COOPERATIVE MANAGEMENT

Institutional Responsiveness and Beneficiary Trust in Cooperative Retail Service Delivery in Tamil Nadu

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Abstract

Cooperative institutions occupy an important position in the delivery of essential public services, particularly where organisational performance is closely associated with public confidence and the quality of frontline interactions. In Tamil Nadu (TN), cooperative-run Fair Price Shops constitute an important institutional arrangement through which households access essential commodities. Although the operational performance of these institutions is generally examined in terms of distribution and administrative efficiency, comparatively less attention is given to the relationship between institutional responsiveness, management effectiveness and beneficiary trust. The present study examines the institutional dimensions of cooperative-run Fair Price Shops by analysing beneficiary perceptions across four selected districts of Tamil Nadu, namely Chennai, Coimbatore, Dindigul and Thoothukudi. The study adopts a quantitative research design based on structured questionnaire responses. The empirical analysis considers staff responsiveness, cooperative management's handling of operational issues, perceived institutional effectiveness and beneficiary trust. Descriptive statistics, reliability analysis, Pearson correlation, district-wise comparative tests and multiple regression are employed to examine the relationships among the selected variables. The Institutional Governance and Beneficiary Trust construct recorded a mean score of 3.927, with a standard deviation of 0.670 and a Cronbach's Alpha coefficient of 0.813. District-wise analysis established significant differences in institutional perceptions (Welch's $F = 82.895$, $p < 0.001$). Pearson correlation indicated a strong positive association between perceived operational efficiency and institutional governance and beneficiary trust ($r = 0.709$, $p < 0.001$). The regression results further demonstrated that perceived operational efficiency ($B = 0.444$, $p < 0.001$) and digital awareness and capability ($B = 0.166$, $p < 0.001$) were positively associated with institutional governance and beneficiary trust. The model explained 63.2 per cent of the observed variation in the dependent construct. The findings suggest that institutional confidence in cooperative service outlets is closely associated with the quality-of-service delivery and the perceived ability of management to respond to beneficiary requirements. The study highlights the importance of strengthening frontline responsiveness, management accountability and service-oriented institutional practices in cooperative retail distribution.

Keywords: Cooperative management; institutional responsiveness; beneficiary trust; service delivery; institutional performance; cooperative retailing

1 Introduction

Cooperative institutions have historically played an important role in the economic and social development of India. Their organisational structure, founded on collective participation, mutual assistance and democratic management, distinguishes them from conventional commercial enterprises. Unlike profit-oriented retail establishments, cooperatives are expected to balance operational efficiency with the welfare of their members and the wider community. This distinctive institutional

character makes their performance an important subject of investigation within cooperative management and business administration.

In Tamil Nadu, cooperative institutions have developed an extensive presence across several economic activities, including agricultural credit, consumer services, marketing, dairy development and public distribution. The management of Fair Price Shops represents one of the significant service-delivery responsibilities undertaken by cooperative societies. These outlets function as the direct point of interaction between the institution and households that depend on the regular supply of essential commodities.

The performance of a cooperative-run service outlet cannot be evaluated exclusively through the availability of commodities or the completion of transactions. The conduct of frontline personnel, the ability of management to address operational difficulties, the accessibility of services and the confidence placed in the institution are equally relevant dimensions of institutional performance.

In service-oriented organisations, beneficiary perceptions are shaped through repeated interactions with the service provider. A technically efficient system may not necessarily generate confidence if beneficiaries encounter inadequate assistance or delayed responses. Conversely, an institution that maintains effective communication, provides appropriate support and addresses operational difficulties may establish stronger relationships with its users.

This distinction is particularly relevant to cooperative-run Fair Price Shops. The beneficiaries interact with frontline personnel during commodity collection, entitlement verification and transaction-related activities. Their assessment of the institution is therefore influenced not only by the formal structure of the cooperative society but also by the quality of service experienced at the outlet level.

The present study examines this institutional dimension by focusing on the relationship between cooperative management, frontline responsiveness, perceived operational efficiency and beneficiary trust. Rather than evaluating the administrative scale or technological infrastructure of the Public Distribution System, the investigation approaches cooperative-run Fair Price Shops as service-oriented institutions whose effectiveness is reflected partly in the perceptions of their beneficiaries.

2 Review of literature

2.1 Cooperative institutions and institutional performance

Cooperative institutions differ from conventional business organisations in their underlying objectives and governance arrangements. Their performance is expected to reflect economic discipline, member participation, institutional accountability and community-oriented service.

The effectiveness of cooperative organisations therefore depends on more than their formal organisational structure. The manner in which managerial decisions are implemented, the responsiveness of personnel and the consistency of service delivery contribute to the institution's overall performance.

In the context of cooperative-run Fair Price Shops, these dimensions acquire particular significance because beneficiaries experience institutional performance through their direct interactions with the outlet.

2.2 Frontline responsiveness and service relationships

Frontline employees represent the immediate organisational interface between a service institution and its users. Their conduct influences the accessibility, convenience and perceived reliability of the service.

Responsiveness involves the willingness and ability of personnel to provide assistance, clarify difficulties and address service-related concerns. Where the frontline workforce responds effectively, users are more likely to develop favourable assessments of the organisation.

For cooperative service outlets, staff responsiveness is therefore an important managerial consideration. The quality of interaction at the outlet level can influence the extent to which the broader cooperative institution is perceived as dependable and service-oriented.

2.3 Management effectiveness and institutional confidence

Management effectiveness is reflected in the institution's capacity to coordinate activities, address operational problems and maintain consistent service standards. The effectiveness of cooperative management becomes particularly visible when beneficiaries encounter difficulties that require intervention beyond routine frontline transactions.

A cooperative institution that responds appropriately to operational problems may strengthen its credibility among service users. On the other hand, inadequate supervision and weak problem-solving arrangements may affect the perceived quality of the institution even when its formal service infrastructure remains available.

2.4 Trust in service institutions

Institutional trust represents the confidence that users place in an organisation's ability and willingness to discharge its responsibilities consistently.

In public-facing service institutions, trust develops through repeated experiences of fairness, reliability, accessibility and appropriate assistance. It is consequently related to both organisational practices and the quality of individual service encounters.

Khera's work on welfare delivery in India has emphasised the importance of institutional capacity and administrative accountability in determining the effectiveness of public distribution arrangements. Similarly, the discussions of Drèze and Khera highlight the importance of local institutional practices and beneficiary experiences in evaluating welfare delivery.

The present investigation extends this institutional perspective by examining the relationship between cooperative management practices and beneficiary trust through primary survey evidence.

2.5 Research gap

Existing discussions of cooperative participation in public distribution have largely concentrated on the institutional structure, distribution arrangements and administrative responsibilities of cooperative societies. Although these aspects are important, they provide an incomplete assessment of organisational effectiveness.

There remains a need to examine how beneficiaries evaluate cooperative institutions in terms of frontline responsiveness, management effectiveness and institutional confidence. In particular, the

relationship between perceived operational efficiency and trust in cooperative-run service outlets deserves closer empirical examination.

The present study addresses this concern through a quantitative assessment of beneficiary perceptions across four districts of Tamil Nadu. Its principal contribution lies in treating institutional responsiveness and beneficiary trust as measurable dimensions of cooperative service performance.

3 Objectives of the study

The study is guided by the following objectives:

1. To examine beneficiaries' perceptions of frontline responsiveness in cooperative-run Fair Price Shops.
2. To assess the perceived effectiveness of cooperative management in addressing operational and service-related issues.
3. To examine the level of beneficiary trust in cooperative-run Fair Price Shops.
4. To analyse the relationship between perceived operational efficiency and institutional governance and beneficiary trust.
5. To identify district-wise variations in beneficiaries' assessments of cooperative institutional performance.

4 Research hypotheses

The following hypotheses are formulated for empirical examination:

H_{01}: There is no significant association between perceived operational efficiency and institutional governance and beneficiary trust.

H_{02}: Digital awareness and capability have no significant association with institutional governance and beneficiary trust.

H_{03}: There is no significant difference in institutional governance and beneficiary trust across the selected districts.

5 Research methodology

5.1 Research design

The study adopts a quantitative, descriptive and analytical research design. Primary data obtained through a structured questionnaire are used to examine beneficiary perceptions concerning cooperative institutional performance.

The analytical framework focuses on the relationship between service delivery, management effectiveness and institutional confidence.

5.2 Area of the study

The investigation covers four districts of Tamil Nadu:

- Chennai – Metropolitan context.
- Coimbatore – Industrial and commercial context.

- Dindigul – Agrarian and semi-urban context.
- Thoothukudi – Coastal and port-oriented context.

The selection of these districts provides an opportunity to examine institutional perceptions under different geographical and socio-economic conditions.

5.3 Sampling design and sample size

The final analytical sample comprised 880 respondents, comprising 220 respondents from each selected district. The analytical sample was obtained through screening of the original survey records, followed by district-wise equal-allocation selection.

The underlying survey employed a purposive-cum-convenience approach. The findings are therefore interpreted within the selected geographical and institutional context rather than being treated as statistically representative of all PDS beneficiaries in Tamil Nadu.

5.4 Sources of data

The study primarily relies on primary data collected through a structured questionnaire administered to beneficiaries of cooperative-run Fair Price Shops.

The analysis draws upon the following questionnaire dimensions:

- Responsiveness and support provided by cooperative FPS staff.
- Effectiveness of cooperative management in handling digital-related issues.
- Reduction in favouritism or bias.
- Increase in beneficiary trust.
- Perceived operational efficiency.
- Digital awareness and capability.

5.5 Statistical tools employed

The following statistical techniques are employed:

- Percentage analysis.
- Mean and standard deviation.
- Cronbach's Alpha reliability analysis.
- Exploratory factor analysis.
- Pearson product-moment correlation.
- One-way ANOVA and Welch's ANOVA.
- Kruskal–Wallis H test.
- Pairwise Welch comparisons with Holm adjustment.
- Multiple regression analysis.

The regression models are interpreted in terms of adjusted statistical associations rather than causal relationships.

6 Analysis and interpretation

6.1 Assessment of cooperative institutional performance

The institutional performance of cooperative-run Fair Price Shops was examined through four indicators relating to perceived fairness, frontline responsiveness, management effectiveness and beneficiary trust.

Table 1 presents the beneficiary perceptions of cooperative institutional performance.

Table 1. Beneficiary perceptions of cooperative institutional performance.

Institutional indicator	Positive response (%)
Responsiveness of cooperative FPS staff	75.8
Effectiveness of cooperative management in handling digital-related issues	81.4
Increase in trust in cooperative-run FPS	79.9
Suitability of cooperative-run FPS for long-term digital service delivery	82.0

Source: Primary survey data.

The results indicate that the majority of respondents expressed favourable perceptions regarding the institutional performance of cooperative-run Fair Price Shops.

Management effectiveness recorded a positive response of 81.4 per cent, while 82.0 per cent considered cooperative-run outlets suitable for long-term service delivery. The corresponding proportion for staff responsiveness was 75.8 per cent.

The difference between staff responsiveness and management effectiveness is noteworthy. Although both indicators received favourable assessments, the lower response associated with frontline responsiveness suggests that the quality of individual service interactions remains an area requiring managerial attention.

The findings also indicate that institutional trust is not necessarily determined by a single dimension of service performance. It reflects a broader assessment of the institution's ability to provide consistent assistance and address beneficiary requirements.

6.2 Reliability assessment of institutional governance and beneficiary trust

The internal consistency of the institutional governance and beneficiary trust construct was examined using Cronbach's Alpha.

The construct comprised four indicators:

- Reduction in favouritism or bias in ration distribution.
- Responsiveness and support provided by cooperative-run FPS staff.
- Effectiveness of cooperative management in handling digital-related issues.
- Increase in beneficiary trust in cooperative-run FPS after digitalisation.

Table 2 presents the reliability statistics of institutional governance and beneficiary trust.

Table 2. Reliability statistics of institutional governance and beneficiary trust.

Reliability measure	Value
Number of items	4
Analytical observations	880
Cronbach's Alpha	0.813

Source: Computed from primary data.

The Cronbach's Alpha coefficient of 0.813 indicates good internal consistency among the four indicators.

The item-total statistics further support the reliability of the construct.

Table 3 presents the item-total statistics.

Table 3. Item-total statistics.

Indicator	Corrected item-total correlation	Alpha if item deleted
Reduction in favouritism or bias	0.577	0.793
Responsiveness of cooperative FPS staff	0.658	0.763
Cooperative management handles digital issues better	0.641	0.762
Increase in beneficiary trust	0.687	0.741

Source: Primary data.

The corrected item-total correlations range from 0.577 to 0.687. All four indicators demonstrate positive contributions to the composite measure.

The highest corrected item-total correlation is recorded by beneficiary trust (0.687), followed by staff responsiveness (0.658). This indicates that both the direct assessment of institutional confidence and the quality of frontline interactions contribute meaningfully to the overall construct.

The reliability findings provide an empirical basis for examining institutional governance and beneficiary trust as a composite measure.

6.3 Exploratory factor assessment

Principal Axis Factoring was employed to examine the underlying structure of eleven indicators representing digital awareness, operational efficiency and institutional governance.

Parallel analysis supported the retention of one common factor. The extracted factor loadings ranged from 0.510 to 0.720.

Table 4 presents the factor loadings of the institutional indicators (Principal Axis Factoring).

Table 4. Factor loadings of the institutional indicators (Principal Axis Factoring).

Indicator	Factor loading
Reduction in favouritism or bias	0.633
Responsiveness of cooperative FPS staff	0.715
Effectiveness of cooperative management in handling digital issues	0.720

Indicator	Factor loading
Increased trust in cooperative-run FPS	0.716

Source: Primary data (Principal Axis Factoring).

The highest loading among the institutional indicators was recorded by cooperative management effectiveness (0.720). Beneficiary trust and staff responsiveness recorded closely comparable loadings of 0.716 and 0.715, respectively.

These results indicate that management effectiveness, frontline responsiveness and institutional trust are closely associated with the broader perception structure identified in the factor analysis.

However, the single-factor solution should be understood as the measurement result for the combined eleven-item set. It does not independently establish that institutional management and beneficiary trust constitute separate latent dimensions.

6.4 District-wise assessment of institutional governance and beneficiary trust

To examine geographical differences, the composite institutional governance and beneficiary trust score was compared across the four selected districts.

Table 5 presents the district-wise descriptive statistics.

Table 5. District-wise descriptive statistics.

District	Mean	Standard deviation
Chennai	4.255	0.510
Coimbatore	3.435	0.704
Dindigul	3.832	0.658
Thoothukudi	4.188	0.428
Overall	3.927	0.670

Source: Primary data.

Chennai recorded the highest mean score of 4.255, followed by Thoothukudi at 4.188. Dindigul recorded a mean of 3.832, whereas Coimbatore recorded the lowest mean of 3.435.

The difference between Chennai and Coimbatore is 0.820 points, indicating a considerable variation in the assessment of cooperative institutional performance.

Chennai and Thoothukudi demonstrate comparatively favourable perceptions, whereas Coimbatore records a lower institutional assessment. This pattern suggests that the performance of cooperative-run service outlets is not perceived uniformly across the selected geographical settings.

The standard deviation is also comparatively lower in Thoothukudi (0.428) than in Coimbatore (0.704). This indicates that responses in Thoothukudi were relatively less dispersed, while perceptions in Coimbatore exhibited greater variation.

6.5 Test of homogeneity of variances

Before undertaking district-wise comparisons, Levene's test was employed to examine the assumption of equal variances.

Table 6 presents the results of Levene's test.

Table 6. Results of Levene's test.

Composite measure	Levene statistic	Significance
Institutional Governance and Beneficiary Trust	20.033	$p < 0.001$

The result is statistically significant, indicating that the assumption of homogeneity of variances is not satisfied.

Consequently, Welch's ANOVA was considered an appropriate robust alternative for examining differences across the four independent district groups.

6.6 Welch's ANOVA

Table 7 presents the results of Welch's ANOVA.

Table 7. Results of Welch's ANOVA.

Measure	Welch F	Numerator df	Denominator df	Significance
Institutional Governance and Beneficiary Trust	82.895	3	478.025	$p < 0.001$

The Welch's ANOVA result establishes a statistically significant difference in institutional governance and beneficiary trust across the four selected districts.

The test statistic of 82.895 indicates that the observed variation in institutional perceptions is unlikely to be attributable solely to random sampling variation under the null hypothesis of equal district means.

The conventional one-way ANOVA also produced a significant result ($F = 91.082$, $p < 0.001$), with an eta-squared value of 0.238.

This indicates that approximately 23.8 per cent of the observed variation in institutional governance and beneficiary trust scores is associated with district membership in the analysed sample.

The magnitude of this variation suggests that geographical and local institutional conditions deserve consideration when evaluating cooperative service performance.

6.7 Kruskal–Wallis test

Since the questionnaire measures were based on ordinal Likert-scale responses, the Kruskal–Wallis H test was also employed as a non-parametric robustness assessment.

Table 8 presents the results of the Kruskal–Wallis test.

Table 8. Results of the Kruskal–Wallis test.

Composite measure	H-statistic	Degrees of freedom	Significance
Institutional Governance and Beneficiary Trust	186.404	3	$p < 0.001$

The Kruskal–Wallis result confirms the existence of statistically significant differences across the four district groups.

The consistency between Welch's ANOVA and the non-parametric test strengthens the conclusion that the observed district-level variation is not dependent solely on the equal-variance assumption or the parametric comparison.

6.8 Pairwise district comparisons

Following the significant omnibus tests, pairwise Welch comparisons with Holm adjustment were undertaken to identify the district combinations contributing to the observed differences.

Table 9 presents the pairwise district comparisons.

Table 9. Pairwise district comparisons.

District comparison	Mean difference	Adjusted significance
Chennai – Coimbatore	0.819	$p < 0.001$
Chennai – Dindigul	0.423	$p < 0.001$
Chennai – Thoothukudi	0.067	$p = 0.136$
Coimbatore – Dindigul	-0.397	$p < 0.001$
Coimbatore – Thoothukudi	-0.752	$p < 0.001$
Dindigul – Thoothukudi	-0.356	$p < 0.001$

Note: Pairwise Welch comparisons with Holm-adjusted significance values.

The results reveal that Chennai and Thoothukudi do not differ significantly in their institutional governance and beneficiary trust scores (adjusted $p = 0.136$).

However, Chennai records significantly higher scores than both Coimbatore and Dindigul. Similarly, Thoothukudi records significantly higher scores than Coimbatore and Dindigul.

The difference between Coimbatore and Dindigul is also statistically significant.

The pairwise findings provide a more detailed understanding of the geographical variation. The lower assessment recorded in Coimbatore cannot be interpreted as a general weakness of cooperative institutions across the State. Rather, it indicates that beneficiaries' assessments differ considerably across the selected local settings.

The findings also suggest that institutional performance should be examined at a more decentralised level instead of relying exclusively on aggregate assessments.

6.9 Correlation analysis

Pearson product-moment correlation was employed to examine the relationship between digital awareness and capability, perceived operational efficiency, and institutional governance and beneficiary trust.

Table 10 presents the matrix of Pearson correlations.

Table 10. Matrix of Pearson correlations.

Variables	Digital awareness and capability	Perceived operational efficiency	Institutional governance and trust
Digital awareness and capability	1.000	0.527***	0.532***
Perceived operational efficiency	0.527***	1.000	0.709***
Institutional governance and trust	0.532***	0.709***	1.000

Note: N = 880. *** denotes statistical significance at $p < 0.001$.

The correlation analysis establishes positive and statistically significant relationships among the three composite measures.

The association between perceived operational efficiency and institutional governance and beneficiary trust is particularly strong ($r = 0.709$, $p < 0.001$).

This indicates that respondents who assess the operational performance of cooperative-run outlets more favourably also tend to express greater confidence in the institution and its management.

Digital awareness and capability also demonstrate a positive association with institutional governance and beneficiary trust ($r = 0.532$, $p < 0.001$).

The results suggest that awareness of service procedures and confidence in using digital systems are related to more favourable institutional assessments. Nevertheless, the stronger correlation involving operational efficiency indicates that the beneficiary's overall service experience is particularly important in understanding institutional confidence.

Spearman's rank correlation provides a further robustness assessment. The association between operational efficiency and institutional governance and trust was 0.745 ($p < 0.001$), while digital awareness and institutional governance and trust recorded a coefficient of 0.557 ($p < 0.001$).

The direction and significance of the relationships therefore remain consistent under the rank-based approach.

6.10 Multiple regression analysis

Multiple regression analysis was employed to examine whether digital awareness and capability and perceived operational efficiency are associated with institutional governance and beneficiary trust.

Institutional Governance and Beneficiary Trust was considered the dependent variable.

The explanatory variables were:

- Digital Awareness and Capability.
- Perceived Operational Efficiency.

The model additionally incorporated controls for gender, age, educational attainment, occupation, monthly income, marital status, duration of PDS usage and district.

Table 11 presents the model summary.

Table 11. Model summary.

Particulars	Value
Dependent variable	Institutional Governance and Beneficiary Trust
Sample size	880
R	0.795
R-square	0.632
Adjusted R-square	0.623
Number of predictors, including controls	18
Overall robust F-statistic	54.031
Model significance	$p < 0.001$

The coefficient of determination (R^2) is 0.632, indicating that approximately 63.2 per cent of the observed variation in institutional governance and beneficiary trust is statistically explained by the variables included in the regression model.

The adjusted R^2 of 0.623 indicates that the model retains substantial explanatory capacity after accounting for the number of predictors.

The overall robust F-statistic of 54.031 is statistically significant at $p < 0.001$. The model therefore demonstrates an overall statistically significant relationship with institutional governance and beneficiary trust.

Table 12 presents the regression coefficients.

Table 12. Regression coefficients.

Explanatory variable	Unstandardised B	Robust SE	Test statistic	Significance
Digital Awareness and Capability	0.166	0.033	5.036	$p < 0.001$
Perceived Operational Efficiency	0.444	0.041	10.783	$p < 0.001$

Note: The model incorporates demographic, socio-economic and district-level controls (gender, age, educational attainment, occupation, monthly income, marital status, duration of PDS usage and district).

The regression results reveal that both explanatory variables have positive and statistically significant associations with institutional governance and beneficiary trust.

Digital awareness and capability records an unstandardised coefficient of 0.166 ($p < 0.001$). This indicates that higher reported awareness and confidence in using digital systems are associated with more favourable assessments of cooperative institutional performance, holding the other included variables constant.

Perceived operational efficiency records a comparatively larger coefficient of 0.444 ($p < 0.001$). The result indicates that favourable operational experiences are strongly associated with institutional confidence.

The difference between the two coefficients is noteworthy. Although awareness of digital procedures contributes positively to institutional perceptions, the relationship involving operational efficiency is stronger in terms of the reported unstandardised coefficient.

The findings suggest that institutional confidence is closely associated with the actual service experience reported by beneficiaries, rather than being explained exclusively by familiarity with the systems through which services are delivered.

It is important to note that the coefficients represent adjusted associations. Since the study is based on cross-sectional survey responses, they should not be interpreted as evidence of causal effects.

6.11 Hypothesis testing

The statistical results provide the basis for evaluating the three hypotheses formulated for the study.

Table 13 presents the summary of hypothesis testing.

Table 13. Summary of hypothesis testing.

Hypothesis	Statistical evidence	Decision
H_{01}: No significant association between operational efficiency and institutional governance and beneficiary trust	Pearson r = 0.709, p < 0.001; regression B = 0.444, p < 0.001	Rejected
H_{02}: Digital awareness and capability have no significant association with institutional governance and beneficiary trust	Pearson r = 0.532, p < 0.001; regression B = 0.166, p < 0.001	Rejected
H_{03}: No significant district-wise difference in institutional governance and beneficiary trust	Welch F = 82.895, p < 0.001; Kruskal–Wallis H = 186.404, p < 0.001	Rejected

The results establish statistically significant relationships between operational efficiency, digital awareness and institutional governance and beneficiary trust.

The district-wise comparisons also establish significant differences in the institutional assessments recorded across the four selected districts.

The rejection of the null hypotheses is confined to the operationalised perception-based measures and the selected sample. It does not establish causal effects or demonstrate that every cooperative institution performs in the same manner.

7 Discussion

The findings provide an important perspective on the managerial dimensions of cooperative service delivery.

First, the favourable assessments of staff responsiveness and cooperative management indicate that beneficiaries recognise the contribution of frontline personnel and institutional administration to the functioning of cooperative-run Fair Price Shops. The positive assessment of management effectiveness (81.4 per cent) is particularly noteworthy because it indicates that the institutional role of cooperative societies extends beyond the routine distribution of commodities.

Second, the relationship between operational efficiency and institutional governance and beneficiary trust is an important finding. The Pearson correlation coefficient of 0.709 indicates a strong positive association between the two constructs. The regression analysis further establishes that operational efficiency remains positively associated with institutional confidence after accounting for the included control variables.

This finding has a clear managerial implication. Service efficiency should not be treated as an isolated operational objective. It is also associated with the way beneficiaries evaluate the institution responsible for providing the service.

Third, the district-wise comparisons demonstrate that institutional performance is not perceived uniformly. Chennai and Thoothukudi recorded relatively higher institutional scores, while Coimbatore recorded the lowest mean. These differences suggest the importance of examining local management practices, organisational arrangements and service conditions when evaluating cooperative institutions.

Fourth, the findings indicate that digital awareness and capability are also associated with beneficiary trust. However, the relationship is comparatively weaker than that observed for operational efficiency. This suggests that awareness alone may not be sufficient to establish institutional confidence. The quality and consistency of service delivery remain important considerations.

Taken together, the findings indicate that cooperative institutional performance is best understood through the relationship between management practices, frontline service and beneficiary experience.

8 Managerial implications

The empirical findings have several implications for cooperative management.

8.1 Strengthening frontline service management

The relatively lower positive assessment of frontline staff responsiveness compared with management effectiveness indicates the need for greater attention to beneficiary-facing personnel.

Cooperative societies should provide regular training in beneficiary communication, service assistance, issue identification and problem resolution.

8.2 Establishing measurable service standards

Cooperative institutions may develop clearly defined service standards relating to staff availability, assistance, information provision and the resolution of operational difficulties.

Such standards would help translate general expectations of service quality into measurable managerial responsibilities.

8.3 Strengthening management accountability

The positive association between operational efficiency and institutional trust highlights the importance of effective management supervision.

Management should periodically examine beneficiary concerns, staff performance and the consistency of service delivery across outlets.

8.4 District-specific managerial interventions

The significant district-wise differences suggest that a uniform managerial approach may not adequately address local requirements.

Cooperative authorities should examine the reasons for comparatively lower institutional assessments in Coimbatore and Dindigul and identify practices associated with the stronger perceptions recorded in Chennai and Thoothukudi.

9 Limitations of the study

The findings should be interpreted in light of the following limitations.

First, the study is confined to four selected districts of Tamil Nadu. The results should not be generalised automatically to all cooperative institutions or all PDS beneficiaries in the State.

Second, the sampling procedure is based on purposive-cum-convenience recruitment followed by district-wise equal-allocation subsampling. Consequently, the findings do not constitute probability-based estimates of the wider beneficiary population.

Third, the principal measures are based on respondents' perceptions. The study does not independently assess the financial performance, cost efficiency or profitability of cooperative societies.

Fourth, the cross-sectional nature of the data restricts the ability to establish causal relationships among the variables.

Finally, the institutional governance and beneficiary trust measure combines perceptions of fairness, staff responsiveness, management effectiveness and trust. Although the construct demonstrates acceptable internal consistency, the individual dimensions may merit separate investigation in future studies.

10 Conclusion

The performance of cooperative institutions cannot be assessed solely through their organisational structure or their ability to discharge prescribed service responsibilities. Their effectiveness is also reflected in the manner in which beneficiaries experience the services provided and the confidence they place in the institution.

The present investigation examined this dimension through an empirical assessment of cooperative-run Fair Price Shops across four selected districts of Tamil Nadu. The findings indicate favourable beneficiary perceptions of institutional management, staff responsiveness and trust. The Institutional Governance and Beneficiary Trust construct recorded a mean score of 3.927 and a Cronbach's Alpha coefficient of 0.813, demonstrating a favourable overall assessment and good internal consistency.

The district-wise analysis established significant variations in institutional perceptions, with Chennai and Thoothukudi recording comparatively higher scores than Coimbatore and Dindigul. More importantly, the correlation and regression results established a strong positive association between perceived operational efficiency and institutional governance and beneficiary trust. The regression model explained 63.2 per cent of the observed variation in the dependent construct, with operational efficiency demonstrating a positive coefficient of 0.444.

These findings underline the importance of managerial effectiveness in service-oriented cooperative institutions. The ability of frontline personnel to provide assistance, together with the capacity of management to address operational difficulties, appears to be closely associated with the confidence beneficiaries place in cooperative-run outlets.

The study therefore concludes that the long-term effectiveness of cooperative service institutions depends not only on their formal organisational responsibilities but also on the quality of management practices and the consistency of beneficiary-oriented service. Strengthening frontline responsiveness, improving institutional accountability and addressing district-specific service conditions would contribute to more effective cooperative management.

The evidence also indicates that institutional trust should be treated as an important dimension of organisational performance rather than merely as a secondary outcome of service delivery. Cooperative institutions that consistently demonstrate responsiveness and operational effectiveness are better positioned to sustain beneficiary confidence and fulfil their broader community-oriented responsibilities.

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