Asian Journal of Agricultural Extension, Economics & Sociology

39(11): 484-491, 2021; Article no.AJAEES.76950
ISSN: 2320-7027

An Assessment of Quality of Service Extended by Select Agriclinics and Agribusiness Centres in Union Territory of Puducherry

S. Balasoundari[1*#], K. Mahendran[2†], S. Moghana Lavanya[3‡] and Patil Santosh Ganapati[4¥]

[1]Department of Agricultural and Rural Management, Tamil Nadu Agricultural University, Coimbatore-641 003 (Tamil Nadu), India.
[2]ARM, Department of Social Sciences, AC&RI (TNAU), Madurai- 625 104 (Tamil Nadu), India.
[3]ARM, Department of Social Sciences, ADAC&RI (TNAU), Trichy-620 009 (Tamil Nadu), India.
[4]Department of Physical Sciences and Information Technology, Tamil Nadu Agricultural University, Coimbatore-641 003 (Tamil Nadu), India.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJAEES/2021/v39i1130776
Editor(s):
(1) Dr. Roxana Plesa, University of Petrosani, Romania.
Reviewers:
(1) Richard Smardon, SUNY College of Environmental Science and Forestry, USA.
(2) Henrykus Sihaloho, Universitas Katolik Santo Thomas (Catholic University of Saint Thomas), Indonesia.
Complete Peer review History, details of the editor(s), Reviewers and additional Reviewers are available here: https://www.sdiarticle5.com/review-history/76950

Original Research Article

Received 09 September 2021
Accepted 18 November 2021
Published 24 November 2021

ABSTRACT

The establishment of Agri clinics and Agribusiness Centers is a Government of India Scheme implemented through NABARD and MANAGE, Hyderabad for promotion of rural entrepreneurship through effective training and handholding of the graduate youth. Agri-Clinics are intended to provide expert advice and services to farmers on various aspects to improve crop/animal yield and increase farmers' revenue. This study was conducted to assess the quality of services provided by the Agri clinics and agribusiness centers in the union territory of Puducherry. 90 farmers were

#PG Scholar
†Professor
‡Associate Professor
¥Assistant Professor
**Corresponding author: E-mail: balasnjv@gmail.com;*

personally interviewed using the service quality instrument - SERVQUAL to explore their expectation and perception of service quality provided by the Agri -clinics and agribusiness centers. The results indicated that the level of quality of the services provided by the Agri clinics is not to the expected level of the sample farmers i.e., all perception ratings were lower than their expectation scores. In all five dimensions of service quality, a gap was observed between farmers' perceptions and expectations: Tangible: -0.93, Reliability: -0.89, Responsiveness: -0.78, Assurance: - 0.58, Empathy: -0.61. The results indicated that much more service improvement activities are needed for improving the service quality. The Agri-clinics need to modernize facilities and equipment to reduce the gap between farmers' perceptions and expectations.

Keywords: Agri-clinic and agribusiness centers; SERVQUAL, ANOVA; service quality gaps.

1. INTRODUCTION

The government of India's Agri clinics and Agribusiness Centers scheme is a subsidy-based credit-linked scheme extended for trained agricultural graduates to start agribusinesses to improve technology transfer, public extension, and job creation in rural areas. Agri-entrepreneurship has the potential to contribute to social and economic development by creating jobs, reducing poverty, improving nutrition, health, and overall food security in the national economy, particularly in rural areas. The Swaminathan committee proposed this scheme, which was launched on April 9, 2002. Agri-clinics are expected to provide expert advice and services to farmers on cropping practices, technology dissemination, crop safety from pests and diseases, market patterns and prices of various crops in the markets, and clinical services for animal health, etc., to increase crop/animal productivity.

1.1 Agri-clinics and Agribusiness Centres (ACABC)

Agri-clinics and agribusiness centers have become popular among agricultural graduates, and they have served as a backbone to supplement public agricultural extension services. Till now, 32242 applications for two-month training under the Agri clinics and agribusiness centers scheme (ACABC) have been submitted, and 30977 graduates have been trained. About 11641 Agri ventures were reported to have been developed (2002-2021), representing a success rate of nearly 37%. MANAGE has listed 129 nodal training institutions (NTIs) throughout the country for training purposes [1].

1.2 Agri-clinics and Agribusiness Centres in Puducherry

Eighty-four ACABCs have been established in Puducherry UT from 2002 to 2021 out of the 141 candidates trained through the scheme. The details are presented in Table 1.

1.3 Objective of the Study

The objective of the study was to measure and analyze the gap between expectation and perception of farmers towards service quality of Agri-clinics and Agribusiness Centers in the Union Territory of Puducherry.

2. LITERATURE REVIEW

According to a study by Dotchin & Oakland (1994), service quality is defined as the amount to which a service meets the demands or expectations of the consumer.

Parasuraman et al (1988) defined service quality as "an anticipated judgment as a result of appraisal but refer to quality as an ambiguous and indefinite construct."

Lewis and Booms (1983) stated that service quality is a measure of how well the service level delivered matches the customers' expectations.

Table 1. General information on Agri-clinics in Puducherry

Number of trained candidates under ACABC scheme	141
Number of ventures established under ACABC scheme	84
Number of Projects Sanctioned by Banks Under ACABC Scheme	14
Number of projects pending by banks under ACABC scheme	1

Source: MANAGE, AC&ABC database (2021), GoI

Yavas and Benkenstein, (2007) found that delivery of high service quality to customers offers businesses an opportunity to differentiate themselves in competitive markets.

Levesque and McDougall (1996) stated that high service quality results in customer satisfaction and loyalty, greater willingness to recommend to someone else, reduction in complaints, and improved customer retention rates.

Ghotbabadi, Feiz & Baharun [2] reported that service quality measurement is one of the significant measurement tools for firms to understand consumers' needs and wants by analyzing the experience of consumers and customers' satisfaction with the services provided.

3. METHODOLOGY

SERVQUAL is widely regarded as a global and widely accepted technique for assessing the quality of service. SERVQUAL can also be used as a diagnostic tool to help public and private companies understand the deficiencies and strengths of their service procedure. SERVQUAL technique is based on the premise that service quality may be determined by calculating the difference between customers' expectations of a certain service and their perceptions of the service provider's actual performance (Zeithaml et al., 1993). SERVQUAL scale was developed by Parasuraman, Berry, and Zeithaml in 1985 and included ten dimensions for determining service quality. The dimensions were then reduced to five, namely Tangibility, Reliability, Responsiveness, Assurance, and Empathy by the same authors.

Service quality of the select Agri was assessed using the SERVQUAL questionnaire, which included 2 x 23 questions/criteria (23 questions for the expectations and 23 for the perceptions) reflecting the five service quality categories tangibles (4 items), reliability (5 items), responsiveness (5 items), assurance (4 items), and empathy (4 items) (5 items). To measure farmers' expectations and perceptions of agri-clinic service quality in Puducherry, a 5-point Likert-type scale was adopted, ranging from strongly disagree (1) to strongly agree (5).

The 23 criteria are presented below in Table 2.

Six Agri-clinics were selected randomly in the Puducherry region from each of which responses from 15 farmers availing the services were collected. 90 Farmers who were the customers of Agri-clinics were selected as samples for the study. The results of the study are presented in the following section.

4. RESULTS AND DISCUSSION

4.1 Demographic Details

Among the sample respondents, the Majority of the respondents were male (85.56%) followed by females (14.44%). The majority of the respondents have completed secondary level of education (38.89%) among the other categories. The major share of respondents fell in the age group of 41-50 years (33.33%) followed by 51-60 years (30.00%). A large number of respondents were categorized with a family size of 4 members (47.78%) and with an annual family income of Rs. 2,00 – Rs. 3.00 lakhs (44.44%). The majority of the respondents were marginal farmers (< 1.00 ha) (57.78%) and with farm experience of more than 20 years (30%). The demographic profile of respondents is presented in Table 3.

4.2 Reliability of the Study

The internal reliability of the component variables of all dimensions for service quality was tested using Cronbach's Coefficient Alpha. Cronbach's alpha was calculated for each of the five dimensions for both perceptions and expectations. The reliability coefficients are presented in Table 4.

Overall, the estimated reliability coefficients for the expectation (E) and perception (P) presented satisfactory values, as the commonly used threshold value for acceptable reliability was 0.70 (Hair, Black, Babin, Anderson, & Tatham, 2005). The reliability coefficients for the expectation were higher than the perception comparatively.

4.3 Analysis of Service Quality Gaps

Analysis of the expectation and perception of the farmers on the various quality parameters extended by the Agri-clinics to the sample farmers was based on the difference in the gap score indicated by the farmers. Regarding the mean score, the responsiveness dimension seemed to have the highest expectation (mean score = 4.35) and the tangibles dimension seemed to have the lowest expectation (mean score = 3.88). The assurance component had

Table 2. List of criteria used in this research

SL. No	Expectation statements	Perception statements
Tangibles		
1.	Agri-clinic will have modern looking equipment.	XYZ Agri-clinic has modern looking equipment.
2.	The physical facilities at Agri-clinic will be visually appealing.	XYZ Agri-clinic's physical facilities are visually appealing
3.	Employees at Agri-clinic will be neat appearing.	XYZ Agri-clinic's employees are neat appearing.
4.	Materials associated with the service (such as pamphlets or statements) will be visually appealing at an Agri-clinic.	Materials associated with the service (such as pamphlets or statements) are visually appealing at XYZ Agri-clinic.
Reliability		
5.	When Agri-clinic promises to do something by a certain time, they do.	When XYZ Agri-clinic promises to do something by a certain time, it does so.
6.	Agri-clinic will show a sincere interest in solving customer's problem.	When you have a problem, XYZ Agri-clinic shows a sincere interest in solving it.
7.	Agri-clinic will perform the service right the first time.	XYZ Agri-clinic performs the service right the first time.
8.	Agri-clinic will provide the service at the time they promise to do so.	XYZ Agri-clinic provides its service at the time it promises to do so.
9.	Agri-clinic will insist on accurate and error free services	XYZ Agri-clinic insists on error free records
Responsiveness		
10.	Employees of Agri-clinic will tell customers exactly when services will be performed.	Employees in XYZ Agri-clinic tell you exactly when services will be performed.
11.	Employees of Agri-clinic will give prompt service to customers.	Employees in XYZ Agri-clinic gives you the prompt service.
12.	Employees of Agri-clinic will always be willing to help customers.	Employees in XYZ Agri-clinic are always willing to help you.
13.	Employees of Agri-clinic will never be too busy to respond to customers' requests.	Employees in XYZ Agri-clinic are never too busy to respond to your request.
14.	Provides information / details about service even through telephone.	Employees in XYZ Agri-clinic will provide information / details about service even through telephone.
Assurance		
15.	The behavior of employees in Agri-clinic will instill confidence in customers.	The behavior of employees in XYZ Agri-clinic instills confidence in you.
16.	Customers of Agri-clinic will feel safe in transactions.	You feel safe in your transactions with XYZ Agri-clinic.
17.	Employees of Agri-clinic will be consistently courteous with customers.	Employees in XYZ Agri-clinic area consistently courteous with you.
18.	Employees of Agri-clinic will have the knowledge to answer customers' questions.	Employees in XYZ Agri-clinic have the knowledge to answer your questions.
Empathy		
19.	Agri-clinic will give customers individual attention.	XYZ Agri-clinic gives you individual attention.
20.	Agri-clinic will have operating hours convenient to all their customers.	XYZ Agri-clinic has operating hours convenient to all its customers.
21.	Agri-clinic will have employees who give customers personal attention.	XYZ Agri-clinic has employees who gives you personal attention.
22.	Agri-clinic will have their customer's best interests at heart.	XYZ Agri-clinic has your best interest at heart.
23.	The employees of Agri-clinic will understand the specific needs of their customers.	The employees of XYZ Agri-clinic understand your specific needs.

the highest perceptions (mean score = 3.71) while the tangibles dimension seemed to have the lowest perception (mean score = 2.95), among the five dimensions. The details are presented in Table 5.

It was evident that in all dimensions of quality, the perception of farmers in service quality was lower than their expectation. The overall gap means a score of service quality of Agriclinics was found to be -0.76. The greatest gap was seen in the tangibles of the services (gap mean score = -0.93, including items such as the appearance of physical facilities, equipment, personnel, and written materials), while the lowest gap was found in the assurance dimension (gap mean score = -0.58, including items such as employees' knowledge, courtesy and their ability to inspire trust and confidence). It can be noted from the expectation score (3.88) which is least among the five quality dimensions, that most of the farmers are not actually concerned about the physical appearance of the agri-clinic. Though the expectation score is low for tangibles, it could not meet out to the perception of the farmers. Hence, the development of physical features should also be prioritised.

4.3.1 Comparison of service quality dimensions between expectation and perception

Analysis of Variance (ANOVA) has been used to determine whether there is any similarity between expectation and perception.

Table 3. Demographic profile of the sample respondents

S.No	Characteristics	No. of Respondents	Share (%)
I	**Gender**		
	Male	77	85.56
	Female	13	14.44
II	**Age**		
	< 30 years	2	2.22
	31-40 years	19	21.11
	41-50 years	30	33.33
	51-60 years	27	30.00
	> 60 years	12	13.33
III	**Education**		
	Illiterate	2	2.22
	Primary	24	26.67
	Secondary	35	38.89
	Diploma	16	17.78
	Graduate	11	12.22
	Postgraduate	2	2.22
IV	**Family Size**		
	≤ 3 members	5	5.56
	4 members	43	47.78
	5 members	33	36.67
	≥ 6 members	9	10.00
V	**Annual Family Income**		
	< 1 Lakh	10	11.11
	1 Lakh – 2 Lakhs	24	26.67
	2 Lakhs – 3 Lakhs	40	44.44
	> 3 Lakhs	16	17.78
VI	**Operational Farm Holding**		
	Marginal (< 1.00 ha)	52	57.78
	Small (1-2 ha)	35	38.89
	Semi-medium (2-4 ha)	3	3.33
	Medium (4-10 ha)	0	0
	Large (>10 ha)	0	0
VII	**Farming Experience**		
	0-5 years	13	14.44
	6-10 years	21	23.33
	11-15 years	19	21.11
	16-20 years	10	11.11
	> 20 years	27	30.00

Table 4. Reliability analysis – Cronbach's-α (alpha)

Sl.No.	Quality Dimensions	No. of Factors	Expectation Coefficient	Perception Coefficient
1.	Tangibles	4	0.871	0.806
2.	Reliability	5	0.945	0.921
3.	Responsiveness	5	0.930	0.903
4.	Assurance	4	0.912	0.865
5.	Empathy	5	0.945	0.923
	TOTAL	**23**	**0.981**	**0.973**

Table 5. Gap analysis

S.No.	Quality Dimensions	Mean	SD	Expectation Score (E)	Mean	SD	Perception Score (P)	Gap (P-E)
1.	Tangibles	3.88	0.59	3.88	2.95	0.19	2.95	-0.93
2.	Reliability	4.34	0.64	4.34	3.45	0.89	3.45	-0.89
3.	Responsiveness	4.35	0.53	4.35	3.57	0.71	3.57	-0.78
4.	Assurance	4.29	0.46	4.29	3.71	0.55	3.71	-0.58
5.	Empathy	4.26	0.68	4.26	3.64	1.17	3.65	-0.61
	TOTAL	4.22	0.58	4.24	3.46	0.71	3.48	-0.76

Table 6. ANOVA results

	Source of Variation	Sum of Squares	df	Mean Square	F	P-value	F crit
Tangibles	Between Groups	1769985	1	1769985	0.999227	0.356	5.987378
	Within Groups	10628132	6	1771355			
	Total	12398118	7				
Reliability	Between Groups	1.97136	1	1.97136	221.7241	0.000	5.317655
	Within Groups	0.071128	8	0.008891			
	Total	2.042488	9				
Responsiveness	Between Groups	1.518661	1	1.518661	96.34339	0.000	5.317655
	Within Groups	0.126104	8	0.015763			
	Total	1.644765	9				
Assurance	Between Groups	0.686792	1	0.686792	72.59446	0.000	5.987378
	Within Groups	0.056764	6	0.009461			
	Total	0.743556	7				
Empathy	Between Groups	0.913853	1	0.913853	58.71996	0.000	5.317655
	Within Groups	0.124503	8	0.015563			
	Total	1.038356	9				

**0.05 level of significance*

4.3.2 Hypothesis

There is no significant difference among the expectation and perception scores of Agri-clinics for service quality dimensions.

The dimension-wise result of ANOVA indicates that the F critical value (5.987378) of tangibles is higher than the f value (0.999227), so there is no significant difference between the expectation and perception of the farmers. It concludes null hypothesis is accepted Hence, according to farmers' expectation and perception of tangibles are same.

Similarly, the F value of reliability (F=221.7241, F crit=5.317655), responsiveness (F=96.34339, F crit=5.317655), assurance (F=19.875, F crit=5.987378), and empathy (F=16.336, F crit=5.317655) which is greater than the F critical value at the significance level of 0.05. Hence, the null hypothesis has been rejected indicating that there is a significant difference among the expectation and perception scores of farmers for service quality dimensions (reliability, responsiveness, assurance, and empathy). This concludes that the expectation and perception of reliability, responsiveness, assurance and empathy varies significantly according to the farmers.

5. CONCLUSION

This study used the SERVQUAL scale to examine the quality of services provided by the

Agri-clinics and agribusiness centers to the farmers in the Puducherry region. The results from the gap analysis indicated that farmers' expectations were higher than their perceptions. It could be understood that the quality of the services extended by the Agri-clinics was not to the expected level of the sample farmers. It was evident that significant gaps were observed in quality dimensions like tangibles (- 0.93), reliability (- 0.89), and responsiveness (-0.78). It was also observed that the farmers expected responsiveness (4.35) followed by reliability (4.34) and assurance (4.29) in that order of importance from the service providers. It is also found that these quality dimensions are vital to gain customer trust. The gap analysis between service perceptions and expectations showed that all scores for perceptions were lower than their expectations scores, indicating that there are a lot of service improvements efforts that need to be fulfilled to enhance the quality of service. This can assist firms in increasing the customer satisfaction as well as attracting and retaining loyal customers. For testing the significant difference among the SERVQUAL score of Agri-clinics, a one-way ANOVA test has been applied. Significant differences have emerged among the service quality dimensions (reliability, responsiveness, assurance, and empathy). This is because the agri-clinics have failed to meet the expectations of the farmers. They lack in providing enough services, such as not all personnel are trained, animal feed isn't provided, and field visits aren't offered. There is no significant difference between expectation and perception of the service quality dimension – tangibles. This is due to the reason that the farmers have no much expectation on the physical aspects of the agri-clinics and The farmers availing the services have limited knowledge about the various products and services extended by the agri-retail shops where the relationship factor plays a significant role.

LIMITATIONS AND FUTURE RESEARCH

The limitation of the study is mainly the results are based on the selected six agri-clinics in union territory of Puducherry, the study could be widened to all agri-clinics present in the region to increase the external validity of the study's results. Secondly, this study was conducted and analyzed the opinions of the customers' expectations and perceptions and does not focus on management perception of the customer's expectations which could also be examined.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Shoji Lal Bairwa, Saket Kushwaha, Lokesh Kumar Meena, Kerobim Lakra. Present status of agriclinics and agribusiness centers scheme in India: An Analysis. International Journal of scientific research and management (IJSRM). 2014;2(9): 1431-1440.
2. Ali Ramezani Ghotbabadi, Setareh Feiz, Rohaizat Baharun. Service quality measurements: A review. International Journal of Academic Research in Business and Social Sciences. 2015;5(2). ISSN: 2222-6990
3. Kontogeorgos A, Tselempis D, Karipidis P. Young farmers' perceived service quality of the Greek Ministry of Agriculture: A SERVQUAL Approach, Agricultural Economics Review; 2014.
4. Khanchitpol Yousapronpai boon, SERVQUAL: Measuring higher education service quality in Thailand, Procedia - Social and Behavioral Sciences. 2014;116: 1088 – 1095
5. Lama Khawaja, Alaa Eldin Abbass Ali, Nehale Mostapha. The mediating effect of customer satisfaction in a relationship with service quality, corporate social responsibility, perceived quality, and brand loyalty. Management Science Letters. 2021;11:763–772.
6. Rose L. Johnson, Michael Tsiros and Richard A. Lancioni. Measuring service quality: a systems approach. Journal of Services Marketing; 1995. DOI: 10.1108/08876049510100272
7. Emel Kursunluoglu Yarimoglu. A Review on Dimensions of Service Quality Models. Journal of Marketing Management. 2014; 2(2):79-93 ISSN: 2333-6080
8. Sabrina Tazreen. An Empirical Study of Servqual as a Tool for Service Quality Measurement. IOSR Journal of Business and Management (IOSRJBM).2012.1(5); ISSN: 2278-487
9. Bharti Marwari, Rajinder Kaur. Service Quality a Dimension of CRM: A Study of Public and Private Sector Banks. International Journal of Research in Commerce & Management. 2020;11(11); ISSN 0976-2183

10. Prabha Ramseook-Munhurrun, Perunjodi Naidoo, Soolakshna Desai Lukea-Bhiwajee. Measuring service quality: Perceptions of employees. Global Journal of Business Research. 2010; 4(1).

Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle5.com/review-history/76950