International Review of Management and Marketing

ISSN: 2146-4405

available at http: www.econjournals.com

International Review of Management and Marketing, 2026, 16(5), 286-295.

Organizational Characteristics and Financial Performance of Multi-purpose Cooperatives: Evidence from North Eastern Mindanao, Philippines

Kimberly L. Miranda*

North Eastern Mindanao State University, Cantilan Campus, Cantilan, Surigao del Sur, Philippines. *Email: ylrebmik1988@gmail.com

Received: 28 February 2026 **Accepted:** 30 May 2026 **DOI:** https://doi.org/10.32479/irmm.23991

ABSTRACT

This study examined the financial performance of multi-purpose cooperatives and determined whether selected organizational characteristics predict financial performance. Using a quantitative, descriptive-predictive design, documentary data from cooperative records and audited financial statements were analyzed. Financial performance was assessed using the PISO framework in terms of profitability, institutional strength, structure of assets, and operational strength. The organizational characteristics examined were capital build-up, number of members, number of employees and staff, and years in operation. Descriptive statistics, quadratic regression, and one-way ANOVA were used for analysis. Results showed that small size cooperative achieved satisfactory financial performance, while the others were classified under needs improvement. Operational strength was the strongest dimension, whereas institutional strength was the weakest. Capital build-up and number of members significantly predicted financial performance, while number of employees and staff and years in operation did not. Significant differences in performance were also observed across cooperative types. The findings highlight the importance of capital formation and membership participation in improving cooperative financial sustainability.

Keywords: Multi-Purpose Cooperatives, Financial Performance, PISO Framework, Capital Build-Up, Membership, Quadratic Regression
JEL Classifications: P13, M21, G32

1. INTRODUCTION

Cooperatives continue to play an important role in inclusive economic development because they combine enterprise activity with member participation (Li et al., 2024), resource pooling (Kalogiannidis et al., 2024), and community-oriented service delivery through their concern for community (Von Der Osten et al., 2025), particularly in developing economies such as the Philippines (Birchall, 2013; Dogarawa, 2005; Majee and Hoyt, 2011). Multi-purpose cooperatives, in particular, provide diversified services—including credit, marketing, and consumer goods—that directly enhance the socio-economic welfare of their members (Ramos et al., 2025). In rural and emerging regions, these organizations function as key instruments for grassroots development and poverty reduction (Castro et al., 2025). Despite their contributions, many cooperatives continue to face challenges in sustaining financial performance (Attolba-Aquino and Castañeda, 2025), raising important questions about the internal organizational factors that influence their long-term viability (Ghani and Mohamad Shabri, 2024; Orillosa et al., 2025).

In the Philippine cooperative sector, financial performance is a critical indicator of whether multipurpose cooperatives can sustain their services, protect member resources, and remain viable over time. The Cooperative Development Authority (CDA) institutionalized this concern through its performance standards, particularly the PISO framework, which measures financial performance in terms of profitability, institutional strength,

structure of assets, and operational strength. The CDA explicitly identifies PISO as a financial standard for measuring cooperative performance and as both a regulatory and supervisory tool for development intervention and a management tool for identifying operational problem areas and assessing the cooperative's overall health. This makes the framework highly relevant for assessing multipurpose cooperatives, since it goes beyond simple profit measurement and instead evaluates whether the cooperative possesses the financial capacity and organizational stability needed to serve its members sustainably. The framework is useful because it recognizes that cooperative performance cannot be judged by profit alone; rather, it must also consider the strength of the institution, the quality of asset structure, and the ability of the cooperative to sustain operations over time. Many multipurpose cooperatives remain functional; however, their financial performance is often only satisfactory and still marked by weaknesses in areas such as profitability, turnover, and asset structure, indicating the need for closer analysis of the factors that shape financial outcomes (Maniego and Maniego, 2025).

To respond to this concern, the present study examines whether selected organizational characteristics—namely capital build-up, number of members, number of employees and staff, and years in operation—can predict the financial performance of multipurpose cooperatives. These characteristics are important because they reflect the cooperative's resource capacity, membership base, workforce support, and organizational maturity, all of which may influence how effectively it generates surplus, manages assets, and sustains operations. Cooperative performance is linked to internal management practices, financial controls, and business profiles, suggesting that financial outcomes are not accidental but are partly shaped by the cooperative's internal organizational condition (Orillosa et al., 2025; Otache et al., 2023). Hence, assessing financial performance through the CDA's PISO standards while testing the predictive value of these organizational characteristics provides an evidence-based way to determine which internal factors may strengthen or constrain the long-term viability of multipurpose cooperatives.

Although the financial condition of multipurpose cooperatives in the Philippines has been assessed using CDA-based standards (Miranda, 2025), much of the recent literature has focused more on describing performance levels, business practices, or profitability conditions than on testing whether specific organizational characteristics can significantly predict financial performance. At the same time, the CDA's PISO framework was designed not only to rate cooperative health but also to identify problem areas that may require management intervention, which implies the need to examine the internal conditions associated with stronger or weaker financial outcomes. In this context, there remains a practical and empirical need to determine whether organizational characteristics such as capital build-up, number of members, number of employees and staff, and years in operation can predict financial performance among multipurpose cooperatives. These variables were selected because they represent key dimensions of organizational capacity. Capital build-up reflects the cooperative's internally generated financial base, membership size reflects the breadth of participation and support, employees and staff represent operational capacity, and years in operation indicate institutional maturity and accumulated organizational experience. Prior studies have shown that organizational and structural factors may influence cooperative effectiveness and financial outcomes, although the strength of those relationships may vary across cases and locations. This gap is particularly relevant in local cooperative settings, where evidence is still limited and where understanding these predictors can help explain why some cooperatives perform better than others under the same regulatory framework.

Given the regulatory importance of financial performance in the Philippine cooperative sector, there is a clear need to move beyond describing whether multipurpose cooperatives perform well or poorly under CDA standards and instead examine the organizational conditions associated with such performance. The CDA's performance standards were designed not only to measure cooperative health but also to identify operational problem areas and guide management intervention, which supports the need for predictor-based analysis. In this light, the present study is anchored on the assumption that organizational characteristics may help explain differences in financial performance among multipurpose cooperatives. By assessing financial performance through the CDA's PISO framework and testing whether capital build-up, number of members, number of employees and staff, and years in operation significantly predict such performance, the study provides an empirical basis for identifying which internal factors may strengthen or constrain the long-term viability of cooperatives in the local setting.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Financial Performance

Financial performance is a central concern in cooperative management because cooperatives must remain economically viable while sustaining member-oriented services (Henock, 2019). Unlike investor-owned firms, cooperatives operate with a dual purpose: They must maintain financial soundness while also advancing member welfare, democratic participation, and community benefit. This dual character makes cooperative performance multidimensional rather than purely profit-based. Financial performance is commonly examined through indicators of profitability, liquidity, solvency, efficiency, asset utilization, and institutional capacity because these measures reveal whether a cooperative can generate surplus, meet obligations, use resources productively, and remain sustainable over time.

In the Philippine setting, the Cooperative Development Authority's PISO framework provides a structured basis for assessing cooperative financial performance. PISO refers to Profitability, Institutional Strength, Structure of Assets, and Operational Strength, and is described by the CDA as the financial standard used to measure cooperative performance and staying power. This framework is appropriate for multi-purpose cooperatives because their financial viability depends not only on surplus generation but also on capital adequacy, asset quality, liquidity, solvency, cost control, and operational continuity.

Profitability represents the cooperative's ability to generate surplus from its operations. In the PISO framework, this is reflected through indicators such as profitability ratio, earnings per share, profitability growth rate, asset efficiency, and rate of interest on share capital. These indicators are consistent with cooperative financial analysis literature, where profitability and return measures are used to assess how effectively cooperative assets and member capital are converted into returns. Cooperative financial statement analysis enables boards and managers to evaluate performance trends over time (Kenkel and Doye, 2019). In contrast, financially non-stressed cooperatives generally exhibit stronger returns on assets and equity (Pokharel et al., 2019).

Institutional strength reflects the cooperative's internal financial foundation and capacity to withstand risk. In PISO, this includes net institutional capital and adequacy of provisioning, which assess whether the cooperative has sufficient reserves, allowances for probable losses, and protection against problem receivables. This dimension aligns with cooperative governance research showing that internal governance, accountability, and control systems are closely related to cooperative performance. Cooperative governance and performance are strongly connected in the literature, indicating that financial outcomes are influenced not only by income generation but also by internal systems and institutional discipline (Jamaluddin et al., 2023).

Structure of assets concerns the composition and quality of cooperative resources. PISO includes indicators such as non-earning assets to total assets, members' equity to total assets, deposit liabilities to total assets, external borrowings to total assets, and receivables to total assets. These measures are important because a cooperative may appear large in asset size but remain financially weak if assets are unproductive, receivables are excessive, or liabilities are poorly managed. Financial performance studies on cooperatives similarly treat asset utilization, leverage, liquidity, and solvency as major indicators of cooperative health. Liquidity, solvency, and profitability ratios are used to assess agricultural cooperative performance (Khoiriyatun, 2024), while cooperative profitability and efficiency must be analyzed in ways that account for cooperative specificity (Meliá-Martí et al., 2024).

Operational strength refers to the cooperative's ability to sustain continuing operations. In PISO, this dimension includes business volume to total assets, solvency, liquidity, cost per volume of business, administrative efficiency, and turnover ratio. These indicators show whether the cooperative can generate sufficient business activity, meet obligations, control costs, manage receivables, and maintain service delivery. Hamsyah et al. (2023) demonstrated that cooperative financial performance can be assessed through liquidity, solvency, profitability, and activity ratios, showing that operational indicators such as receivables turnover may reveal weaknesses even when other ratios appear favorable.

Taken together, the PISO framework provides a comprehensive measure of cooperative financial performance by integrating surplus generation, institutional resilience, asset quality, and operational capacity. This is important because many cooperatives may remain operational yet still exhibit weaknesses in profitability, turnover, and asset structure. Maniego and Maniego (2025), for instance, found that cooperatives assessed through established cooperative standards may show satisfactory overall performance while still requiring improvement in specific financial areas such as turnover, profitability, and structure of assets. Thus, financial performance should be understood as a composite condition shaped by the cooperative's ability to manage resources, protect institutional capital, sustain operations, and generate benefits for members.

This study therefore, treats financial performance as the dependent variable measured through the PISO framework. While the PISO dimensions provide the basis for assessment, the study focuses on whether selected organizational characteristics—capital build-up, number of members, number of employees and staff, and years in operation—can explain variations in overall financial performance. This approach is consistent with the resource-based view, which argues that internal resources and capabilities contribute to differences in organizational performance. In the cooperative context, capital resources, membership base, human resources, and organizational experience may function as internal conditions that affect financial outcomes.

2.2. Capital Build-up and Financial Performance

Capital build-up is commonly viewed as a core indicator of a cooperative's financial base because it reflects the amount of internally mobilized resources available for operations, expansion, and member services. In cooperatives, stronger capital build-up may enhance the organization's ability to absorb risks, finance activities, and maintain institutional stability. Capital build-up programs contributed to the improvement of the economic status of cooperatives and their members, suggesting that capital mobilization is closely linked to organizational strength (Laureta, 2020). Recent Philippine work on multipurpose cooperatives also treated capital build-up as a relevant variable in explaining profitability performance. Based on this reasoning, the study tests whether capital build-up significantly predicts financial performance.

- H_1: Capital build-up does not significantly predict the financial performance of multi-purpose cooperatives.

2.3. Number of Members and Financial Performance

The number of members is a crucial organizational characteristic because cooperatives are membership-based enterprises whose operations depend on member participation, patronage, and contributions. A larger membership base may provide broader capital support, higher service utilization, and stronger economic participation, all of which may contribute to better financial performance. Prior research has shown that member economic participation is a significant determinant of cooperative performance, while localized Philippine research has also considered the number of members as a relevant factor in profitability analysis among multipurpose cooperatives (Muryani et al., 2022). On this basis, the study examines whether the number of members significantly predicts the financial performance of multi-purpose cooperatives.

- H_2: The number of members does not significantly predict the financial performance of multi-purpose cooperatives.

2.4. Number of Employees and Staff and Financial Performance

The number of employees and staff represents the human resource capacity of the cooperative to implement programs, manage transactions, deliver services, and sustain day-to-day operations. Adequate staffing may improve efficiency, service delivery, and internal control, which may in turn support stronger financial performance. Philippine and international studies on cooperatives have noted that personnel-related and management-related internal factors are associated with cooperative outcomes, and recent localized research included number of employees as one of the variables relevant to cooperative profitability performance. Recent literature on human resource management in cooperatives emphasizes that HRM practices are connected to cooperative performance because cooperatives require both business efficiency and member-centered governance (Voigt and von der Oelsnitz, 2024). Adequate staffing may improve efficiency, service delivery, and internal control, which may in turn support stronger financial performance. However, staffing size alone may not automatically improve performance unless personnel are effectively managed and aligned with cooperative objectives. Accordingly, this study tests whether the number of employees and staff significantly predicts financial performance.

- H_3: Number of employees and staff does not significantly predict the financial performance of multi-purpose cooperatives.

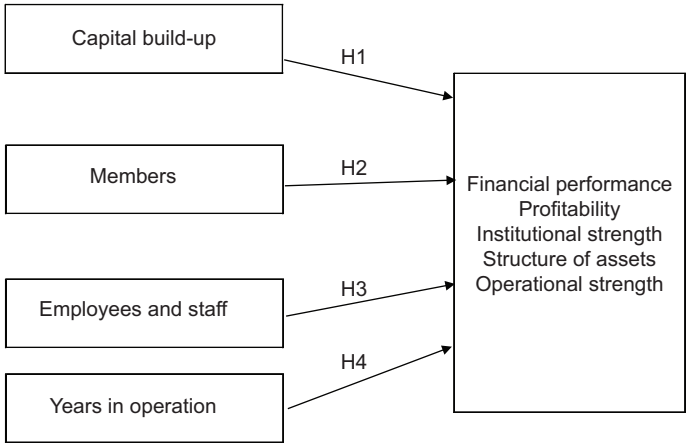
2.5. Years in Operation and Financial Performance

Years in operation reflect the organizational maturity and accumulated experience of a cooperative. Older cooperatives may have more established systems, wider networks, and greater familiarity with regulatory and financial management requirements, which may contribute to more stable performance. Firm-age literature suggests that age can influence performance because older firms may accumulate experience, routines, and market knowledge over time (Mallinguh et al., 2020). However, maturity alone may not automatically guarantee stronger financial outcomes because older organizations may also experience rigidity, outdated systems, or weak adaptation, making it necessary to test their actual predictive value. Recent Philippine research on multipurpose cooperatives included years in operation among the variables examined in relation to profitability performance, highlighting the need for further empirical testing of its role in cooperative sustainability (Miranda, 2025). Hence, the study evaluates whether years in operation significantly predict the financial performance of multi-purpose cooperatives.

- H_4: Years in operation do not significantly predict the financial performance of multi-purpose cooperatives.

This study is anchored on the view that the financial performance of multi-purpose cooperatives can be explained, at least in part, by selected organizational characteristics as shown in Figure 1. Financial performance is treated as the dependent variable and is assessed using the Cooperative Development Authority's PISO framework, which measures Profitability, Institutional Strength, Structure of Assets, and Operational Strength. The CDA defines PISO as the financial standards used to measure the financial performance of cooperatives, making it an appropriate regulatory framework for evaluating cooperative financial health in the Philippine setting.

Figure 1: Conceptual framework



In this study, capital build-up, number of members, number of employees and staff, and years in operation are treated as the independent variables or predictors of financial performance. These variables represent key organizational characteristics of a cooperative. Capital build-up reflects the cooperative's internal resource base and capacity to support operations; number of members reflects the breadth of membership participation and potential capital support; number of employees and staff reflects the cooperative's operational manpower; and years in operation reflects organizational maturity and accumulated experience. The framework assumes that variations in these organizational characteristics may correspond to variations in cooperative financial performance under the PISO standards. Thus, the conceptual framework of the study posits a direct predictive relationship between the selected organizational characteristics and the financial performance of multi-purpose cooperatives.

In addition to the predictive role of organizational characteristics, this study also considers whether financial performance differs across cooperative types. Cooperative type may reflect differences in scale, resource capacity, and operational complexity. Since medium, small, and micro cooperatives operate under different conditions, their financial performance may also vary.

- H_5: There is no significant difference in the financial performance of Multipurpose Cooperatives in North Eastern Mindanano.

Taken together, the literature suggests that cooperative financial performance is multidimensional and is shaped by internal organizational conditions. The PISO framework provides a structured way to assess this performance, while the organizational characteristics of capital build-up, number of members, number of employees and staff, and years in operation provide a basis for explaining variations in financial outcomes. Therefore, this study examines whether these organizational characteristics significantly predict the financial performance of multi-purpose cooperatives.

3. RESEARCH METHODOLOGY

3.1. Research Design

This study employed a quantitative, descriptive-predictive research design. The descriptive component was used to assess the financial performance of multi-purpose cooperatives, native to the study area that had available audited financial statements for the period 2019-2023, based on the PISO framework. The predictive component was used to determine whether selected organizational characteristics significantly predict financial performance. A comparative component was also included to examine whether financial performance significantly differs across cooperative types. The study was non-experimental because the variables were analyzed as they naturally existed, and no intervention or manipulation was introduced. The MPCs were grouped according to type of cooperative, namely Medium (MPC-A), Small (MPC-B), and Micro (MPC-C, MPC-D, and MPC-E).

3.2. Measurement Development

Table 1 presents the operationalization of the dependent and independent variables used in the study. The dependent variable, financial performance, was measured using the PISO framework prescribed under Cooperative Development Authority Memorandum Circular No. 2013-2015. The PISO framework is appropriate because it defines cooperative financial performance through four dimensions: Profitability, Institutional Strength, Structure of Assets, and Operational Strength. This part deals with the statistical analysis wherein the formula for each indicator was computed and the points earned based on the computation is shown in Figure 1 under results. Points earned in every indicator will accumulate up to 100 points. The resulting total was then interpreted using the adjectival rating scale applicable to the cooperative type. The computed financial performance scores were interpreted using the adopted adjectival rating scale according to cooperative type.

The profitability indicators measure the ability of the cooperative to generate surplus, improve earnings, use assets efficiently, and provide returns to members through interest on share capital. Institutional strength indicators assess the cooperative's internal financial foundation through reserves, allowances, problem receivables, and provisioning. Structure of assets indicators examine how cooperative resources are distributed among earning and non-earning assets, member equity, deposits, borrowings, and receivables. Operational strength indicators evaluate the cooperative's staying power through business volume, solvency, liquidity, cost efficiency, administrative efficiency, and receivable turnover.

The table also presents the independent variables used to predict financial performance. Capital build-up reflects the cooperative's internal financial capacity; the number of members represents the breadth of ownership, patronage, and participation; the number of employees and staff reflects operational manpower; and years in operation indicate organizational maturity. Linking these organizational characteristics to the PISO-based financial performance score allows the study to examine whether internal cooperative conditions significantly explain differences in financial outcomes.

Regression analysis was performed separately for each organizational characteristic to determine its relationship with financial performance. The coefficient of determination (R^2) was used to describe the strength of the relationship, while the P-value was used to determine statistical significance at the 0.05 level.

Table 2 presents the adjectival rating scale used to interpret the overall financial performance of cooperatives according to cooperative type. Different cut-off points were applied for medium, small, and micro cooperatives to account for differences in operational scale and financial capacity. In the present study, this scale served as the basis for translating the computed PISO scores into qualitative interpretations such as excellent, very satisfactory, satisfactory, fair, and needs improvement.

3.3. Statistical Treatment of Data

Descriptive and inferential statistics were used in analyzing the data. Descriptive statistics were employed to summarize the financial performance of the multi-purpose cooperatives based on the PISO framework. These included computed percentage scores, total scores, and adjectival ratings.

To examine the relationship between financial performance and each profile variable, the study used quadratic regression analysis or second-order polynomial (quadratic) regression, performed separately for each predictor. This approach was adopted because the observed relationship between financial performance and the profile variables was modeled using a 2$^{nd\circ}$ polynomial function of the form:

$$FP = \beta 0 + \beta_1 X + \beta_2 X^2 + \varepsilon \quad (1)$$

Where:
FP = Financial performance score
X = Profile variable tested separately
β_0 = Constant term
β_1 = linear coefficient
β_2 = Quadratic coefficient
ε = Error term

Thus, the following separate regression models were estimated:

$$FP = \beta_0 + \beta_1 CB + \beta_2 CB^2 + \varepsilon \quad (2)$$

$$FP = \beta 0 + \beta_1 NM + \beta_2 NM^2 + \varepsilon \quad (3)$$

$$FP = \beta 0 + \beta_1 NES + \beta_2 NES^2 + \varepsilon \quad (4)$$

$$FP = \beta 0 + \beta_1 YO + \beta_2 YO^2 + \varepsilon \quad (5)$$

Where:
CB = Capital build-up
NM = Number of members
NES = Number of employees and staff
YO = Years in operation.

Table 1: Description of variables and PISO indicators. This table presents the variables, operational descriptions, formulas, and data sources used in assessing the financial performance of multi-purpose cooperatives based on the PISO framework

Variables	Description	Formula/measurement	Data sources
Financial performance	Composite financial performance score of the cooperative based on the PISO dimensions.	Sum of indicator scores under profitability, institutional strength, structure of assets, and operational strength.	Audited financial statements, 2019-2023; CDA PISO standards
Profitability performance	Measures the cooperative's ability to generate surplus and returns from operations. A higher result is generally better because it indicates stronger earning capacity.	Profitability ratio=Net operating surplus/Gross revenue or gross margin Earnings per share ratio=Net surplus/Paid-up capital or par value Profitability growth rate = (EPS ending - EPS beginning)/ EPS beginning Asset efficiency rate=Net surplus/Total assets Rate of interest on share capital=Amount allocated for interest on share capital/Average paid-up share capital	Statement of operations, Statement of financial position, Statement of changes in equity; notes to financial statements 2019-2023
Institutional strength	Measures the cooperative's internal financial foundation, reserves, and capacity to withstand risks. A higher result is better because it indicates stronger institutional stability.	Net institutional capital = (Reserves+allowance for probable losses on loans and accounts receivable - [Problem receivables+Past due receivables+receivable under litigation+restructured receivables])/Total assets Adequacy of provisioning=Allowance for probable losses on receivables/Past due receivables	Statement of financial position; notes to financial statements; receivables aging schedule 2019-2023
Structure of assets	Measures the composition and quality of cooperative assets. The preferred direction depends on the indicator because some ratios are better when high, while others are better when low.	Non-earning assets to total assets=Non-earning assets/total assets Members' equity to total assets = (Paid-up share capital+Deposits for capital subscription)/Total assets Deposit liabilities to total assets=Total deposit liabilities/Total assets External borrowings to total assets=Total external borrowings/Total assets Receivables to total assets=Loans or accounts receivable/ Total assets	Statement of operations, Statement of financial position, notes to financial statements, receivables schedule 2019-2023
Operational strength	Measures the cooperative's staying power, liquidity, solvency, cost efficiency, and ability to sustain operations. A higher result is generally better, except for cost-based indicators where lower values are preferred.	Volume of business to total assets=Total volume of business/ Total assets Solvency = (Assets+allowance for probable losses - total liabilities - deposit liabilities+past due receivables+restructured receivables+receivables under litigation)/(Deposit liabilities+share capital) Liquidity = (Liquid assets - short-term payables)/Total members' deposit Cost per volume of business = (Operating cost-(members' benefit expense+social service expense])/Total volume of business Administrative efficiency = (Administrative cost – [Members' benefit expense+social service expense])/Average total assets Turnover ratio=Net credit sales/Average accounts receivable, or total loans receivable/Average loans receivable	Statement of operations, Statement of financial position, notes to financial statements, receivables schedule 2019-2023
Capital build-up	Internal capital accumulated by the cooperative through member contributions and related capital accounts.	Reported capital build-up or paid-up share capital value	Cooperative profile; statement of financial condition
Number of members	Total recorded members of the cooperative during the period covered.	Count of registered cooperative members	Cooperative profile records
Number of employees and staff	Total personnel supporting cooperative operations.	Count of employees and staff	Cooperative profile records; administrative records
Years in operation	Length of operation of the cooperative up to the study period.	Study year - year of registration or establishment	CDA registration record; cooperative profile

Source: Adapted from cooperative development authority memorandum circular No. 2013-2015, performance report standards for cooperatives

The coefficient of determination (R^2) was used to describe the proportion of variance in financial performance explained by each predictor, while the P-value was used to test statistical significance. Quadratic regression was employed because the observed relationship between financial performance and each organizational characteristic was better represented by a curvilinear pattern than by a strictly linear trend.

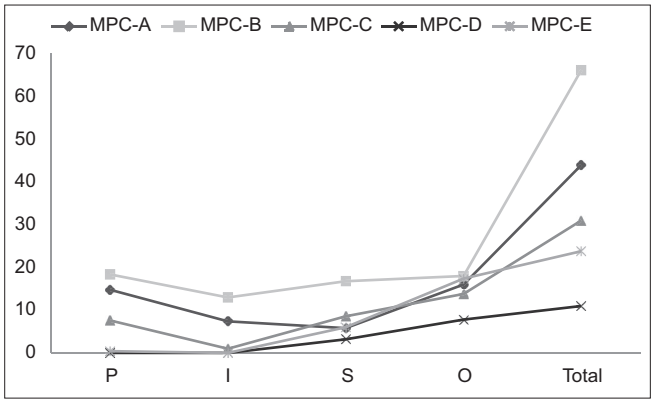
To determine whether financial performance significantly differs across cooperative types, one-way analysis of variance

Table 2: Adjectival rating scale for interpreting cooperative performance by type

Adjectival rating	Type of cooperative		
	Medium (MPC-A) (%)	Small (MPC-B) (%)	Micro (MPC-C/ D/E) (%)
Excellent performance	91-100	81-100	75-100
Very satisfactory performance	81-90	71-80	61-74
Satisfactory performance	71-80	61-70	51-60
Fair performance	61-70	51-59	41-50
Needs improvement	60 and below	50 and below	40 and below

Source: Adpated from MC 2013-2015 Performance report standards of cooperatives

Figure 2: Comparative trend of piso financial performance scores among multi-purpose cooperatives by cooperative type



(ANOVA) was used. This test examined whether profitability, institutional strength, structure of assets, and operational strength vary significantly when cooperatives are grouped according to type.

All statistical tests were evaluated at the 0.05 level of significance.

The null hypothesis was rejected when the computed P-value was ≤0.05. Otherwise, the null hypothesis was not rejected.

3.4. Ethical Considerations

The study relied on documentary data obtained from MPC records. Proper authorization was secured before data collection. All records were treated confidentially and used strictly for research purposes. The results were presented objectively and were not used to unfairly identify or discredit any specific cooperative. The analysis was limited to the multi-purpose cooperatives native to the study area that had available audited financial statements for the period 2019-2023, which resulted in a small number of observations. This constrained the use of more complex multivariate models; thus, quadratic regression was performed separately for each organizational characteristic. The analysis was also limited to four organizational predictors and did not include other potentially relevant determinants such as governance quality, internal control, leadership, and business diversification. In addition, the study relied on documentary data, making the findings dependent on the completeness and quality of available cooperative records. Accordingly, the results should be interpreted within the scope of the cooperatives covered and the adopted PISO-based framework.

4. EMPIRICAL RESULTS

Figure 2 illustrates the comparative performance across the four dimensions of profitability, institutional strength, structure of assets, and operational strength and Table 3 presents the summary of PISO financial performance scores and adjectival ratings of the multi-purpose cooperatives by cooperative type.

The results show that only MPC-B achieved a satisfactory level of financial performance, with a total score of 66%, while all other cooperative types—MPC-A (44%), MPC-C (31%), MPC-D (11%), and MPC-E (24%)—were classified under needs improvement. This indicates that the majority of cooperatives in the study fall below the minimum threshold for acceptable financial performance.

Across the PISO dimensions, operational strength emerged as the most consistent contributor to total performance among all cooperative types. All cooperatives recorded relatively higher scores in this dimension compared to the others, suggesting that while they are able to sustain operational activities, this strength is not sufficient to compensate for weaknesses in other areas.

Institutional strength recorded the lowest scores across all cooperative types, including zero values for MPC-D and MPC-E. This pattern indicates deficiencies in governance systems, internal controls, and institutional capacity, which are critical components of financial sustainability. The persistently low institutional strength scores significantly contributed to the overall weak performance of most cooperatives.

With respect to profitability, only MPC-A, MPC-B, and MPC-C generated measurable values, while MPC-D and MPC-E recorded zero scores, indicating an absence of surplus generation in these cooperative types. Similarly, the structure of assets showed uneven distribution across cooperatives, with MPC-B posting the highest value and MPC-D the lowest, suggesting differences in asset allocation efficiency and financial structure.

Figure 1 reinforces these findings by showing that MPC-B consistently outperforms the other cooperative types across most PISO dimensions, particularly in profitability and operational strength. In contrast, MPC-D and MPC-E exhibit minimal contributions in profitability and institutional strength, which explains their low overall performance.

Overall, the results indicate that financial performance among the multi-purpose cooperatives is uneven and generally weak, with most cooperative types failing to achieve satisfactory standards. The findings highlight that deficiencies in institutional strength and profitability are the primary factors limiting overall financial performance, despite relatively stronger operational capacity.

Quadratic regression was employed because the observed relationships between financial performance and the organizational

Table 3: Summary of PISO Financial Performance Scores and Adjectival Ratings of Multi-Purpose Cooperatives by Cooperative Type

Type of cooperative	MPC	P	I	S	O	Total	Adjectival rating
Medium	MPC-A	15	7	6	16	44	Needs improvement
Small	MPC-B	18	13	17	18	66	Satisfactory performance
Micro	MPC-C	8	1	9	14	31	Needs improvement
Micro	MPC-D	0	0	3	8	11	Needs improvement
Micro	MPC-E	0	0	6	17	24	Needs improvement

Source: Adpated from MC 2013-2015 Performance report standards of cooperatives

characteristics exhibited nonlinear patterns, as indicated by the fitted curves. Each predictor variable was analyzed separately to determine its individual relationship with financial performance. Table 4 presents the regression results on the relationship between financial performance and the selected organizational characteristics of multi-purpose cooperatives. The analysis shows that capital build-up and number of members significantly predict financial performance, while number of employees and staff and years in operation do not.

Capital build-up obtained an R^2 of 0.95 with a P = 0.00, indicating a statistically significant relationship with financial performance. Similarly, the number of members yielded an R^2 of 0.89 with a P = 0.00, also indicating statistical significance. These findings suggest that financial performance varies strongly with the cooperative's internal capital base and membership size.

The number of employees and staff produced an R^2 of 0.50 with a P = 0.20, and years in operation obtained an R^2 of 0.25 with a P = 0.57. Since both P-values exceeded the 0.05 level of significance, these variables were not found to significantly predict financial performance.

The regression results further suggest that the relationship between financial performance and the organizational characteristics is not uniformly proportional across all levels of the predictors. Instead, the fitted quadratic form indicates that changes in financial performance may vary in magnitude depending on the level of capital build-up, membership size, staffing, or years in operation. This implies that the effect of organizational characteristics on financial performance may be more complex than a simple straight-line relationship.

Overall, the findings indicate that capital build-up and number of members are the organizational characteristics most strongly associated with financial performance, whereas number of employees and staff and years in operation do not show significant predictive influence.

Table 5 presents the one-way ANOVA results on the differences in financial performance of multi-purpose cooperatives when grouped according to cooperative type. The results show that significant differences exist across cooperative types in all four PISO dimensions. Profitability performance yielded an F = 45.88 with a P = 0.00, indicating a statistically significant difference among cooperative types. Institutional strength likewise showed a significant difference, with an F-value of 71.46 and a P = 0.00. Similarly, the structure of assets recorded the highest variation

Table 4: Second-order polynomial (quadratic) regression results on the relationship between financial performance and organizational characteristics

Characteristics	R^2	P-value	Decision
Capital build-up	0.95	0.00	Reject Ho
Members	0.89	0.00	Reject Ho
Employees	0.50	0.20	Accept Ho
Years in operation	0.25	0.57	Accept Ho

R^2 represents the proportion of variance in financial performance explained by the fitted regression model. A predictor variable was considered statistically significant when the P-value was ≤0.05

Table 5: One-way ANOVA results on the differences in financial performance of MPCs

Variables	Df effect	SS effect	MS effect	F	P-value	Decision
Profitability performance	4	1380.16	345.04	45.88	0.00	Reject Ho
Institutional strength	4	657.44	164.36	71.46	0.00	Reject Ho
Structure of assets	4	548.24	137.06	126.91	0.00	Reject Ho
Operational strength	4	341.20	85.30	12.47	0.00	Reject Ho

across cooperative types, with an F = 126.91 and a P = 0.00. Operational strength also differed significantly, with an F = 12.47 and a P = 0.00.

These findings indicate that the financial performance of multi-purpose cooperatives is not uniform across categories. Instead, the results suggest that cooperative type is associated with substantial variation in profitability, institutional strength, structure of assets, and operational strength. Among the four dimensions, the structure of assets exhibited the greatest variation, while operational strength showed the least, although both remained statistically significant.

Overall, the ANOVA results confirm that cooperative classification is an important factor in understanding differences in financial performance. This implies that the financial conditions and performance capacities of medium, small, and micro multi-purpose cooperatives are not the same, and that cooperative type should be taken into account when assessing performance and designing improvement strategies.

The foregoing empirical results provide the basis for discussing the financial condition of the cooperatives, the role of organizational characteristics in explaining performance, and the implications of the observed differences across cooperative types.

5. DISCUSSION

The results indicate that the financial performance of the multi-purpose cooperatives was generally weak, with only one cooperative type achieving a satisfactory rating and the rest falling under needs improvement. A consistent pattern in the findings is that operational strength recorded the strongest scores, whereas institutional strength remained the weakest across most cooperative types. This suggests that some cooperatives may be able to sustain day-to-day operations even when their institutional systems and financial foundations remain limited.

The regression findings provide additional insight by showing that capital build-up and the number of members significantly predict financial performance. This means that the financial strength of cooperatives is more strongly associated with their internally mobilized capital and membership base than with staffing size or length of existence. In practical terms, cooperatives with stronger capital build-up and broader member support appear to have a better foundation for financial sustainability.

The use of quadratic regression further suggests that these relationships may not be strictly linear. This means that increases in organizational characteristics do not necessarily produce identical or constant increases in financial performance at every level. Instead, the association may vary depending on the amount of capital build-up, the size of membership, or the level of the other profile variables. This is an important implication because it suggests that cooperative performance may be shaped by changing effects rather than simple one-directional growth.

At the same time, the number of employees and staff and years in operation were not found to significantly predict financial performance. This indicates that workforce size and organizational longevity alone are insufficient to explain why some cooperatives perform better than others. A cooperative may have more personnel or may have operated for many years, yet still remain financially weak if capital formation, member participation, and institutional strength are limited.

The ANOVA results further showed that financial performance differs significantly across cooperative types. This confirms that the financial conditions of medium, small, and micro cooperatives are not uniform and that cooperative classification remains relevant in understanding performance variation.

Taken together, the findings suggest that the financial sustainability of multi-purpose cooperatives depends more on the strength of their financial base and member support than on size of staff or years of existence, and that these relationships may operate in a nonlinear manner.

6. CONCLUSION AND IMPLICATIONS

This study assessed the financial performance of multi-purpose cooperatives using the PISO framework and examined whether selected organizational characteristics predict financial performance. The findings showed that financial performance was generally weak, with only one cooperative type attaining a satisfactory rating and the remaining types falling under needs improvement. Among the PISO dimensions, operational strength recorded the highest scores, while institutional strength consistently posted the weakest results.

The quadratic regression analysis showed that capital build-up and number of members significantly predict financial performance, whereas number of employees and staff and years in operation do not. The one-way ANOVA further revealed significant differences in financial performance across cooperative types. Overall, the study concludes that the financial performance of multi-purpose cooperatives is shaped more strongly by internal financial capacity and membership strength than by workforce size or longevity and that the effect of organizational characteristics may vary across different levels rather than follow a strictly linear pattern.

The results imply that the financial viability of multi-purpose cooperatives depends more on the strength of their internal financial base and membership support than on workforce size or years in operation. This means that cooperative managers should prioritize capital formation, member participation, and institutional strengthening as core strategies for improving financial performance. The weak performance observed in most cooperative types also implies that operational continuity alone is not sufficient to ensure sustainability when profitability and institutional strength remain limited.

At the policy level, the findings imply that cooperative support mechanisms should be more targeted and classification-sensitive. Since financial performance significantly differed across cooperative types, development programs, monitoring systems, and technical assistance initiatives may be more effective when designed according to the specific conditions of medium, small, and micro cooperatives.

For future research, the findings imply the need to explore additional determinants of performance beyond organizational profile variables, particularly those related to governance, management quality, internal control, and member engagement. This may contribute to a deeper understanding of the institutional and managerial conditions that shape the long-term financial sustainability of multi-purpose cooperatives. Future studies may also test more robust models with larger datasets to further examine possible nonlinear relationships in cooperative financial performance.

REFERENCES

Attolba-Aquino, R.A.M., Castañeda, M.O. (2025), Implementation and effectiveness of sustainable cooperative management practices. Journal of Interdisciplinary Perspectives, 3(6), 488-501.

Birchall, J. (2013), Resilience in a Downturn: The Power of Financial Cooperatives. International Labour Organization. Available from: https://www.ilo.org/publications/resilience-Sdownturn-power-financial-cooperatives

Castro, M.T.M., Basco, R.D., Catelo, M.A.O., Cleofe, A.M. (2025),

Leveraging Cooperatives to Improve Food and Nutrition Security: Evidence from Oriental Mindoro, Philippines [Discussion Paper No. 2025-07]. University of the Philippines Center for Integrative and Development Studies. Available from: https://cids.up.edu.ph/wp-content/uploads/2025/03/leveraging-cooperatives-to-improve-food-and-nutrition-security_-evidence-from-oriental-mindoro-philippines.pdf

Dogarawa, A.B. (2005), The role of cooperative societies in economic development. The Nigerian Journal of Administrative Studies, 3(2), 1-12.

Ghani, R., Mohamad Shabri, S. (2024), The effect of organizational internal factors on the performance of cooperative governance in Malaysia. Indian-Pacific Journal of Accounting and Finance, 8(1), 3-13.

Hamsyah, H., Latif, I.N., Dewi, C.K. (2023), Cooperative financial performance analysis of liquidity, solvency, profitability, and activity ratios: (A case study of the tirta dharma PDAM cooperative in Samarinda City based on ministerial regulation number 06/Per/M.KUKM/V/2006). Indonesian Journal of Sustainability Policy and Technology, 1(1), 30-45.

Henock, M.S. (2019), Financial sustainability and outreach performance of saving and credit cooperatives: The case of Eastern Ethiopia. Asia Pacific Management Review, 24(1), 1-9.

Jamaluddin, F., Mohd Saleh, N., Abdullah, A., Hassan, M.S., Hamzah, N., Jaffar, R., Abdul Ghani Aziz, S.A., Embong, Z. (2023), Cooperative governance and cooperative performance: A systematic literature review. SAGE Open, 13(3), 1-21.

Kalogiannidis, S., Karafolas, S., Chatzitheodoridis, F. (2024), The key role of cooperatives in sustainable agriculture and agrifood security: Evidence from Greece. Sustainability, 16(16), 7202.

Kenkel, P., Doye, D. (2019), Financial Statement Analysis for Agricultural Cooperatives. Oklahoma State University Extension. Available from: https://extension.okstate.edu/programs/agribusinessand-cooperative-management/site-files/docs/financial_statement_analysis_for_agricultural_cooperatives.pdf

Khoiriyatun, W. (2024), Financial performance analysis of agricultural cooperatives in Central Java Indonesia. Russian Journal of Agricultural and Socio-Economic Sciences, 12(156), 73-77.

Laureta, M.S. (2020), Economic contribution of capital build-up programs of cooperatives in the province of Ilocos Sur. Asian Journal of Management, 11(4), 497-506.

Li, C., Deng, H., Yu, G., Kong, R., Liu, J. (2024), Impact effects of cooperative participation on the adoption behavior of green production technologies by cotton farmers and the driving mechanisms. Agriculture, 14(2), 213.

Majee, W., Hoyt, A. (2011), Cooperatives and community development: A perspective on the use of cooperatives in development. Journal of Community Practice, 19(1), 48-61.

Mallinguh, E., Wasike, C., Zoltan, Z. (2020), The business sector, firm age, and performance: The mediating role of foreign ownership and financial leverage. International Journal of Financial Studies, 8(4), Article 79.

Maniego, E.R., Maniego, L.A. (2025), The Financial Dynamics of Cooperatives: Analyzing Performance through Established Cooperative Standards. In: Proceedings of the 3rd International Conference on Public Administration and Governance (ICOPAG 2024). European Union Digital Library.

Meliá-Martí, E., Martínez-García, A.M., Carnicer-Andrés, M.P. (2024), Global efficiency and profitability: Cooperatives as social economy enterprises versus investor-owned firms. Journal of Innovation Knowledge, 9(4), 100564.

Miranda, K.L. (2025), Profitability performance of multipurpose cooperatives in CarCanMadCarLan, Surigao Del Sur. Science International, 37(2), 89-94.

Muryani, E., Gunawan, A., Halim Yustiyawan, R. (2022), the impact of member participation and innovation ability on the performance of the cooperatives of women's kartini in the district of driyorejo, gresik regency. Journal of Technology Management & Innovation, 17(3), 52-58.

Orillosa, S.J., Arroyo, E.J., Iphan, T.A., Rebonza, J. (2025), The role of internal controls in enhancing financial performance: Evidence from multipurpose cooperatives in the 1st District of Cotabato Province, Philippines. Psychology and Education: A Multidisciplinary Journal, 37(1), 53-61.

Otache, I., Echukwu, I.J., Umar, K., Yunusa, A., Audu, S. (2023), Internal factors affecting the performance of employee-based savings and credit cooperatives: Evidence from Nigeria. Journal of Enterprising Communities: People and Places in the Global Economy, 17(6), 1154-1170.

Pokharel, K.P., Regmi, M., Archer, D.W., Featherstone, A.M. (2019), Examining the financial performance of agricultural cooperatives in the USA. Agricultural Finance Review, 79(2), 271-282.

Ramos, L.A.S., Galay-Limos, J.A., Lazaro, N.J. (2025), Business practices, members' satisfaction, and financial performance of multi-purpose cooperatives in Sablayan, Occidental Mindoro. International Journal of Research Studies in Educational Technology, 9(1), 123-138.

Von Der Osten, F.L., Martins, T.S., Dong, H., Bailey, A.R. (2025), What does the 7th cooperative principle (concern for community) really mean? Management Review Quarterly, 75(2), 1813-1838.

Voigt, L., von der Oelsnitz, D. (2024), A framework of HRM in cooperatives: A systematic literature review and future research agenda. Journal of Co-operative Organization and Management, 12(1), Article 100232.