P-ISSN 2322 - 0678 & E-ISSN 3048 - 9946
https://doi.org/10.56572/gjoee.2025.40.1.0011 Gujarat Journal of Extension Education Vol. 40 : Issue 1 : December - 2025

CONSTRAINTS FACED BY EXTENSION SCIENTISTS IN COMMUNICATING AGRICULTURAL INFORMATION

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ABSTRACT

The present study aimed to assess the constraints faced by 150 extension scientists in Punjab and Odisha states in communicating agricultural information to the farmers in 2023. Respondents were selected following probability proportionate to the number of extension scientists in each university, resulting in 73 from Punjab Agricultural University (PAU) and 77 from Odisha University of Agriculture and Technology (OUAT). Constraints faced by the Extension Scientists while seeking information and disseminating information was measured on a three-point continuum i.e., frequently, occasionally, and never and scores of two, one and zero were assigned, respectively and further summed scores were categorized into three categories by using cumulative cube root method i.e. rarely, occasionally and frequently. Majority of the respondents faced the problem of insufficient staff availability for field assistance, lack of timely funds to carry out training and field activities and unavailability of transport facilities in both the universities. In both universities, more than fifty per cent of the total respondents were facing the problems occasionally followed by rarely. Recruiting more staffs, providing transport facilities for each headquarter and outstation and timely funds for conducting a greater number of extension activities for needy farmers will be beneficial.

Keywords: *constraints, extension scientists, agricultural information, PAU, OUAT*

INTRODUCTION

Agricultural extension plays a pivotal role in bridging the gap between research institutions and farming communities by disseminating relevant information and technologies. But in order to properly convey agricultural information to farmers, extension scientists frequently encounter a number of constraints. In its broadest sense, communication is a dynamic process impacted by institutional, technological, and socioeconomic elements rather than just the transfer of knowledge (Singh, 2005; Sharma et al., 2013). Recent field studies have also shown that the pace at which farmers adopt ICT-based advisory services depends heavily on their familiarity and confidence in using these tools. Similar observations were made in Gujarat, where ICT adoption among farmers increased only when basic operational barriers were addressed (Khodifad & Solanki, 2023). Inadequate access to information and communication technology (ICT) tools is one of the main problems. Despite the fact that ICT has revolutionized agricultural extension globally, infrastructure constraints, a lack of training, and limited accessibility in rural regions prevent extension workers from using it effectively (James & Lakshminarayan, 2017; Verma et al., 2013; Baruah & Mohan, 2018). Similar results from Ethiopia and Nigeria show that extension agents' ability to provide timely information is impacted by their low digital literacy and limited ICT exposure (Mustapha et al., 2022; Workineh et al., 2022; Pratik and Vinaya, 2022).

Constraints also emerge from the information-seeking behaviour of extension scientists themselves (Harikrishna et al., 2023a; Harikrishna et al., 2025b). Research from Africa and India indicates that extension agents and agricultural researchers face a lack of access to pertinent databases and e-resources, which limits the dissemination of current information to the farming population (Mtega et al., 2014; Neogi & Partap, 2022; Gudeta et al., 2021). Additionally, there is frequently a lack of contact between scientists, extension agents, and farmers, which leads to the underutilization of the knowledge systems that are accessible (Okoedo & Edobor, 2013; Sivanarayana et al., 2002). Effective communication is further hampered by sociocultural hurdles such farmers' low literacy rates, resistance to change, and linguistic disparities (Moyo & Abiodun, 2018; Sobalaje et al., 2019). Evidence shows that social norms, mobility limitations, and low digital literacy also widen communication gaps among farming groups. Farm women, in particular, face greater barriers to accessing digital extension services due to limited device ownership, time constraints, and reliance on others for information (Challa, 2024). These complex limitations lower extension services' overall efficacy, which eventually impacts rural livelihoods and agricultural productivity. Therefore, it is essential to comprehend and resolve the obstacles extension scientists

encounter in order to improve agricultural communication systems and guarantee the industry's sustained growth.

OBJECTIVE

To assessing the contranints faced by extension scientists in communicating agricultural information

METHODOLOGY

A total of 300 extension scientists are working in both universities, out of which 145 extension scientists are working at PAU and 155 extension scientists are working at OUAT. A total of 150 extension scientists, including 73 from PAU and 77 from OUAT, were selected following probability proportionate to the number of extension scientists employed by each university as well as the number of extension scientists employed at both their headquarters and outposts. Constraint was operationalized as difficulties or hindrances faced by the Extension Scientists while seeking information and disseminating information. Problems faced by the respondents in communicating agricultural information to the farmers were studied and different problems were classified based on organizational, financial, and technical problems. It was measured on a three-point continuum i.e., frequently, occasionally, and never and scores of two, one and zero were assigned, respectively. Scores of different constraints were summed for each respondent. Constraints faced by extension scientists was categorized into three categories by using cumulative cube root method.

RESULTS AND DISCUSSION

(1) Organizational problems

Table 1: Distribution of respondents according to constraints faced on the basis of organizational problems (n=150)

Sr. No.	Problems	Respondents									
		PAU (n_1 = 73)					OUAT (n_2 = 77)				
		F f (%)	O f (%)	N f (%)	Mean Score	Rank	F f (%)	O f (%)	N f (%)	Mean Score	Rank
1	**Insufficient staff availability for field assistance.**	46 (63.03)	25 (34.24)	02 (2.73)	1.60	1	43 (55.12)	30 (38.96)	04 (5.92)	1.50	1
2	**Burden of other activities hinders dedicating time to extension activities.**	23 (31.50)	30 (41.09)	20 (27.41)	1.04	2	27 (35.06)	33 (42.85)	17 (22.09)	1.12	5
3	**Insufficient support from seniors and subordinates.**	16 (22.00)	41 (56.00)	16 (22.00)	1.00	3	26 (33.70)	49 (63.60)	02 (2.70)	1.31	2
4	**Unavailability of resource persons/experts of particular discipline on time.**	15 (20.54)	38 (52.05)	20 (27.41)	0.91	5	18 (23.37)	52 (67.53)	07 (9.10)	1.14	4
5	**Lack of integrated approach of inter-departments.**	12 (16.43)	44 (60.27)	17 (23.30)	0.93	4	17 (22.20)	58 (75.10)	02 (2.70)	1.19	3

F- Frequently, O-Occasionally, N-Never

* Figures in parenthesis are the percentage to their respondents total

The data put forth in Table 1 reveals that in PAU and OUAT, insufficient staff availability for field assistance ranked first with mean score 1.60 and 1.50 respectively followed by burden of other activities, insufficient support from seniors and subordinates, lack of integrated approach of inter departments, and unavailability of experts ranked two, three, four and five with mean scores 1.04,1.00,0.93 and 0.91 respectively for PAU. In case of OUAT, the ranks regarding insufficient support from seniors and subordinates, lack of integrated approach of inter departments, unavailability of experts, and burden of other activities were two, three, four and five with mean scores 1.31,1.19,1.14 and 1.12 respectively. More than half of the respondents of PAU (63.03%) and OUAT (55.12%) were facing the problem of insufficient staff availability for field assistance frequently. The probable reason for this might be the staffs were engaged and involved in other activities and were not available on time. More than one-third of the respondents of PAU (41.09%) and OUAT (42.85%) were occasionally facing the problem of burden of other activities that hinders dedicating time to extension activities. More than half of the respondents of PAU were facing the problems of insufficient support from seniors and subordinates (56%), lack of integrated approach of inter departments (60%), and unavailability of experts (52.02%)

occasionally similarly in OUAT, more than half of the respondents were facing the problems of insufficient support from seniors and subordinates (63.60%), lack of integrated approach of inter departments (75.10%), and unavailability of experts (67.53%) occasionally while communicating agricultural information to farmers. These findings are in line with Mugwisi (2013) who reported that poor communication between inter-departments affected the information flow.

Financial problems

Table 2: Distribution of respondents according to constraints faced on the basis of financial problems (n=150)

Sr. No.	Problems	Respondents									
		PAU (n_1 = 73)					OUAT (n_2 = 77)				
		F f (%)	O f (%)	N f (%)	Mean Score	Rank	F f (%)	O f (%)	N f (%)	Mean Score	Rank
1	**Unavailability of transport facilities hinders the visit and training to farmers.**	10 (13.69)	52 (71.23)	11 (15.08)	0.98	4	20 (25.97)	54 (70.12)	03 (3.91)	1.22	3
2	**Electricity problems affects conducting extension activities in the field.**	14 (19.17)	33 (45.20)	26 (35.63)	0.83	5	17 (22.07)	49 (63.63)	11 (14.30)	1.07	4
3	**Shortage of funds to purchase modern equipments/tools.**	21 (28.76)	34 (46.57)	18 (24.67)	1.04	3	39 (50.64)	32 (41.55)	06 (7.81)	1.42	1
4	**Lack of timely funds to carry out training and field activities.**	40 (54.79)	24 (32.87)	09 (12.34)	1.42	1	30 (38.96)	45 (58.44)	02 (2.60)	1.36	2
5	**Availability of less inputs for demonstration than demanded by the farmers.**	20 (27.39)	37 (50.68)	16 (21.93)	1.05	2	17 (22.00)	37 (48.00)	23 (30.00)	0.92	5
6	**Insufficient supply of literature to the farmers during training/ demonstrations affects the information delivery.**	12 (16.43)	36 (49.31)	25 (34.26)	0.82	6	11 (14.28)	39 (50.64)	27 (35.08)	0.79	6

F- Frequently, O-Occasionally, N-Never

* Figures in parenthesis are the percentage to their respondent's total

The data put forth in Table 2 reveals that in PAU, lack of timely funds to carry out training and field activities ranked first with mean score 1.42 followed by availability of less inputs for demonstrations, shortage of funds to purchase modern equipment/tools, unavailability of transport facilities, electricity problems, and insufficient supply of literature ranked two, three, four, five and six with mean scores 1.05,1.04,0.98,0.83 and 0.82 respectively. In case of OUAT, the ranks with regard to shortage of funds to purchase modern equipment/tools, lack of timely funds to carry out training and field activities, unavailability of transport facilities, electricity problems, availability of less inputs for demonstrations, and insufficient supply of literature were two, three, four, five and six with mean scores 1.42,1.36,1.22,1.07,0.92 and 0.79 respectively. More than half of the respondents of PAU were facing the problem of unavailability of transport facilities (71.23%) and availability of less inputs for demonstrations (50.68%) occasionally. Problem of shortage of funds to purchase modern equipment/tools were faced by 46.57 per cent of the respondents of PAU occasionally whereas in OUAT, 50.64 per cent of the respondents frequently faced this problem. More than half of the respondents of PAU (54.79%) were facing the problem of lack of timely funds to carry out training and field activities frequently. In OUAT, more than half of the respondents were facing the problem of unavailability of transport facilities (70.12%), electricity problems (63.63%), lack of timely funds to carry out training and field activities (58.44%) and insufficient supply of literature (50.64%) occasionally while communicating agricultural information to farmers. These findings are in line with those of Singh (2005), Godara *et al* (2009), Okoedo *et al* (2013) and Baruah *et al* (2018) who reported that major problems faced by respondents were lack of funding, transport facilities, infrastructure, demonstration materials and power supply while communicating information to farmers.

(3) Technical problems

Table 3: Distribution of respondents according to constraints faced on the basis of technical and miscellaneous problems

(n=150)

Sr. No.	Problems	Respondents									
		PAU (n_1 = 73)					OUAT (n_2 = 77)				
		F f (%)	O f (%)	N f (%)	Mean Score	Rank	F f (%)	O f (%)	N f (%)	Mean Score	Rank
A	**Technical**										
1	Lack of information about farmers' need reduces the efficiency.	13 (17.80)	50 (68.49)	10 (13.71)	1.04	1	20 (26.00)	54 (70.10)	03 (3.90)	1.22	1
2	Lack of knowledge about ICT tools applicability.	08 (10.95)	37 (50.68)	28 (38.37)	0.72	2	17 (22.00)	48 (62.30)	12 (15.70)	1.06	2
B	**Miscellaneous**										
3	Age and health factors affect the effective communication with farmers.	10 (13.69)	40 (54.79)	23 (31.52)	0.82	-	18 (23.37)	59 (76.63)	-	1.23	-

F- Frequently, O-Occasionally, N-Never

* Figures in parenthesis are the percentage to their respondents total

The data put forth in Table 4.20 reveals that in PAU and OUAT, lack of information about farmer's need ranked first with mean score 1.04 and 1.22 respectively followed by lack of knowledge about ICT tools applicability ranked second with mean score 0.72 and 1.06 respectively. More than half of the respondents of PAU (68.49%) and OUAT (70.10%) were facing the problem of lack of information about farmers' need reduces the efficiency occasionally. More than half of the respondents of PAU (50.68%) and OUAT (62.30%) were facing the problem of lack of knowledge about ICT tools applicability occasionally. Similar patterns of limited ICT application have been reported among farmers and extension users in recent field studies (Samadder, Panday & Prasad Lal, 2024). Majority of the respondents of OUAT (76.63%) and 54.79 per cent respondents of PAU were facing the problem of age and health factors affect the effective communication with farmers occasionally. These findings are in line with those of Mugwisi (2013); Baruah *et al* (2018); Bhuvanasri et al. (2025); Jevlya et al. (2025); Ganvit et al. (2024); Harikrishna et al. (2023a); Harikrishna et al. (2025b).

From the above findings, it can be concluded that majority of the respondents were facing the problems of unavailability of transport facilities, lack of information about farmers' needs, lack of integrated approach of inter departments, shortage of funds and age and health factors affecting effective communication occasionally whereas insufficient staff availability for field assistance frequently.

(4) Intensity of constraints

Table 4: Distribution of the respondents according to the intensity of constraints faced by them (n=150)

Sr. No.	Intensity of constraints faced by respondents	Respondents				Overall f (%)
		PAU (n_1 = 73)		OUAT (n_2 = 77)		
		f	%	f	%	
1	**Rarely** (8 – 13.97)	29	39.70	07	9.00	36 (24.35)
2	**Occasionally** (13.97 – 17.76)	33	45.30	47	61.00	80 (53.15)
3	**Frequently** (17.76 - 24)	11	15.00	23	30.00	34 (22.50)

Comparative assessment of both universities based on constraints faced by respondents			
Variable	**Mean Scores**		**Z test #**
PAU (n_1 = 73)	**OUAT** (n_2 = 77)		
Constraints	14.24	16.61	-5.130**

**Significant at 0.01 level #- Mann-Whitney U test

The data pertaining to level of problems faced by the respondents has been placed in Table 4. Problems were ranged from 8-24. 45.30, 61.00 and 53.15 per cent of the respondents of PAU, OUAT and overall universities faced the problems occasionally (13.97-17.76). It is clear from the data in Table 4.20 that 15.00, 30.00 and 22.50 per cent of the respondents of PAU, OUAT and overall universities were facing the problems frequently (17.76-24). The Table further reveals that 39.70, 9.00 and 24.35 per cent of the respondents of PAU, OUAT and overall universities were facing the problems rarely (8-13.97). These findings are in line with a graphical representation given in figure 1. There is significant difference between both the universities at 0.01 level in case of constraints faced by the respondents.

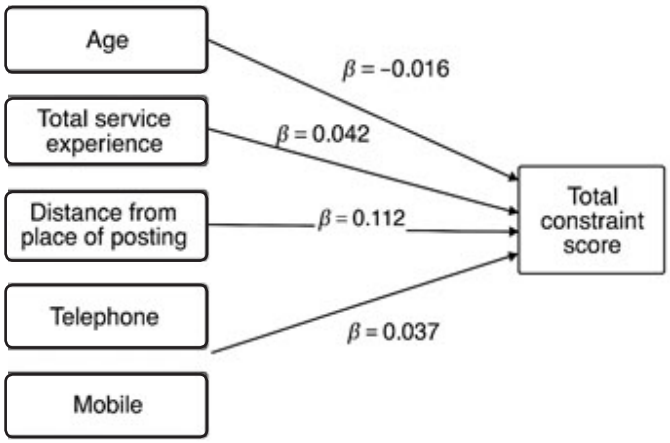

Fig. 1: Path analysis of constraints faced by extension scientists

(5) Path analysis of the constraints

Table 5: Path analysis of the constraints with respect to independent variables. (n=150)

Sr. No.	Predictor Variable → Total Constraint Score	Standardized Coefficient (β)	Interpretation
1	**Age**	-0.016	Very weak negative effect
2	**Total service experience**	0.042	Weak positive effect
3	**Distance from posting**	0.112	Moderate positive effect
4	**Telephone facility**	0.037	Weak positive effect
5	**Mobile facility**	-0.039	weak negative effect

Path coefficients (β) show that distance contributes the most to perceived constraints, while communication facilities (mobile, telephone) slightly reduce them. The path analysis revealed that among the selected independent variables, the distance from the place of posting (β = 0.112) had the most prominent positive effect on the total constraint score, indicating that extension personnel located farther from their duty stations experienced relatively higher constraints. Total service experience (β = 0.042) and telephone facility (β = 0.037) also showed weak positive relationships, whereas age (β = –0.016) and mobile facility (β = –0.039) exhibited weak negative effects, implying that younger personnel and those with better mobile access faced fewer constraints. Overall, infrastructural accessibility and remoteness primarily influenced the constraints perceived.

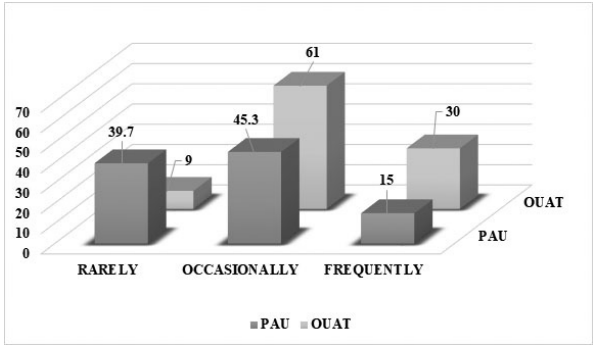

Fig 2: Intensity of constraints faced by the respondents

CONCLUSION AND SUGGESIONS

Majority of the respondents of both the universities were facing the problems of unavailability of transport facilities, lack of information about farmers' needs, lack of integrated approach of inter departments, shortage of funds and age and health factors affecting effective communication occasionally whereas insufficient staff availability for field assistance frequently. In case of OUAT, sixty per cent of the respondents were facing the problems occasionally followed by frequently and in PAU, less than half of the respondents were facing the problems occasionally followed by rarely. In PAU and OUAT, more than fifty per cent of the total respondents were facing the problems occasionally followed by rarely. The policy makers must address these problems to help extension scientists by recruiting more staffs, providing transport facilities for each headquarter and outstation and provide timely funds for conducting a greater number of extension activities for needy farmers. It was observed that large number of respondents were facing the issue of integrated approach of inter-department linkage. Thus, inter departmental linkages should be further strengthened by conducting quarterly interactive meetings of related departments.

CONFLICT OF INTEREST

This is to declare that there is "No conflict of interest" among researcher.

REFERENCES

Baruah, A. and Mohan, G. M. (2018). The agricultural experts' view towards the use of information and communication technology in extension services in NER India. *J. Manage.*, 5(4): 510–519.

Bhuvanasri, P., Singh, R. K. J. and Sindhura, K. (2025) Information seeking behaviour of farmers on adoption of climate-smart agriculture practices. *Gujarat Journal of Extension Education*, 39(1): 66–73. https://doi.org/10.56572/gjoee.2025.39.1.0011

Challa, L. N. (2024). Constraints faced by farm women in accessing and utilisation of digital extension services. *Gujarat Journal of Extension Education,* 38(1): 5-9.

Ganvit, T. D. and Chandravadia, K. U. (2024) Utilization behaviour of farmers for information and communication technologies. *Gujarat Journal of Extension Education,* 38(1):111-114. https://doi.org/10.56572/gjoee.2024.38.1.0019.

Godara, A. K., Kumar, P., Mehta, S. K. and Singh, N. (2009). Correlates of constraints affecting the productivity of extension scientists. *Indian J. Agril. Res.*, 43(1)**:** 215–230.

Gudeta, A., Tesfaye, L. and Eric, N. (2021). Information needs and information seeking behavior of agricultural researchers of Fadis and Mechara agricultural research centres, Ethiopia. *Int. J. Agril. Extn. Rural Dev. Stud.*, 8(3)**:** 1–14.

Harikrishna Y.Y., Patel J. B. and Vinaya Kumar H. M. (2023). E-extension tools usages by extension personnel in Central *Gujarat. Journal of Global Communication.*16(1):11-25. http://doi.org/10.5958/0976-2442.2023.00003.4

Harikrishna Y.Y., Patel J. B. and Vinaya Kumar, H. M. (2023). A study on assessing the attitude of atma and kvk personnel towards e-extension. *Gujarat Journal of Extension Education* 35 (2): 14-17. https://doi.org/10.56572/gjoee.2023.35.2.0004

James, D. J. and Lakshminarayan, M. T. (2017). Attitude of agricultural extension functionaries towards information and communication technology tools. *Mysore J. Agril. Sci.*, 51(4)**:** 872–876.

Jevlya, D., Kalsariya, B. N. and Jaryal, R. D. (2025) Evaluating the effectiveness of agricultural information services and associated influencing factors: A case of RFIS in Saurashtra. *Gujarat Journal of Extension Education,* 39(1): 86–94. https://doi.org/10.56572/gjoee.2025.39.1.0014

Khodifad, P. B. and Solanki, A. V. (2023). Utilization of information and communication technologies by the farmers. *Gujarat Journal of Extension Education,* 35(2): 122-126.

Moyo, R. and Abiodun, S. (2018). A survey of communication effectiveness by agricultural extension in the Gweru district of Zimbabwe. *J. Rural Stud.*, 60**:** 32–42.

Mtega, W. P., Frankwell, D., Andrew, W. M. and Angella, C. (2014). The usage of e-resources among agricultural researchers and extension staff in Tanzania. *Lib. Info. Res.*, 38**:** 119.

Mugwisi, T. (2013). The information needs and challenges of agricultural researchers and extension workers in Zimbabwe. *Ph.D. Dissertation*, University of Zululand, South Africa.

Mustapha, S., Norsida, M. J., Arif, S. N., Hirawaty, K. A. and Abubakar, T. (2022). Factors affecting use of

information communication technologies among extension agents in North-East Nigeria. *J. Agril. Extn.*, 26(1)**.**

Neogi, P. and Partap, B. (2022). Information needs and information seeking behaviour of agricultural research fraternity of West Bengal, India: An evaluative study. *Library Philosophy and Practice (e-journal)*, Article No. 5817.

Okoedo, D. U. and Edobor, E. W. (2013). Identification of communication needs of extension agents in Ondo State, Nigeria. *J. Agri. Vet. Sci.*, 4(1)**:** 1–6.

Pratik Kiritkumar Patel and Vinaya Kumar, H. M. (2022). Predictive Factors for Farmers' Knowledge of Social Media for Sustainable Agricultural Development. *Indian Journal of Extension Education,* 58 (4): 55-59. http://doi.org/10.48165/IJEE.2022.58412

Samadder, S., Panday, S. P. and Prasad Lal, S. (2024). Utilization pattern of ICT tools among potato growers to facilitate appropriate agricultural practices. *Gujarat Journal of Extension Education,* 37(1): 39-45.

Sharma, R. N., Sharma, S. K. and Sharma, B. L. (2013). Communication linkage mechanisms used by extension personnel for transfer of technology to farmers in Rajasthan. *Ind. J. Extn. Educ. R.D.*, 21: 146–152.

Singh, D. (2005). Communication behaviour of Agricultural Development Officers of Punjab. *Ph.D. Dissertation*, Punjab Agricultural University, Ludhiana, Punjab, India.

Sivanarayana, G., Reddy, P. R. and Reddy, T. B. (2002). Training needs and sources of information utilized by the Agricultural Extension Officers (AEOs) of Warangal District. *J. Res. ANGRAU.*, 30: 1005.

Sobalaje, A. J., Thomas, A. O., Solomon, O. O. and Mary, N. N. (2019). Information needs, information sources and information seeking behaviour of agricultural extension workers in Osogbo zone of Osun State, Nigeria. *Lib. Phil. Pract.*, Lincoln.

Verma, S. R., Chayal, K., Meena, N. R., Singh, N. and Sharma, F. L. (2013). Constraints and obstacles perceived by extension personnel in application of information and communication technology in agriculture. *J. Agri. Update.*, 9: 279–287.

Workineh, T. M., Ali, A. C. and Woldearegay, A. G. (2022). Intentions without attention: Challenges in agricultural extension communication in Ethiopia. pp. 95–112.

Received : September 2025 : Accepted : November 2025