



RESEARCH ARTICLE

An assessment of service quality gap in farmer producer organizations: A comparative approach using SERVQUAL

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Abstract

This study examines service quality gaps in Farmer Producer Organizations (FPOs) in Tamil Nadu using the SERVQUAL model by comparing Grade A and Grade D FPOs. Data were collected through a stratified random sampling method from 240 members across four FPOs to assess five key service quality dimensions. The findings revealed significant service gaps with Grade D FPOs showing larger service quality gaps particularly in tangibles (-1.21), reliability (-1.32) and empathy (-1.17). These gaps disclose shortcomings in infrastructure, timeliness of service delivery, accuracy in record keeping and member focused engagement. In contrast, Grade A FPOs demonstrated narrower gaps, indicating stronger operational efficiency and higher levels of member satisfaction. The pronounced service quality gaps in Grade D FPOs pose threat to member trust, active participation and the long-term sustainability of these organizations. The study recommends targeted policy interventions such as the implementation of standardized service delivery protocols and workforce training. Bridging these gaps is critical to strengthening the role of FPOs as vital institutions for promoting inclusive and sustainable growth in Indian agricultural sector.

Keywords: farmer producer organizations; quality gap; service quality; SERVQUAL

Introduction

Farmer Producer Organizations (FPOs) emerged as important institutions to empower small and marginal farmers in India (1). By promoting collective action, FPOs enhanced access to inputs, markets and financial services (2). However, many FPOs struggled to sustain member trust and active participation due to inconsistent service delivery. While much attention was given to forming and scaling FPOs through policy and financial support, service quality remained an overlooked factor that critically affected their success.

Service quality was essential for the success of FPOs, which relied on the voluntary participation of farmers (3). Providing timely inputs, fair pricing and transparent communication-built trust and encouraged active involvement. If services failed to meet expectations, it led to dissatisfaction, reduced participation and even the collapse of the organization (4). Hence, service quality was not just a performance indicator but a strategic necessity for FPOs. In this study SERVQUAL model was used to assess service quality by measuring gaps between customer expectations and perceptions across five key dimensions, helping identify specific areas that needed improvement.

Previous studies using SERVQUAL showed mixed results across countries. Negative service gaps were found in Iranian cooperatives (5), while only 54 % satisfaction was reported in Tanzania (6). In contrast, 86.93 % satisfaction was reported in Indonesia (7). In India, assurance, reliability and tangibles were the key satisfaction drivers in e-NAM (8). Positive perceptions were observed in empathy and reliability, but gaps were found in responsiveness in agricultural cooperative societies (9). Service quality issues were identified in FPOs across Andhra Pradesh and Karnataka (10). These findings confirmed SERVQUAL's effectiveness but emphasized that service gaps varied by context. These varied findings highlighted SERVQUAL's strength in identifying service gaps, though their nature differed by context. With more than 300 registered FPOs in Tamil Nadu, evaluating their service quality through a structured framework was not just timely, it was essential for driving meaningful improvements and ensuring long-term success of FPOs.

Materials and Methods

This study employed an explanatory and analytical design to assess perceived service quality and satisfaction among FPO members using the SERVQUAL model, which measured gaps between expectations and perceptions across five dimensions: Tangibles, Reliability, Responsiveness, Assurance and Empathy. A stratified random sampling method was used to select four FPOs using NABARD grading tool - two from NABARD's Grade A FPOs (Gayathiri Farmer Producer Company Limited and Erode Precision Farmer Producer Company Limited) and two from Grade D FPOs (Kiruba Sustainable Agriculture Farmer Producer Company Limited), selected based on performance scores. From each FPO, 60 members were randomly selected, totaling 240 respondents. Primary data were collected using a structured SERVQUAL questionnaire comprising 22 items designed to capture members' expectations and perceptions across five service quality dimensions. A 7-point Likert scale was used for responses. The data collected were analysed using descriptive statistics and paired sample t-tests to identify and assess service quality gaps.

Results and Discussion

Table 1. Comparison of expectation and perception scores across SERVQUAL dimensions in Grade A and D FPOs

SERVQUAL Dimension	Service Item	Grade A FPO (n=120)			Grade D FPO (n=120)		
		Mean Expectation	Mean Perception	Gap (P-E)	Mean Expectation	Mean Perception	Gap (P-E)
Tangibles	Equipment	5.95 (0.53)	5.48 (0.47)	-0.47*	5.99 (0.54)	4.00 (1.02)	-1.99*
	Facilities	6.01 (0.64)	5.48 (0.47)	-0.53*	5.88 (0.54)	4.73 (0.51)	-1.14*
	Appearances	5.93 (0.60)	5.47 (0.47)	-0.47*	5.87 (0.56)	5.17 (0.46)	-0.70*
	Physical Layout	5.97 (0.67)	5.58 (0.52)	-0.38*	6.08 (0.78)	5.08 (0.26)	-1.01*
	Mean (Tangibles)	5.96	5.50	-0.46	5.95	4.74	-1.21
Reliability	Timeliness	6.14 (0.58)	5.68 (0.50)	-0.46*	6.15 (0.59)	4.68 (0.47)	-1.48*
	Dependability	6.04 (0.63)	5.89 (0.71)	-0.15	6.21 (0.55)	5.08 (0.26)	-1.13*
	Precision	6.05 (0.52)	5.66 (0.48)	-0.39*	6.10 (0.53)	4.98 (0.27)	-1.13*
	Punctuality	6.23 (0.59)	5.57 (0.50)	-0.66*	6.27 (0.69)	4.74 (0.60)	-1.53*
	Accuracy	6.22 (0.65)	5.51 (0.50)	-0.71*	6.26 (0.63)	4.94 (0.24)	-1.32*
	Mean (Reliability)	6.14	5.66	-0.47	6.20	4.88	-1.32
Responsiveness	Communication	6.24 (0.69)	5.93 (0.60)	-0.31*	6.25 (0.52)	5.37 (0.53)	-0.88*
	Prompt	6.19 (0.51)	5.97 (0.67)	-0.23*	6.01 (0.57)	5.31 (0.46)	-0.70*
	Helpfulness	5.95 (0.53)	5.48 (0.50)	-0.47*	6.25 (0.60)	5.04 (0.20)	-1.21*
	Responsiveness	6.01 (0.64)	5.48 (0.50)	-0.53*	6.18 (0.57)	5.07 (0.50)	-1.11*
	Mean (Responsiveness)	6.10	5.71	-0.38	6.17	5.20	-0.98
Assurance	Trustworthiness	5.47 (0.50)	5.49 (0.53)	0.03	6.27 (0.48)	4.91 (0.55)	-1.36*
	Safety	5.58 (0.53)	5.56 (0.57)	-0.03	5.98 (0.60)	5.06 (0.42)	-0.92*
	Courteous	6.26 (0.62)	5.68 (0.47)	-0.58*	6.25 (0.64)	5.18 (0.46)	-1.08*
	Knowledge	6.00 (0.59)	5.63 (0.49)	-0.38*	6.17 (0.69)	4.85 (0.38)	-1.32*
	Mean (Assurance)	5.83	5.59	-0.24	6.16	5.00	-1.17
Empathy	Individual Attention	6.10 (0.64)	5.63 (0.49)	-0.48*	6.18 (0.59)	5.20 (0.40)	-0.98*
	Accessibility	6.26 (0.70)	5.55 (0.50)	-0.71*	6.20 (0.53)	4.68 (0.47)	-1.53*
	Personal Attention	6.07 (0.40)	5.68 (0.47)	-0.38*	6.10 (0.54)	4.96 (0.27)	-1.14*
	Care	6.16 (0.55)	5.61 (0.49)	-0.55*	6.29 (0.73)	5.13 (0.46)	-1.17*
	Understanding	6.16 (0.58)	5.56 (0.50)	-0.60*	6.26 (0.64)	5.22 (0.49)	-1.04*
	Mean (Empathy)	6.15	5.61	-0.54	6.21	5.04	-1.17

* indicates statistically significant gap at $p < 0.05$, all scores are based on a 7-point Likert scale, value in parenthesis indicates standard deviation

Service quality assessment for Grade A and Grade D FPOs

The SERVQUAL analysis was conducted to evaluate the service quality gap between the expectations and perceptions of FPO members across five core dimensions. Table 1 presents the service quality assessment for the Grade A and D FPOs.

Tangibility dimension

The tangibility dimension focusing on members' perceptions of physical aspects such as equipment, facilities, employees and materials. This dimension revealed a notable contrast between Grade A and Grade D FPOs. As presented in Table 1, all statements within this dimension exhibited negative gap scores for both Grade A and Grade D FPOs, ranging from -0.38 to -0.53 for Grade A and -0.70 to -1.99 for Grade D, indicating that member expectations consistently exceeded their perceptions. Grade A FPOs exhibited relatively smaller service quality gaps with an average gap of -0.46 (mean expectation score 5.96 vs. mean perception 5.50), indicating moderate member satisfaction. In contrast, Grade D FPOs showed significantly larger deficiencies, with an average gap of -1.21 (mean expectation score 5.95 vs. mean perception score 4.74). The most significant issues in Grade D included outdated equipment for input storage (-1.99) poor visual appeal of storage facilities (-1.14) and inadequate packaging and documentation (-1.01), compared to Grade A's largest gap related to physical facilities (-0.53).

Reliability dimension

The reliability dimension focused on fulfilling promises, solving problems sincerely, providing accurate and timely services and maintaining error-free records. All items showed negative gap scores ranging from -0.15 to -0.71 for Grade A FPOs, indicating moderate dissatisfaction, whereas Grade D FPOs exhibited much larger gaps ranging from -1.13 to -1.53, reflecting severe reliability issues. Grade A FPOs showed moderate service quality gaps, with an average gap of -0.47 (mean expectation score 6.14 vs. mean perception score 5.66), with key concern in maintaining error-free records (-0.71) and timely service delivery (-0.66). Grade D FPOs had significantly larger gaps averaging -1.32 (mean expectation score 6.20 vs. mean perception score 4.88), with critical issues in untimely service (-1.53), inconsistent performance (-1.48) and inaccurate records (-1.32).

Responsiveness dimension

This dimension, evaluated the FPO's ability to respond promptly, inform about services and offer timely help. Grade A FPOs demonstrated relatively smaller service gaps with a mean gap of -0.38 (ranging from -0.15 to -0.71), with expectation and perception scores of 6.10 and 5.71, respectively. The most prominent concern (-0.53) was related to staff responsiveness indicating room for improvement in member interaction. In contrast, Grade D FPOs exhibited much wider service gaps with a mean gap of -0.98 (ranging from -0.70 to -1.21), with perception scores falling to 5.20 against expectations of 6.17. The most critical deficiencies were in the willingness to help members (-1.21) and delayed responsiveness (-1.11), reflecting possible constraints in staffing, inadequate training and lower motivation levels.

Assurance dimension

The dimension included factors such as staff courtesy, confidence-building behaviour, transaction security and knowledge. Grade A FPOs exhibited minor service gaps (ranging from -0.38 to -0.58), with an average gap of -0.24 (mean expectation scores of 5.83 vs perception score 5.59). Most assurance items performed close to member expectations, though courteous behaviour recorded the highest gap (-0.58). Grade D FPOs on the other hand revealed much larger assurance gaps (ranging from -0.92 to -1.36), with perceptions dropping to 5.00 despite expectations of 6.16. The most significant shortfall was found in staff competence and confidence-building behaviour (-1.36), followed by lack of knowledge (-1.32), courtesy (-1.08) and transaction safety (-0.92).

Empathy dimension

The final dimension assessed aspects such as individual attention, working hours, member-focused services and staff understanding. This dimension reveals significant differences between Grade A and Grade D FPOs. Grade A FPOs showed negative gap scores across all statements, ranging from -0.38 to

-0.71, with an average gap of -0.54 (mean expectation score 6.15 vs. mean perception score 5.61). Key concerns included providing convenient working hours (-0.71) and understanding specific member needs (-0.60), which indicated a need for greater member-centric service and operational flexibility. In contrast, Grade D FPOs exhibited much larger gaps ranging from -0.98 to -1.53, with an average gap of -1.17 (mean expectation score 6.21 vs. mean perception score 5.04). The most significant shortfalls included in convenient operating hours (-1.53), lack of individualized attention (-1.14) and poor understanding of member needs (-1.04), reflecting a critical failure to deliver personalized and member-focused services.

Comparison of all FPO grades across SERVQUAL dimensions

Table 2 summarizes the gap scores for each SERVQUAL dimension across Grade A and Grade D FPOs. The results clearly show a consistent decline in service quality as the FPO grade decreases from A to D.

The tangibles dimension showed consistently negative gap scores across all FPO grades, indicating that physical components such as equipment, storage facilities, packaging and documentation were perceived to fall short of member expectations. Grade A FPOs reported the smallest gap (-0.46), reflecting relatively well-maintained and modern infrastructure. Gaps widened noticeably in Grade D (-1.21). This trend suggested that lower-grade FPOs lacked adequate investments in infrastructure, which contributed to poor physical service delivery and negatively influenced member satisfaction.

Reliability showed one of the widest and most concerning gaps in service quality across all grades. Grade A had a moderate gap (-0.47), but the gap increased significantly in Grade D (-1.32). This dimension reflected core operational inefficiencies, particularly in lower-grade FPOs, where service delivery was often inconsistent, error-prone and failed to meet promised standards.

Responsiveness gaps, while still negative, were comparatively smaller than other dimensions. Grade A showed the smallest gap (-0.38), implying relatively better staff willingness and promptness. The gap increased in Grade D (-0.98). Despite being a relative strength, lower responsiveness in weaker FPOs still indicated challenges in providing timely support, proactive communication and accessible services.

Assurance shows a sharp decline in quality from higher- to lower-grade FPOs. Grade A maintains a minimal gap (-0.24), reflecting confidence in staff knowledge, courtesy and transaction safety. However, the gap widens drastically in Grade D FPOs (-1.17). These scores point to a serious trust deficit and lack of professionalism in staff working with lower-grade FPOs, underlining the need for training, capacity building and better member communication.

Table 2. Comparison of services quality gap scores between Grade A and Grade D FPOs

SERVQUAL Dimensions	Grade A FPO Gap (n=120)	Grade D FPO Gap (n=120)
Tangibles	-0.46	-1.21
Reliability	-0.47	-1.32
Responsiveness	-0.38	-0.98
Assurance	-0.24	-1.17
Empathy	-0.54	-1.17
Mean	-0.42	-1.17

Empathy consistently reflected the largest service quality gaps, especially in lower-grade FPOs. While Grade A reported a moderate gap (-0.54), Grade D (-1.17) highlighted severe dissatisfaction with the personal attention and member understanding that were provided by staff. This revealed a clear erosion of member-centric service culture in underperforming FPOs and highlighted the urgent need for improved engagement, personalized support and responsiveness to member needs.

The average SERVQUAL gap score underscored a strong correlation between FPO performance grade and perceived service quality. Grade A: recorded an average gap of -0.42, indicating near-alignment between expectations and service delivery. Grade D showed significantly higher average gaps (-1.17), reflecting major service shortfalls. This systematic increase in service quality gaps from Grade A to D highlighted the urgent need for comprehensive quality improvement strategies, particularly in infrastructure, staff capacity and member engagement.

Conclusion

Overall, the findings clearly indicated that as FPO grade decreased, service quality gaps widened across all dimensions. Grade A FPOs were relatively successful in meeting member expectations, while Grade D FPOs struggled with core service delivery issues. Based on the detailed SERVQUAL gap analysis among grade A and D FPOs, the following policy recommendations were proposed to enhance service quality, member satisfaction and long-term sustainability of Farmer Producer Organizations (FPOs):

1. Mandated the development and adoption of Standard Operating Procedures (SOPs) for service delivery, procurement, record keeping and grievance redressal and introduced service audits for underperforming FPOs to identify bottlenecks in service reliability.
2. Developed and implemented minimum infrastructure standards for FPOs to access government support. For this provided performance-linked capital grants or subsidies to lower-grade FPOs (Grade D) for upgrading storage, input processing and packaging facilities.
3. Established member help desks in all FPOs, especially Grade D FPOs, for timely resolution of queries and proactive communication.
4. Supported FPOs in regular assessments of staff performance and knowledge levels and introduced incentive structures for FPO staff linked to response time, member feedback and satisfaction metrics.
5. Designed policies ensuring gender-sensitive and inclusive services, enhancing the FPO's social equity role to address empathy and member-centric service culture.
6. Encouraged customized service packages (timing, pricing, delivery models) based on farmer requirements.
7. Designed and supported more intensive handholding for D grade FPOs.
8. Funded action research studies on service quality improvement and incorporated findings into dynamic policy revisions.

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Authors' contributions

SPK carried out conceptualization, data collection, study design, data analysis and preparation of original draft. SS contributed to supervision, validation of results, critical review and substantial revisions of the manuscript. PR, MD, JP and JIP participated in manuscript review and approved the final version. All authors have read and approved the final manuscript.

Compliance with ethical standards

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During the preparation of this work the authors used Grammarly to improve language and readability. By using this tool, the authors reviewed and edited the content as necessary and take full responsibility for the final content of the publication.

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