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## Utilizing pattern of information communication technology tools by the farmers

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### Abstract

This study was carried out in the Kheda district of Central Gujarat to find out the utilizing pattern of ICT tools by the farmers and the study revealed that the vast majority of respondents had mobile phones, television and internet facilities as well as had utilized mobile phone and television for the purposes of information sharing, news, entertainment, agriculture-related information and spending free time. The majority of respondents considered neighbors, friends, local leaders, agribusiness centres, television, mobile phones, newspapers, and the internet as their regular sources of information, whereas they had very low to medium extent of use of ICT tools to collect agricultural information.

**Keywords:** Utilizing, ICT, use, extent, farmers

### Introduction

Information and Communication Technology (ICT) in agriculture is an emerging field focusing on the enhancement of agricultural and other development in India. The agriculture sector is gearing up to use new information and communication technologies [1]. At present, the information and communication technology (ICT) revolution has made the extension function more efficient and effective and provides extension systems with opportunities to deliver new information services to clients. Nowadays, it also provides new options for accessing information by providing it directly to farmers and rural households by extension agents, agribusiness, and other intermediaries. According to UNESCO, ICT can be broadly understood as the technologies that facilitate communication, processing, and transmission by electronic means. It is one of the most important and challenging fields in today's world. In recent years, there is a visible shift from the old ways of delivering information to the modern ways of information delivery systems. 45% of the world's ICT projects implemented in India and also Asia's highest number of information kiosks implemented across rural India [2]. However, the most of the rural ICT projects are implemented in the socio- economically developed states of South and North India. Numbers of ICT initiatives are documented and online available. Some of the e-agriculture initiatives in India are AGMARKET, AGRISNET, ASHA, Ashwini, e-Arik, e-sagu, e- KRISHI VIPANAN, Gyandoot, HP i- Community, ITC e-choupal, Agriwatch Portal etc. [5] Gujarat has been one of the frontline state in the implementation of e-governance policies and projects in India. Independent agencies have rated Gujarat as one of the most e-prepared states in the country. Gujarat is an aspiring leader with e-readiness initiatives with the IT Policy. Gujarat has been positioned at the L2 stage in Information Communication Technologies (ICTs), which is categorized based on environment, readiness, and usage applications. The advancements in ICT can be utilized to provide accurate, timely, relevant information and services to farmers, thereby facilitating an environment that is also remunerative in the agricultural occupation [3]. ICT has revolutionized the technology transfer process by making information from various sectors available quickly and accurately. The use of ICT in agriculture extension witnessed a significant impact on the growth of agriculture. Still, there is substantial scope for enhancing the role of ICT in agriculture. Doubling the farm income within 2022 is a new challenge. Judicious use of inputs and precision farming knowledge-intensive for dissemination of technology of knowledge

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through ICTs [4]. This is a need to know the existing socio-economic profile and attitude of farmers about ICT tools and the extent of utilization of ICTs among the farming community. With this background, the present study has been formulated.

**Methodology**

**Sample design**

In the present study, a multistage sampling technique was used for the selection of samples.

**Selection of the study area:** The study was conducted in Kheda district. The Kheda district comprises 8 blocks, out of 8 blocks, Mahemdavad, Nadiad and Kheda blocks were selected purposively because it served a great deal of convenience to the researcher for easy accessibility, rapport buildings and online communication sources.

**Selection of the villages**

For selection of villages, a list of villages comes under these blocks was prepared and 12 villages were selected for the study.

**Selection of the respondents**

After the selection of villages, village wise list of farmers was prepared and among them 10 respondents from each village

were selected on the basis of random sampling methods. Thus, the total 120 respondents were selected for sample size.

**Instruments of data collection**

The instrument of data collection was the interview schedule which was prepared on the basis of the objectives of the study. Before the actual collection of data, the interview schedule was tested for the convenience of data collection. The interview schedule was prepared in Gujarati.

**Method of data collection**

Survey method of enquiry was used for data collection. The data were collected through a well-structured and pre tested interview schedule. The researcher was personally meet to the respondents and explained to them about the purpose of the study. The data were collected and recorded in free and frank atmosphere where the interviewer and interviewee may have a good rapport.

**Statistical analysis of data:** Data collected were qualitative as well as quantitative. The quantitative data were interpreted in terms of percentage and qualitative data were tabulated on the basis of categorization methods. After tabulation, statistically tools like frequency and percentage were used.

**Results and Discussion**

**Table 1:** Personal and socio-economic characteristics of the farmers using ICT tools; n= 120

Sr. No.	Characteristics	Frequency	Percent
1.	Young Age (up to 30 years)	27	22.50
	Middle Age (31 to 50 years)	61	50.83
	Old Age (Above 50 years)	32	26.67
2.	Illiterate	02	01.67
	Primary education (up to vii std.)	30	25.00
	Secondary education (viii to x)	44	36.67
	Higher secondary (xi to xii)	23	19.16
3.	Graduate	21	17.50
	Up to 3	19	15.83
	4 to 5	67	55.84
4.	Above 5	34	28.33
	Up to Rs. 50000	37	30.83
	50001 to Rs. 100000	58	48.33
5.	Above Rs. 100000	25	20.84
	Up to 1 hectare	31	25.83
	1.1 to 2 hectares	62	51.67
6.	Above 2 hectares	27	22.50
	Farming	83	69.16
	1) Farming + Job	24	20.00
	2) Farming + Business	13	10.84

Table 1 shows that slightly more than half (50.83%) of farmers were belonging to middle age group. More than two fourth (61.67%) of respondents had primary to secondary level of education followed by 36.66 percent from them had graduation to higher secondary level of education. More than half (55.84%) of respondents had four to five family members followed by 28.33 percent and 15.83 percent had above 5 and

up to 3 family members in their family respectively. 48.33 percent of respondents had ₹ 500001 to ₹ 100000 annual income while slightly more than half (51.67%) of respondents had 1.1 to 2 hectares of land. As far as occupation is concerned, majority (69.16%) of respondents were belonging to farming occupation only.

**Table 2:** Extension participation; n = 120

Sr. No.	Statement	Always		Often		Sometime		Never	
		F	P	F	P	F	P	F	P
1	Was there any crop demonstration organized at your field?	08	06.66	11	9.16	39	32.50	62	51.67
2	Have you have ever participated in any extension programme/activity?	21	17.50	24	20.00	47	39.16	28	23.33
3	Have you ever contacted extension officer?	19	15.83	33	27.50	48	40.00	20	16.67
4	Have you ever participated in field day?	06	05.00	11	09.16	29	24.16	74	61.67
5	Have you ever participated in Krishi Mahotsav/Krishimela?	23	19.16	26	21.67	50	41.67	21	17.50

\* F= Frequency, P= Percentage

A perusal of data presented in Table 2 reveals that there was no any crop demonstration organized in the field of majority (51.67%) of farmers whereas slightly less than two fifth (39.16%) of respondents had participated sometime in many extension programmes. Two fifth (40.00%) of respondents

had contacted sometime with extension officer while more than three fifth (61.67%) of respondents had never participated in field day. Majority of respondents (41.67 percent) of respondents had participated sometime in Krishi Mahotsava/Krishimela.

**Table 3:** Ownership of ICT tools; n = 120

Sr. No.	ICT Tools	Frequency	Percent
1	Radio	17	14.16
2	Television	104	86.66
3	Mobile Phone	116	96.66
4	Tablet	3	02.50
5	Computer/Laptop	12	10.00
6	Internet	78	65.00

\*F= Frequency, P= Percentage

The data presented in table 3 shows that overwhelming majority (96.66%) of respondents had mobile phones followed by 86.66 percents of respondents had television,

65.00% had internet facility, 14.10% had radio, 10.00 percent had computer or laptop while only 2.50% of respondents had tablet.

**Table 4:** Purpose of utilization of ICT tools; n = 120

Sr. No.	Utilization	Radio		Television		Mobile phone		Computer	
		F	P	F	P	F	P	F	P
1	Information sharing	02	1.66	04	3.33	87	72.50	05	4.16
2	News	07	5.83	47	39.16	23	19.16	06	5.00
3	Entertainment	15	12.50	101	84.16	107	89.16	09	7.50
4	Agriculture related information	01	0.83	37	30.83	74	61.66	04	3.33
5	Spending free time	11	9.16	78	65.00	94	78.33	09	7.50

\*F= Frequency, P= Percentage

As far as purpose of utilization of ICT tools is concerned, the findings in table 4 clarifies that vast majority of farmers (72.50%) were utilized mobile phone for the purpose of information sharing. Slightly less than two fifth (39.16 percent) of respondents utilized television for news purpose while overwhelming majority (89.16%) of respondents were

utilized mobile phones followed by 84.16 percent of respondents were utilized television for their entertainment. Slightly more than three fifth (61.66%) of respondents were utilized mobile phone for getting agriculture related information as well as majority (78.33%) of farmers used mobile phones for spending their free time.

**Table 5:** Period of utilization; n = 120

Sr. No.	Sources of information	Regular		Often		Sometime		Never	
		F	P	F	P	F	P	F	P
1	Neighbour	55	45.83	27	22.50	26	21.66	12	10.00
2	Friends	67	55.83	29	24.16	19	15.83	05	04.17
3	Relatives	23	19.16	18	15.00	72	60.00	07	05.83
4	Local leader	69	57.50	34	28.33	11	9.17	06	05.00
5	Village Level Worker	30	25.00	17	14.16	46	38.33	27	22.50
6	Subject Matter Specialist	17	14.16	38	31.66	41	34.16	24	20.00
7	State Agricultural Universities	19	15.83	25	20.83	60	50.00	16	13.33
8	Agri Business Centre	53	44.16	40	33.33	23	19.16	04	03.33
9	Radio	05	04.16	09	07.50	03	02.50	103	85.83
10	Television	70	58.33	46	38.33	04	3.33	00	0.00
11	Mobile phone	95	79.16	16	13.33	05	4.17	04	3.33
12	News paper	59	49.16	27	22.50	18	15.00	16	13.33
13	Agricultural Magazine	14	11.66	16	13.33	65	54.16	25	20.83
14	Exhibition	13	10.83	20	16.66	45	37.50	42	35.00
15	Krishi Mahotsav/Krishi Mela	18	15.00	16	13.33	47	39.16	39	32.50
16	Internet	53	44.16	30	25.00	05	4.17	32	26.66
17	Kisan Call Centre	21	17.50	17	14.16	42	35.00	40	33.33

\* F= Frequency, P= Percentage

Table 5 indicates that majority of respondents utilized their neighbor (45.83%), friends (55.83%), local leader (57.50%), agribusiness centre (44.16%), television (58.33 percent), mobile phone (79.16%), news paper (49.16%) and internet (44.16%) regularly as sources of information whereas majority of respondents utilized relatives (60.00%), village

level worker (38.33%), subject matter specialist (34.16%), state agricultural universities (50.00%), agricultural magazine (54.16 percent), exhibition (37.50%), Krishi Mahotsav/Krishi Mela (39.16%) and kisan call centre (35.00%) sometime as their source of information. As far as radio is concerned vast majority (85.83%) never utilized radio for information.

**Table 6:** Extent of use of information communication tools by the farmers to collect agricultural information; n = 120

Sr. No.	Category	Frequency	Percentage
1	Very low	35	29.17
2	Low	44	36.67
3	Medium	38	31.67
4	High	03	02.50
5	Very High	00	00.00

The data presented in table 6 shows that majority of respondents (65.84%) fall under the category of very low to low extent of use of information communication tools followed by medium extent (31.67%) of use of ICT tools by the farmers to collect agricultural information. Only 2.50 percent of respondents were fall under the high category of extent of use of ICT tools to collect agricultural information. The result might be due to their lower extension participation, purpose of utilization of ICT tools other than agriculture, lower functional literacy regarding use of ICT tools for agricultural purpose.

### Conclusion

It has been concluded from the study that majority of farmers were belonging to middle age group, had primary to secondary level of education, had three to five family members, ₹ 500001 to ₹ 100000 annual income, 1.1 to 2 hectare of land and majority of respondents were belonging to farming occupation only. There was no any crop demonstration organized in the field of majority of farmers whereas majority of respondents had participated sometime in many extension programmes and contacted with extension officer as well as participated sometime in Krishi Mahotsava/Krishimela while majority of respondents had never participated in field day. Vast majority of respondents had mobile phones, television and internet facility as well as they were utilized mobile phone and television for the purposes of information sharing, news, entertainment and agriculture related information and spending free time. Majority of respondents considered neighbours, friends, local leaders, agri business center, television, mobile phones, newspaper and internet as their regular source of information whereas they had very low to medium extent of use of ICT tools to collect agricultural information.

### References

1. Arun Babu A. A comparative analysis of e-readiness and perception of Information Communication Technology (ICT) beneficiaries in Kerala [master's thesis]. Bangalore: University of Agricultural Sciences; c2005.
2. Bhatnagar S, Vyas N. Gyandoot: Community-Owned Rural Internet Kiosks. e-Government Case Studies. Washington, DC: World Bank; c2001 [cited 2024 Nov 30]. Available from: [www.worldbank.org/publicsector/egov/gyandootcs.htm](http://www.worldbank.org/publicsector/egov/gyandootcs.htm)
3. Dhaka BL, Chayal K. Farmers' experience with ICTs on transfer of technology in changing agri-rural environment. *Indian Res J Ext Edu.* 2010;10(3):114-118.
4. Hassan M, Samah B, Shaffril H, D'Silva J. Perceived usefulness of ICT usage among JKKK members in peninsular Malaysia. *Asian Soc Sci.* 2011;7(10):255-266.
5. Nayak HS, Jadhav SN. Televiewing behavior of rural televiewers towards farm programmes. *Maharashtra J Extn Edu.* 1996;15:173-175.