Determinants of Efficient Needs Delivery to Farmers of Odisha: A Multi-Approach Constraint Analysis

ABSTRACT

Extension and Advisory Service (EAS) providers serve as the primary means of delivering these needs and play a crucial role in improving agricultural output; yet, farmers have challenges related to the effective implementation of these services. This study seeks to identify the primary challenges encountered by farmers in Odisha. Utilizing an exploratory study design with two methodologies, namely Mean Percent Score and Garrett's Ranking procedure, the issues were prioritized. Farmers had challenges with the EAS in three primary domains: social skills, empowerment, and innovation adoption. The report proposes targeted solutions to the challenges encountered by farmers in the region via a collaborative approach involving all stakeholders.

Keywords: Problem Prioritization, Extension and Advisory Service (EAS), Garrett's Ranking, Mean percent Score

INTRODUCTION

When it comes to increasing agricultural output and ensuring its long-term viability, one of the most important factors is the prompt and efficient delivery of necessities to farmers. (Shukla et al., 2022) (Shukla et al., 2024) Effective delivery systems guarantee that farmers obtain information, resources, and technology that are important for improving their farming methods in a timely manner and that are relevant to their needs. It is essential to go through this process in order to bridge the gap between agricultural research and practical application, which will ultimately contribute to the improvement of economic growth and food security. In India, there is a considerable disparity in access to agricultural information as well as

Commented [e1]: Start the abstract with the broad objective.

Commented [e2]:

Commented [e3]: Add the method of selecting the respondents and the number of the respondents in brief

Commented [e4]: Add major findings with the mean score

Commented [e5]: Add conclusion and recommendation clearly. Let them emanate from your findings.

Commented [e6]: Italicize all the *et al*

technology, which has an impact on the techniques that are used to produce crops. By addressing these gaps and improving agricultural results, it is necessary to have information delivery systems that are both effective and efficient (Krishna & Naik, 2020). The suppliers of Extension and Advisory Services (EAS) are, in essence, the means by which these requirements are presented. In spite of the fact that EAS plays a significant part in increasing agricultural output, the efficacy of this system is dependent on a number of elements, including the delivery mechanisms that are in place and the availability of information to farmers. They are confronted with a multitude of challenges that hinder their effectiveness in providing agricultural extension and advisory services. These challenges include a lack of coordination, which can result in conflicting information being provided (La et al., 2020), disrupted institutional relationships, and unclear pathways for obtaining necessary information (Mubangizi et al., 2005). Additionally, inconsistencies in government programs and inadequate support for extension staff further exacerbate the challenges that extension service providers face (Ajani & Onwubuya 13). The current study was carried out with the intention of analyzing the issues that are impacting the farmers in Odisha in terms of effective requirements delivery due to the EAS providers. This evaluation was carried out in light of the background information provided above.

Commented [e7]: Review more empirical findings to support your results and discussion.

METHODOLOGY:

The current research employed an exploratory research design characteristic of social science inquiry. The primary objective was to examine the challenges encountered by farmers in the state characterized by a high growth rate of Gross State Domestic Product from Agriculture (GSDPA) and a low instability as indicated by the Cuddy Della Vale Index (CDVI), signifying an economically stable environment. Among the various states of India, Odisha was chosen for the study through purposive random sampling.

Commented [e8]: Start with the description of the study area and justify the essence of carrying out this study in the area. You can add map of the study area.

Commented [e9]: Where was the sample frame gotten from?

Odisha (State)	Purposive Random Sampling
	Criteria: High CAGR & Low CDVI
Puri & Rayagada (Districts)	Purposive Random Sampling
	Criteria: Cropping Intensity
6 Blocks & 24 Villages	Simple Random Sampling
192 Respondnets	Simple Random Sampling

Chart 1: Sampling Procedure

In the districts of Odisha, a purposive random sampling method was employed, focusing on Cropping Intensity, leading to the selection of Rayagada and Puri districts. Additionally, a random selection was made involving 6 blocks, 24 villages, and 192 respondents for the purpose of the study. The data was gathered through a meticulously organized schedule utilizing the EAS-Y scoring tool (Grovermann, 2022), encompassing nine comprehensive domains: factors influencing technical knowledge and skills, entrepreneurial abilities, social competencies, innovation adoption, enhanced access to services, empowerment, economic resilience, social well-being, and environmental integrity.

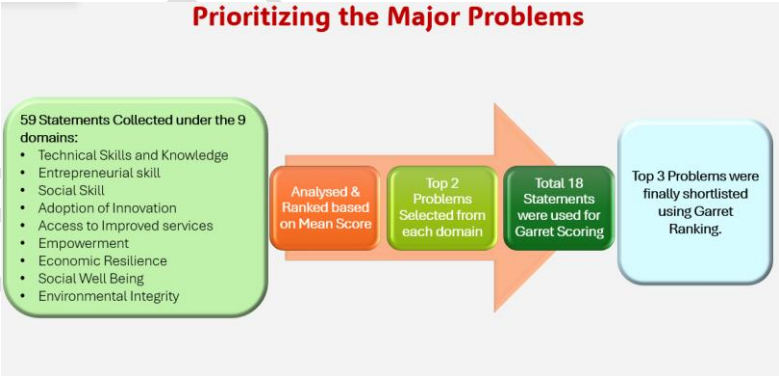

Figure 1: Sampling Procedure

The analysis was conducted in two phases; in the first phase, statements were evaluated and ranked utilizing the Mean Percent Score (MPS) methodology. The formula employed for the calculation of the MPS is as follows:

$$Mean\ Percent\ Score = \frac{Total\ Obtained\ Score}{Maximum\ Obtainable\ Score} \times 100$$

In the subsequent phase, the Ranking Technique developed by Garrett was employed to determine the principal factors. This statistical method serves to systematically rank a collection of factors according to the preferences expressed by respondents. It is frequently employed in agricultural research and extension to assess and prioritize a range of issues, challenges, or solutions, all grounded in the perspectives of farmers. It transforms the ranks assigned by respondents into scores, thereby facilitating the prioritization of factors and the extraction of significant insights.

$$Percent\ Position = \frac{(Rij - 0.5) \times 100}{Nj}$$

Where, Rij = Ranked the ith factor by the jth individual

Nj = Count of items evaluated by the jth individual

The transformation of percentage positions into scores is accomplished by referring to the table presented by Garrett and Woodworth (1969). Subsequently, for each factor, the scores assigned to each individual were aggregated, followed by the computation of the total score and the mean values of the scores. The mean scores for all factors were systematically organized in descending order, allowing for the identification of the most influential factors through the assignment of ranks. The elements exhibiting the highest mean value were considered the most consequential.

RESULT AND DISCUSSION:

Following the data collection in the initial phase, the MPS was computed based on the scores provided by the respondents. In order to evaluate the severity of constraints, the average percentage score for each item was computed and subsequently ranked (Natwadia et al., 2023). Table 1 presents 18 statements, accompanied by the MPS, having been meticulously shortlisted from a total of 59 statements across the 9 major areas. The following 18 statements represent the leading two for each of the nine major factors.

Table1: Factors along with Mean Percent Score

Major Factors	Statements	MPS
Technical Skills and Knowledge	Untimely provision of knowledge	66.06
	Insufficient skill training	71.24
Entrepreneurial skill	No backward and forward linkages with market	70.55
	Less promotion for organizing farmers producers' group	71.48
Social Skill	No encouragement for social capital building	71.45
	Poor leadership development training	72.36
Adoption of Innovation	Recommended practices require high investment	72.03
	Level of technology used in the field is adjusted with respect to field condition and investment capacity	71.03
Access to Improved services	Poor communication from service providers in this regard	70.43
	Poor awareness about the type and level of improved services to be accessed	71.22
Empowerment	Poor awareness creation by EAS towards type and level of empowerment	70.88
	Casual approach from EAS towards empowerment issues	72.29
Economic Resilience	Poor communication from EAS regarding economic resilience	66.31
	No behavioral change suggested that can promote economic resilience	67.00
Social Well Being	Not promoting group cohesion and group formation	67.66
	Not helpful to build social capital	70.01

Environmental Integrity	Very less orientation provided by EAS regarding environmental integrity	69.46
	Promotion of collective work towards environmental integrity is not done by EAS providers	70.32

It was found that within the Technical Skills and Knowledge domain, the constraints include the untimely provision of knowledge (66.06), where delays in knowledge delivery hinder its relevance, and insufficient skill training (71.24), with farmers expressing a need for more comprehensive technical training. The Entrepreneurial Skill domain reveals issues such as no backward and forward linkages with the market (70.55), which limits farmers' access to inputs and markets, and less promotion for organizing farmers' producers' groups (71.48), underscoring the lack of support for collective action that could enhance farmers' bargaining power. In the Social Skill domain, the constraints include no encouragement for social capital building (71.45), showing a deficiency in fostering networks and trust within farming communities, and poor leadership development training (72.36), highlighting the lack of initiatives aimed at empowering farmers to take leadership roles. Within Adoption of Innovation, the challenges of recommended practices requiring high investment (72.03) and the level of technology used in the field being adjusted with respect to field condition and investment capacity (71.03) suggest that financial constraints limit the widespread adoption of new practices and technologies. The Access to Improved Services domain includes poor communication from service providers (70.43) and poor awareness about the type and level of improved services to be accessed (71.22), pointing to communication breakdowns and insufficient awareness of available resources. In the Empowerment domain, poor awareness creation by EAS towards type and level of empowerment (70.88) and a casual approach from EAS towards empowerment issues (72.29) reflect a lack of focus on empowering farmers and raising awareness about the opportunities for empowerment. The Economic Resilience domain reveals poor communication from EAS regarding economic resilience (66.31) and no

behavioral change suggested that can promote economic resilience (67.00), indicating a failure to communicate strategies for building financial stability and resilience to economic shocks. In the Social Well-Being domain, the constraints of not promoting group cohesion and group formation (67.66) and not being helpful to build social capital (70.01) highlight the lack of efforts to foster social bonds and collective action that are crucial for community resilience. Finally, the Environmental Integrity domain includes very little orientation provided by EAS regarding environmental integrity (69.46) and promotion of collective work towards environmental integrity is not done by EAS providers (70.32), pointing to insufficient guidance on sustainable practices and collaboration for environmental protection. Together, these findings indicate a broad range of challenges, particularly related to communication, market integration, skill development, empowerment, and sustainability. The constraints reflect significant gaps in how Agricultural Extension Services are designed and delivered, underscoring the need for more targeted, efficient, and responsive services that can better address farmers' needs, foster innovation, and support long-term economic, social, and environmental sustainability.

Commented [e10]: After the implication of your findings, support it with other work similar to this.

Table 2. Ranking of Constraints Faced in Odisha: (Garret Ranking)

Category	Statements	Mean Garret Score	Garret Rank
Technical Knowledge & Skill	Untimely provision of knowledge	70.84	XVIII
	Insufficient skill training	76.02	VI
Entrepreneurial Skill	No backward and forward linkages with market	75.33	X
	Less promotion for organising farmers producers' group	76.26	IV
Social Skill	No encouragement for social capital building	76.23	V
	Poor leadership development training	77.14	I

Adoption of Innovation	Recommended practices require high investment	76.81	III
	Level of technology used in the field is adjusted with respect to field condition and investment capacity	75.81	VIII
Access to Improved Services	Poor communication from service providers in this regard	75.21	XI
	Poor awareness about the type and level of improved services to be accessed	76.00	VII
Empowerment	Poor awareness creation by EAS towards type and level of empowerment	75.66	IX
	Casual approach from EAS towards empowerment issues	77.07	II
Economic Resilience	Poor communication from EAS regarding economic resilience	71.09	XVII
	No behavioural change suggested that can promote economic resilience	71.78	XVI
Social Well Being	Not promoting group cohesion and group formation	72.44	XV
	Not helpful to build social capital	74.79	XIII
Environmental Integrity	Very less orientation provided by EAS regrading environmental integrity	74.24	XIV
	Promotion of collective work towards environmental integrity is not done by EAS providers	75.10	XII

After the selection of the 18 statements, the ranking technique developed by Garrett was employed, with the Ranks and Mean Garrett Score presented in Table 2. The transformation of the percentage position for each rank into scores was executed using Garret's table. The scores provided by individual respondents for each constraint were compiled and then divided by the total number of respondents who contributed to those scores. The Mean

Garrett score for each constraint was systematically organized in a ranked order. The table presents 18 constraints identified across 9 key domains, with the corresponding mean Garrett scores and ranks, shedding light on the major issues that farmers face regarding Agricultural Extension Services (EAS). Within Technical Knowledge & Skill, the constraints include untimely provision of knowledge (70.84), ranked XVIII, reflecting the delayed delivery of crucial information that undermines its applicability. Similar findings were highlighted in the study by Anderson and Feder (2004), which emphasized that delayed knowledge provision leads to reduced effectiveness in agricultural practices. The second constraint, insufficient skill training (76.02), ranked VI, shows the gap in training programs, with farmers reporting a lack of adequate technical development. This resonates with Davis (2008), who similarly notes that inadequate training is a major barrier to improving farmers' productivity and innovation. Furthermore, Mwaka and Mosugu (2020) in their study on agricultural extension in sub-Saharan Africa highlighted that insufficient skill development often results in lower adoption of modern agricultural practices. In the Entrepreneurial Skill domain, no backward and forward linkages with the market (75.33), ranked X, indicates a lack of market integration that restricts farmers' access to inputs and outputs. This is aligned with Rivera & Alex (2004), who found that market integration is often a significant barrier to agricultural development. Additionally, less promotion for organizing farmers' producers' groups (76.26), ranked IV, highlights inadequate support for collective action, which limits farmers' bargaining power. This constraint resonates with Davis (2008), who emphasized the role of farmer groups in improving market access and achieving economies of scale. Similarly, Rai and Sharma (2021) in India found that inadequate support for farmer groups leads to lower economic resilience in rural areas. Within the Social Skill domain, no encouragement for social capital building (76.23), ranked V, points to insufficient efforts to foster networks and trust among farmers. This finding is echoed by Anderson and Feder (2004), who found that

social capital plays a critical role in successful agricultural development. Similarly, poor leadership development training (77.14), ranked I, reveals the need for leadership programs to enable farmers to take on leadership roles in their communities. This is consistent with Davis (2008), who argued that leadership development is essential for enhancing community-based agricultural initiatives. Furthermore, Teshome and Balis (2023) note that leadership training in agricultural extension significantly influences the empowerment of rural farmers. In Adoption of Innovation, recommended practices require high investment (76.81), ranked III, underlines the financial barriers to adopting modern farming techniques. Similar findings are noted by Rivera & Alex (2004), who discuss the significant costs associated with adopting innovative agricultural practices. Additionally, level of technology used in the field is adjusted with respect to field conditions and investment capacity (75.81), ranked VIII, indicates that technology adoption is tailored to the financial capacity and conditions of farmers, which might limit full-scale innovation. Studies like those by Anderson and Feder (2004) have similarly pointed out that the adoption of technology is often hindered by farmers' financial constraints. Within the Access to Improved Services domain, poor communication from service providers in this regard (75.21), ranked XI, points to communication breakdowns between service providers and farmers, which is widely reported in the literature. A similar finding is presented by Rivera & Alex (2004), who identified poor communication as a major barrier to effective extension services. Additionally, poor awareness about the type and level of improved services to be accessed (76.00), ranked VII, reflects that farmers are not well-informed about the services available to them, a finding supported by Davis (2008), who noted that farmers' lack of awareness of available services significantly affects their agricultural outcomes. In Empowerment, poor awareness creation by EAS towards type and level of empowerment (75.66), ranked IX, highlights a lack of focus on educating farmers about empowerment opportunities. This is similar to findings by

Anderson and Feder (2004), who emphasized that empowerment through extension services is often neglected. Additionally, casual approach from EAS towards empowerment issues (77.07), ranked II, reveals that empowerment is not treated with the seriousness it deserves by extension agents. This echoes findings from Davis (2008), which indicate that extension services often lack a comprehensive approach to empowerment, limiting their potential impact. Within Economic Resilience, poor communication from EAS regarding economic resilience (71.09), ranked XVII, and no behavioral change suggested that can promote economic resilience (71.78), ranked XVI, both suggest that extension services are failing to communicate key strategies for building economic resilience, which is consistent with Anderson and Feder (2004), who noted that communication about resilience-building strategies is often weak in extension services. Benin and Diagne (2022) further explored the role of extension services in fostering resilience in West Africa and pointed to the failure of extension systems to introduce resilience-enhancing practices. In the Social Well-Being domain, not promoting group cohesion and group formation (72.44), ranked XV, and not helpful to build social capital (74.79), ranked XIII, reflect the insufficient focus on fostering collective action and strengthening community ties, which are essential for long-term agricultural sustainability. These findings align with Rivera & Alex (2004), who argued that collective action is a key factor for enhancing social well-being in rural areas. Finally, within Environmental Integrity, very little orientation provided by EAS regarding environmental integrity (74.24), ranked XIV, and promotion of collective work towards environmental integrity is not done by EAS providers (75.10), ranked XII, highlight the lack of emphasis on environmental education and collaborative environmental initiatives among farmers. This finding is consistent with the literature, such as the study by Davis (2008), which stressed that environmental sustainability is often overlooked in agricultural extension efforts, particularly in rural areas. Similarly, Hassan and Ali (2023) discussed the importance of fostering

collective environmental efforts in their study on sustainable agricultural practices, supporting the need for more focused initiatives. These studies collectively underscore the importance of addressing gaps in communication, training, empowerment, and collective action, all of which are essential to improving the effectiveness of Agricultural Extension Services and promoting sustainable agricultural practices.

Table 3. Major Constraints prioritized

RANK	**ODISHA**	
	Domain	**Factors**
1	Social Skill	Poor leadership development training
2	Empowerment	Casual approach from EAS towards empowerment issues
3	Adoption of Innovation	Recommended practices require high investment

The study in Odisha identified three major constraints in Agricultural Extension Services (EAS). First, **poor leadership development training** under the **Social Skill** domain was ranked as the top constraint, highlighting the lack of effective leadership programs that hinder farmers' ability to lead and drive community-based agricultural initiatives. Second, the **casual approach from EAS towards empowerment issues** was identified as a critical issue in the **Empowerment** domain, indicating insufficient focus on empowering farmers with the knowledge and tools they need to make informed decisions. Finally, the **high investment required for adopting recommended practices** ranked third in the **Adoption of Innovation** domain, reflecting the financial barriers that prevent farmers from adopting new, more productive farming methods. These constraints suggest the need for enhanced leadership training, greater empowerment, and better financial support for innovation in the region.

CONCLUSION:

This study highlights the critical constraints faced by farmers in Odisha regarding Agricultural Extension Services (EAS), which hinder agricultural productivity and sustainable development. The findings identify key challenges across multiple domains, including Technical Knowledge & Skill, Entrepreneurial Skill, Social Skill, Adoption of Innovation, Access to Improved Services, Empowerment, Economic Resilience, Social Well-Being, and Environmental Integrity. Among the top constraints, a lack of timely knowledge provision, insufficient skill training, and poor communication from service providers were found to be major barriers. Moreover, financial constraints and the limited promotion of collective action and environmental integrity further exacerbate these challenges. However, the study also reveals three primary constraints that have the most significant impact on the region: the poor leadership development training in the Social Skill domain, the casual approach from EAS towards empowerment issues, and the high investment required for adopting innovative practices. These findings underscore the urgent need for a comprehensive and focused approach to improve leadership training, empower farmers with the necessary resources and knowledge, and alleviate financial barriers to innovation adoption. Addressing these constraints will be crucial for enhancing the effectiveness of Agricultural Extension Services and fostering sustainable agricultural development in Odisha.

POLICY IMPLICATIONS:

Several key policy implications can be drawn for improving Agricultural Extension Services (EAS) in Odisha. First, policymakers should prioritize leadership development programs to empower farmers and extension agents. Second, empowerment strategies should be strengthened by providing farmers with technical, decision-making, and business skills. To address the financial barriers to innovation, subsidies, micro-financing, and affordable

technologies should be introduced. Additionally, improving communication and information flow between service providers and farmers is crucial, as is promoting farmer producer organizations (FPOs) to enhance market access and collective action. Environmental sustainability should be integrated into EAS by encouraging eco-friendly farming practices. Lastly, targeted interventions for women and marginalized farmers are needed to ensure inclusivity and equitable development. These policy actions will help create a more effective, inclusive, and sustainable agricultural extension system in Odisha.

References:

Commented [e11]: Use the same font style

Abraham, S. & Akpan, S. I. (2022). Bridging the gap in agricultural extension communication in Nigeria: Implications for sustainable agricultural development. *Journal of Rural Studies*, 89, 120-129.

Anderson, J. R., & Feder, G. (2004). Agricultural Extension: Good Intentions and Hard Realities. *The World Bank Research Observer*, 19(1), 41-60.

Ajani., E.N., Onwubuya. E.A., (2013). 7. Human Factors that Derail Extension Services Delivery in Developing Countries: Implications for Policy. *International Journal of Agricultural Research, Innovation and Technology*, doi: 10.3329/IJARIT.V2I2.14015

Benin, S., & Diagne, A. (2022). The role of extension services in building farmer resilience: A study in West Africa. *Agricultural Economics*, 53(4), 527-540.

Davis, K. E. (2008). Extension in Sub-Saharan Africa: Overview and Assessment of Past and Current Models. *The Journal of International Agricultural and Extension Education*, 15(1), 15-28.

Dhananjaya, J.P., Patel, D. D., and Patel, J. B. (2020) Constraints Faced by Farmers in Availing Technical Guidance from KVK Scientists. *Gujarat Journal of Extension Education*. 31(1), 175-177

Krishna, A., & Naik, G. (2020). Addressing crisis in Indian agriculture through agricultural information delivery. *IIMB Management Review*, 32(2), 217–229. https://doi.org/10.1016/j.iimb.2020.09.004

Faure, G., Davis, K., Ragasa, C., Franzel, S. C., & Babu, S. C. (2016). Framework to Assess Performance and Impact of Pluralistic Agricultural Extension Systems: The Best-Fit Framework Revisited. *SSRN Electronic Journal*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2869346

Grovermann, C., Chuluunbaatar, D., Blockeel, J., Sulaiman V, R., Djamen, P. and Holley, A. (2022). The extension and advisory service systems yardstick (EAS-Y) – A scoring tool to generate evidence on performance and outcomes. Rome, FAO. https://doi.org/10.4060/cb8735en

Hassan, M. A., & Ali, M. (2023). Environmental sustainability in agriculture: The role of extension services in fostering environmental integrity. *Environmental Development*, 42, 142-151.

Kassie, M., & Zikhali, P. (2022). Assessing the impact of extension services on rural household welfare: Evidence from Sub-Saharan Africa. *World Development*, 151, 104684.

La, K., Masambuka-Kanchewa, F., Lamm, A., Davis, K., & Nahdy, S. (2020). Strengthening Coordination Among Extension Service Providers for Improved Provision of Agricultural Extension and Advisory Services: A Case Study from Kenya. *Journal of International Agricultural and Extension Education*, *27*(3), 18–26. https://doi.org/10.5191/iaee.2020.27318

Mwaka, M. O., & Mosugu, O. (2020). Agricultural extension and advisory services in sub-Saharan Africa: Emerging trends and lessons learned. *International Journal of Agricultural Sustainability*, 18(4), 297-310.

Narisi, Mubangizi., Margaret, Najjingo, Mangheni., Chris, Garforth. (2005). 2. Challenges and opportunities of private agricultural extension service providers in accessing and utilising information under the National Agricultural Advisory Services (NAADS) System in Uganda: a case study of Arua and Tororo districts. *International Association of Agricultural Information Specialists*.

Natwadia, R., Sharma, R., & Badhala, B. S. (2023). Constraints Faced by The Vegetable Growers in Adoption of Drip System Of Irrigation. *Gujarat Journal of Extension Education*, *36*(2), 44–50. https://doi.org/10.56572/gjoee.2023.36.2.0008

Rai, R. K., & Sharma, P. (2021). Constraints in agricultural extension and their impact on rural livelihoods: A case study from India. *Agricultural Systems*, 188, 103016.

Rajput, M. B., Ashwar, B. K., & Vekariya, S. J. (2023). Socio-Economic Status and Constraints Faced by Dairy Farmers. *Gujarat Journal of Extension Education*, *36*(2), 54–63. https://doi.org/10.56572/gjoee.2023.36.2.0010

Rivera, W. M., & Alex, G. (2004). Extension in Rural Development: A Global Overview. *International Journal of Agricultural Sustainability*, 2(3), 145-157.

Sharma, D., & Verma, N. (2023). Enhancing social capital and group cohesion through agricultural extension programs: Insights from rural India. *Journal of Agricultural Education and Extension*, 29(2), 163-176.

Shukla, G., Ansari, M. N., Lal, S. P., & Bandhavya, M. (2022). Information seeking behaviour of farmers through mobile: An innovative ICT tool. In Biological Forum–An International Journal. 14(1): 586-590).

Shukla, G., Ansari, M. N., & Lal, S. P. (2024). Assessment of Agricultural Information Needs of Farmers: Triangulating Reliability of Standardized Information Need Index. *Gujarat Journal of Extension Education*, 37(2), 26–31. https://doi.org/10.56572/gjoee.2024.37.2.0005

Swaminathan, M. S., & D'Souza, C. (2023). Innovations in agricultural extension services: A way forward for sustainable agricultural practices. *Agricultural Systems*, 198, 103305.

Teshome, A. & Balis, T. (2023). Empowering farmers through extension: The intersection of technology, leadership, and capacity building. *Journal of Extension Education*, 61(1), 82-91.

Umar, M. & Khan, A. A. (2023). Exploring the barriers to adopting agricultural innovations in developing countries: A meta-analysis of extension service constraints. *Sustainability*, 15(9), 2315.

Zinzala, R. K., Sharma, O. P., and Jadav, T. D. (2019) Constraints Perceived by Young Cotton Growers in Development of Entrepreneurial Behaviour. *Gujarat Journal of Extension Education*, 30(1), 17-18.