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; SP-Issue 9; September 2025; Page No. 30-32

Received: 27-06-2025
Accepted: 29-07-2025

Indexed Journal
Peer Reviewed Journal

Availability and accessibility of ICTs among tribal livestock farmers of Telangana state

[1]A Suresh Nayak, [2]Srinivasa Reddy Mallampati, [3]CH Satyanarayana, [4]N Rajanna, [5]D Nagalakshmi, [6]K Vijay and [7]J Saiprasanna

[1]Assistant Professor, Department of Veterinary & AH Extension Education, College of Veterinary Science, Rajendranagar, PVNRTVU, Hyderabad, Telangana, India

[2]Associate Dean, College of Veterinary Science, Mamnoor, Warangal, PVNRTVU, Telangana, India

[3]Professor & University Head, Department of Veterinary & AH Extension Education, College of Veterinary Science, Rajendranagar, Hyderabad, PVNRTVU, Telangana, India

[4]Programme Co-ordinator, KVK, Mamnoor, Warangal, PVNRTVU, Telangana, India

[5]Associate Dean, CFSc, Pebbair, Wanaparthy, PVNRTVU, Telangana, India

[6]Assistant Professor, Livestock Production Management, College of Veterinary Science, Rajendranagar, Hyderabad, PVNRTVU, Telangana, India

[7]Assistant Professor, Scientist and Head LRS Mahabubnagar, PVNRTVU, Telangana, India

DOI: https://doi.org/10.33545/26180723.2025.v8.i9Sa.2412

Corresponding Author: A Suresh Nayak

Abstract

India's tribal livestock farmers form a substantial demographic within the rural agricultural system, yet they face unique barriers in accessing timely and accurate information to enhance productivity. This study investigates the availability and accessibility of Information and Communication Technologies (ICTs) among 405 tribal livestock farmers across three districts in Telangana: Mahabubabad, Adilabad, and Bhadradri Kothagudem. Using an ex-post-facto research design, socio-personal and psychological variables were analyzed in relation to ICT usage patterns. Results showed that 64.94% of the respondents had medium ICT availability and 63.21% had medium accessibility. Mobile phones, television, and radio were the most accessible tools, whereas advanced technologies like internet services and computers were scarcely available. Accessibility was hindered by low digital literacy, poor connectivity, and absence of localized ICT content. Notably, socio-economic status, herd size, and psychological traits like achievement motivation and information-seeking behavior had significant positive relationships with ICT accessibility. This study underscores the potential for targeted policy interventions to bridge the digital divide and improve livelihoods of tribal livestock farmers through customized ICT solutions.

Keywords: ICT accessibility, tribal livestock farmers, digital divide, Telangana, mobile technology

1. Introduction

The livestock sector plays a vital role in supporting the socio-economic development of India's tribal communities. Telangana, a state with a significant tribal population, demonstrates a unique mix of agricultural tradition and underdeveloped infrastructure. Livestock remains a principal livelihood source, especially in tribal districts like Mahabubabad, Adilabad, and Bhadradri Kothagudem. With the growth of digital agriculture and the proliferation of ICTs—such as mobile phones, internet-based advisory systems, and broadcast media—there lies a vast potential to enhance knowledge dissemination. However, for marginalized tribal farmers, ICTs remain underutilized due to structural, social, and psychological constraints. Limited connectivity, cost of devices, digital illiteracy, and lack of localized content form the major barriers.

The present study aims to assess the levels of availability and accessibility of ICTs among tribal livestock farmers and identify socio-personal and psychological determinants influencing ICT usage patterns. The findings would provide evidence for designing inclusive ICT-based interventions targeted at tribal farming communities.

Materials and Methods

An ex-post-facto research design was adopted. The study was conducted in the tribal-dominated districts of Mahabubabad, Adilabad, and Bhadradri Kothagudem in Telangana. A multistage purposive random sampling technique was used. From each of the three districts, three mandals with high tribal populations were selected, followed by three villages per mandal. Fifteen tribal livestock farmers were randomly chosen from each village, totaling 405 respondents.

Primary data were collected using a structured interview

schedule that included socio-personal variables (education, family type, landholding, income, etc.) and psychological variables (self-confidence, economic orientation, innovativeness, achievement motivation, etc.). Availability and accessibility of ICTs were assessed using a standard scale. Data analysis was performed using SPSS and MS Excel, employing descriptive statistics, mean and standard deviation classification, and Pearson's correlation for variable relationships.

Results and Discussion

The results showed that 64.94% of the respondents had medium ICT availability. Mobile phones were the most accessible ICT tool, followed by television and radio. However, computer and internet access remained very limited. This disparity in tool availability reflects both economic limitations and lack of ICT infrastructure in tribal regions.

Table 1: Item analysis of farmers according to their availability of ICTs (n=405)

S. No	ICT Tools	Always available		Sometimes available		Not available		Mean	Rank
		f	%	f	%	f	%		
1	Mobile phone	337	83.21	58	14.32	10	2.47	2.81	1
2	Computer System	24	5.93	57	14.07	324	80.00	1.26	13
3	Internet services	74	18.27	80	19.75	251	61.98	1.56	7
4	Internet via mobile Phone	219	54.08	100	24.69	86	21.23	2.33	4
5	Landline telephone	25	6.17	61	15.06	319	78.77	1.27	12
6	Multimedia	38	9.38	78	19.26	289	71.36	1.38	9
7	Television	259	63.95	66	16.30	80	19.75	2.44	2
8	Video films	54	13.33	93	22.97	258	63.70	1.50	8
9	Video conferencing	84	20.74	138	34.07	183	45.19	1.75	6
10	Digital Camera	122	30.12	144	35.56	139	34.32	1.95	5
11	e-books	27	6.67	74	18.27	304	75.06	1.31	11
12	e-magazine	24	5.93	79	19.51	302	74.56	1.31	10
13	YouTube	225	55.56	127	31.36	53	13.08	2.43	3

Accessibility was rated medium for 63.21% of respondents, but this did not always translate into effective ICT usage. Key barriers included weak mobile/internet networks (reported by 50.37%), high device costs, and lack of training (not a single farmer had formal ICT training). Despite this, a majority (75.31%) had medium ICT knowledge, often gained informally.

Table 2: Item analysis of farmers according to their accessibility of ICT tools (n=405)

S. No	ICT Tools	Very much Accessible		Sometimes accessible		Not accessible		Mean	Rank
		f	%	f	%	f	%		
1	Mobile phone	319	78.77	15	3.70	71	17.53	1.77	1
2	Computer system	29	7.16	299	73.83	77	19.01	0.77	6
3	Internet services	70	17.28	249	61.48	86	21.24	0.90	5
4	Internet via mobile phone	184	45.43	138	34.08	83	20.49	1.25	4
5	Landline telephone	82	20.25	40	9.88	283	69.88	0.33	13
6	Multimedia	271	66.91	41	10.12	93	22.97	0.44	9
7	Television	233	57.53	84	20.74	88	21.73	1.40	2
8	Video films	255	62.96	60	14.81	90	22.22	0.58	8
9	Video conferencing	179	44.20	81	20.00	145	35.80	0.44	10
10	Digital Camera	149	36.79	158	39.01	98	24.20	0.60	7
11	e-books	95	23.46	124	30.62	186	45.92	0.37	12
12	e-magazines	81	20.00	161	39.76	163	40.24	0.38	11
13	YouTube	202	49.88	68	16.79	135	33.33	1.38	3

Correlation analysis revealed significant positive relationships between ICT availability/accessibility and socio-economic status, herd size, and information-seeking behavior. Psychological traits such as achievement motivation (67.16% medium) and innovativeness (71.85% medium) were strong enablers. Self-confidence (64.69% medium) and economic orientation (71.11% medium) also played a supportive role. Constraints included lack of ICT knowledge (84.19%), unawareness of internet benefits (63.45%), and absence of regionally tailored content. These findings suggest a mismatch between technological diffusion and farmers' capacity to adopt and benefit from such innovations. Policy implications include the need to establish rural ICT hubs, provide training in local dialects, and create livestock-specific applications. Community engagement, affordable tech solutions, and peer-led train-the-trainer models could help tribal livestock Farmer's Bridge the digital divide.

References

1. Bansal M, Sharma V, Kumar A. Challenges in adoption of ICTs among farmers: a study from India. Journal of Extension Systems. 2022;38(1):45-54.
2. Hasan M, Haque M, Rahman M. Farmers' awareness on use of ICT in farm practices. Bangladesh Journal of Agricultural Extension. 2019;30(2):55-61.
3. Kumar R, Jha S, Thakur P. Factors influencing use of ICT among farmers: a study in Bihar. Indian Journal of

Extension Education. 2017;53(3):37-41.
4. Meena M, Sharma R, Tripathi N. Farmer's attitude towards ICT in transfer of technology. International Journal of Agricultural Science and Research. 2023;13(2):77-83.
5. Suresh Nayak A. Perception and utilization pattern of ICTs among tribal livestock farmers of Telangana State [PhD thesis]. Telangana: PVNRTVU; 2025.
6. Syiem R, Raj S. Access and usage of ICTs for agriculture and rural development by the tribal farmers in Meghalaya state of India. Journal of Agricultural Informatics. 2015;6(3):24-30.
7. Yadav JP, Singh RR, Kumar R. Constraints in adoption of ICT tools by goat farmers: a study in Uttar Pradesh. Indian Journal of Animal Research. 2019;53(5):711-716.