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UTILIZATION PATTERN OF INFORMATION AND COMMUNICATION TECHNOLOGIES AMONG AGRICULTURAL STUDENTS

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ABSTRACT

Information and Communication Technologies (ICTs) enable fast and efficient communication through emails, messaging apps, and video conferencing. They also enhance the learning experience by providing access to e-learning platforms, digital libraries, and online courses, making education more interactive and accessible. This study was conducted at Anand Agricultural University (AAU) in the state of Gujarat to examine the utilization patterns of ICT tools among agricultural students. An Ex-Post Facto research design was adopted for the study. A total sample of 80 students was selected using simple random sampling. The study aimed to identify the factors associated with the level of ICT usage among the students. The findings revealed that variables such as the students' level of education, the medium of instruction during basic schooling, and mass media exposure were positively and highly significantly associated with the level of ICT usage. This indicates that students with higher education levels, English-medium backgrounds, and greater exposure to mass media tend to use ICT tools more frequently and effectively. In contrast, variables such as gender, family type, and landholding were found to have no significant association with the level of ICT usage. This suggests that these socio-demographic factors do not substantially influence ICT adoption among agricultural students.

Keywords : *ICT utilization, agricultural students, e-learning, mass media exposure*

INTRODUCTION

In the modern era, Information and Communication Technologies (ICTs) have revolutionized the way information is accessed, shared, and utilized across various sectors, including education and agriculture. ICT tools such as emails, messaging applications, video conferencing platforms, e-learning systems, digital libraries, and online courses have made communication faster and learning more interactive and accessible. In agricultural education, ICTs play a vital role in equipping students with up-to-date knowledge, technical skills, and access to real-time information, which are crucial for academic success and future professional engagement in agriculture.

Despite the rapid advancement of ICTs, their effective utilization among students varies based on multiple socio-demographic and educational factors. Understanding the pattern of ICT usage and the factors influencing it is essential for promoting equitable and efficient integration of technology in agricultural education. At Anand Agricultural University (AAU), students are expected to leverage ICT for academic, research, and professional development. However, observations and preliminary evidence suggest that not all students utilize ICT tools to the same extent or with the same effectiveness. Various factors such as educational background, medium of instruction, access to resources, and exposure to mass media may influence the level of ICT engagement. This uneven utilization raises critical questions about the digital readiness of agricultural students and the barriers that may be limiting their effective use of ICT. Therefore, there is a pressing need to examine the patterns of ICT usage and to identify the socio-demographic and educational variables that influence ICT engagement among AAU agricultural students.

OBJECTIVES

(1) To study the profile of students

(2) To assess the level of engagement with ICT tools among agricultural students at Anand Agricultural University (AAU)

(3) To identify the types of ICT tools commonly used by the students for academic and communication purposes

(4) To examine the relationship between profile and the level of ICT engagement among students

METHODOLOGY

The present study was conducted at Anand Agricultural University (AAU) in the state of Gujarat. A simple random sampling technique was employed. Anand Agricultural University was selected purposively, and a total of 160 students were randomly selected as respondents. An *Ex-Post Facto* research design was used to examine the utilization pattern of Information and Communication Technologies (ICTs) among agricultural students at AAU. The data was primarily collected through a Google Form-based questionnaire. The questionnaire was developed in accordance with the objectives of the study and was standardized for all respondents.

RESULT AND DISCUSSION

Table 1 : Distribution of students with their Profile (n = 160)

Sr. No.	Variables	Categories	Frequency	Percentage
1	**Gender**	Male	100	62.50
		Female	60	37.50
2	**Education of Students**	UG	100	62.50
		PG	36	22.50
		Ph. D.	24	15.00
3	**Medium of Basic School Education**	Gujarati	124	77.50
		Hindi	6	3.75
		English	30	18.75
4	**Family Type**	Nuclear	104	65
		Joint	56	35
5	**Family Income**	Upto ₹ 1 lakh	98	61.25
		₹ 1-3 lakh	44	27.50
		Above ₹ 3 lakhs	18	11.25
6	**Land Holding**	Upto 1 ha	86	53.75
		1-2 ha	38	23.75
		2-4 ha	24	15.00
		4-10 ha	08	05.00
		Above 10 ha	04	02.50
7	**Mass Media Exposure**	Low	20	12.50
		Medium	74	46.25
		High	66	41.25

According to Table 1, the study found that the majority (62.50%) of the respondents were male, followed by 37.50% who were female. It was concluded that most respondents (62.50%) were undergraduate (UG) students, followed by 22.50% pursuing postgraduate (PG) studies, and 15.00% enrolled in Ph.D. programs. The study also revealed that a majority (77.50%) of the respondents had studied in Gujarati-medium schools, while 18.75% had studied in English-medium schools, and only 3.75% in Hindi-medium schools. Furthermore, the study found that most respondents (65.00%) came from nuclear families, while 35.00% belonged to joint families. In terms of annual family income, the majority (61.25%) of respondents belonged to families earning up to ₹1 lakh per year, followed by 27.50% with an income between ₹1–3 lakh, and 11.25% earning above ₹3 lakh. Regarding landholding, more than half (53.75%) of the respondents' families owned up to 1 hectare of land, followed by 23.75% with 1–2 hectares, 15.00% with 2–4 hectares, 5.00% with 4–10 hectares, and only 2.50% owning more than 10 hectares. In terms of mass media exposure, a majority (46.25%) of respondents had medium exposure, followed by high exposure (41.25%) and low exposure (12.50%).

Table 2. Distribution of the students as per their usage of ICT tools for educational purposes (n=160)

Sr. No	Categories	Frequency	Percentage (%)
1	***Krishi-kosh***	130	81.25
2	**CERA**	92	57.50
3	**Shodhganga**	78	48.75
4	**ChatGPT**	160	100.00
5	**Krishiprabha**	20	80.00

The data in the table 2. revealed that ChatGPT had the highest usage (100 per cent), followed by Krishi-kosh (81.25 per cent), CERA (57.5 per cent), and Shodhganga (48.75 per cent). Krishiprabha was used by (80 per cent) of respondents.

Table 3. Usage of ICT on Agricultural Education of Students (n=160)

Sr. No.	Categories	Frequency		
		Regular	**Occasional**	**Never**
1	**Research**	90 (56.25%)	60 (37.50)	10 (6.25%)
2	**Concept Understanding**	70 (43.75%)	70 (43.75%)	20 (12.50%)
3	**Seminar**	100 (62.50%)	60 (37.50)	0
4	**Assignment**	90 (56.25%)	70 (43.75%)	0
5	**Data Analysis**	80 (50.00%)	30 (18.75%)	30 (18.75%)

The data indicated in table 3 shows that majority of the respondents use ICT tools for seminar, assignment and research purposes, followed by concept understanding and data analysis. This result in line with Singh *et al.* (2022), Pandey *et al.* (2019) Rathwa *et al.* (2024).

Table 4 : Distribution of respondents based on utilization pattern of ICT tools for educational purposes

(n=160)

Sr. No	Utilization pattern	Frequency	Percent
1	**Low** (10 to 20 Score)	20	12.85
2	**Medium** (21 to 30 Score)	88	55.00
3	**High** (31 to 40 Score)	52	32.50

The data presented in table 4 indicated that majority of the respondents (55 per cent) has medium utilization pattern, followed by high (32.50 per cent) and low (12.85 per cent) level of utilization pattern, respectively.

Table 5 : Relationship between utilization pattern and profile of the students (n= 160)

Sr. No.	Variable	Correlation coefficient (r value)
X1	**Gender**	0.028
X2	**Education of Students**	0.229**
X3	**Medium of Basic School Education**	0.201**
X4	**Family Type**	0.009
X5	**Family Income**	0.191*
X6	**Land-holding**	0.030
X7	**Mass Media Exposer**	0.248**

*Correlation is significant at the 0.05 level

**Correlation is highly significant at the 0.01 level

According to Table 5, the variables *viz.*, education of students, medium of basic school education and mass media exposure are positively and highly significantly associated with their utilization pattern. This can be possibly due to increased awareness and knowledge about various ICT tools through academic and socio-cultural interactions through mass media. Family income is positively and significantly associated with utilization pattern. Gender, family type and land holding are non-significantly associated with their

utilization pattern of ICT tools for educational purposes. This result in line with Tankodara *et. al.* (2022), Rao (2020), Khodifad and Solanki(2023).

CONCLUSION

The study concludes that Information and Communication Technology (ICT) tools play a pivotal role in agricultural education, with widespread adoption among students for various academic and research-related activities. The findings indicate extensive use of platforms such as ChatGPT, Krishi-Kosh, and other ICT initiatives, particularly for preparing seminars, conducting research, and completing assignments. Key factors such as the level of education, medium of schooling, and mass media exposure were found to be significantly associated with ICT usage, highlighting the importance of these variables in shaping students' engagement with digital tools. Conversely, variables such as gender, family type, and landholding size did not exhibit a significant relationship with ICT utilization patterns. These findings underscore the transformative impact of ICT in agricultural education. By enhancing knowledge acquisition, improving research capabilities, and fostering digital literacy, ICT tools are helping to modernize the educational experience of agricultural students. The results imply that further integration and promotion of ICT in curriculum design and institutional support can strengthen learning outcomes and better prepare students for the demands of the evolving agricultural sector.

CONFLICTS OF INTEREST

The author declares no conflict of interest.

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