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Service quality of public, private and cooperative agricultural service providers in Karnataka

[1]Parashuram Kambale, [2]SB Goudappa, [3]Sashidhara KK, [4]Shivanand Kammar, [5]BS Reddy and [6]Pramod Katti

[1]Ph.D. Scholar, Department of Agricultural Extension Education, University of Agricultural Sciences, Raichur, Karnataka, India

[2]Director of Extension, University of Agricultural Sciences, Raichur, Karnataka, India

[3]Associate Professor and Head, Department of Agricultural Extension Education, University of Agricultural Sciences, Raichur, Karnataka, India

[4]Associate Professor, Department of Agricultural Extension Education, University of Agricultural Sciences, Dharwad, Karnataka, India

[5]Professor and Sr. Farm Superintendent, Zonal Agricultural Research Station, Kalaburagi, Karnataka, India

[6]Comptroller and ICAR- Nodal Officer, University of Agricultural Sciences, Raichur, Karnataka, India

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Corresponding Author: Parashuram Kambale

Abstract

The service quality of public, private and cooperative agricultural service providers in Karnataka state was investigated in this study. The Agricultural service providers were the businesses or organizations that provide services to the farmers and other agricultural producers. The AGRISERV scale was developed to assess the service quality of selected agricultural service provider and scale was administered to 270 farmers from three chosen agricultural service providers. Findings of the study revealed that all the selected organizations, irrespective of origin, had a negative difference between perceived and expected ratings, on all of the five service quality dimensions, namely tangibles, reliability, responsiveness, assurance, and reliability. Major issues hinder service quality were scarcity of fund for doing true extension work, less use of information communication technology, lack of co-ordination among research extension and extension service providers themselves, and political interference. A demand responsive extension service is obligatory for the survival of extension organizations in a changing context.

Keywords: Service quality, AGRISERV, agricultural service, multiple providers, Karnataka

Introduction

Attempting to keep up with the rapid changes through adaptation and reinvention, the Indian agricultural extension and service delivery system finds itself at a crossroads. There are new and challenging opportunities as well as complex pressures facing the agriculture industry as a whole. Among the difficulties are resource competition, market access issues, floods, droughts, climate change, uneven rainfall distribution, rising input costs, and resource competition. The following primary factors have led to an increased interest in unconventional alternatives to cutting-edge models in the Indian public sector agricultural research and extension system. First, it appears that the majority of agricultural technologies and extension programs have failed to generate and apply innovations in a way that effectively provides pro-poor end users with services. The global push for accountability, transparency, and a re-evaluation of the deliverable outputs comes next. Thirdly, experimenting and rivalry with the private industry; the instability brought on by vulnerability, unpredictability, and the budgetary crisis in the age of structural adjustment and climate change in agriculture; Convert low-value crops into high-value ones. Not to be overlooked are the public sector service models that are built around the Lab to Land initiative's framework, with the least emphasis placed on identifying the precise kinds, caliber, and advice that farmers actually require. The system for agricultural extension and service delivery was restructured as a result, either to make room for private service providers or to improve the efficiency of agricultural organizations in the public sector.

In order to manage a business effectively, quality is a crucial and strategic component for both public and private sector companies as well as other kinds, such as non –profits organizations. The current situation necessitates higher standards for better services than just having them available. A competitive climate has been established among various service providers, including the public and private sectors, NGOs, cooperative societies, farmer organizations, and others, as a result of the global economy. A stakeholder's

assessment of the intensity of services in terms of high or low quality is referred to as service quality (Zeithaml *et al.*, 1990; Grönroos, 2001; Parasuraman *et al.*, 1985, 1988; Rana *et al.*, 2011,) [14, 2, 7, 8, 15]. In this study, agricultural services can be broadly classified as financial services, research and advisory services, capacity building and training services, support services for information dissemination and access, and support services for dissemination. A number of factors are taken into consideration when evaluating access to agricultural services, including the type of service, its relevance, timeliness, outreach, quality, cost, and efficiency (Birner *et al.*, 2006) [1].

Service quality is a critical and strategic component of future management for non-profit organizations as well as for businesses in the public and private sectors (Rana *et al*., 2013) [9]. However, by clearly identifying the program's strengths and shortcomings, measuring the quality of extension services from the client's point of view can reduce the waste of expensive labour and resources. In order to provide demand-driven extension services, it is crucial to measure the quality of those services based on client feedback.

While there are several other models (Seth *et al*., 2005) [12], SERVQUAL is a standardized and trustworthy tool that has been utilized by the majority of studies to date in an effort to measure service quality (Rohini and Mahadevappa, 2006; Shahin, 2013) [10, 13]. There is no exception when it comes to the SERVQUAL model being applied directly or modifiedly to measure agricultural extension service organizations (Horri *et al*., 2012; Rana *et al*., 2013) [4, 9]. In his research on the "assurance of customer-guided training services" in Latvia, Grīnberga-Zālīte (2011) [2] discovered that the SERVQUAL model was a useful instrument. In order to assess the quality of agricultural extension services in a chosen Indonesian regency, Ruhana (2011) [16] also used the SERVQUAL model.

Methodology

This study was conducted in Raichur, Ballari and Yadgir district of Karnataka state. Several contract growers who supply seed to private companies are available in the selected districts because they are known for their ability to produce quality seed. Agricultural extension service providers are drawn to the chosen areas due to their diversified farming practices and high agricultural production. In this study, agricultural services were provided to the farming community by three different types of providers: public, private, and cooperatives. The transfer of technology centres, in particular the ICAR-Krishi Vigyan Kendras and Raitha Samparka Kendras of the Karnataka State Department of Agriculture, were chosen for the study under public service providers. During the movement, Syngenta, Coromandel International Limited (CIL), and BASF India are among the private service providers for the study. However, IFFCO was selected as the cooperative service providers for the research. A list of farmers availing services from the above mentioned service providers after rigorous discussion with extension personnel working in these organization. By using random sampling technique, the farmers were selected. From one district 90 farmers i.e., 30 from public service providers, 30 from private service providers and 30 from cooperative service providers were selected randomly from the list. Thus, from three district a total of 270 farmers were selected for the study.

Table 1: Sampling frame of the study

Type of agricultural service provider	Name of the agricultural service provider	No. of farmers selected
Public	ICAR-KVK, Ballari	15
	KSDA, Ballari	15
	ICAR-KVK, Raichur	15
	KSDA, Raichur	15
	ICAR-KVK, Yadgir	15
	KSDA, Yadgir	15
Private	Syngenta	30
	BASF India	30
	Coromandel International Limited (CIL)	30
Cooperative	IFFCO	90
	Total	270

A primarily quantitative approach was used in this study. To analyse the data, quantitative techniques like gap analysis, t-test, and descriptive statistics were employed. Farmers completed a standardized "AGRISERV" scale in which they were asked to rate their agreement or disagreement with each statement on a five-point continuum: Strongly Disagree (1), Disagree (2), Undecided (3), Agree (4), and Strongly Agree (5) for the positive statements, and the opposite for the negative statements. Quantitative data was gathered using 22 items total, which are divided into five dimensions in the final scale. Perception and expectation were used to calculate the arithmetic mean value for each AGRISERV dimension. Evaluation of AGRISERV is revealed by the variations in mean values.

Service quality (SQ) = Farmer's perception (P) - Farmer's expectations (E). In equation form, it can be expressed as follows.

$$SQi = \sum_{j=1}^{k} (P_{ij} - E_{ij})$$

Where,

SQ_i = Service quality of individual 'I'.

K = Number of service attributes/items.

P = Perception of individual 'I' with respect to performance of service organization's attribute 'j'.

E = Service quality expectation of attribute 'j' that is relevant norm for individual 'I'.

(Parasuraman *et al*., 1988) [8].

In order to determine the reliability of used instrument Cronbach's alpha analysis was performed. For all of the five selected dimensions, Alpha values were ranged from 0.73 to 0.89, which are more than the value 0.70 suggested by Nunnally (1978) [6], hence indicating an acceptable level of reliability.

Results and Discussion

Demographic Profile of the Farmers

The total number of clients interviewed in this research was 270. Mean age of the farmer was 39.28 (SD = 9.32). Overall it was observed that, nearly two-fifth (40.00%) of the respondents had achieved secondary education followed by one-fourth of the respondents (24.81%) with middle level education (5^{th} to 8^{th} standard). Average per capita annual income equals to Rs. 80,844.44 (SD = 30722.85). In terms of landholdings, nearly one-third (28.89%) of the respondents were small while 26.67 percent were semi-medium farmers and 24.44 percent of medium farmers.

Gap between Perceived and Expected Agricultural Service

Public agricultural service providers have the largest gap (-0.88) in the responsiveness dimension when comparing their ratings of perceived and expected scores, as shown in Table 2. Tangibility and responsiveness have the next largest gaps (mean = -0.70 and -0.62, respectively). The empathy and assurance dimensions, on the other hand, showed the least amount of disparity, measuring -0.40 and -0.47, respectively. The reliability dimensions had the biggest service gaps, according to findings pertaining to private agricultural service providers (mean difference = -0.29). Other dimensions included tangibility (mean gap = -0.17), empathy (mean gap = -0.16), assurance (mean gap = -0.20), and responsiveness (mean gap = -0.22) based on the difference between perceived and expected scores. The greatest service gap in the case of cooperative agricultural service providers was seen in reliability (mean gap = -0.32), which was followed by responsiveness (mean gap = -0.19), and assurance and tangibility (mean gap = - 0.15).

Table 2: Gap analysis result of perceived and expected score for different agricultural service providers, (n=270)

Org. Type	Service quality dimensions (SQD)	Perceptions		Expectations		Mean gap (P –E)	Sig. (2-tailed)
		Mean	S.D	Mean	S.D		
PUB (n_1=90)	Tangibility	3.44	0.48	4.15	0.24	-0.70	0.024*
	Reliability	3.27	0.37	4.13	0.64	-0.88	0.036*
	Responsiveness	3.49	0.28	4.11	0.47	-0.62	0.042*
	Assurance	3.65	0.33	4.12	0.24	-0.47	0.013*
	Empathy	3.96	0.15	4.37	0.23	-0.40	0.011*
PVT (n_2=90)	Tangibility	3.94	0.08	4.11	0.11	-0.17	0.003*
	Reliability	3.54	0.24	3.84	0.27	-0.29	0.001*
	Responsiveness	3.58	0.34	3.81	0.37	-0.22	0.007*
	Assurance	3.83	0.38	4.04	0.37	-0.20	0.001*
	Empathy	3.82	0.29	3.99	0.31	-0.16	0.002*
COOP (n_3=90)	Tangibility	3.67	0.28	3.82	0.28	-0.15	0.001*
	Reliability	3.33	0.29	3.66	0.31	-0.32	0.004*
	Responsiveness	3.57	0.28	3.77	0.25	-0.19	0.003*
	Assurance	3.58	0.13	3.74	0.14	-0.15	0.009*
	Empathy	3.81	0.27	3.93	0.28	-0.11	0.009*

In evaluating the level of service provided by Public and Private Agricultural Extension Service Providers in Bangladesh, Mamun-ur-Rashid *et al*. (2018) [17] found that farmers' assessments significantly fell short of expectations across all five service quality dimensions, confirming the poor quality of services provided by all service providers. The responsiveness and reliability dimensions exhibited the largest disparity among service providers. PUB providers trailed PPR providers in terms of service gap, while PNP providers displayed the smallest service gap. In Karnataka State, India, Sarvanan and Veeradhadraiah (2003) [11] examined 60 respondents from public, private, and non-governmental extension services in the districts of Chitradurga, Kolar, and Tumkur. Their findings were nearly identical to ours. Agribusiness firms performed significantly worse than NGOs, with 60.00 percent of farmers rating their services as low quality. In contrast, public extension services and NGOs demonstrated nearly identical status in terms of service quality, according to the study. According to James *et al*. (2012) [5], there were notable variations in every dimension proposed by the SERVQUAL model when evaluating Ghanaian farmers' satisfaction with agronomic services. But according to their research, the tangible dimension had the smallest gap (-0.63), while the reliability dimension had the largest gap (-1.06). The responsiveness aspect showed the largest discrepancy between perception and expectation.

Table 3 shows that, for public agricultural service providers, farmers feel that, record keeping of farmers by the service providers is not up to date, location of the service providers is not appropriate to the farmers, the helpdesk was not well furnished with all the facilities and Service providers won't deliver the service in time. Top ten criteria for private service provider with highest service gap represents that, record keeping of farmers by the service providers is not up to date, service providers always won't respond to farmers requests, service providers won't provide the service accurately, service providers won't provide the service in time. With respect to cooperative agricultural service providers, farmers feel that, service providers won't provide the service accurately, the service provider is not credible, record keeping of farmers by the service providers is not up to date, service providers do not inform farmers about extension activities and service providers do not provide the service in time.

Causes of Poor Service Quality

Maintenance of quality service is hampered due to lack of coordination among organizations. Extension providers do not maintain regular contact with different research institutions. Even coordination among public and private extension providers is often weak and confined to crop seminars and product demonstrations. The extension personnel of Karnataka State Department of Agriculture and the subject matter specialists from the ICAR-KVKs were more involved in non-extension /non- mandated activities were not able to provide the services dependably and accurately to the farming community. The private service provides were more focused on promotion of their products and profit generation whenever there is new product comes into the market. As mentioned earlier the private service providers were profit oriented and opportunistic so may not be responsive every time.

Table 3: Top ten criteria with highest service gap for selected agricultural service provider, (n=270)

Dimension	Criteria	Service gap (P- E)			Rank		
		PUB (n_1=90)	PVT (n_2=90)	COOP (n_3=90)	PUB	PVT	COOP
Tangibility	Location of the service providers is appropriate to the farmers	-1.14	-0.26	0.20	2	5	7
	The helpdesk is well furnished with all the facilities	-1.12			3		
	Possession of physical facilities are as per the farmers need	-0.73			7		
Reliability	Service providers provides the service in time	-1.11	0.27	-0.24	4	4	5
	Service providers keeps record of farmers	-1.47	-0.35	-0.26	1	1	3
	Service providers provides the service accurately		-0.30	-0.42		3	1
Responsiveness	Service providers timely inform the farmers about extension activities	-0.93	-0.25	-0.25	5	6	4
	Service providers always respond to farmers requests	-0.91	-0.31		6	2	
	Farmers receive prompt service from the service providers			-0.23			6
	Service providers make information easily obtainable by farmers			-0.16			8
Assurance	Service providers seems to receive adequate support from higher authority to do their job	-0.67			8		
	The service provider is credible		-0.24	-0.36		7	2
	Service provider has the information to reply to queries posed		-0.22	-0.15		8	9
	The service provider is focused on the best services for the farmers		-0.21	-0.13		9	10
Empathy	Location of extension events proposed to be taken up are convenient for me	-0.62	-0.20		9	10	
	The extension activity timings of service providers are comfortable to me	-0.58			10		

Note: Blanks indicates minimum service gap

Suggestions to Improve the Service Quality

Service providers work needs to revolve around farmers, understanding their problems, providing suitable advices and supports to help farmers to improve their efficiency. Rapid increase in non-mandated activities of ICAR-KVKs need to be addressed and the RSKs can acts as knowledge centres in providing knowledge to the farmers for their overall development through its wide network. The supply-push extension at the RSKs need to be replaced. Service providers, besides providing technology, must also instil confidence in farmers through factors such as reliability and empathy. Appointment of specialized extension agents to communicate with farmers and effective utilization of available resource by the KSDA- Raita Samparka Kendra's will increase the service quality.

Conclusion

The perceptions of farmers failed to meet expectations in each of the five service quality dimensions, confirming the poor quality of services provided by the selected agricultural service providers. The reliability and responsiveness dimensions exhibited the greatest disparity among service providers. PVT and PUB providers had the lowest and highest service gaps, respectively, while COOP providers displayed the least amount of a gap. All service providers should take into account common areas of service improvement, such as program flexibility, quick service, willingness to assist clients, keeping client records, and keeping promises, in order to improve the quality of their offerings.

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