



Effectiveness of Public and Private Extension Service Organization in Delivering Advisory Services in Meghalaya

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ABSTRACT

A study was conducted in Ri-Bhoi district of Meghalaya and two organizations KVK, Ri-Bhoi, Umsning block as public extension organization and RRTC, Umran block as private extension organization were selected randomly for the purpose of the study. The data were collected from randomly selected 120 farmers through structured interview schedule. The perceived effectiveness of extension advisory services was assessed in terms of extension delivery, yield and income, change in behaviours as a result of adoption of improved technology and found that majority of the farmers' perceived *change in awareness* was most important contributor towards perceived effectiveness of KVK, Ri-Bhoi. The perceived effectiveness in terms of change in awareness has showed the highest index value with 0.92, followed by effectiveness in term of change in yield and income with index value of 0.84. The least contributor for perceived effectiveness of the FAS of KVK, Ri-Bhoi was extent of delivery with 53.3 per cent of the farmers rated it in low category. The perceived change in terms of awareness of the technologies by the farmers has the highest index score of 0.86, followed by changes in terms of satisfaction of the farmers with index score of 0.85 in RRTC. Overall perceived effectiveness of delivering FAS for KVK, Ri- Bhoi was found more effective than RRTC.

Keywords: Effectiveness, Extension services, Farm advisory services, Factors affecting

INTRODUCTION

Agricultural extension and advisory services (AEAS) refers to any organization in the public or private sectors that facilitates farmers' and other rural actors' access to knowledge, information and technologies, and their interactions with other actors; and assists them to develop their own technical, organizational and management skills and practices, so as to improve their livelihoods and well-being.

Farm advisory services are important as it helps in educating farmers in innovation, crop yields, to protect environment and only 5 out of 43 per cent of women have access to extension services and an investment in extension yields on an average 40-60 per cent annual rate of return (GFRAS, 2012). It helps to obtain relevant information to solve their problem and provide skills and technologies to raise their standard of living. Agricultural advisory (extension) services are a vital element of the array of market and nonmarket entities and agents that provide

critical flows of information that can improve farmers' and other rural peoples' welfare (Anderson, 2008).

There can be seen several extension service organisations from both public and private sector leading to pluralistic extension systems catering to the farmers' needs. An extension service includes all the activities involved in the exchange of information appropriate to agricultural, livestock production, processing and marketing. The key objectives of both the public and private sector extension organizations is more or less the same *i.e.*, enhancing the food production, ensuring the food and nutrition security and livelihood security of the rural people (Christoplos, 2003). Yet some differences can be noticed between them. While public sector extension organizations focused more on transfer of technology for achieving the food security of the nation, private sector extension organizations focused more on organizing the farm families and engaging themselves in socio-economic empowerment of famers mostly with mandate of donor agency. The

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public extension involves a professional body of agricultural experts to teach the improved method of farming, demonstration of the innovation, helps in organizing farmers meeting, training and organizing field days on a wide range of topic. Public extension, sometimes, acts as the channel to introduce and sometimes, acts as a mechanism to enforce policies in the agriculture.

Private sector provides services to farmers in accordance with their specialized incentives and in return farmers respond according to what they see as most beneficial to them. Private sector extension services focus is mainly on cash crops, or on sale of inputs (seeds, fertilizers, pesticides, machinery *etc.*). Private extension activities are vertically integrated enterprise. Some of the extension wings of non-government agencies use non-formal education techniques for teaching and training farmers. Yet, some other extension organizations adopt participatory extension and facilitation extension approaches in helping farmers to organise into farmers' groups (with similar resources and interest), such as farmer interest groups (FIGs) and/or self-help groups (SHGs) of poor rural women.

Public and private sector extension organizations differ in such aspects as nature, approach of the extension services, mode of operation, organizational structure, provision of various kinds of farm advisory services and their level of performance and impact on farmers' lives. So, it is imperative to assess how efficient are the two extension systems in terms of delivery of farm advisory services to the satisfaction of the farming community and functioning in catering to the needs of farmers. Thus an attempt was made to focus on the following research issues for empirical probing to analyze the effectiveness of extension service organization in delivering advisory services and factors affecting it.

MATERIALS AND METHODS

The study was conducted in Ri-Bhoi district of Meghalaya as very few studies have been conducted in North- East Hill region, Meghalaya's majority of population is tribal of which Khasis make the largest group and The Ri-Bhoi district was selected purposively as presence of many NGOs, ICAR Research Complex for NEH Region Post Graduate Institute (CAU), KVK are situated in this district. From the list available for FASs available in Ri-Bhoi district, two extension service organizations: KVK, Ri-Bhoi as Public sector extension service organization and RRTC a

Non-Government organization as Private extension service organization were selected randomly to see their comparative performance. The data were collected from randomly selected 60 beneficiary and 60 non-beneficiary farmers through structured interview schedule.

The perceived effectiveness of extension advisory services was assessed in terms of extension delivery, yield and income, change in behaviors as a result of adoption of improved technology and process and their perceived usefulness and satisfaction for the farm advisory services received and used by them. A schedule was developed to measure the effectiveness of delivery of farm advisory services of extension service organization with regard to each of the effectiveness indicators to which numerical scores were assigned. It was measured with a three-point rating scale for each of the parameters. Adopter farmers of both extension service organizations were asked to state their rating on six components of effectiveness in delivery of farm advisory services and the data were analysed and the effectiveness component scores, and effectiveness index scores were computed.

$$EI = \frac{\text{Total obtained scores of all items} - \text{Minimum score}}{\text{Total maximum possible scores on all items} - \text{Minimum score}} \times 100$$

RESULT AND DISCUSSION

Effectiveness of Krishi Vigyan Kendra (KVK) in delivering farm advisory services: Adopted farmers of Public extension service organisation, i.e., KVK, Ri-Bhoi were asked to state their rating on six components of effectiveness in delivery of farm advisory services and the data were analysed and the effectiveness component scores and effectiveness index scores were computed. The frequency distribution of effectiveness scores is given in Table 1.

As can be seen from the data, majority of the farmers' perceived *change in awareness* was most important contributor towards effectiveness of KVK, Ri-Bhoi. As 63.3 per cent of farmers were in very high category and followed by high category (20%). Next two contributory factors towards perceived effectiveness were *change in yield and income* and *change in adoption* of technology. The least contributor for perceived effective of the FAS of KVK, Ri-Bhoi was *extent of delivery* with 53.3 per cent of the farmers rated it in low category. Patel and Patil (2020) concluded that farmers had a good perception towards

Table 1: Adopter Farmers' Perceived Effectiveness of delivery of FAS by KVK

Effectiveness of extension services organization in delivering FAS	Perceived Effectiveness of Adopter Farmers of KVK (n=30)					
	Extent of delivery	Change in awareness	Change in adoption	Change in yield and income	Change in behaviour	Level of satisfaction
Mean	0.58	0.92	0.80	0.84	0.79	0.80
Standard Deviation	0.19	0.119	0.159	0.13	0.1	0.12
Range (Min – Max)	0 - 1	0.62-1	0.43-1	0.55-1	0.55-0.95	0.64-1
V. Low (<0.5)	5(16.7)	0 (0)	1 (3.3)	0(0)	0(0)	0(0)
Low (0.5-0.65)	16(53.3)	2(6.7)	8 (26.7)	4(13.3)	5(16.7)	5(16.7)
Medium (0.65-0.78)	5(16.7)	3(10.0)	1 (3.3)	3(10.0)	4(13.3)	8(26.7)
High (0.78-0.92)	2(6.7)	6(20.0)	10 (33.3)	13(43.3)	19(63.3)	11(36.7)
V. high (>0.92)	2(6.7)	19 (63.3)	10 (33.3)	10(33.3)	2(6.7)	6(20.0)

KVK Training Centre as there were changes in their knowledge and skill.

The results from the Figure 1 showed the dimension-wise mean level of each effectiveness index score in the form of radar chart. From the diagram it appeared that the perceived effectiveness in terms of change in awareness has showed the highest index value with 0.92, followed by perceived effectiveness in term of change in yield and income with index value of 0.84. This showed that farmers' yield and income increase after the adoption of the technologies provided by KVK, Ri-Bhoi. The perceived effectiveness in term of change in extension delivery with the lowest index score of 0.58. Therefore, it may be inferred that there is need of improvement in terms of extension delivery in KVK, Ri-Bhoi, Meghalaya.

Effectiveness of Rural Resources Training Centre (RRTC) in delivering FAS: Adopter farmers of Private extension service organisation, *i.e.*, RRTC were asked to

state their rating on six components of effectiveness in delivery of farm advisory services and the data were analysed and the effectiveness component scores and effectiveness index scores were computed. The frequency distribution of effectiveness scores is given in Table 2.

It is evident from the Table 2 the major contributors to perceived effectiveness of RRTC were *Level of satisfaction* and *Change in awareness* as 53.3 per cent of respondents were in very high category. *Change in behavior* was next contributor perceived for effectiveness of RRTC. Thus, it can be concluded that as farmers are highly aware of the technologies disseminated by RRTC that leads to change in behavior of the farmers and with high level of satisfaction as more than 53 per cent of the farmers are satisfied with the farm advisory services of RRTC. Likewise, in RRTC also has weakness in term of extent of delivery of the technologies as the index value was only 0.63, which also need lot of improvement in this

Figure 1: Radar chart showing overall effectiveness parameters of KVK

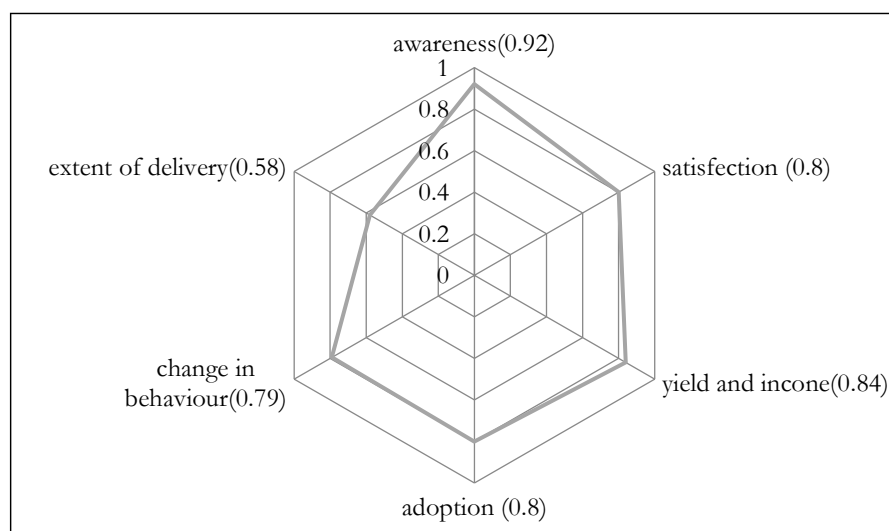


Table 2: Adopter Farmers’ Perceived Effectiveness of delivery of FAS by RRTC

Effectiveness of extension services organization in delivering FAS	Perceived Effectiveness of Adopter Farmers of RRTC (n=30)					
	Extent of delivery	Change in awareness	Change in adoption	Change in yield and income	Change in behaviour	Level of satisfaction
Mean	0.63	0.86	0.72	0.67	0.82	0.85
Standard Deviation	0.22	0.182	0.121	0.19	0.15	0.198
Range (Min – Max)	0.18-1	0.36-1	0.35-9	0.33-1	0.36-1	0.29-1
V. Low (<0.4)	5(16.7)	1(3.3)	1(3.3)	5(16.7)	1(3.3)	1(3.3)
Low (0.4-0.58)	6(20.0)	1(3.3)	3(10)	2(6.7)	1(3.3)	2(6.7)
Medium (0.58-0.75)	7(23.3)	6(20.0)	14(46.7)	13(43.3)	9(30.0)	4(13.3)
High (0.75-0.93)	10(33.3)	6(20.0)	12(40.0)	8(26.7)	14(46.7)	7(23.3)
V. high (>0.93)	2(6.7)	16(53.3)	0(0)	2(6.7)	5(16.7)	16(53.3)

matter. Seepersad and Henderson (1984); Sulaiman and Sadamate (2000); Saravanan (2003) and Saravanan and Veerabhadraiah (2007) in their study stated that to identify the extension organization effectiveness indicators for delivering farm advisory services at different levels like level in input, level in extension activity, level in organizational and in practice change have been identified.

The results from the Figure 2 showed that change in terms of awareness of the technologies by the farmers has the highest index score of 0.86, followed by changes in terms of satisfaction of the farmers with index score of 0.85; this showed that farmers were satisfied with the FAS which were delivered by the RRTC. Likewise, in

RRTC also has weakness in term of extent of delivery of the technologies as the index value was only 0.63, which also need lot of improvement in this matter.

Comparing the Means of Effectiveness of extension advisory services of KVK and RRTC: *T-test* is conducted to know whether there was any difference between the mean scores of six parameters in two organizations, KVK and RRTC. From the results in Table 3, it is evident that there was significant difference between the mean of KVK and RRTC on perceived changes in terms of *yield and income* of the farmers as the p-value was 0.00. There was also significant in perceived adoption of technologies by farmers at 0.5 level of significant and

Figure 2: Radar chart showing overall effectiveness parameters of RRTC

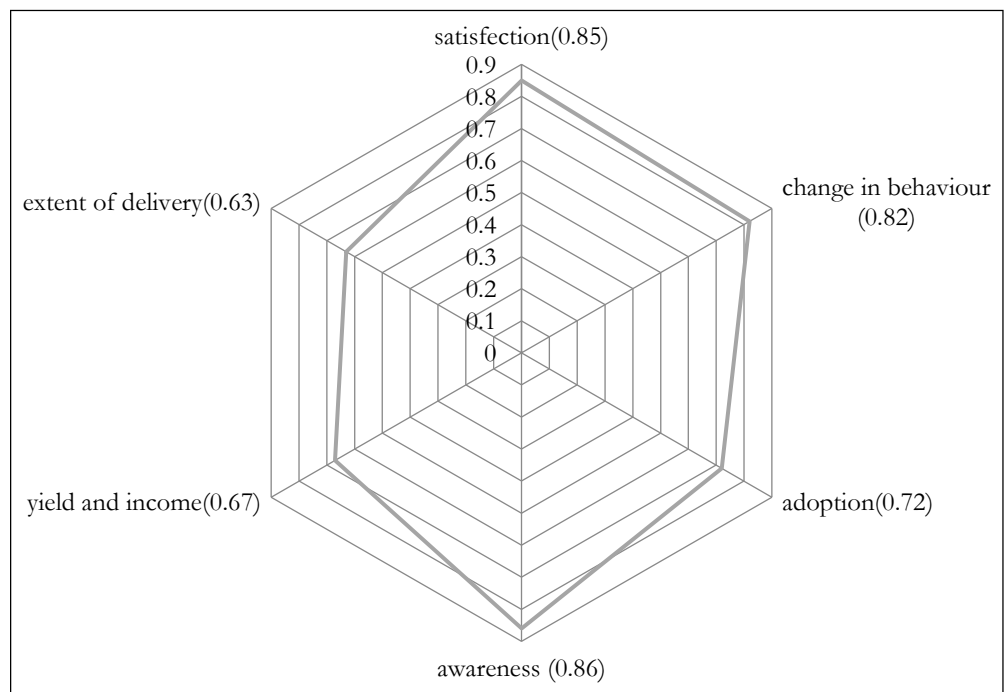


Table 3: Comparing KVK, Ri-Bhoi and RRTC in terms of effectiveness of extension advisory services

Variables	KVK mean	RRTC mean	Difference between means	t value	p-value
Extent of delivery	0.58	0.63	- 0.05	-1.082	0.284
Yield and income	0.84	0.67	0.17	4.00**	0.000
Awareness of technology	0.84	0.86	- 0.02	-0.503	0.617
Adoption of technologies	0.80	0.72	0.08	2.38*	0.020
Change in behaviour	0.79	0.82	- 0.03	-0.92	0.361
Usefulness and satisfaction	0.80	0.85	- 0.05	-1.011	0.316

positively correlated between the KVK and RRTC. We can conclude by saying that in KVK the mean value of perceived changes in terms of yield and income of the farmers is 0.84 which is considered more effective compared to RRTC with mean value of change in yield and income was 0.67.

Change in Adoption of technologies by farmers in KVK is also perceived better than RRTC as the mean value of change in terms of adoption of technologies was 0.80 in KVK and the mean value for RRTC was 0.72.

Table 4: Comparison of overall effectiveness index of KVK, Ri-Bhoi and RRTC

	KVK (n=30)		RRTC (n=30)	
Mean	0.794		0.764	
Standard deviation	0.79		0.76	
	Frequency	%	Frequency	%
V. low (<0.58)	0	0	4	13
Low (0.58-0.68)	1	3	1	3
Medium (0.68-0.77)	11	37	11	37
High (0.77-0.87)	15	50	12	40
V. high (>0.87)	3	10	2	7

From the Table 4 it is evident that the overall effectiveness index mean for KVK is 0.794 and the overall effectiveness index mean for RRTC is 0.764. In KVK, Ri-Bhoi, 50 per cent of the respondent fall under the effectiveness index score of high (0.77-0.87) and in RRTC, 40 per cent of the respondent fall under high (0.77-0.87) effectiveness index. From the overall results of the effectiveness index value, it can conclude by saying the perceived effectiveness of delivering FAS for KVK, Ri-Bhoi if found more effective than RRTC. Sahu *et al.* (2018) also opined that membership in organisation was positively related to the socio-economic upliftment of the people in the study area. The production, income and employment

generated for the members were significantly higher in comparison to the non-members

Factors affecting the effectiveness of KVK, Ri-Bhoi and RRTC in delivering FAS: In order to find out the factors affecting effectiveness of KVK, Ri-Bhoi and RRTC, multiple regression analysis was done, and the results are given below:

Regression analysis for factors affecting the effectiveness of KVK, Ri-Bhoi: Multiple Regression analysis was done ascertain the predictors of effectiveness of KVK's delivery of farm advisory service. For this a regression equation was fitted keeping perceived effectiveness index scores as dependent variable with nine independent variables. The results showed that about 85 per cent of variance in dependent variable perceived effectiveness of KVK, Ri-Bhoi could be explained by the variables in the regression equation as can be seen from R² being 0.83, which is significantly different. Four variables were found to be significantly contributing to the effectiveness of KVK, Ri-Bhoi in delivery of farm advisory service. While age is positively contributing, thereby meaning that older people perceive that KVK's effectiveness is good. Education is found to be negatively affecting the effectiveness, thereby meaning that new entrants into farming with less farming experience look forward to services of KVK positively. Another interesting finding was observed to be that economic motivation of farmers was contributing positively to the effectiveness of KVKs' attempts at delivery of farm advisory services to its clients.

In analyzing the factors affecting the perceived effectiveness of ESO of RRTC sex is negatively affecting the effectiveness of the ESO at 0.05 level of significant. RRTC farmers' economic motivation was contributing positively to the effectiveness of RRTC in attempts at delivery of farm advisory services to its clients.

Table 5: Regression analysis of the perceived effectiveness of KVK, Ri-Bhoi

Model	Unstandardized coefficients		Standardized coefficients	t	P value
	B	Standard error	beta		
Constant	.538	.123		4.373	.000
sex	.023	.024	.112	.971	.344
Age	.004	.002	.332	2.332*	.031
Education	-.014	.007	-.228	-2.089*	.050
Occupation	.012	.014	.094	.875	.392
Land	-.002	.008	-.035	-.301	.766
Experience	-.004	.002	-.276	-2.336*	.031
Contact with ESO	.003	.004	.083	.767	.453
Level of aspiration	-.007	.010	-.092	-.715	.483
Achievement motivation	-.004	.011	-.037	-.352	.729
Economicmotivation	.042	.013	.448	3.342**	.003

R²=0.83; F= 9.862; *significant at 0.05 level of probability; **significant at 0.01 level of probability

Table 6: Regression analysis of the effectiveness of RRTC

Model	Unstandardized coefficients		Standardized coefficients	t	P value
	B	Standard error	beta		
Constant	.695	.127		5.469	.000
sex	-.060	.027	-.250	-2.246*	.037
Age	-.001	.002	-.058	-.517	.611
education	.000	.005	-.010	-.095	.925
occupation	.000	.010	-.004	-.038	.970
Land	-.001	.019	-.007	-.064	.950
Experience	-.001	.002	-.074	-.605	.552
contact	-.008	.009	-.086	-.867	.397
Aspiration	-.003	.014	-.020	-.195	.847
Achievement	.003	.016	.019	.164	.871
Economic motivation	.075	0.014	.741	5.293**	0.000

R² = 0.847; F ratio = 10.5; df = 29; *significant at 0.05 level of probability; **significant at 0.01 level of probability

CONCLUSION

The farmers' perceived *change in awareness* was most important contributor towards perceived effectiveness of KVK, Ri-Bhoi as 63.3 per cent of farmers were in very high category followed by high category (20%). The perceived effectiveness in terms of change in awareness has showed the highest index value with 0.92, followed by effectiveness in term of change in yield and income with index value of 0.84. This showed that farmers' yield

and income increase after the adoption of the technologies provided by KVK, Ri-Bhoi. The major contributors to perceived effectiveness of RRTC were Level of satisfaction, change in awareness and change in behavior. Thus, it can be said that as farmers are highly aware of the technologies disseminated by RRTC that leads to change in behavior of the farmers and with high level of satisfaction as more than 53% of the farmers are satisfied with the farm advisory services of RRTC.

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