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EXPLORING RELATIONSHIP BETWEEN FARMERS' CHARACTERISTICS AND THEIR ATTITUDE TOWARDS INFORMATION AND COMMUNICATION TECHNOLOGIES

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ABSTRACT

The present study was carried out in Vadodara and Kheda district of Gujarat state. From each selected district, three talukas were selected as having a major area under cultivation and five villages from each selected taluka were randomly selected for the study. Thus, thirty villages were selected from the six selected talukas. From each village randomly five respondents were selected for the study. Therefore, 150 respondents were selected for the study. The study aimed to understand the attitude of farmers towards Information and Communication Technologies. The study shows that majority (60.00%) of the respondents possessed more than 3 tool and slightly more than half (52.00%) had favorable attitude towards ICTs. Socio-personal characteristics of the respondents viz.- education, annual family income, occupation, innovativeness and scientific orientation were positive and highly significant correlated and extension participation had positive and significant relationship with attitude of farmers towards ICTs. Whereas, age and farming experience had negative and highly significant relationship and size of family, land holding, sources utilized by the farmers to learn the ICT tools and social participation were positive and non-significant correlated with attitude of farmers towards ICTs.

Keywords: *farmers, ICT tools, attitude, correlation coefficient, multistage sampling*

INTRODUCTION

Agricultural extension has long played a pivotal role in delivering essential information to the farming community, not only to enhance productivity but also to improve livelihoods. Over time, transformative changes have been made in the transfer of technology to make it more effective and accessible to farmers. Among these advancements, Information and Communication Technologies (ICTs) have emerged as powerful tools, revolutionizing agricultural extension by making it more realistic, dynamic and engaging (Pratik and Vinaya, 2022).

In a predominantly agrarian economy like India, rapid agricultural development hinges on the timely dissemination of accurate, location-specific information. Farmers are increasingly showing interest in ICTs and a positive attitude toward these technologies is essential for their sustained and effective use. Since attitude is influenced by the socio-personal characteristics of individuals, the present study explores how such characteristics affect farmers' attitudes toward ICTs (Pratik and Vinaya, 2021).

Attitude is defined as the degree of positive or negative feelings that individuals hold toward ICTs. A favourable attitude among farmers is crucial for the successful integration of ICTs in agricultural extension, as it facilitates effective information delivery and enhances decision-making. ICTs hold significant potential to improve farming efficiency, productivity and income. Experiences of integration of ICTs in the agricultural institutes have been showing encouraging results and also complementing conventional communication methods (Chauhan et al., 2016; Mishra *et al.*, 2020). Keeping above, study was focus on attitude towards Information and Communication Technologies.

OBJECTIVES

(1) To find out the possession of ICT tools by the farmers

(2) To measure the attitude of the farmers for Information and Communication Technologies

(3) To ascertain the relationship between profile of the farmers and their attitude towards ICTs

METHODOLOGY

The study was conducted in the Vadodara and Kheda districts of Gujarat, which is under the jurisdiction of Anand Agricultural University. A multistage sampling technique was used for the selection of the respondents. From each selected district, three talukas were selected as having

a major area under cultivation and five villages from each selected taluka were randomly selected for the study. Thus, thirty villages were selected from the six selected talukas. From each village randomly five respondents were selected for the study. Thus, total 150 respondents were selected. Data was collected through personal interview method through the structured Gujarati questionnaires. The study explored the ICT tools possessed by farmers, their attitudes toward ICTs and their demographic characteristics. For the data analysis SPSS version 26 was used, statistical techniques including the frequency, percentage, arbitrary method and correlation coefficient (r) were used to explore the relationship between farmers' socio-economic profiles and their attitude towards ICTs.

RESULTS AND DISCUSSION

Table 1: Distribution of the respondents according to various ICT tools possession (n = 150)

Sr. No.	ICT Tools	Frequency	Per cent
1	**Radio**	03	02.00
2	**Television**	138	92.00
3	**Smartphones**	148	98.67
4	**WhatsApp groups**	115	76.67
5	**Computer**	09	06.00
6	**Laptop**	29	19.33
7	**Digital Camera**	00	00.00
8	**Internet**	142	94.67

Data presented in Table 1 indicated distribution of the respondents according to the possession of different kinds of ICT tools. It observed that majority respondents (98.67%) possessed smartphones, followed by 94.67 per cent, 92.00 per cent and 76.67 per cent of them had internet access, possessed television, WhatsApp groups as ICT tool, respectively. Whereas 19.33 per cent had laptop, 06.00 per cent had computers and only 02.00 per cent of them had radio. None of the respondents possessed digital camera.

Additionally, during the survey found that most of the respondents possessed you tube, Facebook for getting the latest agricultural information. It means farmers were aware about the different ICT tools.

Table 2: Distribution of the respondents according to their possession of ICT tools (n = 150)

Sr. No.	Category	Frequency	Per cent
1	**At least 1 tool**	06	04.00
2	**2 to 3 tools**	54	36.00
3	**More than 3 tools**	90	60.00

It is implied from the given Table 2 that three-fifth of the respondents (60.00%) possessed more than 3 tool, followed by 36.00 per cent and 04.00 per cent of them had possessed 2 to 3 ICT tools and up to 1 tool, respectively. The results are consistent with the findings of Rashid *et al.* (2023) and Ganvit and Chandravadia (2024).

Table 3: Distribution of the respondents according to their attitude towards ICTs (n = 150)

Sr. No.	Category	Frequency	Percent
1	**Highly unfavourable** (17.00 to 30.60)	00	00.00
2	**Unfavourable** (30.61 to 44.20)	17	11.33
3	**Neutral** (44.21 to 57.80)	42	28.00
4	**Favourable** (57.81 to 71.40)	78	52.00
5	**Highly favourable** (71.41 to 85.00)	13	08.67

The data presented in Table 3 indicated that slightly more than half (52.00%) of the respondents had favourable attitude towards ICTs, followed by 28.00 per cent and 11.33 per cent of them had neutral and unfavourable attitude towards ICTs, respectively. Whereas, 08.67 per cent of the respondents had highly favourable attitude and none of the respondents had highly unfavourable attitude towards ICTs. Probable reason for this could be increasing awareness and exposure of farmers to the benefits and applications of ICTs in agriculture, as it provides accurate information at the right time related to weather updates, market trends, etc. through the extension system. The outcomes align with the research findings of Ram (2020), Asari *et al.* and Naik *et al.* (2021).

Table 4: Relationship between the profile of the farmers and their attitude towards ICTs (n = 150)

Sr. No.	Independent variables	Correlaton Coefficient (r)
X_1	**Age**	-0.295**
X_2	**Education**	0.428**
X_3	**Farming Experience**	-0.312**
X_4	**Size of family**	0.057
X_5	**Landholding**	0.159
X_6	**Annual family income**	0.292**
X_7	**Occupation**	0.237**
X_8	**Social participation**	0.077
X_9	**Extension participation**	0.167*
X_{10}	**Sources utilized by the farmers to learn the ICT tools**	0.101
X_{11}	**Innovativeness**	0.658**
X_{12}	**Scientific orientation**	0.709**

* Significant at 0.05 per cent level of probability

** Significant at 0.01 per cent level of probability

According to Table 4, it was disclosed that independent variables *viz.*, education, annual family income, occupation, innovativeness and scientific orientation of respondents had positive and highly significant correlation with attitude of farmers towards ICTs. While, extension participation had positive and significant relationship with attitude of farmers towards ICTs. The relation suggests that as value of the variables increases, the attitude of farmers towards ICTs also increase. The outcomes somewhat align with the research findings of Ram (2020) and Naik *et al.* (2020).

Whereas, variables like age and farming experience had negative and highly significant relationship with attitude of farmers towards ICTs. It seems that farming experience is increasing while the attitude of farmers towards ICTs is decreasing. Middle-aged and elderly farmers might limit familiarity with technology, lack of interest and dependence on traditional information sources. The result is somewhat similarly with the findings of Parmar *et al*. (2021); Shahlas *et al*. (2024); Danu *et al*. (2022).

Moreover, size of family, land holding, sources utilized by the farmers to learn the ICT tools and social participation had positive and non-significant correlation with attitude of farmers towards ICTs. The outcomes somewhat align with the research findings of Panda *et al.* (2019) and Bhuva *et al.* (2024).

CONCLUSION

The study show that majority of the respondents possessed more than 3 tool and had favourable attitude towards ICTs. Therefore, there is a need to make available these tools at village level along with creating awareness about the importance of ICT tools so farmers attract 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. Variables like education, annual family income, occupation, innovativeness and scientific orientation of respondents had positive and highly significant correlation and extension participation had positive and significant relationship with attitude of farmers towards ICTs. Hence, there is a strong need to educate the farmers during extension programmes regarding usefulness of ICT tools, type of information provided and authenticity of information to make them aware about these tools.

RECOMMENDATIONS

Build a network of farmers, traders, dealers and extension workers through ICT tools so that each can help and benefit from other's knowledge. This will also allow farmers to get easy access to market conditions, availability of inputs, demand and supply as well as procurement of their produce.

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CONFLICT OF INTEREST

All authors declare that they have no conflict of interest.

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