes on the need of related information to be transferred to the farmers. The farmers are also showing interest towards ICT. A positive attitude towards ICT will surely enhance this interest towards harnessing benefits out of it on a sustained basis. As attitude depends upon the socio-personal disposition of an individual, the present study tries to tress out those factors in relation to use of ICT. Attitude is the degree of positive or negative feeling of farmers towards the Information and Communication Technologies (ICTs). The favourable attitude of farmers towards ICT is very much required in obtaining benefit of effective and efficient information support tool which would lead to stronger conviction and

efficient extension programme planning in changing agri-rural environment.

Attitude is seen as an evaluative disposition based upon cognitions, affective reactions, behavioural intention and past behaviours and it provides the response of someone's like or dislike towards something (Shih, 2004; Luarn and Lin 2004).

Farmers often use sub-optimal agricultural practices due to lack of information, knowledge and inputs and their management (Jack, 2011). In India, many resource-poor farmers have restricted access to state-funded services; nearly 60 per cent are beyond access (Ferroni and Zhou 2012).

ICT has tremendous potential in improving the livelihood of farmers via positive impact on factors such as farming efficiency, farm productivity, and farmers' income (Sangeetha *et al.,* 2015).

Furthermore, agricultural services leveraged by ICT have been seen to provide a greater scope for incorporating the farmers' feedback into the agricultural knowledge system (Glendenning, 2010). Although the recent developments in ICT have facilitated flow of information to various stakeholders in agriculture, especially farmers; however, factors such as lack of awareness, not enough ICT infrastructure, nonstrategic location of information centres and lack lustre attitude towards ICT use continue to inhibit the potential of ICT for agricultural development (Maningas, 2006).

For increasing the scope of ICT media penetration in agricultural extension services as well as raising the interest of farmers in adopting ICT, there is a need to look closely at factors the constraints the farmers currently face with the use of ICT as well as study their perception regarding the use of ICT in agriculture. This research paper tries to explore the same.

METHODOLOGY

Ex-post-facto research design was used in the present investigation. The study was undertaken in Balianta and Balipatna blocks of Khurda district (Fig. 1) during the year 2019 with 120 respondents taken randomly for data collection.

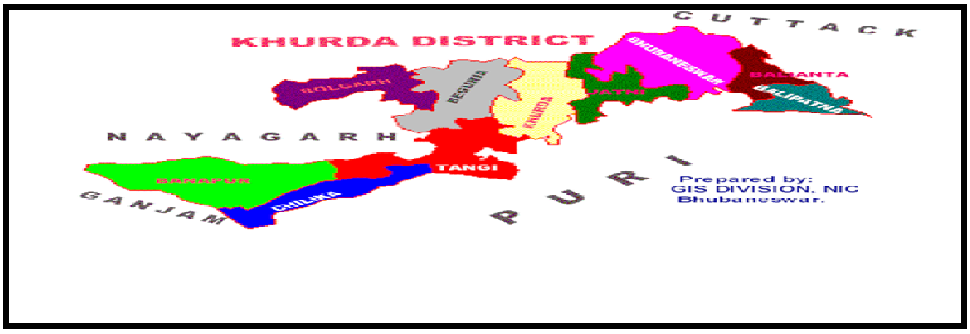

Fig. 1. Sample Area (Khurda district).

A total of four villages were covered under the study. From each selected gram panchayat, two villages from each gram panchayat namely Atala and Balabhadrapur villages of Balianta block and Arilo and Baradapada villages of Balipatna block were selected randomly based on maximum ICT activities undertaken. The primary data was collected with the help of well-structured and pre-tested interview schedule, designed especially in the light of objectives, whereas secondary data was collected from sources like thesis, journals, literature etc. The statistical measures like frequency, percentage, mean, standard deviation, were used to analyze the data to draw tangible inferences.

RESULTS AND DISCUSSION

An attempt was made to find out the response of farmers towards a set of statements of attitude towards ICTs use with varying degrees of positive and negative impressions. Data on content analysis of the attitude statements were furnished accordingly on the nature and magnitude of the attitude statements in table as given below.

Table 1: Content analysis of attitude statements on input specification and prices (n=120).

Sr. No.	Statements	SA		A		UD		DA		SDA	
1)	INPUT SPECIFICATION AND PRICES	F	%	F	%	F	%	F	%	F	%
a)	Getting timely information of inputs possible through ICT	45	37.50	60	50.00	4	3.33	6	5.00	5	4.16
b)	Correct information through ICT helps to increase the knowledge on the specifications of prices	44	36.66	60	50.00	6	5.00	5	4.16	5	4.16
c)	Farmers are getting remunerative prices of the produce through ICT based market intelligence.	20	16.66	50	41.66	30	25.00	30	25.00	10	8.33
d)	The information is adequate to meet my needs.	18	15.00	55	45.84	6	5.00	28	23.33	13	10.83
e)	This information is influencing my decision making.	19	15.83	44	36.68	40	33.33	15	12.50	2	1.66

SA- Strongly Agree, **A**- Agree, **UD**- Undecided, **DA**- Disagree, **SDA**- Strongly Disagree, F = frequency, % = percentage

A half (50.00%) of the respondents opined that they got timely information on inputs through the ICT interventions and said that they increased their knowledge on specification of prices. However, 25.00% of the respondents did not agree to the statement that farmers were getting remunerative prices through ICT based market intelligence. Even, the information is adequate to meet the needs for 45.84% of the respondents and it influences the decision making for 36.68% of the respondents.

Table 2: Content analysis of attitude statements on weather-based forecasting of pest and diseases (n=120).

Sr. No.	Statements	SA		A		UD		DA		SDA	
2)	Weather based Forecasting of Pest and Diseases	F	%	F	%	F	%	F	%	F	%
a)	Available data through the station may not accurately represent the current weather condition on a farm perhaps 10-20 miles away.	35	29.16	65	54.16	10	8.33	5	4.16	5	4.16
b)	Weather networks provide accurate pest prediction?	5	4.16	15	12.50	20	16.66	60	50.00	20	16.66
c)	ICT based Pest/disease outbreak warning system facilitate to take preventive measures.	34	28.33	55	45.85	4	3.33	25	20.83	2	1.66
d)	The information is adequate to meet our needs.	11	9.16	57	47.52	4	3.33	34	28.33	14	11.66
e)	The information is adequate to improve the crop productivity.	30	25.00	56	46.68	7	5.83	25	20.83	2	1.66
f)	This information is influencing my decision making.	18	15.00	55	45.84	6	5.00	28	23.33	13	10.83

SA- Strongly Agree, **A**- Agree, **UD**- Undecided, **DA**- Disagree, **SDA**- Strongly Disagree, F = frequency, % = percentage

More than half (54.16%) of the respondents opined that the available data through the station may not accurately represent the current weather condition on a farm perhaps 10-20 miles away followed by half (50.00%) of the respondents agreed that weather network provide accurate pest prediction and 45.85% of them said that this warning system facilitate to take preventive measures. The information is adequate to meet the needs for 47.52% of the respondents and is adequate to improve the crop productivity for 46.68% of the respondents and influences the decision making of 45.84% of respondents.

Table 3: Content analysis of attitude statements on weather forecasting(n=120).

Sr. No.	Statements	SA		A		UD		DA		SDA	
3)	Weather Forecasting	F	%	F	%	F	%	F	%	F	%
a)	Getting timely information on weathers.	45	37.50	60	50.00	4	3.34	6	5.00	5	4.16
b)	I saved my stored grains from getting affected from cyclone by weather forecasting	30	25.00	50	41.68	8	6.66	28	23.33	4	3.33
c)	I am happy and satisfied with the service.	29	24.17	68	56.68	5	4.16	7	5.83	11	9.16
d)	The information is adequate to meet our needs.	18	15.00	55	45.84	6	5.00	28	23.33	13	10.83
e)	Forecasting on weather saves our life and property.	21	17.50	39	32.50	21	17.50	37	30.84	2	1.66
f)	This information is influencing our decision making.	19	15.83	44	36.68	40	33.33	15	12.50	2	1.66

SA- Strongly Agree, **A**- Agree, **UD**- Undecided, **DA**- Disagree, **SDA**- Strongly Disagree, F = frequency, % = percentage

A half of the respondents (50.00%) opined that they are getting timely information on weathers followed by 41.68% of the respondents saved the stored grains from getting affected from cyclone and more than half (56.68%) of the respondents are happy and satisfied. The information is adequate to meet the needs for 45.84% of the respondents and saves life and property for 32.50% of the respondents. This is also influencing the decision making of 36.68% of respondents.

Table 4: Content analysis of attitude statements on market forecasting (n=120).

Sr. No.	Statements	SA		A		UD		DA		SDA	
4)	MARKET FORECASTING	F	%	F	%	F	%	F	%	F	%
a)	Getting timely information on the demand of our product in the market.	45	37.50	60	50.00	4	3.34	6	5.00	5	4.16
b)	I am getting information on different segments of the market.	16	13.33	44	36.66	10	8.33	34	28.33	16	13.33
c)	This information is helping us to penetrate into the market.	29	24.17	68	56.68	5	4.16	7	5.83	11	9.16
d)	This information helping us to know our competitors in the market and why customers buy from them.	16	13.33	44	36.66	10	8.33	34	28.33	16	13.33
e)	I am wasting my precious time by browsing unnecessary sites	7	5.83	58	48.34	15	12.50	28	23.33	12	10.00

SA- Strongly Agree, **A**- Agree, **UD**- Undecided, **DA**- Disagree, **SDA**- Strongly Disagree, F = frequency, % = percentage

A half (50.00%) of the respondents opined that they are getting timely information on the demand of product followed by 36.66% of the respondents are getting information on different segments in the market, 56.68% of the respondents are getting help to penetrate into the market and 36.66% of the respondents are getting information to know their competitors in the market and 48.34% of the respondents thinks that they are wasting their time by browsing unnecessary sites.

Table 5: Content analysis of attitude statements on subsidies (n=120).

Sr. No	STATEMENTS	SA		A		UD		DA		SDA	
5)	SUBSIDIES	F	%	F	%	F	%	F	%	F	%
a)	I am getting timely information on the subsidies available in the market.	45	37.50	60	50.00	4	3.34	6	5.00	5	4.16
b)	This information helps me to take decision wisely.	19	15.83	44	36.68	40	33.33	15	12.50	2	1.66
c)	I am happy satisfied with the service.	29	24.17	68	56.68	5	4.16	7	5.83	11	9.16
d)	I can access at any time	30	25.00	50	41.68	8	6.66	28	23.33	4	3.33

SA- Strongly Agree, **A**- Agree, **UD**- Undecided, **DA**- Disagree, **SDA**- Strongly Disagree, F = frequency, % = percentage

A half (50.00%) of the respondents opined that they are getting timely information on the subsidies available in the market followed by 36.68% of respondents are getting help in decision making. More than half (56.68%) of the respondents are happy and satisfied and 41.68% of the respondents can access the services at any time.

An appraisal of the content analysis of the statements as shown in the above table says that the majority of the respondents had more favourable attitude towards ICT tools. The findings of the present study are in line with the results obtained by Dhaka and Chayal (2010). So, there is an urgent need to organize effective training programmes and demonstrations for rural youth at village level on ICT tools.

CONCLUSIONS

The findings revealed that the majority of farmers had favourable attitude towards the use of ICT Interventions still there is dependence on the informal sources of information due to the lack of credibility in the information provided by the ICT tools, the farmers are not adopting the recommendations given by them. So, the extension agents should make efforts to enhance the credibility of the ICTs by providing adequate, timely and useful information and impart skill in using ICT tools. This enables them to utilize the ICT tools and develop a favourable attitude towards ICTs use. Therefore, there is a need to make available these tools at village level along with creating awareness about the importance of ICT tools and types of services providing by these tools to the farming community. Providing such facilities at village level will further attract them to use these tools for doubling their income. Further providing services in local language and making the tools more users friendly which will result in developing positive attitude towards ICT tools. Hence, there is a strong need to educate the farmers during extension programmes regarding usefulness of ICT tools, type of information provided and authority of information to make them aware about these tools.

FUTURE SCOPE

A fertile ground for future research would be to identify the improvement in various farm practices, efficiency, and competitiveness due to information and communication technology (ICT) enhanced extension services and so direct the innovation towards supporting efficient and competitive farm practices by farmers. The line department officials of the sample area should make frequent training and capacity building programmes for the farming community for use of ICT tools and more impact of the ICT initiatives. Similar type of study on the use of ICTs may be undertaken for extension functionaries, scientists and farmers. The study of ICTs may also encompass

linkage mechanism of farmers with university scientists and farmer organizations through ICTs may be studied.

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Conflict of Interest. None.

REFERENCES

Dhaka, B. L. and Chayal, K. (2010). Farmers experience with ICTs on transfer of technology in changing Agri-rural environment. *Indian Research Journal Extension Education*, *10*(3), 114–118.

Ferroni, M. and Zhou, Y. (2012). Achievements and challenges in agricultural extension in India. *Global Journal of Emerging Market Economies*, *4*(3), 319–346.

Glendenning, C. J., Babu, S. and Asenso-Okyere, K. (2010). *Review of agricultural extension in India: Are farmers' information needs being met?* IFPRI Discussion Papers 1048. International Food Policy Research Institute.

Jack, K. (2011). 'Market Inefficiencies and the Adoption of Agricultural Technologies in Developing Countries,' ATAI, *1*, 3.

Luarn, P. and Lin, H. (2004). Towards an understanding of the behavior alintention to use mobile banking. *Journalof Computing Human Behavior*, *30*, 1–9.

Maningas, R. V. (2006). Mainstreaming farmers and intermediaries into information and communications technology (ICT): A strategy towards adopting ICT for rural development and agricultural extension. Computers in agriculture and natural resources, 4th World Congress Conference, United States.

Mangesi, K. (2010). *A comparative study of approaches to ICT policy formulation and implementation in Ghana and South Africa* [MSc Thesis]. University of Kwa-Zulu.

Sangeetha, V., Burman, R. R., Dubey, S. K., Sharma, J. P. and Singh, I. (2015). Attitude of agricultural stakeholders on use of Short Message Service (SMS) in transfer of technology. *Indian Journal of Extension Education*, *51*, 60–65.

Shih, H. P. (2004). Extended technology acceptance model of internet utilization behavior. *Information and Management*, *41*(6), 719–729.

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