

FACTORS AFFECTING FARMERS IN EFFECTIVE NEEDS DELIVERY: A MULTI-APPROACH PROBLEM PRIORITIZATION TECHNIQUE

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ABSTRACT

Extension and Advisory Service (EAS) providers are basically the mode of these needs' delivery and plays a critical role in enhancing agricultural productivity, but at the same time there are factors faced by the farmers due to the EAS in the effective needs' delivery. The current study aims to prioritize the major factors faced by the farmers in Meghalaya. With an exploratory research design using two approaches i.e Mean Percent Score and Garretts Ranking technique the problems were prioritised. It was found that famers faced issues with the EAS with regards to 3 major domains i.e. Social skill, Empowerment and Adoption pf innovation. The study advocates specific solutions to the issues faced by the farmers in the region through a convergence based approach of all the stakeholders.

Keywords: extension and advisory service (EAS), garrett's ranking, mean percent score, problem prioritization,

INTRODUCTION

The effective and timely delivery of needs to farmers plays a crucial role in enhancing agricultural productivity and sustainability. Effective delivery systems ensure that farmers receive timely and relevant information, resources, and technologies necessary for improving their farming practices (Shukla *et. al.*, 2022) (Shukla *et. al.*, 2024). This process is vital for bridging the gap between agricultural research and practical application, ultimately contributing to food security and economic growth. In India, there is a significant gap in access to agricultural information as well as technology, which affects crop production practices. Effective information delivery systems are needed to address these gaps and improve agricultural outcomes (Krishna & Naik, 2020; Devi and Shaikh, 2024; Rathwa and Bochalya, 2023; Kalasariya, 2022; and Patel *et al.*, 2023). Extension and Advisory Service (EAS) providers are basically the mode of these needs' delivery. While EAS plays a critical role in enhancing agricultural productivity, its effectiveness is contingent upon various factors including delivery mechanisms and the accessibility of information to farmers. They face a multitude of challenges that hinder their effectiveness in delivering agricultural extension and advisory services like lack of coordination 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) and inconsistencies in government programs and inadequate support for extension staff further exacerbate the challenges faced by extension service providers(Ajani & Onwubuya, 2013).

OBJECTIVE

To analyse the factors affecting the farmers in effective needs delivery due to the EAS providers in Meghalaya

METHODOLOGY

For the present study the exploratory research design of social science research was used. The prime focus was to see the factors faced by the farmers in the state where the growth of Gross State Domestic Product from Agriculture (GSDPA) is high along with the instability determined by Cuddy Della Vale Index (CDVI) is low meaning an economically stable state. From all the states of India, Meghalaya was selected for the study using purposive random sampling.

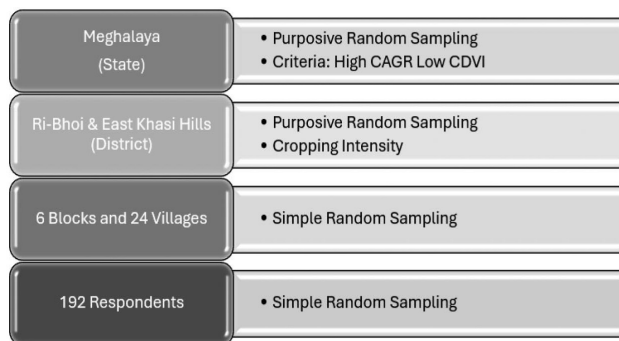


Figure 1: Sampling procedure

In Meghalaya districts were again selected using purposive random sampling based on the Cropping Intensity and Ri-Bhoi & East Khasi Hills districts were selected. Further, 6 blocks, 24 villages and 192 respondents were randomly selected for the study. The data was collected using a structured schedule based on EAS-Y scoring tool

(Grovermann, 2022), under 9 broad areas i.e factors affecting technical knowledge and skill, entrepreneurial skill, social skill, adoption of innovation, improved access to services, empowerment, economic resilience, social wellbeing and environmental integrity.

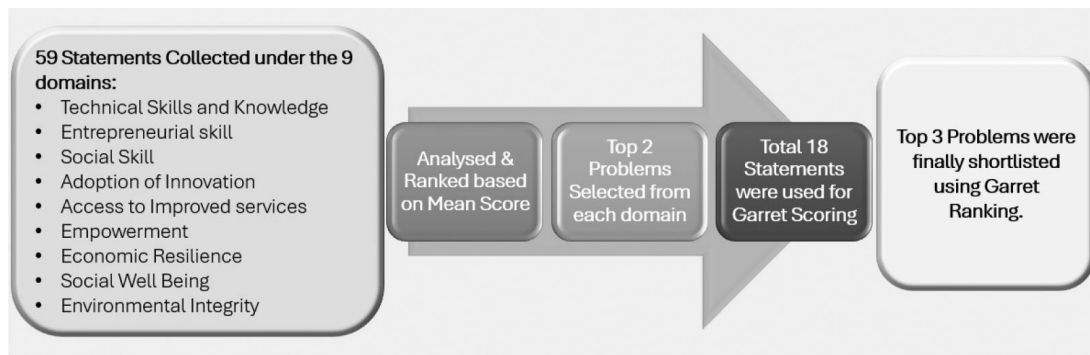


Fig. 1: Sampling Procedure

The analysis was done in 2 phases, in first phase statements were ranked using Mean Percent Score (MPS) approach. The mathematical formula used to calculate the MPS:

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

In the second phase Garretts’ Ranking Technique was used to finalise the major factors. It is a statistical technique used to rank a set of factors based on the preferences of respondents, often applied in agricultural research and extension to evaluate and prioritize various issues, problems, or solutions based on farmers’ perspectives. It converts ranks assigned by respondents into scores, making it easier to prioritize factors and derive meaningful insights.

$$\text{Percent Position} = \frac{(R_{ij} - 0.5) \times 100}{N_j}$$

Where, R_{ij} = Ranked the i th factor by the j th individual

N_j = Count of items evaluated by the j th individual

The conversion of percent position into scores is achieved by consulting the table provided by Garrett and Woodworth (1969). Then for each factor, the scores for each individual was added and then total value of scores and mean values of score were calculated. These mean scores for all the factors were arranged in descending order and the most influencing factors were identified through ranks assigned. The factors with the highest mean value were deemed the most significant.

RESULTS AND DISCUSSION

After collection of the data the in first phase based on the scores given by the respondents MPS was calculated. To assess the intensity of constraints, the mean percentage score for each item was calculated and ranked accordingly (Natwadia *et al.*, 2023). In Table 1, 18 statements are presented along with the MPS after being shortlisted from 59 statements from the 9 major areas. These 18 statements were the top two under each of the 9 majors factors.

It was found that most importantly, social skills are seen to present itself as a major concern as estimated to have high MPS of 80.04 in the poor leadership development training and 75.35 in the lack of commitment in relation to the service delivery. Empowerment issues are also reflected with greater MPS score of EAS toward the casual approach towards the empowerment issues (77.15) and less role of EAS to empower the farmers (76.23) which shows the need to focus for empowering the farmers. On the aspect of access to improved services, both the MPS for poor awareness of improved services (76.00) and no clear idea of the services to be obtained (75.33) clearly show that farmers fail to obtain important information about the available resources and services. Of these, economic resilience can be particularly emphasized; the Country’s economic unsustainability is poorly explained by EAS, and there are no other significant approaches to support its development (poor communication from EAS on economic resilience is 76.81); the problem of the lack of innovation means that there are no other solutions to support economic stability (Lack of other technologies: 55.81). Regarding entrepreneurial skills, lack of market linkages (71.12) and commitment from service provider

Table 1: Factors along with mean percent score

(n=192)

Sr. No.	Major factors	Statements	MPS
1	Technical skills and knowledge	Untimely provision of knowledge	67.54
		No structured routine for knowledge and skill development	57.58
2	Entrepreneurial skill	No backward and forward linkages with market	71.12
		Service providers are not committed	67.36
3	Social skill	Poor leadership development training	80.04
		Lack of commitment	75.35
4	Adoption of innovation	Non-availability of required inputs at local market	50.84
		Level of technology used in the field is adjusted with respect to field condition and investment capacity	66.02
5	Access to improved services	No clear idea of improved services to be obtained	75.33
		Poor awareness about the type and level of improved services to be accessed	76.00
6	Empowerment	EAS has no/lesser role in empowering the farmers	76.23
		Casual approach from EAS towards empowerment issues	77.15
7	Economic resilience	Poor communication from EAS regarding economic resilience	76.81
		No alternative technologies provided to bring economic resilience	55.81
8	Social well being	Very less discussion / orientation about societal issues	75.21
		EAS overlook societal issues	66.00
9	Environmental integrity	Poor knowledge and skill about environmental integrity among EAS providers	75.60
		Promotion of collective work towards environmental integrity is not done by EAS providers	67.17

(67.36) tones down capabilities in enhancing Market Integration and Entrepreneurial Development. Untimely provision of knowledge indicate adequate knowledge is provided at the right time (67.54), while lack of a structured routine for skill development indicates that sufficient developmental skills are not imparted in a systematic manner (57.58). Similar concerns about the environmental integrity are still present: providers from EAS have poor knowledge (75.60); there is no practice that encourages collective work (67.17) to improve the sustainable environment. Another important factor is the social well-being aspect which also need attention, in which societal issues got 75.21 for very limited discourse on socio- political issues and EAS ignore social aspect with 66.00 meaning the broader social implications

is not well addressed. Finally, the constraints in adoption of innovation are largely because the necessary inputs are not easily available locally (50.84) and lastly Level of technology used in the field is adjusted with respect to field condition and investment capacity (66.02). Following the selection of the 18 statements, the ranking technique developed by Garrett was utilized, with the Ranks and Mean Garrett Score detailed in Table 2. The conversion of the percentage position of each rank into scores was accomplished through the application of Garret's table. Scores from individual respondents for each constraint were aggregated and subsequently divided by the total number of respondents contributing to those scores. Consequently, the Mean Garrett score for each constraint was organized in a ranked order.

Table 2 : Ranking of constraints faced in Meghalaya: (Garret ranking)

(n=192)

Sr. No.	Category	Statements	Mean Garret Score	Garret Rank
1	Technical knowledge & skill	Untimely provision of knowledge	70.84	XVIII
		No structured routine for knowledge and skill development	76.02	VI
2	Entrepreneurial skill	No backward and forward linkages with market	75.33	X
		Service providers are not committed	76.26	IV
3	Social skill	Poor leadership development training	76.23	V
		Lack of commitment of EAS providers	77.14	I
4	Adoption of innovation	No clear idea of improved services to be obtained	75.21	11
		Level of technology used in the field is adjusted with respect to field condition and investment capacity	75.81	VIII
5	Access to improved services	Non-availability of required inputs at local market	76.81	III
		Poor awareness about the type and level of improved services to be accessed	76.00	VII
6	Empowerment	EAS has no/lesser role in empowering the farmers	75.66	IX
		Casual approach from EAS towards empowerment issues	77.07	II
7	Economic resilience	Poor communication from EAS regarding economic resilience	71.09	XVII
		No alternative technologies provided to bring economic resilience	71.78	XVI
8	Social well being	Very less discussion / orientation about societal issues	72.44	XV
		EAS overlook societal issues	74.79	XIII
9	Environmental integrity	Poor knowledge and skill about environmental integrity among EAS providers	74.24	XIV
		Promotion of collective work towards environmental integrity is not done by EAS providers	75.10	XII

The analysis is presented with the 18 major factors as primary obstacles faced by the farmers, are listed by their significance in descending order. Starting with, inadequate commitment demonstrated by EAS providers (rank 1) is considered the main problem, closely followed by the indifference to farmer emancipation (rank 2). The non availability of required inputs at local markets (rank 3) supported lack of proper transportation and infrastructure that hinders growth in agriculture sector (Zinzala *et al.*, (2019)). The poor rating on commitment from service providers (rank 4) and poor leadership developing training (rank 5) provided evidence that there is both lack of commitment and poor leadership within the provision of advisory framework. Rank 6th was for lack of structure in maintaining the timely hierarchy of knowledge and skill development indicates the perceived poor organization in training (Rajput *et al.*, (2023)). The factors like low level of knowledge about the enhanced services (Rank 7) and the ability to transfer the fundamental fundamentals of modern technologies to field conditions (Rank 8) can be also named as the critical ones which increase the demand for better communication and integration of technologies into farming practices (Dhananjay *et al.*, (2023)). On the other hand, low EAS engagement in the farmer's enhancement (Rank 9) and market connection (Rank 10) shows low scores in both aspects of empowerment and entrepreneurship. The lack of defined ideas of improved

services (Rank 11) and the non-promotion of collective work towards environmental integrity (Rank 12) show that better leadership and coordination is required. Concerns with ranking 13 to 18 are other difficulties, as EAS is not addressing societal concerns (Rank 13, the organisation tends to have limited knowledge regarding the integrity of the environment in which farming is conducted (Rank 14, there is scarce deliberation on societal issues (Rank 15. At the lower end of the ranking, a lack of other technologies to foster economic sustainability (Rank 16), invincible economics resilience communication (Rank 17), and the delayed knowledge provision (Rank 18) show that the support of economical sustainability and timely knowledge dissemination.

Table 3 : Major constraints prioritized

Rank	MEGHALAYA	
	Domain	Factors
1	Social Skill	Lack of commitment of EAS providers
2	Empowerment	Casual approach from EAS towards empowerment issues
3	Access to Improved Services	Non-availability of required inputs at local market

Three major factors affecting agriculture witnessed among farmers in Meghalaya need urgent consideration and are grouped under critical spheres influencing agricultural advancement. First, in Domain Social Skill, the highest-ranked challenge is the inability of EAS providers to fully commit thus replacing the ineffective provision of consultants, advice-giving services to farmers. Second, in the domain of Empowerment, memo-rial relations are recorded where EAS adopted a casual approach while addressing empowerment problems which suggest a lack of preventive measures by EAS for assisting the farmers to acquire adequate knowledge and skills with a view of improving their lives. Third, under the domain of Access to Improved Services, non-sourcing of required inputs from the local market greatly limits farmers abilities to source the resources so vital for boosting productivity and innovating in the agriculture sector. All these factors are important for the farmer parameter and require attention in order to improve the outcomes of agricultural services in the area.

CONCLUSION

Therefore, from the above study, it can be concluded that in Ri Bhoi and East Khasi hills district of Meghalaya, farmers encounter some specific regions constrains which restrict the agricultural development. Some of the biggest challenges include perceived lack of seriousness among EAS providers when it comes to delivering and implementing extension services, lack of seriousness in farmer empowerment hence limiting the farmers chance to oil their skills and make good decisions, failure to avail key inputs in local markets limiting the available resources for productivity improvement. These problems therefore need to be dealt with directly by specific efforts in order to enhance the total agricultural advancement and steadiness in these areas.

POLICY IMPLICATIONS

Extension Advisory Services (EAS) can address challenges faced by farmers in Meghalaya through a convergence-based approach by involving all the stakeholders. Some specific solutions like monitoring provider commitment, conducting workshops, and empowering farmers through leadership and entrepreneurship training can also be effective. To improve input accessibility, EAS should create a better-connected local supply chain, use mobile distribution centers, and connect farmers to government incentives programs. Implementing cheap and climate-solution technologies and upgrading communication technology can foster agricultural output and farmer welfare.

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CONFLICT OF INTEREST

This is to declare that there is “No conflict of interest” among researchers

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