

RESEARCH ARTICLE

Performance of Agro Service Centres in Kerala as Perceived by Farmers: A Comparative Analysis

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ABSTRACT

Agriculture plays an indispensable role in the Indian economy. Agro Service Centres (ASCs) satisfy the input and service needs of small and marginal farmers by providing quality products and advisory services. The present study was conducted among the beneficiary farmers of Agro Service Centres in Kerala, during the year 2018-19. The sample of the study comprised of 120 farmers from 26 Agro Service Centres in the Thrissur, Kannur and Kottayam districts of Kerala representing the central, northern and southern regions. The performance effectiveness of Agro Service Centres as perceived by farmers was measured in terms of Performance Effectiveness Index (PEI). Frequency and percentage analysis was carried out to find the distribution of farmers based on their perceptions regarding the performance effectiveness of Agro Service Centres and a Kruskal Wallis test was undertaken to test the significant difference in the Performance Effectiveness Index as perceived by the farmers among the three districts. Based on the analysis of data, it was found that 48.88 per cent of the farmers from Kannur and 44.45 per cent of the farmers from Thrissur districts scored the ASCs in the high PEI category. In the Kottayam district, 50 per cent of farmers scored ASCs in the medium PEI category. This result of the Kruskal-Wallis test indicates that the farmer beneficiaries from all the studied districts had similar levels of perception regarding the Performance Effectiveness Index of ASCs.

Key words : *Agro service centre; Performance effectiveness; Information and technology; Services delivery; Farmer's income; Advisory services; Kerala*

Agriculture is the back bone of Indian economy. Timely and quality inputs and service delivery are required to uplift the farming community from the miseries they have been suffering for ages. Kerala, being a consumer state, needs to achieve self-sufficiency in agriculture by producing adequate agricultural commodities to meet its food requirements. Hence, farmers in Kerala need inputs and advisory services to achieve success in agriculture.

Agro Service Centres are the service delivery systems established by the Department of Agriculture in Kerala associated with co-operative societies, public limited companies, NGOs and the like. These centres are designed to purvey the needs of farmers in the areas like hiring of machinery with operator, repairing, providing inputs, transfer of technology at field level, weather advisory services, soil testing support and other technology-based services (GoK, 2016). The

goals of Agro Service Centres are much more holistic and plays a facilitatory role.

In modern times, more emphasis has been given on commercial cultivation of crops for which they require massive investment and technical information which is not readily available in the existing extension service networks (Vitthaldas, 2016). Agro Service Centres satisfies the high-quality inputs and service needs of small and marginal farmers by addressing their problems and sustainability problems, providing supporting services to illiterate farmers, preventing intermediary exploitation in marketing and ensuring reach of government programmes. This study will help in revising the tactic of operation of both existing and coming Agro Service Centres.

METHODOLOGY

The study was conducted in three districts of

Kerala, viz., Kottayam from the southern region, Thrissur from the central region, and Kannur from the northern region, which had the highest number of Agro Service Centers. The respondent groups of the study comprise of beneficiary farmers from Agro Service Centres. The number of farmers in the districts was determined in proportion to the total number of Agro Service Centers in each district. A total of 120 farmers with a sample size of 30, 45, and 45 farmers were randomly selected from Kottayam, Thrissur, and Kannur districts, respectively.

Performance effectiveness of Agro Service Centre is operationally defined as its ability to achieve the predetermined goals and objectives on time with adequate quality. Performance effectiveness Index was measured and analyzed on the basis of three components namely performance effectiveness of ASC in information and technology dissemination (X_1), Performance of ASC in service delivery (X_2) and performance effectiveness of ASC on farmer's income (X_3). Performance Effectiveness Index (PEI) was calculated by the formula provided by Meethal (2019).

$$PEI (XN) = 100 - \left(\frac{XN_{max} - XNi}{Range} \right) \times 100$$

Where, N=1,2,3

(X_{max} is the maximum obtained value of X, X_i is the observed value of X, Range = maximum obtained value X- minimum obtained value of X)

Performance Effectiveness Index as perceived by the farmer (PEI) as :

$$PEI = \frac{PEI (X1) + PEI(X2) + PEI (X3)}{3}$$

Frequency and percentage analysis was carried out to find the distribution of farmers based on their perception regarding the performance effectiveness of Agro Service Centres and the centres were classified into three categories namely low, medium and high based on the range of PEI as perceived by the farmers. The contribution of each indices to total PEI was worked out as the mean of the percentage contribution of each indices to the total Performance Effectiveness Index of studied ASCs.

Eleven independent variables for farmers, such as age, education, size of land holding, annual farm income, farming experience, resource utilization, change proneness, decision making ability, information source utilization, risk orientation, and extension agency contact were selected and the correlation of

independent variables with performance effectiveness was analysed. Kruskal Wallis test was undertaken to test whether there is any significant difference in the PEI as perceived by the farmers among the three districts.

RESULTS AND DISCUSSION

Agro Service Centers of the Department of Agriculture in Kerala deliver farming related information and other support services to its beneficiary farmers. The prime objective of establishing ASC by the Department of Agriculture in Kerala is to disseminate information and technology to farmers and thereby promote growth and development in the agricultural sector. Performance effectiveness of ASCs were determined in terms of Performance Effectiveness Index (PEI) as perceived by the farmer beneficiaries. Performance effectiveness of Agro Service Centres (ASCs) as perceived by beneficiaries : The performance effectiveness of Agro Service Centers in Kerala in providing support services to farmers was determined based on the perception of farmers on availing agricultural information and services from ASCs.

From Table 1, it was found that 48.88 per cent of the farmers from Kannur and 44.45 per cent of farmers

Table1. Performance effectiveness of Agro Service Centres (ASCs) as perceived by beneficiaries

Category	Thrissur		Kannur		Kottayam	
	No.	%	No.	%	No.	%
Low (<33)	9	20	8	17.78	9	30
Medium (33- 66)	16	35.55	15	33.34	15	50
High (>66)	20	44.45	22	48.88	6	20
Mean	58.27		58.65		48.15	
<i>Performance effectiveness of ASC in the dissemination of information and technology</i>						
Low (<33)	7	15.55	8	17.78	8	26.66
Medium (33- 66)	16	35.56	16	35.56	9	30
High (>66)	22	48.89	21	46.66	13	43.34
Mean	60.83		62.78		55.83	
<i>Performance of ASC in service delivery</i>						
Low (<33)	15	33.33	13	28.88	13	43.34
Medium (33- 66)	23	51.12	28	62.23	17	56.66
High (>66)	7	15.55	4	8.89	0	0
Mean	44.37		44.30		34.73	
<i>Performance effectiveness of Agro Service Centres on farmer's income</i>						
Low (<33)	6	13.33	6	13.33	7	23.34
Medium (33- 66)	8	17.78	10	22.22	10	33.33
High (>66)	31	68.89	29	64.45	13	43.33
Mean	69.62		68.89		53.88	

from Thrissur district scored the ASCs to high PEI category. More than thirty per cent (35.55%) of the farmers from Thrissur and 33.34 per cent of farmers from Kannur scored the ASCs to medium category. But in the case of Kottayam district, fifty per cent of farmers scored the ASCs to medium category. Only 20 per cent beneficiaries from Kottayam had the opinion that the performance of Agro Service Centre was high. Almost 20 per cent and 17.78 per cent of farmer beneficiaries from Thrissur and Kannur grouped ASCs into low performance category. Unlike the two districts Thrissur and Kannur, nearly 30 per cent of farmers from Kottayam grouped ASCs into low category of performance.

Therefore, it is clear from the above table that Agro Service Centers from the northern and central region of Kerala were rendering better agricultural information and services to farmers than the Agro Service Centres from southern Kerala. Fifty per cent of ASCs in Kottayam district has started its proper functioning recently and most of the centres fail to provide different expected agro-services to farmers due to their inadequate experience in the concerned areas of service delivery.

Performance effectiveness of Agro Service Centres in the dissemination of information and technology : It is clear from Table 1 that, according to the majority of the respondents (48.89%, 46.66% and 43.34%), the performance effectiveness of ASCs was found to be high in all the districts in the dissemination of information and technology. Almost 46.67 per cent of surveyed beneficiary farmers scored the ASCs into high category of performance in delivering different agricultural information and technologies to farmers. The result implies the adequacy, reliability and timeliness of ASCs in disseminating the information and technology to the farmers.

Performance of ASC in service delivery : Table 1 revealed that most of the farmers (51.12%, 62.23% and 56.66%) from Thrissur, Kannur and Kottayam districts grouped the ASCs into medium category of performance in service delivery. Only a few farmers (15.55% and 8.89%) from Thrissur and Kannur scored the ASCs into high category of performance in service delivery. There was no single farmer from Kottayam district who grouped the ASCs into high performance category in delivering the agro services, unlike the other two districts. Therefore, it is clear from the table that the performance of ASCs in service delivery has

not yet been competent to meet the current information needs and service assistance requirements of farmers

Performance effectiveness of Agro Service Centres on farmer's income : Table 1 revealed that a similar trend was observed in all three districts, where 68.89 per cent, 64.45 per cent and 43.33 per cent of farmers from Thrissur, Kannur and Kottayam districts respectively grouped the ASCs into high category of performance effectiveness on farmer's income followed by 17.78 per cent, 22.22 per cent and 33.33 per cent of farmer beneficiaries from Thrissur, Kannur and Kottayam district respectively scored the ASCs into medium category of performance effectiveness on farmer's income. An equal number of farmers (13.33%) from Thrissur and Kannur scored the ASCs into low category of performance effectiveness on their income and 23.34 per cent of farmers from Kottayam district held the same opinion regarding the performance effectiveness of ASCs on farmer's income.

Therefore, it is clear from the above table that, for majority of the beneficiaries, the services like machinery services, labour hiring services and different farming inputs from Agro Service Centres have contributed to an increase in income from farming.

Table 2. Contribution of each component to total PEI

Components of PEI	Thrissur	Kannur	Kottayam	Overall
Performance effectiveness of ASC in dissemination of information and technology	34.67	35.29	38.46	35.85
Performance of ASC in service delivery	25.19	26.52	24.78	25.59
Performance effectiveness of ASC on farmer's income	40.13	38.20	36.76	38.56

Contribution of each component to total PEI : From the Table 2, it is clear that among these three components of PEI, performance effectiveness of Agro Service Centres on farmers income contributed more (38.56%) to total PEI followed by performance effectiveness of Agro Service Centres in the dissemination of information and technology with 35.85 per cent and performance of Agro service Centre in service delivery with 25.59 per cent contribution to total PEI. Also, in the case of Thrissur and Kannur districts, performance effectiveness of ASCs on farmer's income contributes more i.e. 40.13 per cent in Thrissur and 38.20 per cent in Kannur. But in case of Kottayam district, 38.46 per

cent of contribution to total PEI was from performance effectiveness of ASCs in the dissemination of information and technology followed by 36.76 per cent contribution from performance effectiveness of Agro Service Centres on farmer’s income. Second component contributed only 25.19 per cent, 26.52 per cent and 24.78 per cent in Thrissur, Kannur and Kottayam district respectively. District wise comparison shows that there is not much difference in the pattern of contribution of indices on PEI among the districts. From the results obtained it can be inferred that the performance of ASC in service delivery was not that satisfactory as compared to the other two components.

Comparison of three district with respect to performance effectiveness index as perceived by the farmers : Comparison is needed to identify the gap in extension work and hence it is an inevitable process in social science research. Comparison provides us an opportunity to understand the strength, weakness and opportunities in the performance of different extension agencies and thereby facilitates further improvement in the functioning of these agencies. Table 3 revealed the result of the Kruskal-Wallis test to identify the significant difference in the Performance Effectiveness Index as perceived by the farmers among the three districts.

From Table 3 it is clear that when comparing the three districts in terms of Performance Effectiveness Index, the result shows that the estimated KW value was 5.837 which is less than the chi square value at 2 degrees of freedom (5.991). Hence there was no significant difference in PEI at 1 per cent and 5 per cent level of significance among the districts. This result indicates that the farmer beneficiaries from these three districts had similar level of perception regarding the Performance Effectiveness Index of ASCs.

Item	Thrissur	Kannur	Kottayam
Minimum	6.09	9.01	17.79
Maximum	96.24	92.47	86.02
Mean score	58.28	58.66	48.15
Mean rank	64.11	65.71	47.27
KW statistics		5.837	
χ^2 (0.05, 2)		5.991	
Inference	Non -significant		

Relationship of Performance Effectiveness Index of ASCs with profile characteristics of farmers : Correlation analysis was performed to evaluate the

significance of the performance effectiveness of Agro Service Centres with selected independent variables.

From Table 4, it is clear that Performance effectiveness index was positively and significantly correlated with farming experience, annual farm income and change proneness and it was negatively and significantly correlated with age and risk orientation of the farmers. The result also showed that age of the farmers was negatively and significantly correlated with performance effectiveness index at 1 per cent and farming experience, Annual farm income and change proneness were positively and significantly correlated to performance effectiveness at 5 per cent. But risk orientation of farmers was negatively and significantly correlated with performance effectiveness at 5 per cent only. The independent variables like education, size of land holding, resource utilization and information source utilization were found to be positive and non-significant with performance effectiveness index as perceived by the farmers. Decision making ability and extension agency contact of farmers was found to be negative and non-significant with performance effectiveness.

Aged farmers are traditional in nature and they may not be aware of different agro advisory services available. Hence, they might be far behind in utilizing the services of these centres for improving their farm. Also, due to their dogmatic nature they may be reluctant to utilize the services. This could be the reason for obtaining negative correlation of age with performance effectiveness index. The results are in agreement with the views of *Mauceri et al. (2005)* and *Mwangi and Kariuki*

Table 4. Correlation of the profile characteristics of farmers with Performance Effectiveness Index and attitude of beneficiaries towards ASCs.

Independent variables	PEI (r value)
Age	-0.236**
Education	0.161
Size of land holding	0.073
Annual farm income	0.216*
Farming experience	0.190*
Resource utilization	0.070
Change proneness	0.216*
Decision making ability	-0.125
Information source utilization	0.036
Risk orientation	-0.222*
Extension agency contact	-0.080
N = 120, rtable = 0.179 (5%) & rtable = 0.234 (1%)	
**1% significant level; *5% significant level)	

(2015), where they opined that perception of farmers about latest technologies and its delivering agencies got reduced as they grow older. A different opinion was expressed by Dutta *et al.* (2021) in their study regarding the services of Agricultural Technology Information Centers (ATIC), where age has no connection with the adoption behaviour and satisfaction level of farmers with services from ATIC centers.

The farm income will increase to those farmer beneficiaries who utilize the services of Agro Service Centre effectively because utilization of modern technologies and services from Agro Service Centre leads to a reduction in the cost of cultivation and increase in the production and productivity of crops and thereby an increase in income from farming. This might be the reason for the significant and positive correlation between the performance effectiveness index of Agro Service Centres and the annual income of the farmers. Similar results were reported by Issa *et al.* (2011) and Avinash (2013). The farming experience was positively and significantly correlated with the performance effectiveness index of ASCs. Experienced farmers have a tendency to utilize all the available resources effectively and hence they perceive Agro Service Centres as a better source of information and services for modernizing their farm. Similar result was reported by Issa *et al.* (2011).

Change proneness was significantly and positively correlated with the performance effectiveness index of ASCs. This may be due to the fact that those who are prone to changes through the influence of external factors will have a favourable attitude towards new information and technology disseminating services. Perception of farmers on the performance of any organization or technology is essential for its acceptance and adoption. Hence the result is not in agreement with the result of Neethi (2013) where change proneness was found to be positive and non-significant with extent of adoption and hence non-significant with the perception of farmers on the performance of DAATT Centre. There was a significant and negative correlation between performance effectiveness index as perceived by the farmers and risk orientation. Farmers with high-risk orientation will be self-sufficient in handling problems related to farming and they will not go for the agro advisory services of any extension agencies. This may be the probable reason for the poor perception of farmers about the performance effectiveness of Agro Service Centres. The result is not in agreement with

the findings of Deekshit (2015), where risk orientation was positively and significantly correlated with the perception of farmers regarding the performance of private veterinary services delivery systems.

CONCLUSION

It can be concluded that considering the Agro Service Centres brought under the purview of the study, Agro Service Centres from the northern and central regions of Kerala were rendering better agricultural information and services to farmers than the Agro Service Centres from southern Kerala, based on the perception of beneficiary farmers on the performance effectiveness of Agro Service Centres in Kerala. The performance effectiveness of ASCs was found to be high in all the districts in the dissemination of information and technology, but their performance in service delivery has not yet been competent enough to meet the current information needs and service assistance requirements of farmers.

The performance effectiveness of Agro Service Centres on farmer's income was found to be high in all the studied districts. The performance effectiveness of ASCs is directly reflected in the increase in income and standard of living of the farmers associated with the ASCs. Over the years, the number of ASCs has increased and the number of farmers approaching the centres has also increased. They have brought up and familiarized new technologies among the farmers, and ensured that such technologies are beneficial for the farming community. The increase in farmer's income is a good indication of the services envisaged by ASCs, which has led to the establishment of more ASCs across the state.

Acknowledgment : I acknowledge Kerala Agricultural University for providing the funding support required for the research study.

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