

# Financial Performance and Resilience of Region 3 Cooperatives: Analyzing Profiles and Key Financial Ratios for Growth

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**Abstract**— This study examines the relationship between cooperative characteristics and financial performance, focusing on how cooperative type, asset size, years in operation, and membership size influence key financial indicators. Using a correlational research approach, the study explores financial stability and operational efficiency across different cooperative sectors. Findings reveal structural and financial differences among cooperatives, with certain attributes influencing financial ratios more than others. Cooperative type and membership size significantly impact debt-equity and equity-to-asset ratios, while solvency ratio shows no strong association with cooperative characteristics. Asset turnover ratio is primarily affected by cooperative size, emphasizing the role of resource allocation and operational efficiency. While cooperative profiles provide some insights into financial performance, effective financial management, governance practices, and external market conditions play a more critical role. To enhance financial sustainability, cooperatives should improve financial planning, governance structures, and asset management while implementing supportive policies. Future research should examine governance frameworks, leadership styles, and economic conditions to gain a deeper understanding of cooperative financial stability. These insights highlight the importance of data-driven strategies and targeted interventions to promote cooperative growth and long-term viability.

**Index Terms**— Cooperatives, Financial Performance, Debt-Equity Ratio, Equity-to-Asset Ratio, Solvency Ratio, Asset Turnover Ratio. Financial stability, and social equity, particularly in underserved communities.

## I. INTRODUCTION

Cooperatives play a vital role in economic development by promoting inclusive growth and providing financial services, particularly in rural areas where traditional institutions have limited reach. Government support through financial programs, capacity-building initiatives, and policy reforms strengthen cooperative operations, though effectiveness varies based on structure and economic conditions.

Despite their significance, cooperatives face financial and sustainability challenges. Research gaps remain on how organizational characteristics—such as type, asset size, and years in operation—affect key financial ratios. Findings on financial sustainability are inconsistent, with some studies linking longevity to stability while others emphasize external

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market forces. Many analyses also overlook region-specific economic and policy factors.

This study explores the relationship between cooperative profile variables and financial performance, providing insights for managers and policymakers to enhance financial sustainability and economic contribution.

## II. RESEARCH METHODOLOGY

This study used a correlational research design to examine the relationship between cooperative profile characteristics (type, size, and years in operation) and financial performance indicators (debt-to-equity ratio, equity-to-asset ratio, solvency ratio, and asset turnover ratio). Correlation and regression analyses assessed these relationships without manipulating variables.

A stratified proportional sampling method was applied to a population of 514 compliant micro and small cooperatives, resulting in a final sample of 221 cooperatives (90 Agriculture, 56 Transport, and 75 Multipurpose). The sample was determined using a 95% confidence level and a 5% margin of error for generalizability.

Data collection involved survey questionnaires for cooperative profiles and financial document analysis of balance sheets and income statements to derive key financial ratios. Ethical clearance was obtained, and questionnaires were administered in person and online. Financial reports were collected from official sources, verified for accuracy, and processed using SPSS and Excel, ensuring data reliability.

## III RESULTS

**A. Cooperative Profile.** Cooperative Type. The majority (40.7%) are agricultural cooperatives, followed by multipurpose (34%) and transport (25.3%) cooperatives. The dominance of agricultural cooperatives highlights their role in rural economies, providing market access and financial support to farmers (Birchall, 2004). The prevalence of multipurpose cooperatives reflects a trend toward diversification for financial stability.

**Asset Size.** Most cooperatives are small (51.1%), while 48.9% are micro-sized, indicating early growth stages with capital and asset constraints.

**Years in Operation.** A majority (60.64%) have operated for 11–15 years, suggesting stability, while 24.43% are relatively young ( $\leq 5$  years) and 14.93% have been active for 6–10

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years. Newer cooperatives may still face financial and operational challenges

Table 1. Cooperative Profile

Variables	Indicators	Frequency	Percentage
Type	Agriculture	90	40.7
	Multipurpose	75	34
	Transport	56	25.3
	Total	221	100
Asset Size	Micro	108	48.9
	Small	113	51.1
	Total	221	100
Years in Operation	5 years & below	54	24.43
	6-10 Years	33	14.93
	11-15 years	134	60.64
	Total	221	100
No of Members	100 and below	141	63.81
	101 - 300	68	30.77
	300 -600	10	4.52
	601 - 900	1	0.452
	Above 815	1	0.452
Total	221	100	

Membership Size. Most cooperatives (63.81%) have 100 or fewer members, with 30.77% having 101–300 members. Only 4.52% have 300–600 members, and very few exceed 600. Membership size influences governance, financial contributions, and decision-making efficiency (Chaddad & Cook, 2004).

## B. Significant difference among cooperatives based on these profile variables

The ANOVA results indicate significant differences in years in operation, members and assets among the three types of cooperatives examined in the study. The p-values (Sig. < .001) for all three variables confirm that the differences observed are statistically significant. In addition to ANOVA, the Games-Howell post hoc test, applied due to unequal variances, identifies significant differences among cooperative types.

For years in operation, the F-statistic of 46.108,  $p < 0.001$ . The test indicates a significant difference in cooperative characteristics based on their years in operation. This suggests that financial performance, governance, or operational strategies may vary among younger, mid-aged, and older cooperatives.

1) Table 2.1 Difference in Years of Operation

Comparison	Mean Difference (I-J)	p-value	Interpretation
Agriculture vs Multipurpose	-3.5	0	Significant
Agriculture vs Transport	3.076	0	Significant
Multipurpose vs Transport	6.576	0	Significant

Number of Members. The ANOVA results ( $F = 7.629$ ,  $p < 0.001$ ) indicate significant differences in cooperative performance based on membership size. Larger cooperatives may benefit from economies of scale, while smaller ones face capital constraints. Multipurpose cooperatives have significantly larger memberships than Agriculture and Transport cooperatives ( $p < 0.05$ ), but no significant difference exists between Agriculture and Transport cooperatives ( $p = 0.61$ ).

Table 2.2 Difference in Number of Members

Comparison	Mean Difference (I-J)	p-value	Interpretation
Agriculture vs Multipurpose	-62.922	0.016	Significant
Agriculture vs Transport	14.297	0.61	Not Significant
Multipurpose vs Transport	77.219	0.001	Significant

Years in Operation. All comparisons ( $p < 0.05$ ) indicate significant differences, with Multipurpose cooperatives operating the longest, followed by Agriculture, while Transport cooperatives have the shortest history. This supports Chaddad & Cook (2004), who associate sustainability with diversified business models.

2) Table 2.3 Difference in Years of Operation

Comparison	Mean Difference (I-J)	p-value	Interpretation
Agriculture vs Multipurpose	227,709	0.894	Not Significant
Agriculture vs Transport	-92,233	0	Significant
Multipurpose vs Transport	-92,233	0	Significant

## 2) Hypotheses Interpretation

- $H_0$  (no difference) is rejected for years in operation and number of members, confirming significant differences among cooperative types.
- $H_0$  is partially rejected for asset size, where Transport cooperatives have significantly higher assets than others, but no difference exists between Agriculture and Multipurpose cooperatives.

## C. Relationship between Cooperative Profiles and Financial Ratios

Cooperative Profile and Debt Equity Ratio. The multiple correlation coefficient ( $R = 0.245$ ) indicates a weak relationship between cooperative profile variables and the debt-equity ratio. However, the test of coefficients reveals that cooperative type ( $-0.062$ ,  $p = 0.003$ ) and number of members ( $0.000$ ,  $p = 0.047$ ) have a significant impact, while asset size and years in operation do not ( $p > 0.05$ ). This suggests that the debt-equity ratio is partially influenced by

cooperative characteristics, with type and membership size playing the most notable roles.

#### Hypothesis Interpretation

The coefficient test results indicate that cooperative type (-0.062,  $p = 0.003$ ) and number of members (0.000,  $p = 0.047$ ) have a significant impact on the debt-equity ratio, whereas size and years in operation are not significant predictors ( $p > 0.05$ ). This suggests a partially significant relationship between the cooperative profile and the debt-equity ratio, primarily driven by cooperative type and membership size.

Cooperative Profile and equity-to-asset ratio. The R-value (0.245) suggests a weak relationship between cooperative profile variables and the equity-to-asset ratio. Regression results indicate that cooperative type (0.062,  $p = 0.003$ ) significantly affects the ratio, while asset size, years in operation, and membership size do not ( $p > 0.05$ ). This highlights that cooperative type is a key determinant, but overall, the cooperative profile has only a limited influence on the equity-to-asset ratio.

#### Hypothesis Interpretation

The regression results indicate that type ( $\beta = 0.062$ ,  $p = 0.003$ ) has a significant impact on the cooperative profile and equity-to-asset ratio. However, since only asset size and years of operation are significant among the four predictors, the null hypothesis ( $H_0$ ) cannot be fully rejected. Additionally, cooperative size does not have a significant effect on the equity-to-asset ratio, while years of operation has a small negative coefficient but remains statistically insignificant ( $p > 0.05$ ).

Cooperative Profile and the solvency ratio. The correlation coefficient ( $R = 0.186$ ) indicates a very weak relationship between cooperative profile and solvency ratio. Regression results show no statistically significant predictors ( $p > 0.05$ ), suggesting that cooperative characteristics do not strongly influence solvency. Instead, factors such as financial policies, market conditions, and management efficiency play a more critical role in a cooperative's ability to meet long-term obligations. This highlights the importance of effective risk management and financial planning to strengthen solvency.

#### Hypothesis Interpretation

The test of coefficients reveals no statistically significant predictors ( $p > 0.05$ ) for any of the variables, suggesting that the cooperative profile is not a strong determinant of solvency. Consequently, no significant relationship exists between the cooperative profile and the solvency ratio.

Cooperative Profile and the asset turnover ratio. The correlation coefficient ( $R = 0.254$ ) indicates a weak relationship between cooperative profile and asset turnover ratio. Regression results identify size (-0.424,  $p = 0.005$ ) as a significant predictor, while type, years in operation, and number of members show no significant effect ( $p > 0.05$ ). Although cooperative size influences asset turnover, the overall cooperative profile has a limited impact. Instead, asset utilization is primarily driven by financial management practices, operational efficiency, and external market dynamics.

#### Hypothesis Interpretation

The test of coefficients identifies size ( $\beta = -0.424$ ,  $p = 0.005$ ) as a significant predictor of asset turnover, while type, years in operation, and number of members show no significant effect ( $p > 0.05$ ). This suggests that cooperative size plays a crucial role in asset turnover, whereas the overall cooperative profile has a limited impact. Instead, financial management practices, operational efficiency, and external market dynamics are more influential in determining asset utilization.

### IV. DISCUSSIONS

**Cooperative Type.** Agricultural cooperatives dominate, reflecting their crucial role in rural economies by improving farmers' access to markets, credit, and resources (Birchall, 2004). The significant presence of multipurpose cooperatives indicates diversification for financial stability (Goddard et al., 2002). Micro and small cooperatives are nearly equal in number, suggesting many are in early growth stages with limited capital and asset accumulation. Smaller cooperatives often face financial challenges, particularly in accessing credit and competing with larger enterprises (Altman, 2000). The prevalence of well-established cooperatives signals sustainability, though newer ones may still be navigating financial and operational challenges.

**Asset Size.** Most cooperatives are classified as small which may require institutional support, training, and financial assistance to remain competitive. While 48.9% are micro-sized. The almost equal distribution between micro and small cooperatives suggests that many are in early growth stages, reflecting constraints in capital and asset accumulation. Smaller cooperatives often face challenges in accessing credit and competing with larger enterprises, which can impact long-term sustainability (Altman, 2000).

**Years in Operation.** The majority of cooperatives have been operating for 11-15 years, this distribution suggests that many cooperatives are well-established, which is a positive indicator of sustainability. However, newer cooperatives may still be navigating financial and operational challenges.

**Number of Members.** Most cooperatives have fewer members, impacting governance, financial contributions, and decision-making efficiency (Chaddad & Cook, 2004). Larger cooperatives benefit from economies of scale, higher member contributions (Valentinov, 2007; Hansen et al., 2002), and greater financial resilience (Gertler, 2001; Zeuli & Cropp, 2004). Younger cooperatives need governance and financial literacy training, while established ones should mentor newer cooperatives. Small cooperatives require access to credit and asset management strategies for stability. Encouraging member participation and income diversification can enhance sustainability. Multipurpose cooperatives should leverage their larger memberships for financial stability, transport cooperatives must optimize asset utilization, and agricultural cooperatives should innovate and expand membership to remain competitive.

The ANOVA results confirm that cooperatives differ significantly based on years in operation, number of members, and asset size. Older, larger cooperatives tend to have better financial performance and stability due to experience, membership engagement, and strong asset bases.

**Debt Equity Ratio.** The findings imply that certain cooperative types (e.g., multipurpose cooperatives) are more likely to rely on debt financing than others (e.g., agricultural cooperatives), requiring tailored financial strategies. As cooperatives increase in membership, they may need better financial planning to manage debt responsibly, as high debt reliance can increase financial risk and reduce sustainability (Chaddad & Cook, 2004). Regulatory frameworks should recognize that cooperative type and size impact financial structures and provide appropriate support mechanisms, particularly for cooperatives with higher debt exposure and for future research, given the low  $R^2$ , future studies should explore additional variables such as profitability, government funding, interest rate conditions, and management efficiency to gain a more comprehensive understanding of debt-to-equity determinants in cooperatives.

**Equity to Asset ratio.** The findings imply that given the positive and significant coefficient for Type, policymakers and business strategists should consider how different business models influence financial stability. These results indicate that increasing cooperative size or longevity does not necessarily improve financial stability. The negative impact of Members suggests that firms should manage membership growth carefully to avoid financial strain. Further studies could explore the underlying mechanisms affecting the relationship between equity-to-asset ratio and these independent variables, particularly type and membership structures.

**Solvency Ratio.** The findings imply that since cooperative profile characteristics have minimal impact on solvency, cooperative leaders should focus on financial strategies such as debt management, capital investment, and risk diversification (Altman, 2000). Some cooperative types may have stronger solvency due to capital structures and financing policies, emphasizing the need for industry-specific financial strategies (Chaddad & Cook, 2004). Policies should shift from focusing on cooperative structure to supporting financial sustainability through training programs, capital access, and regulatory incentives to enhance solvency. For future research Since  $R^2$  is low, future research should explore additional financial variables such as profitability, leverage ratios, and liquidity management to better understand solvency determinants.

**Asset Turnover Ratio.** Since cooperative profile characteristics have a weak impact on asset turnover, leaders should focus on efficiency-enhancing strategies such as technology adoption, streamlined operations, and improved asset management (Brigham & Ehrhardt, 2019). Larger cooperatives should optimize asset utilization through leasing, inventory management, and capacity improvements

(Chaddad & Cook, 2004). Rather than emphasizing size or structure, policies should support training programs to enhance asset management skills and competitiveness. Given the low  $R^2$ , future studies should examine other factors like financial leverage, technology investment, and competitive strategies. Overall, asset turnover is driven more by financial management, operational strategies, and market conditions than cooperative characteristics, aligning with resource-based theory, which emphasizes internal capabilities over structural factors.

### V. CONCLUSIONS

Based on the findings, the following conclusions are drawn. The cooperative sector is primarily composed of agricultural and multipurpose cooperatives, mostly classified as micro or small enterprises. While many are well-established, financial, governance, and operational challenges persist, affecting long-term sustainability. Structural differences exist among cooperative types, particularly in years of operation, membership size, and asset distribution, with transport cooperatives having significantly larger assets. However, cooperative profile characteristics have a limited impact on financial performance, as only debt-equity and equity-to-asset ratios show significant associations with cooperative type and membership size, while asset turnover is mainly influenced by cooperative size.

Overall, financial management strategies, market conditions, and internal decision-making play a more critical role in financial stability than cooperative structure. To enhance sustainability and efficiency, cooperatives should adopt sound financial policies, risk management strategies, and operational improvements. Future research should explore governance structures, economic conditions, and market dynamics to gain deeper insights into cooperative financial health and long-term viability.

### VI. RECOMMENDATIONS

The following recommendations are proposed to enhance the financial sustainability and operational efficiency of cooperatives:

**Strengthen Financial Management.** Cooperatives should adopt strategic financial planning and risk management to improve debt-equity and equity-to-asset ratios. Regular financial assessments and benchmarking against industry standards will enhance stability.

**Enhance Governance and Capacity Building.** Training on financial literacy, governance, and cooperative management should be provided. Strengthening internal structures and decision-making processes will improve transparency and resilience.

**Promote Asset Growth and Efficiency.** Cooperatives, particularly in agriculture and multipurpose sectors, should explore investments and financial strategies to expand assets. Modernized business models and efficient resource allocation can improve asset turnover.

**Strengthen Policy and Institutional Support.** Government agencies and cooperative federations should implement

policies offering financial incentives, capacity-building programs, and improved access to funding and credit facilities.

Encourage Data-Driven Decision-Making. Future research should examine governance, leadership, and market influences on financial stability. Institutionalized data collection and performance monitoring will support evidence-based policymaking.

#### REFERENCES

- [1] Abate, G. T., Francesconi, G. N., & Getnet, K. (2014). Impact of agricultural cooperatives on smallholders' technical efficiency.
- [2] Anyaegbunam, H. N., & Mgbada, J. U. (2015). Financial performance analysis of agricultural cooperatives: A case study approach. *Journal of Cooperative Studies*, 48(3), 56-72.
- [3] Birchall, J. (2004). Cooperatives and the Millennium Development Goals. International Labour Organization.
- [4] Birchall, J. (2011). People-centered businesses: Cooperatives, mutuals and the idea of membership. Palgrave Macmillan.
- [5] Birchall, J., & Ketilson, L. H. (2009). Resilience of the cooperative business model in times of crisis. International Labour Organization.
- [6] Brigham, E. F., & Ehrhardt, M. C. (2019). *Financial management: Theory & practice*. Cengage Learning.
- [7] Chaddad, F. R., & Cook, M. L. (2004). Understanding new cooperative models: An ownership-control rights typology. *Review of Agricultural Economics*, 26(3), 348-360.
- [8] Chaddad, F., & Iliopoulos, C. (2013). Control rights, governance, and the costs of ownership in agricultural cooperatives. *Agribusiness*, 29(1), 3-22.
- [9] Cooperative Development Authority (CDA). (2015). CDA Memorandum Circular 2015-05: Revised guidelines on the organization and operation of agricultural cooperatives in the Philippines.
- [10] Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage Publications.
- [11] David, C., & Inocencio, A. (2016). Agricultural cooperatives and rural development in the Philippines: A policy perspective. *Philippine Journal of Development*, 43(1), 33-54.
- [12] Hodge, J. (2017). The role of experience in cooperative financial sustainability. *Journal of Cooperative Studies*, 25(1), 95-110.
- [13] International Cooperative Alliance (ICA). (2020). Cooperatives and the sustainable development goals: A contribution to the 2030 agenda.
- [14] Republic Act No. 9520. (2008). Philippine Cooperative Code of 2008.
- [15] Wanyama, F. O. (2016). Cooperatives and the Sustainable Development Goals: A contribution to the post-2015 development debate. *International Cooperative Alliance Review*, 50(1), 23-45.
- [16] Yamane, T. (1967). *Statistics: An introductory analysis* (2nd Ed.). Harper and Row.

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Ralph Rendell P. Toledo, MPA is a multifaceted professional with extensive academic and public service experience. He holds a Bachelor's in Entrepreneurial Management graduating as Magna cum Laude, completed 27 MBA units, and earned a Master's in Public Administration. He is currently pursuing a Doctor in Business Administration.

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