P-ISSN 2322 - 0678 & E-ISSN 3048 - 9946
https://doi.org/10.56572/gjoee.2024.38.1.0019 Gujarat Journal of Extension Education Vol. 38 : Issue 1 : December 24

UTILIZATION BEHAVIOUR OF FARMERS FOR 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 district three talukas were selected as having a larger area under cultivation in which five villages selected randomly from each taluka. 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 utilization behaviour of farmers for Information and Communication Technologies. The findings revealed that 60.00 per cent of the respondents exhibited medium level overall utilization behaviour towards ICTs. Additionally, the findings revealed that variables such as education, annual family income, occupation, extension participation, innovativeness and scientific orientation exhibited positive and highly significant correlation with utilization behaviour for ICTs. Similarly, family size, landholding and sources utilized by the farmers to learn the ICT tools showed positive and significant relationships with utilization behaviour for ICTs. Conversely, age and farming experience highly and negatively correlated with ICT utilization behaviour, while social participation showed a non-significant and positive correlation.

Keywords : *information and communication technologies, utilization behaviour, correlation co-efficient*

INTRODUCTION

India is one of the major players in the agriculture sector worldwide and it is the primary source of livelihood & backbone of its society, employing 45.80 per cent of its population (Anon., 2022-23). The progress of India depends on the development of agriculture and allied sectors. Agriculture can serve as an important engine for economic growth. Despite having a huge role in the Indian economy agriculture is still lacking in many aspects such as access to the market, delayed information to farmers, lower agricultural productivity, less adoption of new technologies, etc. Therefore, it is very important to keep the farmers aware of new technologies, schemes and better farm practices to increase their productivity and quality of life. The unique features of ICTs provide opportunities to use in ways that differentiate apart from traditional media. ICTs allow rural communities and development groups to communicate in both directions. Additionally, ICTs increase the amount of information available, give high quality information, improve the ability to search for information, lower uncertainty and promote market involvement (Naik et al., 2020).

ICTs in agriculture will ensure the dissemination of required information at the right time. ICTs can provide all the information to farmers as need to improve production, price realization and access to the latest local and global information on weather. ICTs can connect small farmers and artisans living in rural areas to access prices, credit facility, market rates, etc. The atmosphere for more profitable agriculture can be facilitated by using ICT breakthroughs to give farmers timely, accurate, relevant information and services (Saikanth et al., 2022). Thus, this study aimed to explore the utilization behaviour of farmers for ICTs in the agricultural sector as it provides tailored information to their specific needs.

OBJECTIVES

(1) To measure the utilization behaviour of farmers for Information and Communication Technologies

(2) To ascertain the relationship between the profile of the farmers and their utilization behaviour for Information and Communication Technologies

METHODOLOGY

The present study was carried out in Vadodara and Kheda district of Gujarat state. Three talukas were purposively selected from each district as having a highest area under cultivation in which five villages selected randomly from each taluka and from each village five respondents were selected. Thus, 150 respondents were selected for the study. *Ex-post-facto* research design (Kerlinger, 1976) and multistage sampling technique were employed for the study. For measurement of variables included in study, different

scales and scoring techniques were used. To measure the overall utilization behaviour index was developed and four indicators were selected for the study *viz*., attitude towards ICTs, knowledge of ICTs, possession of ICT tools and extent of use of ICT. The data were collected using a well-structured interview schedule in Gujarati through personal interviews. The collected data were tabulated and analyzed by using statistical tools such as arbitrary method, percentage, mean and correlation coefficient.

RESULTS AND DISCUSSION

The data presented in Table 1 shaw that, slightly more than half of the respondents (52.00%) had favourable attitude towards ICTs, followed by 28.00 per cent had neutral and 11.33 per cent had unfavourable attitude towards ICTs. Whereas, 8.67 per cent of the respondents had highly favourable attitude and none of the respondents had highly unfavourable attitude towards ICTs.

The findings also indicate that more than one-third of the respondents (38.67%) had medium level knowledge of ICTs, followed by 33.33 per cent had high level knowledge of ICTs and 17.33 per cent had low level knowledge of ICTs. While, 10.67 per cent had very high level of knowledge of ICTs. It is important to note that none of the respondents exhibited in very low level of knowledge of ICTs.

Table 1: Distribution of the respondents according to different indicators that determine the utilization behaviour for ICTs (n = 150)

Sr. No.	Indicators wise categories	Frequency	Per cent
A	**Attitude towards ICTs**		
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
B	**Knowledge of ICTs**		
1	Very low (Up to 4.00)	00	00.00
2	Low (4.01 to 8.00)	26	17.33
3	Medium (8.01 to 12.00)	58	38.67
4	High (12.01 to 16.00)	50	33.33
5	Very high (16.01 to 20.00)	16	10.67
C	**Possession of ICT tools**		
1	At least 1 tool	06	04.00
2	2 to 3 tools	54	36.00
3	More than 3 tools	90	60.00
D	**Extent of use of ICT**		
1	Very low (Up to 08.80)	02	01.33
2	Low (08.81 to 17.60)	55	36.67
3	Medium (17.61 to 26.40)	72	48.00
4	High (26.41 to 35.20)	21	14.00
5	Very high (35.21 to 44.00)	00	00.00

Exactly three-fifth of the respondents (60.00%) possessed more than 3 tool, followed by 36.00 per cent of the respondents and 4.00 per cent of the respondents had possessed 2 to 3 ICT tools and up to 1 tool, respectively. During the survey discussions with the farmers, they emphasized that major tools such as smartphones, televisions, WhatsApp, Facebook and other internet tools were possessed.

Nearly half of the respondents (48.00%) had medium level extent of use of ICT. Additionally, 36.67 per cent of the respondents had low level and 14.00 per cent of the respondents had high level extent of use of ICT. In contrast, 1.33 per cent of the respondents had a very low level of extent of use of ICT and none of the participants indicated an exceptionally very high level of ICT usage.

Table 2: Distribution of the respondents according to their overall utilization behaviour for ICTs

(n = 150)

Sr. No.	Category	Frequency	Per cent
1	**Very low** (Up 20.00)	00	00.00
2	**Low** (20.01 to 40.00)	15	10.00
3	**Medium** (40.01 to 60.00)	90	60.00
4	**High** (60.01 to 80.00)	39	26.00
5	**Very high** (Above 80.00)	06	04.00

According to Table 2, it was cleared that exactly three-fifth of the respondents (60.00%) had medium level of utilization behaviour, followed by 26.00 per cent had high level and 10.00 per cent had low level of utilization behaviour for ICTs. It is important to note that only 4.00 per cent of the respondents had very high and none of the respondents reported in very low level of utilization behaviour for ICTs. The results are consistent with the findings of Samadder (2021).

Table 3: Relationship between the profile of the farmers and their utilization behaviour for ICTs (n = 150)

Sr. No.	Independent variables	Correlation Coefficient ('r' value)
X_1	**Age**	-0.217**
X_2	**Education**	0.467**
X_3	**Farming Experience**	-0.305**
X_4	**Size of family**	0.194*
X_5	**Landholding**	0.171*
X_6	**Annual family income**	0.327**
X_7	**Occupation**	0.303**
X_8	**Social participation**	0.116^{NS}
X_9	**Extension participation**	0.281**
X_{10}	**Sources utilized by the farmers to learn the ICT tools**	0.175*
X_{11}	**Innovativeness**	0.637**
X_{12}	**Scientific orientation**	0.669**

** Significant at 0.01 level of probability

* Significant at 0.05 level of probability

Table 3 showed that independent variables *viz*., education, annual family income, occupation, extension participation, innovativeness and scientific orientation of respondents had positive and highly significant correlation with their utilization behaviour for ICTs. While, size of family, land holding and sources utilized by the farmers to learn the ICT tools had positive and significant relationship with utilization behaviour for ICTs. The relation suggests that as value of the variables increases, the use of ICTs also increase. The probable reasons for this inclination could be that had some level of education, participation in extension activities and more open to incorporating ICTs into their farming practices. The outcomes align with the research findings of Kumar et al. (2023), Parmar et al. (2021), Pratik and Vinaya (2021), Samadder (2021) and Sipai et al. (2022) .

Whereas, variables like age and farming experience had negative and highly significant relationship with utilization behaviour for ICTs. It seems that farming experience is increasing while the utilization behaviour of farmers for ICTs is decreasing. Middle-aged and elderly farmers might utilize ICTs less due to factors like limited familiarity with technology, lack of interest and dependence on traditional information sources. The results are consistent with the findings of Chaudhari et al. (2021) and Jha et al. (2021) and Kalita and Deka (2024) and Patil et al. (2021), Rathwa et al. (2024), Mallick et al. (2023) and Khodifad and Solanki (2023).

Moreover, Social participation had positive and non-significant correlation with utilization behaviour of farmers for ICTs.

CONCLUSION

The study show that majority of the respondents had favourable attitude towards ICTs, medium to high level knowledge of ICTs, possessed more than 3 tool and medium level extent of use of ICT. Thus, medium to high level of the overall utilization behaviour for ICTs. Among the different variables, *viz*., education, annual family income, occupation, extension participation, innovativeness and scientific orientation of respondents had positive and highly significant associations with the utilization behaviour for ICTs. Additionally, size of family, land holding and sources utilized by the farmers to learn the ICT tools had positive and significant relationship with utilization behaviour for ICTs. Whereas, variables like age and farming experience had negative and highly significant relationship with utilization behaviour for ICTs. Surprisingly, Social participation exhibited positive and non-significant correlation with utilization behaviour of farmers for ICTs.

CONFLICT OF INTEREST

All authors declare that they have no conflict of interest

REFERENCES

Anonymous (2022-23). *Periodic Labour Force Survey*. National Sample Survey Office, India.

Chaudhari, R., Patel, J. B. & Patel, P. C. (2021). Utilization of smartphone applications by farmers in agriculture. *Gujarat Journal of Extension Education*, 32 (1): 38-42.

Jha, S., Kashyap, S. K. & Ansari, M. A. (2021). Utilization pattern of ICT tools among farm women in Uttarakhand. *Indian Research Journal of Extension Education*, 21(4): 63-67.

Kalita, R. & Deka, N. (2024). Knowledge and utilization of information and communication technology in agricultural sector, it's problem and prospects- A study in upper Brahmaputra Vally zone of Assam, India. *Asian Journal of Agricultural Extension, Economics & Sociology*, 42(2): 24-30.

Kerlinger, F. N. (1976). Foundation of Behavioural Research. Surjeet Publication, New Delhi, 198-204.

Khodifad, P. B. and Solanki, A. V. (2023) Utilization of information and communication technologies by the farmers. *Gujarat Journal of Extension Education,* 35(2):122-126. https://doi.org/10.56572/gjoee.2023.35.2.0024.

Kumar, S., Singh, M., Singh, P. & Rohit (2023). Utilization pattern of ICT tools by paddy growers in Uttar Pradesh. *Indian Research Journal of Extension Education*, 59(2): 135-137.

Mallick, Biswajit, Sudhanand, Prasad Lal and Gaur, Rishabh Singh (2023) Utilization pattern of diverse ICT tools by coastal farmers during the warning stages of cyclones. *Gujarat Journal of Extension Education,* 36(1):90-96. https://doi.org/10.56572/gjoee.2023.36.1.0017.

Naik, B. J., Rao, B., Rambabu, P. & Rekha, M. (2020). Attitude of farmers towards information and communication technology (ICT) tools. *Current Journal of Applied Science and Technology*, 39(43): 72-81.

Parmar, K. J., Saini, H. & Saba, S. (2021). Viewing behaviour of farmers towards DD kisan channel. *Gujarat Journal of Extension Education*, 32(1): 67-71.

Patil, K. V., & Patel, V. T. (2021). Correlation of utilization pattern of Kisan Mobile Advisory Services. *Gujarat Journal of Extension Education*, 32(1): 184 - 187.

Pratik Kiritkumar Patel and Vinaya Kumar, H. M. (2021). Farmers socio- econimic status and constraints using social media for sustainable agriculture development. *Guj. J. Ext. Edu.* 32 (1): 34-39.

Rathwa, M. S., Christian, B. M. & Patel, D. N. (2024). Relationship between farmers' profile and their social media utilisation behaviour. *Gujarat Journal of Extension Education*, 37(1): 82–86.

Saikanth, D. R. K., Murugan, P. P., Prasanth, A., Mahandrakumar, K. & Prabakaran, K. (2022). Utilization pattern of agriculture resources information system network (AGRISNET) by farmers of Nagarkurnool district of Telangana. *The Pharma Innovation Journal*, 11(2): 345-347.

Samadder, S. (2021). *Utilization pattern of ICT tools by the potato growers in Banaskantha district* (Master's thesis, Sardarkrushinagar Dantiwada Agricultural University).

Sipai, S. A., Zala, M. B. & Khorajiya, M. T. (2022). Knowledge of farmers about use of ICT tools in agricultural development. *Indian Journal of Agriculture and Allied Sciences*, 8(3): 5-8.

Received : July 2024 : Accepted : September 2024