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Attitude of Farm Youths towards Information and Communication Technologies (ICTs) in Coimbatore District of Tamil Nadu

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The agricultural sector holds significant importance in India and stands to gain substantial benefits from the integration of Information and Communication Technologies (ICTs). Therefore, it is crucial to encourage widespread adoption of Information Technologies (IT) solutions at the grassroot level to facilitate the dissemination of technological advancements. The primary focus of the research was centered around the attitude of farm youths towards Information and Communication Technologies (ICTs) in Coimbatore district of Tamil Nadu. Ex-post facto research design of social research was used in this present study, as the phenomenon has already taken place. Proportionate random sampling method was used to select 120 Farm youths from the four selected Blocks of Coimbatore district. The findings revealed that a predominant majority of farm youths (70.83%) held a favourable attitude towards ICTs, while a smaller percentage (08.33%) exhibited a highly favourable attitude, and the remaining group (20.83%) displayed a less favourable attitude towards ICT. The outcomes from the multiple linear regression analysis indicated that the collective influence of all thirteen independent variables accounted for 52.80 per cent of the overall variability in farm youths' attitudes towards ICT. Factors such as interaction with extension agencies, achievement orientation and decision making all played a notable role in fostering a more favourable disposition towards attitude regarding Information and Communication Technology (ICT).

Keywords: Attitude; Information and Communication Technology (ICT); farm youths.

1. INTRODUCTION

The United Nations defines youth as persons between the age of 15 to 24 years. As outlined in the World Youth Report 2022, there are currently 1.2 billion individuals aged 15-24 globally, and this figure is projected to grow by 7%, reaching 1.3 billion by 2030 [1]. In light of this remarkable surge in the youth population, India has emerged as the world's youngest nation, with 70 per cent of its inhabitants being under the age of 35. This demographic advantage presents an opportunity to harness the potential of the younger generation to propel Indian agriculture to unprecedented levels, achieved by directing the innovative vigour of youth towards developing relevant skills, knowledge and attitudes. Young farmers represent a substantial resource with the capacity to address the primary issues of the 21st century. They also offer significant potential for revitalizing an aging agricultural industry that requires modernization to ensure a sustainable global future and social harmony on Earth [2].

Agriculture plays a vital role in India’s economy. The 54.6 per cent of workforce is engaged in agriculture and allied sector activities (Census 2011) and accounts for 18.6 per cent of India's GVA at current prices during 2021-22 [3]. The country's focus on advancement underscores the necessity of disseminating pertinent information to farmers. Farmers are increasingly demonstrating an inclination towards Information and Communication Technology (ICT). A favourable outlook towards ICT is poised to further augment their enthusiasm for consistently deriving advantages from it. Since one's attitude is shaped by their socio-personal inclinations, this current study seeks to highlight the factors influencing the utilization of ICT. A positive attitude of farmers towards ICT is essential for harnessing the advantages of a capable and efficient information support tool. This, in turn, will bolster confidence and improve the planning of extension programs in response to evolving agricultural and rural conditions.

Arora and Rathore (2013) established that users exhibited a more positive attitude towards e-choupal compared to non-users. Furthermore, the study suggested that non-users' attitudes could be influenced positively towards the program through user interaction, while ICTs could effectively enhance agricultural knowledge and skills with minimal exertion [4].

Mohit Kumar (2019) Enhancing social media utilization in agriculture can be achieved by engaging the younger generation, who are adopt at navigating these platforms. However, older farmers are often hesitant about integrating more social media into agriculture due to concerns about time consumption and potential risks. Therefore, an initial step would involve providing training to bridge this gap. Furthermore, limited education poses a significant hurdle, resulting in a lack of interest among many farmers to

embrace social media in agriculture. Another contributing factor is their unfamiliarity with the appropriate utilization of these online tools [5].

2. MATERIALS AND METHODS

The study was conducted in Coimbatore district of Tamil Nadu during 2022 to know about the attitude of farm youths towards ICTs for development of agriculture. Coimbatore district ranks among top ten youth's population in Tamil Nadu [6]. The factor led to the selection of the Coimbatore district has study area. The researcher was familiar with the socio- economic condition, regional dialect, and cultural jargon of the district's farm youths, which also another factor for choosing the district for the study.

Coimbatore District consists of twelve blocks namely Karamadai, Madukkarai, Periyanayakkanpalayam, Sarcarsamakulam, Thondamuthur, Sultanpet, Annur, Sulur, Pollachi North, Pollachi South, Kinathukadavu, Anaimalai. Among these Twelve blocks, four blocks were selected based on Random sampling method. The selected blocks are Thondamuthur, Annur, Kinathukadavu and Madukkarai. Thirty farm youths were selected from each block for study. Proportionate random sampling method was used to select 120 Farm youths from the four selected blocks of Coimbatore district. The data was gathered by personal contacting the selected farm youths through face-to-face interviews. Ex-post facto research design of social research was used in this present study, as the phenomenon has already taken place.

The attitude measurement statements were created through a process that involved reviewing existing literature, consulting with experts in the field of ICT in agriculture, as well as engaging with field extension personnel and farm youths who use ICT tools for sharing farm related information. These statements were then tested for reliability and validity in a pretest, ensuring a comprehensive understanding from the respondents.

The aim of this endeavor was to assess a set of 21 statements designed for a specific goal. Among these statements, 15 statements were conveyed positivity while 6 conveyed negativities. Respondents rated these statements on a five-point continuum scale ranging from 'Strongly Agree' to 'Strongly Disagree,' assigning scores of 5, 4, 3, 2, and 1 for positive statements, and the reverse for negative ones. Based on the resulting attitude scores, were divided into three categories: less favorable, moderately favorable and highly favorable. The gathered data underwent coding, classification and tabulation. Statistical measures such as Frequency, Percentage, Mean and Standard Deviation were employed for analysis. Correlation coefficients were computed to ascertain relationships between farm youths' profile characteristics and their attitudes towards ICT. Additionally, multiple linear regression was performed to establish functional connections between independent variables and farm youths' attitudes. The Statistical Package for Social Sciences (SPSS) was employed for data analysis.

3. RESULTS AND DISCUSSION

3.1 Profile Character of Respondents

From Table 1. This show that more than half of the farm youth (53.33%) were found to be in the age group of 26 to 30 years, followed by more than one third (38.33%) belonged to the age group of 31 to 35 years and (8.33%) belonged to the age group of 18 to 25 years. The potential explanation for the mentioned pattern could be that middle young to upper young age of the youth population might have previously established themselves in agriculture and are persisting in that field. Conversely, younger individuals could still be pursuing advanced education to determine their career paths. The remaining young people might have opted for farming as an ambitious choice for their future vocations. The outcomes obtained align with the findings of Kavinila's [7] research, which similarly indicated that a significant majority (91.90 percent) of entrepreneurs from the rural youth demographic were situated within the age range of 24 to 35 years. Concerning educational status around 41.67 per cent of the farm youth respondents were diploma holders followed by 37.50 per cent of graduate, 9.17 per cent of secondary level education and all other remaining categories in sum contributes to roughly about 12.00 per cent. The findings distinctly demonstrate that all farm youths had received education, possibly due to the presence of suitable educational establishments in the region and the assurance of educational access by local and regional authorities. Furthermore, the Coimbatore district ranks seventh in terms of its literacy rate (83.98%). The population of Coimbatore exhibits a favourable attitude towards education, as indicated by the

comprehensive survey, thus leading to this outcome. The findings of the present study were similar to that of Denadyalan [8]. Related to innovativeness more than half (65.00%) of the farm youths had medium level of innovativeness followed by low (24.00%) and remaining 18.00 per cent of farm youths belongs to high level of innovativeness. It appears that a trend related to farmers adopting new agricultural technologies faster due to their extensive contact with scientists and extension workers. This contact allows them to access information about new technologies, which leads to quicker adoption compared to other farmers who have less contact. The studies of Dhaka and Chayal [9] also expressed the similar results. In terms of decision-making ability, three-fourth of the farm youths (75.00%) had medium level of decision-making behaviour followed by high (13.33 %) and low (11.67 %) level of decision-making ability. It could be inferred from the findings that about (88.33 %) of the farm youth respondents had medium to high level of decision-making behaviour respectively. This strongly demonstrates how deeply farm youths engage in making decision about their agricultural tasks. Given that a significant proportion of these respondents possess a moderate level of ambition and fall into the middle range of risk-taking behaviour, this factor likely encouraged them to independently decide on strategies to increase their farming income. Thus, the outcomes witnessed in the study region are a direct consequence of these factors. Consequently, the outcomes witnessed in this study align with the discoveries of Jayanthi [10]. Concerning scientific orientation majority of farm youth (61.67 %) belonged to medium level of scientific Orientation followed by high (22.50 %) and remaining 15.33 per cent low level scientific Orientation respectively. This could be because of their organized implementation of innovative agricultural concepts through interaction with extension agency contact. The majority of farm youths possess education and a keen interest in adopting new farm technologies to enhance productivity is also a major reason for medium to high level of scientific orientation. These findings correlate with the outcomes of Shivaji's [11] study, which indicated that around two-thirds of the rural youth exhibited a moderate level of scientific orientation. Regarding number of ICTs tool used majority of respondents had medium (60.83%) level of ICT tools usage followed by high (21.67 %) and low (17.50%) level respectively. Majority of farmers were using ICT tools this may be because they have desire to learn and get relevant information for the purpose of Agriculture. Most of respondents were not using E-Books, E-magazine, E-newspaper. Yet, it is noteworthy that all respondents uniformly make use of YouTube and WhatsApp. The study of Shreya Anand [12] expressed the similar results.

Table 1. Profile character of respondents

S.No.	Independent variable	Category	Respondents	
			F	%
1	Age	Lower young age (18-25)	10	8.34
		Middle young age (26-30)	64	53.33
		Upper young age (31-35)	46	38.33
2	Education status	Illiterate	0	0.00
		Up to secondary level education	11	9.16
		Higher secondary	5	4.17
		Diploma	50	41.67
		Graduate	45	37.50
		Post graduate and above	9	7.50
3	Innovativeness	Low	24	20.00
		Medium	78	65.00
		High	18	15.00
4	Decision making	Low	14	11.67
		Medium	90	75.00
		High	16	13.33
5	Scientific orientation	Low	19	15.83
		Medium	74	61.67
		High	27	22.50
6	Number of ICTs tool used	Low	21	17.50
		Medium	73	60.83
		High	26	21.67

3.2 Overall Attitude of Farm Youth Towards ICT

The overall attitude of farm youths towards ICT is presented in Table 2.

Table 2. Distribution of farm youths according to their overall attitude towards ICT

S.No.	Category	Frequency	Per cent
1.	Less favourable	25	20.83
2.	Favourable	85	70.83
3.	Highly favourable	10	08.34
Total		**120**	**100.00**

It was inferred that majority (70.83%) of the farm youths had favorable of attitude towards ICT followed by low (20.83%) and rest (08.33%) of the farm youths had low level of attitude towards ICT tools.

This could be attributed from the Table 2 farm youths relying on informal sources like input dealers, fellow farmers, acquaintances, and family members to acquire agricultural information. They faced challenges in obtaining accurate and timely information from the established extension system. As a result, they exhibited a favourable attitude towards ICT tools, which offer year-round information access without constraints of time and location. These findings create a chance to promote and establish the use of ICT tools within the farming community. These outcomes align with the findings of Verma [13] and Bannoth jaswanth naik [14].

3.3 Content Analysis of Attitude Statements Regarding ICTs

The content analysis did for attitude statements on ICT were presented in Table. 3.

Table 3. Distribution of respondents according to their attitude about ICT

Sl. No	Statement	SA		A		UD		DA		SDA	
		F	%	F	%	F	%	F	%	F	%
1	ICT can provide a reliable information	51	42.50	45	37.50	14	11.67	7	5.83	3	2.50
2	ICT can provide practical oriented information	30	25.00	63	52.50	20	16.67	6	5.00	1	0.83
3	ICT can access at any where	44	36.67	17	14.17	42	35.00	13	10.83	4	3.33
4	ICT tools can increase confidence level	31	25.83	42	35.00	24	20.00	16	13.33	7	5.83
5	It is difficult to use ICT tools by rural people	37	30.83	35	29.17	34	28.33	8	6.67	6	5.00
6	I have to pay money for getting information through ICT tools	30	25.00	46	38.33	33	27.50	8	6.67	3	2.50
7	ICT tools can provide information very quickly	24	20.00	50	41.67	31	25.83	8	6.67	7	5.83
8	ICT tools are more interactive	25	20.83	26	21.67	46	38.33	17	14.17	6	5.00
9	Can ICT tools help for information sharing	34	28.33	35	29.16	33	27.50	12	10.00	6	5.00
10	ICT can be accessed at any time	25	20.83	40	33.33	25	20.83	21	17.5	9	7.50
11	Can ICT tools make complex ideas into simple ideas	22	18.33	26	21.67	48	40.00	17	14.17	7	5.83
12	I am wasting my precious time by browsing unnecessary site	19	15.83	32	26.67	54	45.00	14	11.67	1	0.83
13	Initial cost of ICT tools	38	31.67	37	30.83	26	21.67	15	12.50	4	3.33

Sl. No	Statement	SA		A		UD		DA		SDA	
		F	%	F	%	F	%	F	%	F	%
	is very high										
14	Information provided by the ICT tools is not suitable to tackle local problems.	37	30.83	32	26.67	27	22.50	21	17.50	3	2.50
15	ICT can be accessed by anybody	18	15.00	45	37.50	31	25.83	18	15.00	8	6.67
16	ICT tools are not suitable to illiterate people.	29	24.17	30	25.00	39	32.50	16	13.33	6	5.00
17	Information provided through ICT is not in local language	15	12.50	36	30.00	37	30.83	19	15.83	13	10.83
18	Traditions inhibit the use of ICT tools by women	33	27.50	28	23.33	33	27.50	23	19.17	3	2.50
19	ICT application in agriculture has created employment opportunities.	22	18.33	44	36.67	40	33.33	9	7.50	5	4.16
20	ICT application in agriculture has improved the social status of the farmer	23	19.16	36	30.00	35	29.16	20	16.67	6	5.00
21	ICT can increase the standard of living	51	15.00	36	30.00	43	35.83	15	12.50	8	6.67

A little less than half of farm youths strongly agree (42.50%) with the statement followed by agree (37.50%), undecided (11.67%), disagree (5.83%) and strongly disagree (2.50%) regarding the statement ICT can provide reliable information**.** A little more than half of the farm youths had agree (52.50%) with the statement followed by strongly agree (25.00%), undecided (16.67%), strongly disagree (5.00%) and disagree (0.83%) regarding the statement ICT can provide practical oriented information**.** Almost more than one third of the farm youths strongly agree (36.67%) with the statement followed by undecided (35%), agree (14.17%), disagree (10.83%) and strongly disagree (3.33%) regarding the statement ICT can access at anywhere. Almost more than one third of the farm youths agree (35.00%) with the statement followed by undecided (20.00%), strongly agree (25.83%), disagree (13.33%) and strongly disagree (5.83%) regarding the statement ICT tools can increase confidence level. A one third of the farm youths strongly agree (30.83%) with the statement followed by agree (29.17%), undecided (28.33%), disagree (6.67%) and strongly disagree (5.00%) regarding he statement It is difficult to use ICT tools by rural people.

Slightly more than two third of the farm youths agree (38.33%) with the statement followed by undecided (27.50%), strongly agree (25.00%), disagree (6.67%) and strongly disagree (2.50%) regarding the statement We have to pay money for getting information through ICT tools. Slightly less than half of the farm youths agree (41.67%) with the statement followed by undecided (25.83%), strongly agree (20.00%), disagree (6.67%) and strongly disagree (5.83%) regarding the statement ICT tools can provide information very quickly. Slightly more than one third of the farm youths were undecided (38.33%) about the statement followed by agree (21.67%), strongly agree (20.83%), disagree (14.17%) and strongly disagree (5%) regarding the statement ICT tools are more interactive. Almost one third of the farm youths agree (29.16%) with the statement followed by strongly agree (28.33%), undecided (27.50%), disagree (10.00%) and strongly disagree (5%) regarding the statement Can ICT tools help for information sharing. Slightly more than one third of the farm youths agree (33.33%) with the statement followed by strongly agree (20.83%), undecided (20.83%), disagree (17.50%) and strongly disagree (7.50%) regarding the statement ICT can access at any time.

It was revealed from the Table 3 slightly less than half of the farm youths responded as undecided (40.00%) with the statement followed by agree (21.67%), strongly agree (18.33%), disagree (14.17%) and strongly disagree (5.83%) regarding the statement Can ICT tools make complex ideas into simple ideas. Slightly less than half of the farm youths undecided (45.00%) with the statement followed by agree (26.67%), disagree (11.67%), strongly agree (15.83%) and strongly disagree (0.83%) regarding the statement I am wasting my precious time by browsing unnecessary sites. Slightly more than one third of the farm youths strongly agree (31.67%) with the statement followed by agree (30.83%), undecided (21.33%), disagree (12.50%) and strongly disagree (3.33%) regarding the statement Initial cost of ICT tools is very high. One third of the farm youths strongly agree (30.83%) with the statement followed by agree (26.67%), undecided (22.50%), disagree (17.50%) and strongly disagree (2.50%) regarding the statement Information provided by the ICT tools is not suitable to tackle local problems. Slightly more than one third of the farm youths agree (37.50%) with the statement followed by undecided (25.83%), disagree (15.00%), strongly agree (15.00%) and strongly disagree (6.67%) regarding the statement ICT can access by anybody. Slightly more than one third of the farm youths undecided (32.50%) with the statement followed by agree (25.00%), strongly agree (24.17%), disagree (13.33%) and strongly disagree (5.00%) regarding the statement that ICT tools are not suitable to illiterate people.

One third of the farm youths undecided (30.83%) with the statement followed by agree (30.00%), disagree (15.83%), strongly agree (12.50%) and strongly disagree (10.83%) regarding the statement Information provided through ICT is not in local language. Slightly less than one third of the farm youths strongly agree (27.50%) with the statement followed by undecided (27.50%), agree (23.33%), disagree (19.17%) and strongly disagree (2.50%) regarding the statement Traditions inhibit the use of ICT tools by rural women. Slightly more than one third of the farm youths agree (36.67%) with the statement followed by strongly agree (18.33%), disagree (7.50%), strongly disagree (4.16%) and undecided (3.33%) regarding the statement ICT application in agriculture has created employment opportunities. One third of the farm youths agree (30.00%) with the statement followed by undecided (29.16%), strongly agree (19.16%), disagree (16.67%) and strongly disagree (5.00%) regarding the statement ICT application in agriculture has improved the social status of the farm youths. Slightly more than one third of the farm youths undecided (35.83%) with the statement followed by agree (30.00%), strongly agree (15.00%), disagree (12.50%) and strongly disagree (6.67%) regarding the statement that ICT can increase the standard of living of farm youths.

3.3 Combined Impact of all Independent Variables on Attitude of Farm Youths towards ICT Tools

In order to assess the collective influence of all independent variables on Farm Youths attitude towards ICT, a multiple linear regression analysis was worked. The obtained coefficient of determination (R^2) and the associated t-values for the partial regression coefficients (b) were displayed in Table 4.

Results from the Table 4 found that the 13 independent variables with the attitude towards ICT tools by the farm youths taken on Multiple Linear Regression analysis gave the Co-efficient of Multiple Determination (R^2) value of 0.528. Hence, it is able be inferred that all the independent variables put together contributed 52.80 per cent of the total variation in the attitude towards ICT by the farm youths and positively significant. Remaining 47.20 per cent was due to extraneous factors.

The regression coefficient given in the Table 4 similarly revealed that the profile characteristics namely extension agency contact, achievement motivation and decision making were found positively significant. Remaining profile characteristics viz., age, education, land holdings, farming experience, annual income, innovativeness, risk orientation, scientific orientation, training undergone and number of ICT tools were non-significant with the attitude towards ICT.

Table 4. Multiple linear regression analysis of attitude of farm youth towards Information and communication Technology (ICT) with independent variables

S.No.	Independent variables	Regression coefficient	Standard error	't' value
1.	Age	-.034	1.093	-.377^{NS}
2.	Educational status	-.134	.651	-1.555^{NS}
3.	Land holding	-.033	.835	-.393^{NS}
4.	Farming experience	.121	1.029	1.364^{NS}
5.	Annual income	.057	1.125	.638^{NS}
6.	Extension agency contact	.198	.304	2.258**
7.	Innovativeness	.098	.152	1.112^{NS}
8.	Risk orientation	-.031	.384	-.362^{NS}
9.	Achievement orientation	.308	.284	3.241**
10.	Decision making	.254	.215	3.009**
11.	Scientific orientation	.090	.222	.972^{NS}
12.	Training Undergone in ICT	.008	1.359	.104^{NS}
13.	Number of ICTs tool used	-.138	.374	-1.658^{NS}

*R^2=0.528 **Significant at the 0.01 level *Significant at the 0.05 level NS = non-Significant*

4. CONCLUSION

The findings of the study demonstrated that 79.63 per cent of farm youths held a favourable to highly favourable attitude regarding Information and Communication Technology (ICT). This strongly supports the notion that ICTs offer significant advantages to farm youths in promptly accessing and updating agricultural information. Factors such as interaction with extension agencies contact, achievement orientation and decision making all played a notable role in fostering a more favourable disposition on attitude towards Information and Communication Technology (ICT).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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