



The Customer Tenure–Satisfaction Paradox in Poverty-Sensitive Cooperative Settings: Evidence from The Philippines

Gemar G. Perez *, Irene H. Maralit, Nickie Boy A. Manalo, Katherine T. Arellano

Batangas State University- The National Engineering University
*Corresponding author E-mail: gemar.perez@g.batstate-u.edu.ph

Received: November 6, 2025, Accepted: December 12, 2025, Published: December 17, 2025

Abstract

This study examines the relationship between multidimensional poverty and customer satisfaction among feed mill customers of a Philippine cooperative, with years as a customer serving as a mediating variable. Responding to the need for integrated performance metrics in development-oriented enterprises, the study combines customer satisfaction assessment with multidimensional poverty measurement across health, education, livelihood, employment, and social inclusiveness. Data were collected from 3,265 customers, and mediation analysis was employed to examine both direct and indirect relationships among poverty, customer tenure, and satisfaction.

The results show that multidimensional poverty has a significant negative effect on customer satisfaction, while also being positively associated with longer customer tenure. Notably, years as a customer were found to have a significant negative effect on satisfaction. This counter-intuitive pattern is conceptualized in this study as the tenure–satisfaction paradox, wherein economically disadvantaged customers remain affiliated with the cooperative for extended periods despite reporting lower satisfaction. Mediation results confirm that customer tenure partially mediates the relationship between poverty and satisfaction, indicating that the influence of poverty on satisfaction is shaped by the duration of customer engagement.

The findings highlight that customer retention and customer satisfaction are related but distinct outcomes in poverty-sensitive cooperative settings. By introducing the tenure–satisfaction paradox, this study contributes to cooperative economics and customer satisfaction literature and offers practical insights for cooperative managers and policymakers seeking to balance service quality, long-term engagement, and inclusive development.

Keywords: Customer Satisfaction; Cooperative Membership; Feed Mill Industry; Multidimensional Poverty; Tenure-Satisfaction Paradox.

1. Introduction

In an increasingly interconnected and competitive global economy, sustainable development efforts have shifted toward enhancing human welfare through multidimensional poverty reduction and inclusive economic growth. Poverty is no longer understood solely as income deprivation but as a complex condition encompassing social, economic, and institutional constraints that limit individual and collective human flourishing [1]. At the same time, customer satisfaction has become a central determinant of organizational performance in both private and social enterprise contexts, serving as a key indicator of sustainability, trust, and long-term viability [2]. As the global community advances toward the Sustainable Development Goals (SDGs), it is increasingly important to examine how institutions—particularly those rooted in social and economic empowerment, such as cooperatives—can simultaneously address poverty alleviation and customer satisfaction.

Cooperatives have gained global recognition for their capacity to promote inclusive development [3] and mitigate multidimensional poverty. Through collective ownership and democratic governance, cooperatives prioritize people over profit, offering not only economic opportunities but also social services and capacity-building interventions [4]. These features make cooperatives particularly relevant in rural and marginalized communities where market failures, financial exclusion, and institutional gaps are prevalent. Accordingly, the International Cooperative Alliance (ICA) has identified cooperatives as critical actors in advancing poverty reduction and social justice worldwide [5].

In Southeast Asia, cooperatives play a vital role in fostering economic empowerment and resilience. In the Philippines, cooperatives contribute substantially to inclusive development by serving sectors often overlooked by mainstream commercial enterprises [6]. As reported by the Cooperative Development Authority (CDA), more than 18,000 registered cooperatives serve over 11 million members nationwide [7]. These cooperatives operate across agriculture, transport, finance, housing, and consumer services, with agricultural cooperatives forming a substantial segment due to the country's agrarian structure. Despite their scale and developmental mandate, empirical studies examining cooperative performance through the combined lenses of customer satisfaction and multidimensional poverty remain limited.

This study focuses on a leading agri-based cooperative in the Philippines that exemplifies the dual commitment to service quality and social development. As of May 2024, the cooperative comprised 49,033 regular members and 22,912 associate members, with operations spanning multiple regions, including Laguna, Quezon, Mindoro, Romblon, Metro Manila, Bataan, Zambales, and parts of the Visayas. Its organizational strength is reflected in integrated services, strong governance structures, and a Quality Policy that explicitly prioritizes customer satisfaction. Supported by 335 regular employees, the cooperative remains a significant socio-economic institution among its stakeholders.

One of the cooperative's primary revenue-generating ventures is its feed mill operation, which supplies branded animal feeds to livestock and poultry raisers through agri-trading outlets and cooperative stores. This division accounts for approximately one-third of the cooperative's total net surplus, underscoring its economic importance. To continuously assess service performance, the cooperative has conducted regular customer satisfaction surveys (CSS) since 2013. These surveys function not merely as compliance tools but as integral components of performance management, informing policy decisions, service improvements, and customer retention strategies.

More recently, the cooperative expanded its evaluative framework to incorporate the socio-economic conditions of its customers. The 2024 Customer Satisfaction Survey integrates a poverty index alongside traditional service and product assessments, enabling the cooperative to evaluate whether its operations contribute to the broader well-being of members and customers. This shift reflects a more holistic approach to performance measurement—one that situates customer satisfaction within the wider context of human development rather than treating it as an isolated outcome.

This study was undertaken as an independent academic evaluation of cooperative feed mill customers, examining customer satisfaction levels alongside multidimensional poverty indicators. This approach aligns with broader calls for evidence-based cooperative governance and stakeholder-centered development models [8].

The dual analytical framework adopted in this study—linking customer satisfaction and poverty index scores—responds to the growing demand for integrated performance metrics that capture both financial outcomes and social impact. While satisfaction indicators reflect how effectively immediate customer needs are met, poverty indices illuminate the structural constraints shaping customer experiences. Considered together, these measures provide a more comprehensive understanding of how cooperative services align with inclusive development outcomes [9].

Multidimensional poverty in this study is assessed across five key dimensions—health, education, livelihood, employment, and social inclusiveness—which are consistent with international poverty measurement standards and reflect socio-economic conditions common in rural and semi-urban Philippine contexts. Customer satisfaction is similarly evaluated across core operational dimensions, including product quality, service delivery, environment, and facilities.

Accordingly, this study examines the relationship between multidimensional poverty and customer satisfaction among cooperative customers. It investigates whether poverty index scores significantly influence customer satisfaction, whether years of cooperative affiliation affect satisfaction outcomes, and whether customer tenure mediates the poverty–satisfaction relationship. The study further explores variations in poverty and satisfaction across customer status, age, and sex. Through these objectives, the research advances understanding of how socio-economic conditions shape service perceptions within cooperative business operations in the Philippines.

This research contributes to both academic scholarship and cooperative practice. Academically, it bridges the literature on customer satisfaction and poverty alleviation within the cooperative sector. Practically, it offers cooperative managers a diagnostic framework for identifying vulnerable customer segments, prioritizing targeted interventions, and designing services that respond not only to consumer preferences but also to developmental needs [10].

More broadly, the study responds to global calls for cooperatives to be evaluated not solely on financial performance but also on social impact. As frontline development institutions, cooperatives require evidence-based frameworks to assess how effectively they fulfill their socio-economic mandates, particularly in the post-pandemic context marked by heightened vulnerability and economic uncertainty.

By integrating multidimensional poverty metrics into customer satisfaction evaluation, this study highlights the potential for institutional innovation within the cooperative sector. Such an approach enables cooperatives to better align operational strategies with inclusive growth objectives and positions them as critical partners in sustainable development. Once refined, this analytical model may be applied to other cooperative contexts within and beyond the Philippines.

To ground the study within existing scholarship, the succeeding section reviews relevant literature and theoretical perspectives on cooperative membership, poverty reduction, and customer satisfaction. This review clarifies key concepts, synthesizes prior findings, and identifies research gaps that inform the study's hypotheses and analytical framework.

Cooperatives have long been recognized for their role in reducing poverty [3] and enhancing social welfare in developing economies, particularly in rural areas where access to formal financial institutions is limited. Empirical evidence highlights their contribution to inclusive growth through access to credit [11], agricultural inputs, training, and market participation [12]. This socio-economic mandate provides a critical backdrop for examining how poverty intersects with customer satisfaction in cooperative settings.

Customer satisfaction—defined as an individual's evaluation of the value and quality of products or services received [13]—is shaped not only by service attributes but also by broader socio-economic conditions [14]. Poverty is often associated with constrained access to services, irregular participation, and heightened sensitivity to pricing and perceived inequities, all of which may shape satisfaction judgments. Studies indicate that economically disadvantaged individuals may hold higher expectations of cooperatives, viewing them as instruments of empowerment rather than purely commercial service providers [15]. In cooperative banking contexts, dissatisfaction among low-income members has been linked to limited access to credit, insufficient training, and affordability concerns [16].

Evidence further suggests that customer satisfaction is embedded within customers' lived socio-economic realities [11]. For example, research on cooperative services in Davao reported lower satisfaction among low-income members with respect to service responsiveness [17]. Similar findings from African cooperatives [18] and Southeast Asian cooperatives [19] highlight dissatisfaction arising from perceived favoritism, service inadequacies, or limited product diversity among customers experiencing poverty. These patterns support the proposition that poverty actively shapes satisfaction perceptions rather than merely conditioning access, leading to the first hypothesis:

H₀: Poverty has a significant effect on customer satisfaction for cooperative customers.

Beyond immediate satisfaction outcomes, poverty may also influence the duration of customer engagement within cooperatives. Economic vulnerability can constrain mobility [20], disrupt participation, or discourage long-term affiliation due to financial obligations. Several studies note that customers with limited financial capacity may struggle to maintain consistent membership [21] or meet cooperative requirements such as capital shares or dues [22].

Conversely, some studies suggest that poverty may foster prolonged cooperative membership when the institution is perceived as a stable economic lifeline. Evidence from dairy cooperatives in India shows longer tenure among low-income members due to regular income streams and subsidized services [23]. Similar patterns have been observed in Latin American cooperatives during economic downturns [24]. These contrasting dynamics motivate the second hypothesis:

H₀₂: Poverty has a significant effect on years as a customer.

Customer tenure has been widely examined as a determinant of satisfaction. Long-term members often develop greater trust, familiarity, and alignment with cooperative values, contributing to higher satisfaction levels [25]. Studies on cooperative feed mill logistics report stronger identification and more favorable experiences among farmers with longer tenure [26]. Loyalty and emotional attachment further reinforce satisfaction [27], while psychological mechanisms such as the mere exposure effect suggest that repeated interaction increases favorability [28]. Empirical evidence from rural Southeast Asian cooperatives supports this pattern [29]. However, other studies caution that prolonged engagement may also lead to dissatisfaction due to unmet expectations, service stagnation, or bureaucratic fatigue [30]. This mixed evidence supports the third hypothesis:

H₀₃: Years as a customer significantly affect customer satisfaction.

Finally, growing attention has been given to mediating mechanisms that explain how socio-economic factors influence satisfaction outcomes. Customer tenure may function as a mediating variable through which poverty shapes satisfaction by altering expectations, familiarity, and perceived benefits over time [31]. Prior research shows that experience length can modify the effects of income or education on satisfaction [32]. Studies on electric and agricultural cooperatives further demonstrate that long-standing customers in poverty may report higher satisfaction than newer customers facing similar constraints [33]. This buffering or adaptation effect underpins the fourth hypothesis:

H₀₄: Years as a customer have a mediating role on the effect of poverty on customer satisfaction.

Taken together, the literature suggests that the influence of poverty on customer satisfaction in cooperative settings operates through several interrelated mechanisms. First, under a resource constraint mechanism, economically disadvantaged customers exhibit heightened price sensitivity, which amplifies dissatisfaction when perceived costs outweigh expected benefits, even when objective service quality is adequate. Second, an expectation–reality gap mechanism emerges as poorer customers tend to view cooperatives not only as service providers but also as social support institutions; when cooperatives are unable to meet these broader expectations, dissatisfaction may arise despite continued patronage. Third, a psychological strain mechanism indicates that persistent economic stress reduces customers' tolerance for service imperfections, making delays, pricing issues, or procedural inefficiencies more salient in satisfaction judgments. These mechanisms clarify why poverty is not merely a background condition but an active determinant of customer satisfaction within cooperative enterprises.

2. Materials and Methods

This section outlines the procedures used to carry out the study, including the research setting, design, instruments, data collection protocols, ethical safeguards, and statistical analyses. These components ensured the reliability, validity, and ethical integrity of the findings.

The study was conducted among customers of a large agri-based cooperative in the Philippines, specifically feed mill clients surveyed from 2023 to 2024. The research was shaped by significant contextual factors, most notably the outbreak of African Swine Flu (ASF), which severely affected hog growers—many of whom were survey respondents. The ASF crisis resulted in substantial economic disruption and localized movement restrictions in affected communities, influencing both respondent accessibility and their economic and satisfaction perceptions. In addition, the timing of the survey varied relative to hog-raising cycles, with some respondents ceasing operations in November 2023 and others in March 2024. These temporal and economic disruptions are considered important contextual elements in interpreting the survey responses.

A descriptive survey research design was employed to collect both quantitative and qualitative data from cooperative customers. This design was appropriate for capturing prevailing conditions, behaviors, and perceptions, allowing for a comprehensive assessment of customer satisfaction and multidimensional poverty through a structured yet flexible data collection approach.

The study population consisted of 10,884 feed mill customers listed in the cooperative's 2023 master registry. Using Cochran's formula for sample size determination with a 95% confidence level, a population proportion of 50%, and a margin of error of 1.434%, the required sample size was calculated at 3,265 respondents. A stratified random sampling technique was employed to ensure representation across different geographic areas. The customer list was stratified by province, and samples were proportionately allocated to each stratum based on their population size. Random selection within each stratum was conducted using Microsoft Excel's =RANDBETWEEN() function. The breakdown of the population and corresponding sample per province is presented below:

Table 1: Distribution of Respondents Per Strata

Province	Population	Sample
Batangas	5,994	1,798
Laguna	73	22
Northern Luzon	326	98
Occidental Mindoro	220	66
Oriental Mindoro	2,630	789
Palawan	650	195
Quezon	377	113
Rizal	60	18
Romblon	117	35
Visayas	437	131
Total	10,884	3,265

Two sets of questionnaires were employed in this study: the Customer Satisfaction Survey and the Poverty Index Questionnaire. The Customer Satisfaction Survey, developed by the cooperative, included sections on the type of product purchased, satisfaction level, suggested improvements, and general comments or feedback. Responses followed a dichotomous "yes" or "no" format, scored as 1 and 0, respectively. The total scores were interpreted using the scale shown below.

The Poverty Index Questionnaire, designed by the researchers, assessed five key dimensions of multidimensional poverty—health, education, housing, employment, and social inclusion. Items were scored based on their contribution to poverty: binary items used 0 (no contribution) and 1 (contribution), while items with three choices used 0, 1, and 2. The total scores were also interpreted using Table 2.

Table 2: Scoring of Responses

Customer Satisfaction Score	Interpretation	Poverty Index Score	Interpretation
0	Highly Dissatisfied	0	No Poverty
1–3	Dissatisfied	1–3	Low Poverty
4–6	Moderately Satisfied	4–6	Moderate Poverty
7–9	Satisfied	7–9	High Poverty
10–12	Highly Satisfied	10–13	Extreme Poverty

To ensure clarity and comprehension, the questionnaires were translated into Tagalog and other relevant local dialects. Survey administration was conducted through a combination of in-person and telephone interviews, enabling broader participation and ensuring that respondents fully understood each item. The Customer Satisfaction Survey, a standard instrument provided by the funding entity, did not require additional validation or a pilot test. In contrast, the Poverty Index Questionnaire underwent validation and a pilot test, yielding a KR-20 value of 0.796, indicating strong internal consistency among the items.

To uphold data confidentiality, the cooperating organization provided respondent names and contact information exclusively for research purposes. A university-based survey team composed of a Project Leader, two Field Supervisors, and twenty enumerators conducted data collection between May and July 2024. The study targeted 3,265 respondents representing feed mill customers from 2023 to 2024. Data collection involved a combination of face-to-face interviews and telephone or online responses. In-person interviews were conducted at cooperative outlets located in Batangas and Mindoro, while telephone interviews targeted respondents residing in Laguna, Quezon, Rizal, Nueva Ecija, Tarlac, Camarines Sur, Palawan, Aklan, and Capiz. Following data collection, responses underwent a systematic process of tallying, cleaning, and analysis.

Of the targeted respondents, 2,187 individuals (66.98%) were surveyed through face-to-face interviews, while the remaining respondents participated via telephone. To ensure ethical research conduct and protect respondent confidentiality, all members of the survey team signed non-disclosure agreements before data collection. Respondents were identified only through name and contact information within the research team, and written informed consent was obtained during in-person interviews. Consent forms allowed respondents to choose whether to participate in the survey alone or to permit the inclusion of photographs with obscured identities. Replacement procedures were implemented when targeted respondents were unavailable.

For telephone interviews, respondents were asked for verbal consent before participation, including permission to answer questions over a recorded line, while ensuring the anonymity of responses. After three unsuccessful contact attempts, replacement procedures were applied. These protocols underscored the study's commitment to ethical research practices and respondent confidentiality throughout the survey process.

Despite these safeguards, several challenges emerged during data collection. Telephone surveys commenced on May 27, 2024, with enumerators attempting to contact 1,020 respondents from Occidental Mindoro, Nueva Ecija, Tarlac, Camarines Sur, Palawan, Aklan, and Capiz. Of these, only 263 interviews were completed due to non-active contact numbers, refusals, non-responses, mid-call withdrawals, and incorrect contact information. To mitigate this limitation, an additional list of potential respondents was obtained from the cooperating organization. Out of 3,872 additional call attempts, 815 interviews were completed. In total, 4,892 telephone call attempts were made, resulting in 1,078 completed interviews and a success rate of 22.04%.

For face-to-face interviews, 3,281 attempts were conducted, of which 2,187 were completed. In-person data collection was carried out over ten days, from July 8 to August 2, 2024. Survey activities were intermittently disrupted by adverse weather conditions, including a typhoon, as well as localized movement restrictions, which caused delays in the data collection process.

Overall, the study recorded 8,173 survey attempts (4,892 telephone attempts and 3,281 in-person attempts). Of these, 3,265 surveys were completed, comprising 1,078 telephone interviews and 2,187 face-to-face interviews. The overall survey success rate was approximately 39.95%. The analysis of the collected data involved a comprehensive application of various statistical techniques, carefully chosen to address the research objectives and the nature of the data. Given that the normality test (Kolmogorov-Smirnov test) yielded p-values less than .001, indicating that the data did not follow a normal distribution, non-parametric methods were utilized to ensure the validity and reliability of the results.

- **Frequency and Percent:** These descriptive statistics were employed to provide an initial overview of the data. Frequency counts and percentages were used to describe the demographic profile of the respondents, such as their age, sex, marital status, and household size. Additionally, these statistics were crucial in summarizing the distribution of respondents across different levels of customer satisfaction and poverty index scores. The frequency and percent values also captured the respondents' answers to specific questions related to satisfaction and poverty dimensions, offering insights into the general trends and patterns within the data.
- **Sum:** The sum was calculated for each respondent's answers to generate the overall customer satisfaction and poverty index scores. The customer satisfaction score was derived by summing the responses to satisfaction-related questions, where "yes" responses were scored as 1 and "no" responses as 0. Similarly, the poverty index score was calculated based on respondents' answers to questions assessing various aspects of poverty, with scores assigned according to the severity of each condition. These summed scores served as key variables in the subsequent analyses, representing the overall satisfaction and poverty levels of each respondent.
- **GLM Mediation Analysis:** The Generalized Linear Model (GLM) Mediation Analysis was conducted to explore the mediating role of the number of years as a customer in the relationship between the poverty index score and the customer satisfaction score. Mediation analysis is particularly useful for understanding whether and how an intermediate variable (in this case, the number of years as a customer) influences the relationship between an independent variable (poverty index score) and a dependent variable (customer satisfaction score). This analysis allowed for a deeper examination of whether the duration of customer membership affected the strength or direction of the impact of poverty on customer satisfaction, offering valuable insights into the dynamics of customer loyalty and satisfaction.
- **Kruskal-Wallis Test and Dwass-Steel-Fligner Pairwise Comparisons:** The Kruskal-Wallis test, a non-parametric equivalent to ANOVA, was utilized to determine whether there were significant differences in customer satisfaction and poverty index scores across various demographic groups, including age, marital status, and household size. This test is particularly suited for comparing more than two independent groups when the data do not meet the assumptions of normality. When the Kruskal-Wallis test indicated significant differences, the Dwass-Steel-Fligner pairwise comparison method was applied to identify which specific groups differed from each other. This approach ensured a more detailed understanding of the demographic factors influencing satisfaction and poverty levels among respondents.
- **The Mann-Whitney U test,** a non-parametric method for comparing two independent groups, was used to examine differences in customer satisfaction and poverty index scores based on sex. This test was selected for its robustness in handling non-normally

distributed data and its capacity to detect statistically significant differences between male and female respondents. The application of the Mann–Whitney U test provided insights into potential gender-based disparities in satisfaction levels and poverty experiences among cooperative customers.

The selection of non-parametric statistical methods was guided by the need to account for the non-normal distribution of the data, as indicated by the Kolmogorov–Smirnov test results. Each statistical technique served a distinct analytical purpose, enabling a thorough and nuanced examination of the data and ensuring that the research questions were addressed comprehensively. The results of these analyses contributed to a deeper understanding of the factors influencing customer satisfaction and multidimensional poverty among cooperative customers, while maintaining the integrity and accuracy of the statistical findings.

3. Results and Discussions

In the following section, a detailed presentation of the results and discussion from the 2024 customer satisfaction and poverty index analysis is provided. The insights derived from this analysis are examined to offer a comprehensive view of how customer satisfaction levels relate to the economic conditions of a diverse cooperative customer base.

To develop a comprehensive understanding of the respondents, an analysis of their profiles was conducted. Key demographic and behavioral characteristics were examined to provide insights into who the customers are and how they engage with different feed brands. This profiling offers a clearer picture of customer segments, preferences, and purchasing patterns, thereby establishing a solid foundation for the subsequent analysis of customer satisfaction and multidimensional poverty.

Table 3: Distribution of Respondents in Terms of Status as Customer

Status of Customer	Frequency	Percent
loyal customer (6 years above)	1682	51.52
established customer (1-5 years)	1416	43.37
new customer (less than 1 year)	167	5.11
Total	3265	100

Table 3 shows that more than half of the respondents (51.52%) are loyal customers who have been with the company for six years or more. This indicates strong long-term relationships and suggests that a significant portion of the customer base values the products and services enough to maintain their patronage over time. The high proportion of loyal customers reflects strong brand trust and satisfaction, implying that current retention programs are effective for long-term clients. Established customers (1–5 years) make up 43.37% of respondents. This sizable segment represents a stable mid-term customer base with high potential to transition into the loyal category if retention strategies remain consistent and engagement efforts are strengthened. In contrast, only 5.11% of respondents are new customers (less than one year), which highlights a need to improve customer acquisition efforts. A low proportion of new clients may limit future growth and pose risks if the customer base is not continually replenished.

The large proportion of loyal and established customers presents an opportunity to build on existing satisfaction, while the low percentage of new customers underscores the importance of implementing targeted marketing, refining product offerings, and expanding outreach initiatives. Balancing customer retention with acquisition will be crucial for ensuring sustainable growth and resilience against market competition.

Table 4: Distribution of Respondents in Terms of Sex

Sex	Frequency	Percent
Female	1903	58.28
Male	1362	41.72
Total	3265	100

Table 4 presents the distribution of customers by sex, showing that 58.28% of respondents are female and 41.72% are male. This gender breakdown provides valuable insights into the customer demographics being served. The higher proportion of female customers suggests that women play a significant role in purchasing decisions related to livestock feeds. This may reflect their active involvement in managing household livestock or small-scale agricultural enterprises where feed products are essential.

Understanding this dynamic is important for tailoring communication, marketing strategies, and product offerings to better engage female customers. For example, marketing campaigns could be designed to address the specific concerns and priorities of women involved in animal husbandry or farming. This might include highlighting ease of use, nutritional benefits, or affordability—factors that may hold particular importance for this demographic.

Meanwhile, the male customer base, although smaller, still constitutes a significant 41.72% of respondents. This suggests there is a sizeable male market segment that should not be overlooked. Opportunities may exist to enhance engagement by focusing on preferences commonly associated with male buyers, such as technical specifications, bulk purchasing options, or specialized feed solutions.

By recognizing and responding to the distinct characteristics of both male and female customers, businesses can improve overall customer satisfaction and loyalty. This targeted approach may also uncover opportunities for product innovation and service enhancement, ultimately contributing to stronger customer relationships and sustainable growth.

Table 5 presents the age distribution of customers, indicating that nearly half (49.65%) of respondents are between 31 and 50 years old. This is followed by those aged 51 and above, who account for 41.44%, while a smaller segment—only 8.91%—falls within the 18 to 30 age range. These figures offer important insights into the demographic composition of the customer base by age.

The dominance of the 31 to 50 age group suggests that this segment is the primary consumer of livestock feeds. Individuals in this age bracket are often actively involved in managing or expanding agricultural ventures, making purchasing decisions, and contributing to the operational growth of their farms or businesses. As such, it would be strategic to tailor products and services to address their specific needs—such as offering volume discounts, providing technical assistance, or promoting solutions that improve productivity and efficiency.

Table 5: Distribution of Respondents in Terms of Age

Age	Frequency	Percent
18-30 years old	291	8.91
31-50 years old	1621	49.65
51 and above	1353	41.44
Total	3265	100

The considerable presence of customers aged 51 and above (41.44%) represents another key segment. These individuals may have more established farming practices or experience in animal husbandry. Offering loyalty incentives, personalized customer service, and specialized educational materials could help maintain their engagement and promote continued loyalty.

In contrast, the relatively small proportion of younger customers, aged 18 to 30 (8.91%), signals an opportunity for future growth. Since this group represents the next generation of agricultural practitioners, efforts to engage them could be vital for long-term sustainability. Initiatives such as digital marketing, social media outreach, and partnerships with schools or agricultural programs may help attract and retain younger customers who are new to farming or livestock production.

Understanding these age-based segments enables more effective marketing, customer engagement, and service delivery. By aligning strategies with the distinct needs of each age group, businesses can enhance customer satisfaction, foster loyalty, and support sustained growth across all demographics.

Table 6: Distribution of Respondents in Terms of Customer Satisfaction Level

Satisfaction Level	Frequency	Percent
Highly Dissatisfied	2	0.06
Dissatisfied	1	0.03
Neutral	44	1.35
Satisfied	645	19.75
Highly Satisfied	2573	78.81
Total	3265	100

The findings demonstrate a strong level of customer satisfaction with the cooperative's feed products. The high proportion of satisfied and very satisfied respondents suggests that the brand consistently delivers on key expectations such as product quality, reliability, and service. This level of approval indicates that the cooperative has successfully built trust and a positive reputation among its customers, particularly in meeting the needs of livestock raisers.

From a management standpoint, the results affirm the effectiveness of current strategies and operations. However, the small percentage of customers who expressed dissatisfaction—though minimal—should not be overlooked. It signals the importance of ongoing monitoring, quality assurance, and responsiveness to customer feedback. Proactive measures such as regular satisfaction surveys, product quality audits, and responsive service channels can help address emerging concerns before they escalate.

Moreover, the high satisfaction ratings present an opportunity to deepen customer engagement. Management could consider loyalty-building initiatives such as rewards programs, educational support for feed usage, or enhanced after-sales service to retain this core customer base. Sustaining these satisfaction levels, while continuously innovating to respond to customer needs, will be key to maintaining a competitive vantage and fostering long-term relationships.

This overall satisfaction trend can be better understood by examining individual satisfaction indicators such as feed quality, packaging, pricing, store accessibility, and customer support. These dimensions help explain the drivers behind the positive ratings and highlight areas where the cooperative can maintain its strengths or make incremental improvements.

Table 7: Customer Perception Towards Product Quality Indicators of Satisfaction

Items	Yes		No	
	f	%	f	%
Product Quality				
1. The desired weight was achieved through "Industry Standards."	3192	97.76	73	2.24
2. The physical form of the feeds is not too dusty, has the right grind, and smells fresh.	3025	92.65	240	7.35
3. The sack helps maintain or preserve the freshness of the feeds.	3167	97	98	3
4. The feeds are in good condition (not expired, no mold, etc.).	3154	96.6	111	3.4
5. The price is reasonable.	2807	85.97	458	14.03
Service				
1. Employees are polite and friendly	3,236	99.11	29	0.89
2. Employees attend to you promptly	3,217	98.53	48	1.47
3. Employees are skilled and knowledgeable about the product being sold	3,246	99.42	19	0.58
4. The frequencies of Employees are capable of meeting your needs and providing other services	3,214	98.44	51	1.56
Environment				
1. The environment is clean	3,247	99.45	18	0.55
2. The arrangement of the feeds is orderly	3,248	99.48	17	0.52
3. The method of storage is acceptable	3,253	99.63	12	0.37

Customer perception of product quality, service, and environment plays a vital role in determining the overall satisfaction in cooperative-based agribusinesses such as feed mills. The analysis of responses from 3,265 customers revealed significant levels of satisfaction, offering meaningful insights for the management and broader cooperative sector.

In terms of product quality, responses indicate very high satisfaction across all four indicators. First, 97.76% of respondents agreed that their desired weight of feed was achieved based on industry standards. This suggests that the cooperative maintains stringent quality control in terms of accuracy in packaging, a key determinant of trust in agribusiness products. According to Majee, W., & Hoyt, A., precise and reliable product delivery enhances a cooperative's competitiveness by reducing transactional uncertainties [34]. Second, 92.65% agreed that the physical form of the feeds is appropriate—meaning not too dusty, ground properly, and fresh smelling. This reflects well on the feed mill's handling and production process. As noted by Vecchiato, D., Torquati, B., Venanzi, S., & Tempesta, T., the sensory characteristics of animal feeds directly influence purchasing decisions among livestock raisers, especially smallholders who rely on visual and olfactory cues as proxies for feed quality [35]. Third, 97% confirmed that the feed sacks preserve freshness. This level of satisfaction implies that packaging is both functional and quality-assuring. Proper packaging reduces wastage and contamination, which Agnieszka Cholewa-Wójcik, & Agnieszka Kawecka emphasized as critical for maintaining long-term product value in the feed industry [36]. Fourth, 96.6% stated that the feeds were in good condition (not expired, mold-free, etc.). The implication for operative management is the need to maintain strong supply chain and inventory management systems to avoid spoilage. As asserted by Choirun, A., Santoso, I., & Astuti, R., feed spoilage not only reduces customer satisfaction but also increases operational loss due to returns and distrust [37]. However, on the indicator related to pricing, only 85.97% found the price reasonable, lower than the other indicators. This suggests a potential issue in cost perception. Sánchez-Navarro, J. L. et.al. highlight that while cooperatives aim to offer lower prices, rising input costs can strain customer

perception of affordability, especially among low-income sectors [38]. Cooperative management must continue to find strategies to cushion price volatility, possibly through bulk procurement or member subsidies.

Regarding service-related indicators, responses were overwhelmingly positive. A near-universal 99.11% said employees are polite and friendly, while 98.53% affirmed prompt service. This aligns with Mazzarol, T., Soutar, G., & Alexandra, E.'s assertion that service experience is often the most significant factor in building cooperative loyalty [39]. When cooperative staff deliver courteous and timely service, they enhance emotional and relational trust—crucial for cooperative identity. Moreover, 99.42% believe the employees are skilled and knowledgeable. This affirms the value of continuous employee training and technical orientation, as suggested by Abualoush, S., Masa'deh, R., Bataineh, K., & Alrowwad, A., who argued that knowledge capital among frontline staff creates a ripple effect in customer satisfaction across Agri-cooperatives [40]. Slightly lower, but still high, was the 98.44% agreement that employees can meet customer needs and offer other services. This opens a window for cooperatives to provide advisory services—like animal health or feed budgeting—which Molina-Flores, B., Manzano-Baena, P., and Coulibaly, M.D identified as emerging best practices among successful Agri coops [41]. The third set of indicators relates to the environment. Here, respondents expressed the highest levels of satisfaction. The cleanliness of the environment was affirmed by 99.45%, while 99.48% said the arrangement of feeds was orderly, and 99.63% found the storage method acceptable. These findings support Bar-Clay, P., & Barker, J. L.'s position that cooperative spaces that are clean and well-organized not only reflect operational discipline but also influence customer trust and retention [42]. From a broader sectoral perspective, these insights suggest that cooperatives, especially those in the feed mill industry, are capable of achieving near-commercial levels of product and service excellence. As illustrated by Sambuo, D., the professionalization of cooperative operations can be achieved without losing the values of inclusivity and member-centeredness [43]. Maintaining such levels of satisfaction indicates that cooperatives are adapting to market demands while preserving cooperative principles. For cooperative customers, high satisfaction levels affirm that cooperatives remain viable alternatives to corporate suppliers. However, concerns over pricing must be monitored to ensure inclusive growth and avoid marginalizing price-sensitive clients, especially those in rural or poverty-affected areas.

Finally, implications for the feed mill industry include the validation that quality, consistency, and service orientation are critical benchmarks. Given that most feed buyers are repeat customers, continuous attention to product form, packaging, and technical knowledge will strengthen brand loyalty. The cooperative sector, in particular, can use these findings to advocate for more robust investment in infrastructure, employee development, and quality assurance mechanisms.

The results indicate that the cooperative's operational strategies are generally effective in meeting customer expectations with respect to product quality, service delivery, and environmental conditions. Areas identified for improvement, such as perceived price fairness, present opportunities for further refinement of pricing approaches and customer support mechanisms, which may enhance overall satisfaction and strengthen competitiveness within the feed industry.

To establish a deeper understanding of customer experience within cooperative-managed feed outlets, the study transitions from analyzing customer satisfaction to exploring its intersection with poverty conditions among customers. While high levels of satisfaction were observed in terms of product quality, service, and environmental conditions, it is equally important to contextualize these perceptions within the broader socio-economic realities of the clientele—many of whom are smallholder farmers and livestock raisers whose livelihoods are often vulnerable to poverty. By examining the poverty index alongside satisfaction indicators, the study aims to uncover whether economic hardships influence customer perceptions and experiences, and how cooperatives can strategically respond to both market and welfare-oriented needs. This linkage provides valuable insight for cooperatives to align their service delivery with inclusive development goals, ensuring that even economically disadvantaged members derive meaningful value and support from cooperative operations.

Table 8: Distribution of Respondents in Terms of Poverty Level

Poverty Index Level	Frequency	Percent
No Poverty	1,850	56.66
Low Poverty	1,172	35.90
Moderate Poverty	231	7.08
High Poverty	12	0.37
Total	3265	100.00

The data in Table 8 reveal that a significant portion of the respondents (56.66%) are not experiencing poverty based on the computed poverty index, while 35.90% fall within the low poverty level. Only a small fraction of the population is classified under moderate (7.08%) and high poverty (0.37%) levels. This suggests that the majority of the feed customers are relatively economically stable, with access to basic needs and potentially some level of disposable income. The concentration of customers in the no-poverty and low-poverty categories may reflect the effectiveness of livelihood strategies and income-generating activities, especially in rural and semi-urban communities where feed usage is common for livestock and poultry production. The low incidence of high poverty also points to the affordability and accessibility of animal feeds among grassroots-level customers.

For the cooperative management, this profile provides a strategic opportunity to sustain and expand operations by tailoring services and pricing schemes to a mostly low to middle-income market. Understanding the economic standing of their clientele allows for more inclusive and responsive product development, credit schemes, and loyalty programs. For the cooperative sector more broadly, these findings highlight the role of cooperatives as facilitators of economic participation and poverty alleviation. Meanwhile, for customers, this socio-economic profile suggests that animal-raising activities could be both a source of livelihood and a potential pathway out of poverty. Finally, for the feed industry, the results reinforce the importance of maintaining product affordability and accessibility while supporting smallholder farmers and backyard raisers who form a significant portion of the customer base.

Table 9: Distribution of Respondents in Terms of Multidimensional Poverty Indicators Among Cooperative Feed Mill Customers

Response	Frequency	Percent
Prevalence of Illnesses		
No	2,804	85.90%
Yes	461	14.10%
Total	3265	100.00%
Access to Primary Healthcare		
Always	2,423	74.20%
Sometimes	695	21.30%
Never	147	4.50%
Total	3265	100.00%
Children's Attendance at School		

Yes, all are attending school / no children need to attend	2,762	84.60%
Some are not attending school	243	7.40%
No, none are attending school	260	8.00%
Total	3265	100.0%
Years of Education		
12 and above	1,718	52.60%
6 to 11 years	1,378	42.20%
0 to 5 years	169	5.20%
Total	3,265	100.00%
Housing Quality		
Permanent	3,096	94.80%
Temporary	169	5.20%
Total	3,265	100.00%
Access to Clean Water		
Yes, within the household	2,161	66.20%
Yes, but not within the household	1,100	33.70%
No access	4	0.10%
Total	3,265	100.00%
Perceived Income Stability		
Yes, there is a stable income	2,045	62.60%
Yes, but income is irregular	1,003	30.70%
No, there is no stable income	217	6.60%
Total	3,265	100.00%
Perceived Job Security		
Yes	2,265	69.40%
No	1,000	30.60%
Total	3265	100.00%
Perceived Community Inclusion		
Yes		94.20%
No		5.80%
Total		100.00%
Experience of Discrimination		
No		92.30%
Yes		7.70%
Total		100.00%

A significant majority of respondents (85.9%) reported no prevalent illness in their households, indicating relatively good health conditions. This dimension has a negative contribution to the poverty index score, meaning it lowers the overall poverty level. Households not burdened by frequent illness are more likely to engage productively in economic activities such as livestock raising. However, the 14.1% with prevalent illnesses slightly increases the poverty index, reflecting vulnerability in health that may reduce work capacity and increase household expenses. As Ugo, O. et.al. noted, persistent illness in rural areas weakens household productivity and resilience [44].

In terms of access to primary healthcare, 74.2% of respondents reported always having access, 21.3% stated "sometimes," and 4.5% reported no access. Those who reported "sometimes" or "no access" contribute positively to the poverty index score, signaling deprivation in basic health services. Access to healthcare ensures preventive and responsive medical support. DIs-prD emphasized that poor health access in rural areas hinders both social mobility and cooperative participation [45].

Regarding children's attendance in school, 84.6% said all children are attending or that there are no school-age children, while 15.4% indicated that only some or none are attending. The 15.4% contribute positively to the poverty index, as child education is a key dimension of multidimensional poverty. Educational non-attendance may result in intergenerational poverty. Orbeta, A., & Paqueo, V. highlighted those barriers to education are among the strongest indicators of household-level poverty [46].

In terms of educational attainment of the household head, 52.6% had 12 or more years, 42.2% had 6–11 years, and 5.2% had 5 years or less. Households with heads having only 5 years or less of schooling contribute significantly to the poverty index score, as educational attainment directly affects employment opportunities and informed decision-making. Orbeta, A., & Paqueo, V. emphasized that education among adult members increases a household's economic capacity and agricultural efficiency [46].

On housing quality, 94.8% reported living in permanent dwellings, while 5.2% lived in temporary structures. The small portion living in inadequate housing conditions contributes positively to the poverty index score. Decent housing is linked to stability and security. National Economic Development Authority noted that permanent housing helps protect households from shocks and supports income-generating activities [47].

As for access to clean water, 66.2% of respondents had access inside their homes, while 33.7% accessed it outside, and 0.1% had no access. Households with external or no water access contribute positively to the poverty index, as water accessibility affects hygiene and productivity, especially in agricultural and livestock work. PIDS emphasized that safe water access correlates with health outcomes and livelihood efficiency [48].

With regard to income stability, only 62.6% of respondents considered their income stable, while 30.7% said it was irregular, and 6.6% had no stable income. These latter two groups represent significant contributors to the poverty index score, as irregular and unstable income reflects economic insecurity. Habitat for Humanity highlighted that income volatility in rural households impairs their ability to invest in livestock or cooperative activities [49].

Job security was reported by 69.4% of respondents, while 30.6% felt insecure about their current work. The latter group contributes positively to the poverty index score, as job insecurity reflects labor vulnerability. Tuyet-Hanh, T. emphasized that without secure employment, rural workers face unstable livelihoods and diminished resilience to economic shocks [50].

Community inclusion was experienced by 94.2% of respondents, while 5.8% felt excluded. Social exclusion, though affecting a small segment, adds to the poverty index score as it reflects limited participation in social or economic life. Lu, B. J., explained that inclusion is essential to foster cooperative participation and mutual support [51].

Lastly, 92.3% of respondents stated they had not experienced discrimination, while 7.7% did. Experiences of discrimination contribute to the poverty index as these reflect systemic inequalities that limit access to resources or opportunities. According to ChildHope Philippines, reducing social stigma and ensuring fair treatment are essential in creating inclusive development [52].

While the majority of respondents show non-deprivation in many areas, those reporting lack of access to health care, low educational attainment, temporary housing, unstable or insecure income, job insecurity, social exclusion, and experiences of discrimination contribute to a higher poverty index score. Addressing these deprivations through targeted cooperative and government support may significantly reduce the multidimensional poverty burden among feed mill customers.

Following the assessment of poverty levels among feed customers, it becomes essential to explore how these socioeconomic conditions relate to their overall satisfaction with cooperative services. Beyond simple associations, the mediation analysis provides deeper insight into the dynamics at play—specifically, how the length of time a customer remains with the cooperative mediates the relationship between poverty and satisfaction. In this context, the Poverty Index Score (PIS) is not only a reflection of a customer's economic standing but also a potential determinant of their behavior and perception over time. By investigating the indirect effects through Customer Tenure, the analysis offers an empirical basis to understand whether economic hardship affects not just immediate satisfaction, but also long-term loyalty and perception, which are critical dimensions in cooperative-customer relations.

The results of the mediation analysis provide valuable insight into the interconnected roles of poverty, customer tenure, and satisfaction within the context of cooperative feed buyers. All paths in the model were statistically significant, confirming the presence of full mediation, wherein the customer tenure (CT) significantly mediates the relationship between the Poverty Index Score (PIS) and the Customer Satisfaction Score (CSS). This has important theoretical and practical implications for cooperative management and the cooperative movement more broadly.

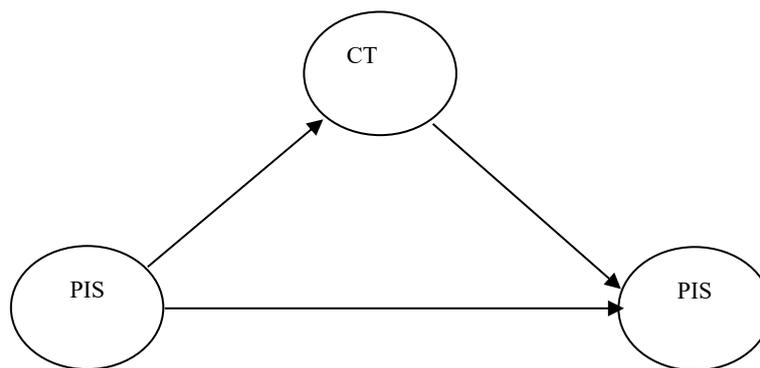


Fig. 2: Statistical Path Diagram.

Table 10: Mediation of Customer Tenure in the Link between Poverty Index and Satisfaction Among Cooperative Feeds Customers

Effect	Estimate	SE	β	z	p-values	Decision to H0	Interpretation
Indirect							
PIS→CT → CSS	-0.00572	0.00145	-0.0138	-4.22	<.001	Reject	Significant
Component							
PIS → CT	0.23955	0.04369	0.0039	5.88	<.001	Reject	Significant
CT →CSS	-0.02386	0.00356	-0.1254	-6.7	<.001	Reject	Significant
Direct							
PIS →CSS	-0.0501	0.00827	-0.1187	-6.06	<.001	Reject	Significant
Total							
PIS →CSS	-0.05301	0.00818	-0.1524	-6.06	<.001	Reject	Significant

Legend: PIS Poverty Index Score
 CSS- Customer Satisfaction Score
 CT- Customer Tenure

The direct path from Poverty Index Score to Customer Satisfaction Score was found to be negative and significant ($\beta = -0.1132, p < .001$), indicating that higher levels of poverty are associated with lower customer satisfaction. This relationship implies that economically disadvantaged cooperative customers are more likely to express dissatisfaction with products or services. This may stem from heightened price sensitivity, reduced resilience to supply disruptions, or a mismatch between customer expectations and perceived value. From a managerial standpoint, this result underscores the importance of adopting an inclusive service approach that addresses the unique needs of poorer members. Cooperatives must consider poverty-sensitive pricing, livelihood support programs, and more accessible communication channels. Strategically, interventions aimed at enhancing the value proposition for low-income customers may not only raise satisfaction levels but also reinforce the social mission of cooperatives as development-oriented enterprises.

Interestingly, the pathway from Poverty Index Score to Customer Tenure was positive and statistically significant ($\beta = 0.1031, p < .001$). This suggests that customers who are experiencing higher levels of poverty tend to remain with the cooperative longer. Such a finding may reflect the cooperative's perceived role as a stable source of support for economically marginalized individuals. For many low-income customers, membership in a cooperative can offer access to cheaper inputs, credit facilities, technical assistance, or a sense of solidarity and shared ownership. In this light, longer customer tenure among poorer individuals may not merely be a function of brand loyalty but rather of necessity and dependence on cooperative mechanisms for survival and growth. This insight is critical for cooperative managers and the sector at large, as it reveals an embedded reliance that must be nurtured responsibly. Sustaining these long-term relationships with poor members requires that cooperatives not only maintain affordability but also continuously evolve their offerings in a way that empowers customers economically and socially.

Conversely, the path from Customer Tenure-to-Customer Satisfaction is significantly negative ($\beta = -0.1254, p < .001$), which may at first seem paradoxical. It suggests that, despite staying longer, customers tend to be less satisfied the longer they are engaged with the cooperative. Several explanations may be drawn from this pattern. Over time, long-standing customers may develop higher expectations, become more critical of stagnation in services, or grow dissatisfied if the cooperative does not innovate or improve service quality. Another possible explanation is that customers who are embedded in the cooperative system for many years may experience fatigue or encounter bureaucratic challenges that newer customers have yet to face. From a management perspective, this finding signals a clear call to action: cooperatives must pay close attention to the evolving expectations of their long-term members. Periodic feedback mechanisms, dynamic loyalty programs, and personalized service upgrades may help address declining satisfaction levels among this key segment.

The finding that longer customer tenure is associated with lower customer satisfaction, despite continued patronage, reflects a well-documented yet often underexplored paradox in service and cooperative research. Although extended engagement is commonly interpreted as a signal of loyalty and positive experience, the present results indicate that longevity of membership does not necessarily translate into sustained satisfaction. Rather, customer tenure appears to reshape expectations, perceptions, and evaluative standards over time, altering how services are assessed by long-standing customers.

One explanation for this pattern lies in expectation escalation. As customers remain longer within the cooperative, they accumulate experience with its operations and develop higher and more specific expectations regarding service improvement, pricing stability, and responsiveness. When service delivery remains static or improves only incrementally, these heightened expectations may not be met, resulting in dissatisfaction even when objective service quality remains acceptable. In contrast, newer customers tend to assess services against more tentative or exploratory benchmarks, which may explain their relatively higher satisfaction scores.

A second explanation relates to captive or necessity-based loyalty, which is particularly salient in cooperative contexts serving economically constrained populations. Long-standing customers—especially those experiencing poverty—may maintain their affiliation not because of high satisfaction, but due to limited alternatives, switching costs, or reliance on cooperative services for livelihood continuity. In such cases, tenure reflects structural dependence rather than positive affect, allowing dissatisfaction to coexist with prolonged engagement.

A third mechanism involves service fatigue and institutional familiarity. Over time, repeated exposure to operational inefficiencies, bureaucratic procedures, or unresolved concerns may accumulate, making imperfections more visible to experienced customers than to new ones. Familiarity can also reduce the perceived novelty or value of services, thereby weakening satisfaction even in the absence of actual service deterioration.

Taken together, these mechanisms suggest that customer tenure functions as a double-edged factor in cooperative relationships. While long-term engagement contributes to stability and retention, it may simultaneously heighten critical evaluation and reduce satisfaction if services do not adapt to evolving customer expectations. This paradox underscores the importance of continuous service innovation, differentiated engagement strategies, and periodic reassessment of long-term customer needs to sustain satisfaction alongside retention.

The significance of the indirect path from the Poverty Index Score (PIS) to the Customer Satisfaction Score (CSS) through Customer Tenure further reinforces the mediating role of tenure. This result indicates that the effect of poverty on satisfaction does not operate in isolation but is partially transmitted through the duration of customer engagement with the cooperative. Considered alongside the direct effect, the findings support a full mediation model in which years as a customer play a central role in shaping how poverty influences satisfaction. This layered relationship highlights the complex social and temporal dynamics of customer experience in cooperative settings, suggesting that tenure serves both as a buffer against immediate dissatisfaction and as a lens through which economically disadvantaged customers interpret their service experiences.

These findings carry important managerial and policy implications. For cooperative managers, the results support the development of a differentiated customer relationship management (CRM) framework that accounts for both customer tenure and socio-economic status. Long-term and economically vulnerable customers may benefit from targeted loyalty programs, tailored financial education initiatives, and recognition mechanisms that acknowledge sustained engagement. At the sectoral level, the findings point to the need for strategies that promote inclusivity not only during customer onboarding but also in sustaining satisfaction among long-standing members, thereby avoiding complacency and institutional stagnation.

From an industry-wide perspective, the results reinforce the distinctive role of cooperatives in balancing business viability with social responsibility. Unlike traditional for-profit enterprises, cooperatives function as economic lifelines in many rural and agricultural communities. Consequently, cooperative-led innovations that enhance satisfaction while addressing poverty—such as subsidized inputs, financial literacy programs, or performance-based loyalty incentives—should be viewed not merely as business strategies but as development-oriented interventions.

From the customers' perspective, the findings highlight the importance of sustained, two-way engagement with cooperatives. Customer satisfaction is not solely the responsibility of service providers but is also shaped by member participation, feedback, and co-ownership. Customer empowerment, therefore, emerges as a critical component of cooperative strategy.

The mediation results underscore that customer satisfaction is a multifaceted phenomenon shaped by both economic conditions and time-based engagement. For cooperatives, this presents a strategic opportunity to design customer experiences that are not only inclusive and supportive but also adaptive, responsive, and future-oriented.

Taken together, the observed tenure–satisfaction pattern may be better understood when viewed through a long-run and ecosystem-oriented analytical lens. Evidence from long-horizon studies suggests that individual outcomes and perceptions are often shaped by cumulative exposure to structural conditions and institutional environments rather than short-term interactions, implying that sustained engagement can coexist with critical evaluations over time [55]. Similarly, research on entrepreneurial capability and ecosystem synergy emphasizes that performance perceptions evolve as stakeholders accumulate experience and adapt to systemic constraints, particularly in environments characterized by resource limitations and interdependence [56]. Applied to the cooperative context, these perspectives help explain why long-term customers—especially those facing economic vulnerability—may remain engaged due to institutional reliance and ecosystem support, while simultaneously reporting lower satisfaction as expectations, evaluative standards, and comparative benchmarks evolve. This synthesis reinforces the importance of incorporating temporal and contextual dimensions into assessments of customer experience, rather than relying solely on retention or tenure as indicators of positive performance.

Table 11: Result of Test for Significant Difference on Customer Satisfaction Score and Poverty Index when Grouped According to Profile

Profile	Groups	W	p	χ^2	p	ϵ^2	Decision to H0	Interpretation	
Types of Customers	Poverty Index Score								
	Established	Loyal	-5.92	<.001*					
	Established	New	1.43	0.571	21.9	<.001	0.00672	Reject	Significant
	Loyal	New	4.14	0.01*					
	Customer Satisfaction Score								
	Established	Loyal	-6.88	<.001*					
Age	Established	New	-2.465	0.189	23.8	<.001	0.0073	Reject	Significant
	Loyal	New	0.709	0.871					
	Poverty Index Score								
	18-30	31-50	4.25	0.008					
	18-30	>50	8.99	<.001	64.1	<.001	0.01963		
	31-50	>50	9.18	<.001					
	Customer Satisfaction Score								

	18-30	31-50	-5.28	<.001						
	18-30	>50	-4.53	0.004	1.8	0.001	<.001	Reject	Significant	
	31-50	>50	1.24	0.654						
	Groups	MU Statistic	Mean difference	SE difference	p-value			Decision to H0	Interpretation	
Sex	Poverty Index Score									
	Female-Male	1.28E+06	2.88E-05	0.0672	0.48			Failed to Reject	Not Significant	
	Customer Satisfaction Score									
	Female-Male	1.29E+06	1.45E-05	0.0312	0.857			Failed to Reject	Failed to Reject	

The findings offer substantial insights into how various customer profile characteristics are associated with both multidimensional poverty and satisfaction with cooperative services. Among these characteristics, customer type and age emerged as significant factors in shaping both poverty index and customer satisfaction scores, while sex did not present any significant variation in either dimension.

Customers who had been members of the cooperative for more than a year—both established customers (1–5 years) and loyal customers (6 years or more)—reported significantly lower poverty index scores compared to new customers (less than one year). Loyal customers also recorded significantly lower poverty scores than established ones. This pattern suggests that prolonged membership in the cooperative may provide protective effects against poverty by enhancing access to economic resources, market information, and institutional support. This finding is consistent with Bernard, Taffesse, and Gabre-Madhin's (2008) observation that cooperatives can strengthen economic resilience by connecting members to markets, promoting collective savings, and creating economies of scale. In terms of customer satisfaction, established and loyal customers reported significantly higher satisfaction scores than new customers, with loyal customers also showing higher satisfaction than established ones. The sustained satisfaction among long-time members likely reflects accumulated positive experiences with cooperative offerings, including the quality of feed products, responsive customer service, and alignment with local needs. However, the absence of a significant difference between new customers and former customers in satisfaction levels points to a potential gap in onboarding and early engagement processes. This may indicate that first-year experiences are not yet strong enough to foster loyalty or align customer expectations with the cooperative's actual service delivery. Addressing this gap could help convert new customers into long-term patrons, further boosting both satisfaction and the cooperative's role in poverty reduction.

In terms of age, older customers, particularly those over 50 years old, reported significantly higher poverty index scores than their younger counterparts. This pattern is concerning as it indicates that older individuals may be more vulnerable to multidimensional poverty, potentially due to age-related limitations in productivity, reduced physical capability for labor-intensive farming, or diminished access to alternative sources of income. The International Labour Organization highlights similar vulnerabilities among aging rural populations, emphasizing the importance of social protection and age-sensitive development programming (International Labour Organization, 2020). Notably, customers aged 18–30 expressed significantly higher satisfaction than those aged above 50. This contrast may reflect generational differences in expectations and perceptions, as younger customers may be more adaptable to changes, more receptive to innovations in cooperative services, or more adept at navigating cooperative communication channels, especially those delivered through digital means. Older members, on the other hand, may feel less engaged or supported, which can result in lower satisfaction scores even when receiving similar services.

Sex, as a variable, did not yield statistically significant differences in either poverty or satisfaction scores, indicating that the cooperative's service provision may be gender-neutral or that existing mechanisms effectively address gender disparities. This lack of variation may be interpreted positively, especially in the rural agricultural sector, where gender bias is often deeply embedded. The equitable results here could suggest that cooperative policies and outreach efforts have succeeded in ensuring inclusion of both male and female customers in access to services and benefits.

These findings carry several implications for stakeholders. For cooperative customers, the evidence underscores the value of long-term engagement, as continued participation is linked to both lower poverty levels and greater satisfaction. Conversely, the findings also highlight the need for targeted support to specific vulnerable groups, such as older customers and those with shorter membership durations, who may not yet fully benefit from the cooperative's offerings. For cooperative management, the data point to the need for improved orientation and retention strategies for new members, as well as tailored interventions for older customers who may require more accessible or specialized services. Proactive measures such as livelihood programs, peer mentoring, or loyalty incentives may enhance both satisfaction and poverty outcomes across member segments. From an industry perspective, the cooperative sector can leverage these insights to demonstrate the role of long-term customer engagement in advancing economic inclusion. This is especially relevant in the context of rural development, where cooperatives serve as an alternative institutional framework that promotes participatory governance and collective bargaining power.

Finally, the feed mill industry, as a vital link in the value chain, may consider aligning its strategies to support cooperatives serving vulnerable populations. Collaboration through price stabilization, flexible payment terms, and bundled technical support can reinforce the positive impact of cooperatives on rural livelihoods. Given that customers who remain engaged with cooperatives for longer periods fare better in both economic and satisfaction dimensions, it becomes crucial to design systems that reward continuity and promote stability within cooperative-customer relationships.

4. Conclusion

This study reveals that multidimensional poverty significantly influences customer satisfaction among cooperative feed mill clients, with the number of years as a customer acting as a partial mediator in this relationship. The findings indicate that economically disadvantaged customers are more vulnerable to dissatisfaction, yet they are also more likely to maintain long-term engagement with the cooperative due to its role in providing essential livelihood support. Importantly, the results point to a tenure–satisfaction paradox: while customers experiencing poverty tend to remain affiliated with the cooperative for extended periods, longer tenure is associated with lower reported satisfaction rather than higher satisfaction. This pattern suggests that continued patronage may reflect reliance, constrained choice, or unmet and evolving expectations over time, rather than purely positive service evaluations. These insights underscore the complex dynamics between poverty, tenure, and satisfaction, highlighting that customer retention and customer satisfaction are related but distinct dimensions in assessing cooperative performance and inclusivity.

In light of these findings, cooperative management may benefit from fostering long-term engagement with economically vulnerable members through strategies that extend beyond retention alone. Initiatives such as differentiated loyalty incentives, needs-based services, and regular feedback mechanisms may help address declining satisfaction among long-standing customers. The cooperative sector may likewise find value in integrating multidimensional poverty reduction considerations into member support programs to better align social

objectives with service delivery. For the feed mill industry, ensuring continued access to affordable and quality products remains essential, particularly for economically constrained customers. Customers, in turn, may be encouraged to maintain active and participatory membership to strengthen service responsiveness and cooperative accountability. Finally, development institutions and policymakers could further strengthen cooperatives as partners in inclusive growth, while future research may employ longitudinal or qualitative approaches to deepen understanding of how satisfaction and reliance on cooperatives evolve.

Acknowledgement

The authors acknowledge the use of AI-assisted language refinement tools solely for improving the clarity, coherence, and presentation of the manuscript. All data collection, statistical analyses, and interpretations were independently conducted by the researchers. The study received financial support from a cooperative organization committed to community and economic development.

References

- [1] S. Alkire and J. Foster, "Counting and multidimensional poverty measurement," *Journal of Public Economics*, vol. 95, no. 7–8, pp. 476–487, 2011, <https://doi.org/10.1016/j.jpubeco.2010.11.006>.
- [2] A. Parasuraman, V. A. Zeithaml, and L. L. Berry, "SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality," *Journal of Retailing*, Jan. 1988. [Online]. Available: <https://www.researchgate.net/publication/200827786>.
- [3] J. Birchall and R. Simmons, *Co-operatives and Poverty Reduction: Evidence from Sri Lanka and Tanzania*. Manchester, U.K.: Cooperative College, 2009.
- [4] A. Ibourk and K. El Aynaoui, "Agricultural cooperatives' sustainability and the relevance of start-up support programs: Evidence from cooperatives' level in Morocco," *Sustainability*, vol. 15, no. 4, p. 3460, 2023, <https://doi.org/10.3390/su15043460>.
- [5] International Cooperative Alliance, "Cooperatives bringing progress against poverty across the world," 2023. [Online]. Available: <https://ica.coop/en/newsroom/news/cooperatives-bringing-progress-against-poverty-across-world>.
- [6] Philippine Institute for Development Studies, "Role of cooperatives in Philippine development," Discussion Paper, 2007. [Online]. Available: <https://www.econstor.eu/bitstream/10419/127947/1/pids-dps2007-11.pdf>.
- [7] Cooperative Development Authority, "Cooperative statistics," 2023. [Online]. Available: <https://cda.gov.ph>
- [8] C. K. Gomathy, "A study on cooperative societies in economic development," *International Journal of Scientific Research in Engineering and Management*, vol. 6, no. 3, 2022, <https://doi.org/10.55041/IJSREM11905>.
- [9] C. M. Reyes, A. Tabuga, R. D. Asis, and M. B. G. Datu, "Determinants of multidimensional poverty," *Social Indicators Research*, vol. 157, pp. 29–59, 2021. [Online]. Available: <https://www.sciencedirect.com/science/article/abs/pii/S2213297X21000021>.
- [10] Cooperative Annual Report and Customer Satisfaction Survey Instrument, Form Ref. GEN-003, Rev. 08, Feb. 19, 2024.
- [11] F. O. Wanyama, P. Develtere, and I. Pollet, "Reinventing the wheel? African cooperatives in a liberalized economic environment," *Annals of Public and Cooperative Economics*, vol. 80, no. 3, pp. 361–392, 2009, <https://doi.org/10.1111/j.1467-8292.2009.00390.x>.
- [12] E. Fischer, *Cooperative Financial Institutions: Issues in Governance, Regulation, and Supervision*. Washington, DC, USA: World Bank, 2025. [Online]. Available: <https://documents.worldbank.org>.
- [13] P. Kotler and K. L. Keller, *Marketing Management*, 15th ed. Harlow, U.K.: Pearson, 2016.
- [14] V. A. Zeithaml, M. J. Bitner, and D. D. Gremler, *Services Marketing: Integrating Customer Focus Across the Firm*. New York, NY, USA: McGraw-Hill Education, 2023.
- [15] M. N. S. Azhari, I. Hasan, and A. Majid, "The role of cooperatives in the Indonesian economy," *International Journal*, vol. 6, no. 10, pp. 43–46, 2017. [Online]. Available: <https://www.researchgate.net/publication/322143870>.
- [16] A. D. Santos, J. I. Caasi, A. Gumahong, and M. Ericka, "Accessibility of credit from microfinance institutions for enhancing business performance of existing small enterprises in Quezon City," 2025.
- [17] R. M. Navarro and J. Bacatan, "Analyzing the relationship between service quality and customer satisfaction on power services," *International Journal of Innovative Research in Management and Finance*, vol. 9, no. 6, pp. 201–210, 2023.
- [18] S. L. Mwakajumilo, *The Role of Informal Microfinance Institutions in Saving Mobilization, Investment and Poverty Reduction*, Ph.D. dissertation, St. Clements Univ., 2011. [Online]. Available: <https://www.scirp.org/reference/referencespapers?referenceid=2998954>.
- [19] S. Syden and M. Lee, "Development of agricultural cooperative in Cambodia—Lessons from South Korea," *Journal of Agricultural Extension & Community Development*, vol. 23, no. 2, pp. 195–210, 2016, <https://doi.org/10.12653/jecd.2016.23.2.0195>.
- [20] M. R. P. Beriales, "Member engagement and level of satisfaction in a revitalized cooperative enterprise in Iloilo Province, Philippines," *Journal of Economics, Management and Agricultural Development*, vol. 8, no. 1, Art. no. 5, 2022.
- [21] Japan International Cooperation Agency, *Women's Participation and Leadership in Peacebuilding: Mindanao, Philippines, case study report*. [Online]. Available: <https://openjicareport.jica.go.jp/pdf/12285813.pdf>.
- [22] N. G. Asiones, "Placemaking cooperation among cooperatives," *Journal of Rural and Community Development*, vol. 15, no. 3, pp. 65–78, 2020.
- [23] S. Anbu, "Dairy cooperatives and dairy development in India," Mar. 21, 2020. [Online]. Available: <https://www.researchgate.net/publication/340085141>.
- [24] R. Leao and L. F. Goulao, "Rural development projects in Latin America," *Societies*, vol. 14, no. 7, p. 131, 2024, <https://doi.org/10.3390/soc14070131>.
- [25] E. S. Kipai, P. Gudda, and R. George, "Effect of membership size on financial performance of SACCOs," *International Journal of Academic Research in Accounting, Finance and Management Sciences*, vol. 12, no. 4, 2022, <https://doi.org/10.6007/IJARAFMS/v12-i4/15746>.
- [26] R. Bacongus, "Extension delivery system in a layer and swine-based farming community," 2007. [Online]. Available: <https://www.econstor.eu/bitstream/10419/127947/1/pids-dps2007-11.pdf>.
- [27] F. Buttle and S. Maklan, *Customer Relationship Management*, 4th ed. London, U.K.: Routledge, 2019, <https://doi.org/10.4324/9781351016551>.
- [28] R. B. Zajonc, "Attitudinal effects of mere exposure," *Journal of Personality and Social Psychology*, 1968. [Online]. Available: <https://psycnet.apa.org/record/1968-12019-001>.
- [29] M. R. Beriales, "Member engagement and level of satisfaction in a revitalized cooperative enterprise," *JEMAD*, vol. 8, no. 1, pp. 1–14, 2022. [Online]. Available: <https://www.ukdr.uplb.edu.ph>.
- [30] H. Liao and A. Chuang, "A multilevel investigation of factors influencing employee service performance," *Academy of Management Journal*, vol. 47, no. 1, pp. 41–58, 2004, <https://doi.org/10.2307/20159559>.
- [31] B. J. Sugianto, S. Riyadi, and E. Budiarti, "Effects of CRM and service quality on customer retention," *Accounting*, vol. 9, no. 2, pp. 85–94, 2023, <https://doi.org/10.5267/j.ac.2022.12.004>.
- [32] E. W. Anderson and M. W. Sullivan, "The antecedents and consequences of customer satisfaction," *Marketing Science*, vol. 12, no. 2, pp. 125–143, 1993. [Online]. Available: <https://www.jstor.org/stable/184036>. <https://doi.org/10.1287/mksc.12.2.125>.
- [33] A. F. Flores, E. S. Saldanha, and M. Vong, "The mediation effect of customer satisfaction," *Timor Leste Journal of Business and Management*, vol. 2, pp. 56–65, 2020, <https://doi.org/10.51703/bm.v2i2.22>.
- [34] W. Majee and A. Hoyt, "Building community trust through cooperatives," *Journal of Community Practice*, vol. 17, no. 4, pp. 444–463, 2009, <https://doi.org/10.1080/10705420903299995>.

- [35] D. Vecchiato et al., "The role of sensory perception in consumer demand for tinned meat," *Foods*, vol. 10, no. 9, p. 2185, 2021, <https://doi.org/10.3390/foods10092185>.
- [36] A. Cholewa-Wójcik and A. Kawecka, "Packaging quality assurance in supply chain," 2014. [Online]. Available: <https://www.researchgate.net/publication/268485962>.
- [37] A. Choirun, I. Santoso, and R. Astuti, "Sustainability risk management in the agri-food supply chain," *IOP Conf. Series: Earth Environ. Sci.*, vol. 475, p. 012050, 2020, <https://doi.org/10.1088/1755-1315/475/1/012050>.
- [38] J. L. Sánchez-Navarro et al., "The role of agricultural cooperatives in mitigating opportunism," *Agricultural and Food Economics*, vol. 12, no. 1, 2024, <https://doi.org/10.1186/s40100-024-00332-8>.
- [39] T. Mazzarol, G. Soutar, and E. Alexandra, "Member loyalty in cooperative enterprises," 2012. [Online]. Available: <https://www.researchgate.net/publication/235432091>.
- [40] S. Abualoush et al., "The role of knowledge management process," *Interdisciplinary Journal of Information, Knowledge, and Management*, vol. 13, pp. 279–309, 2018, <https://doi.org/10.28945/4088>.
- [41] B. Molina-Flores et al., *The Role of Livestock in Food Security*, FAO, 2020, <https://doi.org/10.4060/ca8385en>.
- [42] P. Barclay and J. L. Barker, "Greener than thou," *Journal of Environmental Psychology*, vol. 72, p. 101441, 2020, <https://doi.org/10.1016/j.jenvp.2020.101441>.
- [43] D. Sambuo, "Co-operatology and the science of cooperative societies," *Journal of Co-operative Organization and Management*, vol. 11, no. 1, p. 100190, 2023, <https://doi.org/10.1016/j.jcom.2022.100190>.
- [44] O. Ugo et al., "Improving quality of care in primary health-care facilities," *Health Services Research and Managerial Epidemiology*, vol. 3, 2016, <https://doi.org/10.1177/2333392816662581>.
- [45] Department of Economy, Planning, and Development, "PH highlights multidimensional poverty approach," 2023. [Online]. Available: <https://depdev.gov.ph/ph-highlights-multidimensional-poverty-approach-in-alignment-with-uns-2030-agenda/>.
- [46] A. Orbeta and V. Paqueo, "Who benefits and loses from an untargeted tuition subsidy," *PIDS*, 2017. [Online]. Available: <https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidspn1703.pdf>. <https://doi.org/10.62986/pn2017.03>.
- [47] National Economic and Development Authority, *AmBisyon Natin 2040*, 2018. [Online]. Available: <https://2040.neda.gov.ph/>.
- [48] Philippine Institute for Development Studies, "Poverty and agriculture in the Philippines," n.d. [Online]. Available: <https://www.pids.gov.ph/publication/discussion-papers>.
- [49] Habitat for Humanity, *Housing Poverty in the Philippines*, 2017. [Online]. Available: <https://www.habitatforhumanity.org.uk/country/philippines/>.
- [50] T. T. Tuyet-Hanh et al., "Household trends in access to improved water sources," *Global Health Action*, vol. 9, no. 1, p. 29434, 2016, <https://doi.org/10.3402/gha.v9.29434>.
- [51] B. J. Lu, "Poverty, employment in PH – unpacking the contradiction," *Philippine News Agency*, 2025. [Online]. Available: <https://www.pna.gov.ph/opinion/pieces/1002-poverty-employment-in-ph-unpacking-the-contradiction>.
- [52] ChildHope Philippines, "Social welfare: How it impacts people's lives," 2024. [Online]. Available: <https://childhope.org.ph/what-is-social-welfare/>.
- [53] T. Bernard, A. S. Taffesse, and E. Gabre-Madhin, "Impact of cooperatives on smallholders' commercialization behavior," *Food Policy*, vol. 33, no. 2, pp. 142–153, 2008, <https://doi.org/10.1111/j.1574-0862.2008.00324.x>.
- [54] International Labour Organization, *World Social Protection Report 2020–22*, 2020. [Online]. Available: https://www.ilo.org/global/publications/books/WCMS_817572/lang--en/index.htm.
- [55] G. G. Perez, "Long-Run Drivers of Road Accidents: Governance and Business Implications of Alcohol, Law Enforcement, Infrastructure and Urbanization," *International Journal of Basic and Applied Sciences*, vol. 14, no. 4, pp. 105–112, Aug. 2025, <https://doi.org/10.14419/xd5z4p74>.
- [56] I. H. Maralit, "Entrepreneurial Capability and Ecosystem Synergy: A Strategic Alignment," *International Journal of Basic and Applied Sciences*, vol. 14, no. 2, pp. 410–419, Jun. 2025, <https://doi.org/10.14419/ab4trb29>.