P-ISSN: 2618-0723
E-ISSN: 2618-0731

NAAS Rating (2025): 5.04
www.extensionjournal.com

International Journal of Agriculture Extension and Social Development

Volume 8; Issue 9; September 2025; Page No. 538-541

Received: 13-06-2025
Accepted: 15-07-2025

Indexed Journal
Peer Reviewed Journal

Attitude of farmers towards application of ICT tools in agricultural innovations in Khargone district of Madhya Pradesh

Urvashi, Ashutosh Singh Rajpoot, Varsha Patel, Ranjana Janbandhu and Kavita Yaduwanshi

[1]Research Scholar, School of Studies in Agricultural Sciences, Vikram University, Ujjain, Madhya Pradesh, India

[2]Assistant Professor (Visiting Faculty), School of Studies in Agricultural Sciences, Vikram University, Ujjain, Madhya Pradesh, India

[3]Professor, School of Studies in Agricultural Sciences, Vikram University, Ujjain, Madhya Pradesh, India

[4]Assistant Professor, School of Studies in Agricultural Sciences, Vikram University, Ujjain, Madhya Pradesh, India

[5]Professor, School of Students in Agricultural Sciences, Vikram University, Ujjain, Madhya Pradesh, India

DOI: https://www.doi.org/10.33545/26180723.2025.v8.i9h.2457

Corresponding Author: Urvashi

Abstract

Attitude plays a vital role in determining the willingness of farmers to adopt new technologies. This study was carried out in Khargone district of Madhya Pradesh to assess the attitude of farmers towards ICT tools used for agricultural innovations. A total of 120 farmers were surveyed using a structured interview schedule, and data were analyzed using frequency, percentage, mean, standard deviation, and categorization into attitude levels. The results indicated that a majority of farmers (around 70%) exhibited a moderately favorable attitude towards ICTs, while a smaller proportion showed highly favorable or less favorable attitudes. Farmers appreciated the usefulness of ICTs for accessing weather forecasts, market information, and government schemes. However, challenges such as lack of confidence, technical knowledge, and language barriers limited full adoption. The findings suggest that although farmers' attitudes towards ICTs are generally positive, systematic training and localized content are needed to strengthen adoption.

Keywords: Farmers, attitude, ICT tools, agricultural innovations

Introduction

The application of Information and Communication Technologies (ICTs) in agriculture has emerged as a critical tool for enhancing knowledge dissemination, innovation transfer, and decision-making among farmers. ICTs include mobile phones, internet platforms, computers, and digital advisory systems, which collectively provide timely, relevant, and location-specific information to farming communities. These tools not only facilitate two-way communication between farmers and extension agencies but also enhance productivity, efficiency, and market participation. However, the adoption and success of ICT initiatives largely depend on farmers' attitudes towards their use. Favorable attitudes encourage consistent utilization of ICTs tools for accessing innovations, while unfavorable or indifferent perceptions often limit their effectiveness in rural contexts (Maningas, 2006).

In India, where agriculture remains a backbone of the economy and rural livelihoods, the integration of ICTs has become increasingly relevant in bridging the information gap. According to NASSCOM, India's ICT sector continues to expand, contributing significantly to national GDP and driving digital transformation in rural areas. Studies have shown that farmers' attitudes toward ICTs are influenced by multiple factors such as awareness, perceived usefulness, ease of handling, accessibility, and innovativeness (Reddy *et al*., 2020; Mahajan *et al*., 2023) [5, 3]. In regions like Khargone district of Madhya Pradesh, where socio-economic diversity and varied levels of digital literacy prevail, farmers' perceptions toward ICTs play a decisive role in the adoption and diffusion of agricultural innovations. Examining these attitudes is therefore essential for developing farmer-friendly digital strategies, strengthening extension systems, and ensuring the sustainable integration of ICTs in agriculture. Against this backdrop, the present study specifically focuses on analyzing the attitude of farmers towards the application of ICTs tools in the transfer of agricultural innovations. (Ghosh *et al*., 2022) [2]

Review of Literature

Singh V. and Kameswari V.L.V. (2019) [6] found that majority of the respondents 69.29 per cent had positive attitude towards ICTs tools and 17.50 per cent respondents had neutral attitude towards ICTs tools. It was also found that 13.21 per cent respondents had negative attitude towards ICTs tools.

Naik *et al*. (2020) [4], observed that majority 73.34 per cent of the respondents had medium level of attitude towards ICTs tools followed by high 15.00 per cent and rest 11.66

per cent of the respondents had low level of attitude towards ICTs tools.

Reddy *et al.* (2020) [5] revealed that majority of the respondents 80.00 per cent respondents were having favorable attitude towards ICTs and its tools followed by 13.33 per cent of the respondents who are less favorable attitude and 6.66 per cent of them are more favorable to ICTs and none of them are not favorable.

Ghosh *et al.* (2022) [2] pointed out that highest proportion 78 per cent of the respondents showed moderately favorable attitude and 20 per cent of them showed highly favorable attitude and only 2 per cent of the respondents showed low favorable attitude toward ICTs usage.

Mahajan *et al.* (2023) [3] revealed that most of the farmers that is more than half 74.00 per cent of the respondents had moderately favorable attitude towards use of ICTs tools, followed by less favorable attitude 14.60 per cent and very few 11.33 per cent respondents had highly favorable attitude towards usages of ICTs.

Kumar Rakesh *et al*, reported that majority (56.25%) of the users had moderately favorable attitude towards use of ICTs, followed by more favorable (37.50%) and less favorable (06.25%) attitude towards use of ICTs.

Methodology

To study the attitude of farmers towards the application of ICT tools in transfer of agricultural innovations, a survey research design was employed. The study was purposively conducted in Khargone district of Madhya Pradesh, The district represents a progressive agricultural region with significant ICT penetration. Within Khargone block, four villages—Mothapura, Dongargaon, Rajur, and Likkhi were randomly selected and from each village 30 farmers were chosen through simple random sampling, resulting in a total sample size of 120 respondents. The respondents were selected on the basis of their use of at least one ICT tool, ensuring their direct relevance to the study. Data regarding farmers' attitudes were collected using a structured interview schedule developed for this research, which included ten positive and negative statements related to ICT tools such as mobile phones, television, radio, and internet for agricultural purposes. Responses were measured on a three-point continuum (always, sometimes, never), with scores assigned accordingly and reversed for negative statements. The individual scores were aggregated and categorized into low, medium, and high levels of attitude using mean and standard deviation as the basis for classification. Data collection was carried out through personal interviews between January and May 2025, ensuring rapport and clarity with respondents. The collected data were analyzed using frequency, percentage, mean, and standard deviation, which enabled a systematic and comprehensive assessment of farmers' attitudes towards ICT tools in agricultural extension and innovation dissemination in the Khargone district.

Results and Discussion

Table 1 showed that a majority of respondents (85.00%) have moderate favorable attitude, followed by (13.34%) has high favorable attitude and only (1.66%) have less favorable attitude towards application of ICTs tools. This indicates that most farmers showed a moderate level of attitudes towards application of ICTs tools.

Table 1: Distribution of respondents according to their attitude towards ICT tools

Attitude Category	Number of Farmers	Percentage
Less Favorable	2	1.66
Moderate Favorable	102	85.00
High Favorable	16	13.34
Total	120	100

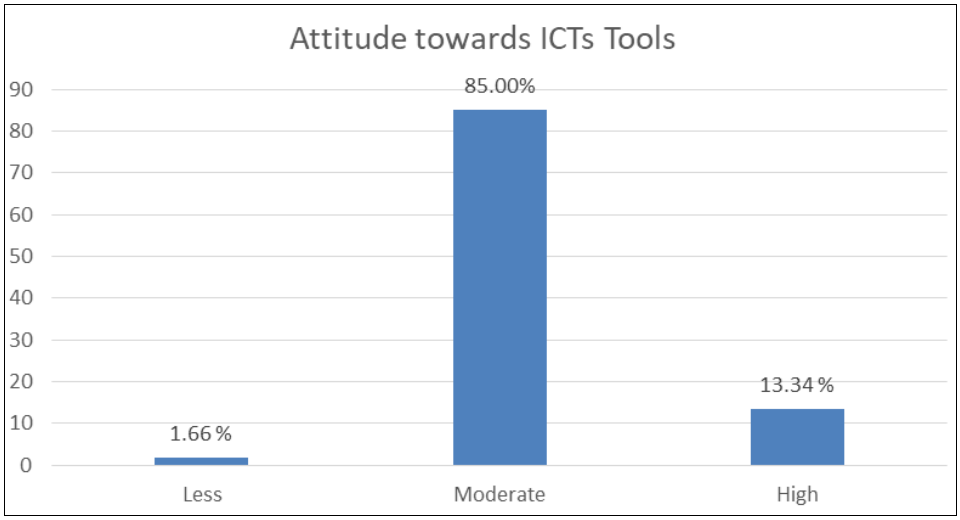

Fig 1: Attitude towards ICTs Tools

Less favorable attitudes may be attributed to infrastructural challenges such as weak internet connectivity, lack of training, and inadequate awareness campaigns, as noted by Maningas (2006). Moreover, farmers with lower levels of education or income were less enthusiastic about adopting ICTs compared to those with higher socio-economic status and greater media exposure.

Table 2: Statements wise analysis of attitude towards application of ICTs tools

S. No.	Statements	Always		Sometimes		Never	
		F	%	F	%	F	%
1.	Used to obtain weather information	92	76.66	25	20.84	03	2.50
2.	Purchase product and machinery	89	74.16	23	19.17	08	6.67
3.	Sale agricultural products	24	20.00	91	75.83	05	04.17
4.	My farm section provides customized notification on each step	21	17.50	88	73.33	11	9.17
5.	Social media section provides solutions to problems by the experts	22	18.34	89	74.16	09	7.50
6.	Market price helps in selling the products	77	64.16	31	25.84	12	10.00
7.	Purchase agricultural inputs for crops	81	67.50	29	24.16	10	8.34
8.	Get information through articles/news section	78	65.00	35	29.16	07	5.84
9.	Get up to date technological information through ICTs tools	78	65.00	33	27.50	09	7.50
10.	Get agriculture related information and queries by talking to expert via toll free number	18	15.00	84	70.00	18	15.00

Both positive and negative perceptions were attempted to learn how farmers would react to a series of statements about their attitudes toward application of ICTs tools. Responses were provided for each statement, as indicated in table 2.

A majority of the respondents (76.66%) were always used, followed by (20.84%) were sometimes used and (2.50%) were never used ICTs application to obtain weather information. A majority of the respondents (74.16%) were always used, followed by (19.17%) were sometimes used and (6.67%) were never used ICTs application to purchase product and machinery. A majority of the respondents (75.83%) were sometimes used, followed by (20.00%) were always used and (4.17%) were never used ICTs application to sale agricultural products. A majority of the respondents (73.33%) were sometimes used, followed by (17.50%) were always used and (9.17%) were never used ICTs application for this feature. A majority of the respondents (74.16%) were sometimes used, followed by (18.34%) were always used and (7.50%) were never used social media section for solutions to problems by the experts. A majority of the respondents (64.16%) were always used, followed by (25.84%) were sometimes used and (10.00%) were never used ICTs application for this feature. A majority of the respondents (67.50%) were always used, followed by (24.16%) were sometimes used and (8.34%) were never used ICTs application to purchase agricultural inputs for crops. A majority of the respondents (65.00%) were always used, followed by (29.16%) were sometimes used and (5.84%) were never used to get information through articles/news section. A majority of the respondents (65.00%) were always used, followed by (27.50%) were sometimes used and (7.50%) were never used to get up to date technological information through ICTs tools. And a majority of the respondents (70.00%) were sometimes used, followed by (15.00%) were always used and (15.00%) were never used to get agriculture related information and queries by talking to expert via toll free number.

The predominance of moderately favorable attitudes highlights that while ICTs are gaining acceptance, farmers are not yet fully confident in their use. This aligns with Singh and Kameswari (2019) [6], who reported that around 69 percent of farmers had a positive outlook towards ICTs, and (Mahajan *et al*. 2023) [3], who found that most farmers showed moderately favorable perceptions. Similarly, (Reddy *et al*. 2020) [5] observed that extension contact, innovativeness, and access to reliable information significantly shape farmers' attitudes toward ICTs.

Overall, the results indicate that ICTs hold significant potential for accelerating the diffusion of agricultural innovations in Madhya Pradesh. To move farmers from moderate favorable to high favorable attitudes, interventions should focus on digital literacy training, localized content in regional languages, improved network infrastructure, and strengthening farmer-extension linkages through ICT platforms. Such measures will enhance farmers' confidence and increase the sustained use of ICTs in agricultural innovation transfer.

Conclusion

The findings of the study revealed that the majority of farmers possessed a moderate favorable attitude towards the application of ICT tools in the transfer of agricultural innovations. This indicates that farmers recognize the potential of use of ICTs in improving access to agricultural information, decision-making, and productivity, but constraints such as limited digital literacy, inadequate infrastructure, and lack of awareness hinders their full adoption. Farmers with higher education, better extension contact, and greater exposure to mass media were more likely to display positive attitudes, whereas those with lower socio-economic status tended to be less enthusiastic. These results underscore the importance of strengthening farmer-friendly ICT initiatives by improving connectivity, providing training programs, and delivering localized content in regional languages. Enhancing farmers' confidence and awareness about ICT benefits will be essential for transforming moderately favorable perceptions into highly favorable attitudes. Such efforts will not only accelerate the adoption of ICTs but also play a vital role in ensuring sustainable agricultural development and rural empowerment.

Recommendations

Based on the findings regarding farmers' attitudes toward the application of ICT tools in the transfer of agricultural innovations, several recommendations can be drawn to enhance their acceptance and utilization. Since most farmers displayed only a moderately favorable attitude, there is a strong need to strengthen awareness and build confidence in digital technologies. Extension agencies and policymakers should organize regular training and capacity-building programs to improve digital literacy among farmers, enabling them to handle ICT tools effectively. Developing

localized content in regional languages and ensuring that information is simple, relevant, and need-based will make ICT applications more farmer-friendly.

Consent

As per international standard or university standard, respondents' written consent has been collected and preserved by the authors.

References

1. Bansal V, Joshi V. Socio economic profile characteristic of farmers regarding use of *ICT* tools. Int J Curr Microbiol Appl Sci. 2019;8(7):164-170.
2. Ghosh A, *et al*. Attitude of farmers towards ICT-based agricultural services. Indian J Ext Educ. 2022;58(4):112-118.
3. Mahajan SK, *et al*. Attitude and perception of farmers towards ICT tools in agriculture. Agric Econ Res Rev. 2023;36(1):98-105.
4. Naik J, *et al*. Farmers' attitude towards ICTs in agricultural innovations. J Community Mobil Sustain Dev. 2020;15(2):240-247.
5. Reddy K, *et al*. Farmers' perspectives on ICT usage in agriculture. Int J Agric Sci. 2020;10(4):301-309.
6. Singh V, Kameswari VLV. Farmers' adoption and attitude towards ICT tools. Indian Res J Ext Educ. 2019;19(2):34-39.