An assessment of ICT use and communication skills of village agricultural assistants (VAAs) working in Rythu Bharosa Kendras

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ABSTRACT

The digitization of extension services is essential for boosting farm productivity and doubling farmers' incomes in India. In Andhra Pradesh, Rythu Bharosa Kendras (RBKs) function as primary village-level hubs for agricultural delivery. This study assessed the extent of information and communication technology (ICT) utilization, communication competencies and operational constraints among village agricultural assistants (VAAs) working within the RBK framework in the Guntur district of Andhra Pradesh during 2022-2023. Using simple random sampling across six Mandals, primary data were gathered from 90 VAAs via a pre-tested, structured interview schedule and analyzed through descriptive statistics and Pearson correlation. A majority of respondents (57.78%) demonstrated a medium level of ICT utilization, with universal adoption of smartphones (100%), near-universal use of WhatsApp (96.67%) and the e-Crop portal (94.45%). ICT usage was heavily centered on administrative transactions like e-Crop registration (100.00%) and advisory dissemination (97.78%). While 62.22 per cent exhibited medium overall communication skills, a clear divergence emerged: interpersonal and listening skills scored highest, whereas, digital communication (mean score: 3.88) and writing skills (mean score: 3.94) lagged behind. Correlation analysis revealed that training exposure ($r = 0.526$) and innovativeness ($r = 0.448$) were the strongest positive drivers of ICT adoption ($p < 0.01$). Major systemic bottlenecks included poor internet connectivity (86.67%) and excessive workload (81.11%). Transitioning from simple device usage to effective digital communication requires addressing connectivity deficits, streamlining workloads and implementing target-driven capacity-building programmes focused on digital content creation.

Keywords: Agricultural extension; Rythu Bharosa Kendras; Village agricultural assistants; ICT; Digital governance; Communication competencies; Extension Capacity building

INTRODUCTION

Agriculture continues to be the backbone of the Indian economy, providing livelihood security to a large proportion of the rural population. Agriculture has historically been the backbone of India's economy and continues to play a central role in shaping socio-economic stability and national development (Mehmood 2025). However, the sector is increasingly confronted with numerous challenges, including climate variability, declining soil fertility, pest and disease outbreaks, fluctuations in market prices and inadequate access to timely and reliable information. In this context, information and communication technologies (ICTs) have emerged as powerful tools for enhancing the effectiveness of agricultural extension services by facilitating the rapid dissemination of information, improving communication between stakeholders and enabling informed decision making among farmers. ICTs, including mobile phones, internet platforms, GIS, drones and artificial intelligence, are transforming agricultural extension by overcoming traditional system limitations (Bhat et al 2024). Digital technologies, including smartphones, the internet, data analytics and sensor devices, have modernized agricultural extension services by enabling real-time communication, data-driven decision-making and access to vital information. When combined with timely hiring and proper logistics support, these tools empower farmers, extension workers and policymakers to boost agricultural productivity and sustainability (Danso Abbeam et al 2018).

To help double farmers' income, the Government of Andhra Pradesh launched 10,641 Rythu Bharosa Kendralu (RBKs) on 30 May 2020 (Anuhya 2022, Babu et al 2021). Functioning at the Panchayat level since kharif 2020, RBKs serve as one-stop centers for advisory services, market intervention and procurement. Partnering with technical experts, they provide certified agri-inputs, farmer knowledge centers, Polambadi (FFS), YSR Rythu Bharosa support and CCRC cards to drive year-round productivity, profitability and sustainability (Reddy 2020).

RBKs deliver comprehensive agricultural and livestock services, including certified input supply, soil testing, plant health clinics, crop booking and technical advisories. They offer veterinary support such as animal health cards, vaccinations, deworming, semen collection and first aid. Additionally, RBKs facilitate crop insurance, Bank Mitra loan guidance, beneficiary selection, market intelligence, farmer training, demonstrations and direct expert interaction via smart TV conferences (Sarada et al 2023). Village agriculture assistants (VAAs), who work closely with farmers, play a crucial role in achieving successful outcomes (Keerthi et al 2025). Their responsibilities encompass the dissemination of scientific crop production technologies, implementation of government programmes, maintenance of digital records, collection and transmission of field level data, organization of farmer awareness programmes and provision of timely advisories through digital communication platforms. To effectively perform these responsibilities, VAAs are expected to possess adequate knowledge and proficiency in the use of various ICT tools, along with strong communication skills that enable them to convey technical information in a clear, accurate and understandable manner. Khatri et al (2024), reported that ICT integration is increasingly transforming agricultural extension by improving the reach, efficiency and timeliness of information delivery. Similarly, Arulmanikandan et al (2024) emphasized that digital agricultural practices can strengthen information access and farmer empowerment, but effective utilization depends on the availability of appropriate digital infrastructure and user capabilities.

Effective communication enables individuals to build strong relationships and influence their environment (Anaeto 2003). In agriculture, extension professionals rely on these communication tactics to bridge the gap between research institutions and farmers, sharing scientific findings while conveying farm-level challenges back to researchers (Kuehne et al 2017).

In the contemporary extension environment, communication competence must be complemented by digital literacy and ICT proficiency to ensure efficient information exchange and improved service delivery. According to Suvedi and Kaplowitz (2016), communication competence directly influences the effectiveness of extension services. Their study demonstrated that extension professionals possessing strong communication skills were more successful in motivating farmers to adopt innovative technologies. Davis and Verma (1993) observed that research on job performance evaluation within agricultural extension organizations was limited. They emphasized the need for further investigation into how extension workers' competencies in human resource development, leadership, communication, programme planning, implementation and evaluation, along with organizational commitment, influence their overall job performance.

Despite the increasing dependence on digital technologies within the RBK system, considerable variations exist among VAAs regarding their access to ICT facilities, frequency of ICT usage, level of digital competence and communication effectiveness. Factors such as educational background, work experience, training exposure, availability of infrastructure, organizational support and personal motivation may influence the extent of ICT utilization and communication performance among extension personnel. Therefore, a systematic assessment of ICT usage patterns and communication skills among VAAs is essential for identifying existing gaps and formulating suitable capacity building interventions.

This study examined how VAAs in Andhra Pradesh used digital tools to communicate and share information with farmers through RBKs. It aimed to identify the tech tools they used, assess their communication skills and understand the challenges that held them back. Ultimately, the findings were intended to help create better training programmess and improve agricultural services for farmers across the state.

METHODOLOGY

The study used an ex-post facto research design in Guntur district, Andhra Pradesh, during 2022-23. Out of 18 Mandals in Guntur, six: Guntur Rural, Pedakakani, Chebrole, Ponnur, Tadikonda and Tenali,

were selected using simple random sampling. From each chosen Mandal, 15 VAAs were randomly selected, resulting in a total sample size of 90 respondents.

Primary data were collected from the selected VAAs using a pre-tested structured interview schedule developed for the purpose. The schedule included items related to the respondents' personal and professional characteristics, extent of ICT use, utilization of different ICT tools and platforms and communication skills required for effective delivery of agricultural extension services through RBKs. The data collected from the respondents were coded, tabulated and subjected to appropriate statistical analysis to draw meaningful conclusions.

RESULTS and DISCUSSION

Distribution of respondents according to ICT utilization

The distribution of respondents according to their overall level of ICT utilization (Table 1) revealed that a majority (57.78%) of the VAAs belonged to the medium ICT utilization category, while 22.22 per cent were in the high category and 20.00 per cent were in the low category. Thus four-fifth (80.00%) of the respondents had medium to high levels of ICT utilization.

The predominance of the medium category indicates that ICTs have become an integral component of the routine functioning of VAAs, particularly for accessing agricultural information, maintaining digital records, registering crop related information and communicating with farmers. However, the relatively smaller proportion of respondents in the high category suggests that regular exposure to ICT tools does not necessarily translate into advanced or comprehensive ICT competency. Differences in individual innovativeness, training exposure, work experience, access to infrastructure and the complexity of digital applications may explain the variation in ICT utilization. Patel et al (2018) reported that smartphones, internet services and social media applications were widely used by extension personnel because of their portability, ease of operation and affordability. Helen et al (2020) observed more than two-third of the extension personnel (71.33%) had only medium level of innovation proneness and with regard to the attitude towards ICTs, majority (86.66%) of the extension workers were under medium category. The researchers found that educational qualification, training exposure, innovativeness and extension contact positively influenced ICT adoption.

Farmers widely use social media to interact with friends and colleagues in search of information and to form collaborations with other farmers (Cinelli et al 2021). Professionals use these platforms to build networks, while farmers connect directly with peers and consumers. Major channels like Facebook, X (Twitter), YouTube and blogs are widely used to share updates on new technologies, events and publications.

The finding also has particular relevance in the context of Andhra Pradesh, where agricultural service delivery is increasingly being digitized. The transition towards integrated digital agricultural systems requires frontline extension functionaries such as VAAs to possess not only basic digital literacy but also the ability to use multiple platforms effectively for farmer service delivery.

Frequency of utilization of various ICT tools

The data given in Table 2 show that the smartphone was the most universally utilized ICT tool, with all the respondents (100.00%) reporting regular use. WhatsApp occupied the next position, with 96.67 per cent of the respondents using it regularly. The e-Crop portal was regularly utilized by 94.45 per cent, followed by YouTube (82.22%), agricultural mobile applications (76.67%), computer/laptop (72.22%), video-conferencing platforms (65.56%) and e-mail (51.11%).

The predominance of smartphones can be attributed to their portability, affordability, multifunctionality and ability to integrate several communication and agricultural applications into a single device. For VAAs, smartphones provide an efficient means of communicating with farmers, accessing advisories, sharing photographs and videos, using agricultural applications and coordinating with departmental officials. The exceptionally high utilization of WhatsApp indicates the growing importance of instant and interactive communication in extension service delivery. WhatsApp enables VAAs to disseminate advisories rapidly, share photographs and videos, communicate with farmer groups and obtain feedback from farmers. The high use of the e-Crop portal reflects the increasing digitization of agricultural administrative functions and the need for VAAs to undertake crop registration and

Table 1. Distribution of respondents according to level of ICT utilization

Level	Respondents (n = 90)	
	Frequency	Percentage
Low	18	20.00
Medium	52	57.78
High	20	22.22

Table 2. Frequency of utilization of various ICT tools

Tool	Frequency of utilization by the respondents (n = 90)					
	Regularly		Occasionally		Never	
	Frequency	%	Frequency	%	Frequency	%
Smartphone	90	100.00	0	0.00	0	0.00
WhatsApp	87	96.67	3	3.33	0	0.00
YouTube	74	82.22	13	14.44	3	3.33
e-Crop portal	85	94.45	5	5.55	0	0.00
Computer/laptop	65	72.22	18	20.00	7	7.78
E-mail	46	51.11	32	35.56	12	13.33
Agricultural mobile applications	69	76.67	17	18.89	4	4.44
Video conferencing platforms	59	65.56	25	27.78	6	6.66

Multiple responses

related digital transactions as part of their routine responsibilities.

The comparatively lower utilization of e-mail and video-conferencing platforms could be due to the fact that these tools are more relevant to formal communication, departmental coordination and organized meetings, whereas, smartphones, WhatsApp and agricultural portals have more direct relevance to day-to-day field-level activities. Paliwal and Kumari (2024) also noted that mobile-based ICTs had considerable potential to improve personalized and timely agricultural advisory services, although connectivity and digital capacity remained important constraints. The findings are also supported by the study on training needs of agricultural extension workers by Boniface et al (2019) which identified agricultural portals and other IT-enabled systems as important areas requiring capacity building among extension personnel.

Purpose-wise utilization of ICT tools

The results indicated that e-Crop registration was the most prominent purpose of ICT utilization, with all the respondents (100.00%) using ICT tools for this activity (Table 3). This was followed by dissemination of agricultural advisories (97.78%), input booking and distribution (94.44%), weather-based advisories (92.22%), record maintenance (90.00%), pest and disease diagnosis (87.78%) and farmer training programmes (83.33%).

The universal utilization of ICT for e-Crop registration reflects the increasing integration of digital systems into routine agricultural administration. Since e-Crop registration involves systematic collection, updating and management of crop related information, ICT tools provide an efficient mechanism for maintaining accurate and timely records. The high utilization for input booking and distribution further indicates that digital technologies are not restricted to information dissemination but are increasingly being used for service delivery and transaction oriented activities. The high proportion of VAAs using ICT for dissemination of advisories and weather-based information demonstrates the importance of digital communication in providing timely, location specific information to farmers. Weather advisories are

particularly important because delays in information can affect decisions relating to sowing, irrigation, fertilizer application, pest management and harvesting. The relatively high utilization of ICT for pest and disease diagnosis also suggests that digital resources are increasingly being integrated into field level problem solving. ICT utilization for farmer training was comparatively lower than its use for administrative and advisory activities. This indicates scope for greater use of digital videos, webinars, virtual demonstrations, online learning materials and interactive multimedia in farmer capacity building. Evidence from Andhra Pradesh and Jharkhand has shown that virtual training platforms can be useful and convenient for extension workers, particularly because they allow learning according to the availability of personnel.

The findings indicate that ICT utilization among VAAs has moved beyond simple communication and has become an important component of digital agricultural governance, advisory delivery, record management and farmer service provision.

Distribution of respondents according to communication skills

The findings (Table 4) revealed that 62.22 per cent of the VAAs possessed a medium level of communication skills, followed by 24.45 per cent with a high level and 13.33 per cent with a low level. Thus 86.67 per cent of the respondents had medium to high levels of communication skills. The predominance of the medium category suggests that most VAAs possessed a functional level of communication competency necessary for interacting with farmers and performing their extension responsibilities. However, the relatively small proportion in the high category indicates that considerable scope existed for strengthening advanced communication competencies, particularly those required for digital communication, technical writing, presentation and public speaking.

Communication is especially important for VAAs because their role extends beyond transferring technical information. They are required to understand farmers' problems, interpret technical recommendations, explain them in simple language, motivate farmers to adopt improved practices, coordinate with stakeholders and obtain feedback. Thus effective extension communication relies on a set of skills, including listening, relationship-building, public speaking, problem-solving and digital communication.

Son et al (2021) also reported a medium level of communication behaviour among extension

Table 3. Purpose-wise utilization of ICT tools

Purpose	Respondents (n = 90)	
	Frequency	Percentage
Dissemination of advisories	88	97.78
Pest and disease diagnosis	79	87.78
Input booking and distribution	85	94.44
Weather-based advisories	83	92.22
e-Crop registration	90	100.00
Farmer training programmes	75	83.33
Record maintenance	81	90.00

Muliple responses

Table 4. Distribution of respondents according to level of communication skills

Level	Respondents (n = 90)	
	Frequency	Percentage
Low	12	13.33
Medium	56	62.22
High	22	24.45

personnel in Prakasam district of Andhra Pradesh. Similarly, Nair et al (2023) reported that communication and human relation skills constituted important components of professional competence among agricultural extension personnel in Karnataka.

Communication competencies of respondents

Among the communication competencies assessed (Table 5), listening skills obtained the highest mean score (4.52) and ranked first, followed by interpersonal communication (4.41), problem-solving ability (4.33), presentation skills (4.26), public speaking skills (4.18), group communication skills (4.07), writing skills (3.94) and digital communication skills (3.88).

The highest score for listening skills is encouraging because effective listening is fundamental to farmer-centred extension. VAAs need to understand farmers' problems, production constraints, resource limitations and perceptions before suggesting appropriate solutions. Good listening can also promote trust and facilitate two-way communication between farmers and extension personnel. The second rank obtained by interpersonal communication indicates that VAAs generally possess the ability to establish and maintain relationships with farmers. This is particularly important in the RBK system, where VAAs function as a readily accessible interface between farmers and the agricultural department.

The relatively high scores for problem solving and presentation skills suggest that respondents are reasonably capable of interpreting farmers' problems and explaining agricultural technologies. However, the comparatively lower scores for writing skills and digital communication skills point towards emerging competency gaps. This is particularly significant because the extension environment is rapidly shifting from predominantly face-to-face communication towards digital and multimedia based communication. The lower score for digital communication skills may reflect the distinction between using a digital device and communicating effectively through digital media.

A VAA may regularly use a smartphone or WhatsApp but may still require training in preparing concise digital messages, developing visual content, conducting online meetings, responding professionally to digital queries, using multimedia advisories and communicating technical information through social media. The finding is supported by the work of Aiswarya et al (2018), who identified communication skills and ICT among the important core competencies requiring systematic training among agricultural extension personnel. Thus the present findings emphasize the need to shift from general ICT orientation programmes towards competency-based digital communication training.

Constraints encountered by VAAs in ICT utilization

The major constraint reported by VAAs (Table 6) was poor internet connectivity (86.67%), followed by excessive workload (81.11%), lack of technical support (76.67%), insufficient training programmes (72.22%), frequent software updates (66.67%) and lack of advanced digital skills (63.33%). Poor internet connectivity emerging as the most important constraint indicates that ICT-based extension cannot be strengthened merely by providing devices and applications. Reliable connectivity is a fundamental prerequisite for accessing portals, uploading data, participating in online meetings, sharing multimedia content and delivering real time advisories. Intermittent connectivity can also increase the time required for routine digital transactions and reduce the effectiveness of online communication. Excessive workload was the second major constraint. This suggests that VAAs may be expected to undertake several administrative, data entry, field level and farmer service activities simultaneously. Consequently, even when ICT facilities are available, limited time may restrict experimentation with advanced digital tools. Lack of technical support and insufficient training further indicate that institutional capacity building is as important as technological infrastructure. Extension personnel require continuous handholding, troubleshooting support and periodic refresher training as digital platforms change. Paliwal and Kumari (2024) identified internet connectivity among the continuing challenges affecting ICT mediated agricultural extension services.

Therefore, improving ICT utilization among VAAs requires a three pronged approach: reliable digital infrastructure, continuous competency development and responsive technical support.

Relationship between selected variables and ICT utilization

The correlation analysis (Table 7) revealed that ICT utilization had a positive and significant relationship with educational qualification ($r = 0.284$), work experience ($r = 0.231$), extension contact ($r = 0.417$), training exposure ($r = 0.526$), achievement motivation ($r = 0.368$) and innovativeness ($r = 0.448$). Among all

Table 5. Communication competencies of respondents (n = 90)

Component	Mean score	Rank
Listening skills	4.52	I
Interpersonal communication	4.41	II
Problem-solving ability	4.33	III
Presentation skills	4.26	IV
Public speaking skills	4.18	V
Group communication skills	4.07	VI
Writing skills	3.94	VII
Digital communication skills	3.88	VIII

Table 6. Constraints encountered by VAAs in ICT utilization

Constraint	Respondents (n = 90)	
	Frequency	Percentage
Poor internet connectivity	78	86.67
Excessive workload	73	81.11
Lack of technical support	69	76.67
Insufficient training programmes	65	72.22
Frequent software updates	60	66.67
Lack of advanced digital skills	57	63.33

Multiple responses

Table 7. Relationship between selected variables and ICT utilization

Variable	Correlation coefficient (r)
Educational qualification	0.284*
Extension contact	0.417**
Training exposure	0.526**
Work experience	0.231*
Achievement motivation	0.368**
Innovativeness	0.448**

*Significant at 5% LoS, **Significant at 1% LoS

the variables studied, training exposure showed the strongest positive relationship with ICT utilization (r = 0.526). This indicates that respondents who had greater exposure to training were more likely to utilize ICT tools. Training provides opportunities to learn about new applications, digital platforms and problem solving techniques, while also improving confidence in using ICTs. This finding strongly supports the need for regular, need-based and hands on training programmes for VAAs. Innovativeness recorded the second highest correlation (r = 0.448), suggesting that respondents who were more willing to experiment with new ideas and technologies were also more likely to utilize ICT tools. This is logical because digital technologies are continuously changing and their effective utilization requires willingness to explore and adapt to new applications. Extension contact also showed a substantial positive association (r = 0.417), indicating that greater interaction with extension institutions and professional networks may expose VAAs to new digital tools, information sources and methods of communication. Achievement motivation (r = 0.368) also had a significant positive association, suggesting that motivated personnel may be more inclined to

acquire new competencies and use ICTs to improve their work performance. Educational qualification had a relatively smaller but significant positive relationship (r = 0.284). This suggests that formal education may facilitate ICT utilization, but educational qualification alone is insufficient to ensure effective ICT use. Practical exposure, training and personal willingness to adopt new technologies appear to be more important. Work experience showed the lowest significant correlation (r = 0.231). This may indicate that experience by itself does not necessarily lead to greater ICT utilization. In a rapidly changing digital environment, recent training and exposure to new technologies may be more important than years of service alone. The strong association between training exposure and ICT utilization is consistent with previous research. Boniface et al (2019) reported substantial training needs among agricultural extension workers in the use of IT-enabled agricultural systems. The use of webinars and online training has effectively improved agricultural extension workers' knowledge, skills and professional attitudes while enhancing their digital literacy, access to learning resources and professional networks. (Asante 2025, Rony and Heryadi 2024, Syafuddin and Meidina 2023).

Taken together, the correlation results demonstrate that ICT utilization is influenced not only by access to technology but also by human and organizational factors. Training, innovativeness, professional interaction and motivation should, therefore, be treated as important components of digital extension capacity building.

CONCLUSION

The digitization of agricultural extension services is vital for improving farm productivity and rural livelihoods in India. In Andhra Pradesh, over 10,000 Rythu Bharosa Kendras (RBKs) were established at the Panchayat level to provide advisory services, input distribution and procurement. Village agricultural assistants (VAAs) serve as frontline links, delivering scientific recommendations, managing digital records and providing real-time advisories through ICT tools. A study of 90 VAAs in Guntur district found that 80 per cent had medium-to-high ICT usage, with smartphones (100%), WhatsApp (96.67%) and the e-Crop portal (94.45%) being the most frequently used platforms, while e-mail usage was lower (51.11%). Major purposes included e-Crop registration (100%), advisory dissemination (97.78%) and input booking (94.44%). VAAs performed best in interpersonal listening (4.52/5.00) and face-to-face communication (4.41/5.00), but scored lowest in digital communication (3.88/5.00) and technical writing (3.94/5.00), highlighting gaps in digital communication competencies. Poor internet connectivity (86.67%) and excessive administrative workloads (81.11%) were major constraints. Training exposure (r = 0.526) and personal innovativeness (r = 0.448) were the strongest positive correlates of ICT adoption. Strengthening digital extension through improved connectivity, reduced workloads and competency-based training in digital content creation and remote communication is essential to enhance RBK effectiveness.

REFERENCES

Aiswarya S, Wason M, Padaria RN, Rao DUM, Gills R, Priyadarshini P and Gurung B 2018. Training need assessment for core competencies of agricultural extension personnel in Kerala: an analytical study. Indian Journal of Extension Education **54(3):** 142-145.

Anaeto CF 2003. Concept of rural development in Nigeria: issues, prospects, problems and solutions. Nigerian Academic Forum **4(2):** 121-130.

Anuhya P 2022. Rythu Bharosa Kendra – Andhra Pradesh's revolutionary step to fulfill the farmers' needs. Agri Articles **2(4):** 223-226.

Arulmanikandan, Mishra A, Shehrawat PS and Malik JS 2024. Empowering farmers through digital agricultural practices – a review. Journal of Community Mobilization and Sustainable Development **19(1):** 9-16; doi: 10.5958/2231-6736.2024.00002.4.

Asante IK 2025. Digital technologies competencies and training needs of agricultural extension agents. African Journal of Rural Development **9(4):** 376-389.

Babu GP, Jayalakshmi M, Chaithanya BH, Mahadevaiah M and Srinivas T 2021. Effectiveness of season long training programme on knowledge levels in Kurnool district of Andhra Pradesh. Indian Journal of Extension Education **57(4):** 44-48; doi: 10.48165/IJEE.2021.57410.

Bhat PP, Prasad R, Anil K, Jadhav A, Manohar KN, Rajesh CM and Reddy SL 2024. The role of information and communication technology in enhancing the effectiveness of agricultural extension programmes worldwide: a review. Journal of Scientific Research and Reports **30(7):** 963-976; doi: 10.9734/jsrr/2024/v30i72206.

Boniface PJ, Jose AM and Husain AS 2019. Training needs of farmers and agricultural extensionists on selected information technology enabled systems for agriculture.

Journal of Extension Education **31(1):** 6209-6215; doi: 10.26725/JEE.2019.1.31.6209-6215.

Cinelli M, De Francisci Morales G, Galeazzi A, Quattrociocchi W and Starnini M 2021. The echo chamber effect on social media. Computer Science **118(9):** e2023301118; doi: 10.1073/pnas.2023301118.

Danso Abbeam G, Ehiakpor DS and Aidoo R 2018. Agricultural extension and its effects on farm productivity and income: insight from northern Ghana. Agriculture and Food Security **7:** 74; doi: 10.1186/s40066-018-0225-x.

Davis W and Verma S 1993. Performance appraisal: how extension agents view the system. Journal of Extension **31(4):** 5; doi: 10.66752/1077-5315.9894.

Helen S, Baby S and Mridula N 2020. Utilization of information and communication technology tools by the extension personnel of Kerala. Agriculture Update **15(1-2):** 1-7; doi: 10.15740/HAS/AU/15.1and2/1-7.

Keerthi P, Devy MR, Sivanarayana G and Sreenivasulu KN 2025. Profile of village agriculture assistants of East Godavari district in Andhra Pradesh. International Journal of Agriculture Extension and Social Development **8(6):** 541-544; doi: 10.33545/26180723.2025.v8.i6g.2076.

Khatri A, Lallawmkimi MC, Rana P, Panigrahi CK, Minj A, Koushal S and Ali MU 2024. Integration of ICT in agricultural extension services: a review. Journal of Experimental Agriculture International **46(12):** 394-410 doi: 10.9734/jeai/2024/v46i123146.

Kuehne G, Llewellyn R, Pannell DJ, Wilkinson R, Dolling P, Ouzman J and Ewing M 2017. Predicting farmer uptake of new agricultural practices: a tool for research, extension and policy. Agricultural Systems **156:** 115-125; doi: 10.1016/j.agsy.2017.06.007.

Mehmood T 2025. Agriculture as the backbone of India's economy: an analysis of contribution, barriers and policy reforms. International Journal of Financial Management and Economics **8(2):** 1134-1140; doi: 10.33545/26179210.2025.v8.i2.660.

Nair NB, Jahagirdar KA, Angadi JG and Meena MS 2023. Professional competence of extension personnel in Karnataka state in India. Indian Journal of Extension Education **59(2):** 79-83; doi: 10.48165/IJEE.2023.59217.

Paliwal H and Kumari J 2024. Transforming agriculture: a comprehensive review of mobile-based ICTs and innovations in India's agricultural extension services, with a focus on the multimedia agricultural advisory system (MAAS). International Journal of Agriculture Extension and Social Development **7(2):** 88-92; doi: 10.33545/26180723.2024.v7.i2b.304.

Patel MR, Patel A, Patel PC and Desai JD 2018. Training needs of the state officials of agriculture and allied departments of western India. Asian Journal of Agricultural Extension, Economics and Sociology **22(3):** 1-7; doi: 10.9734/AJAEES/2018/36915.

Reddy DA 2020. RBKs of Andhra Pradesh – one stop solution for the needs of the farming community. Vigyanvarta **1(3):** 22-24.

Rony ZT and Heryadi DY 2024. Agricultural extension: is it still relevant? Jurnal Studi Komunikasi **8(1):** 72-81; doi: 10.25139/jsk.v8i1.8057.

Sarada O, Suneel Kumar GV and Sivanarayana G 2023. Services offered by the RBKs and training needs of village agricultural assistants in Guntur district. Journal of Research ANGRAU **51(1):** 152-162; doi: 10.58537/jorangrau.2022.50.4.17.

Son SGJD, Bose DK and Jahanara 2021. A study on communication behaviour of extension personnel of Prakasam district of Andhra Pradesh. International Journal of Advances in Agricultural Science and Technology **8(11):** 1-11; doi:10.47856/ijaast.2021.v08i11.001.

Suvedi M and Kaplowitz MD 2016. What every extension worker should know. Core Competency Handbook, Department of Community Sustainability, Michigan State University, USA, pp 7-22.

Syafuddin K and Meidina AP 2023. Collaboration to build resilient farmers' human resources: digital literacy programme in agriculture as a joint education effort. WIMAYA **4(2):** 94-103; doi: 10.33005/wimaya.v4i02.88.

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