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Financial Conditions and Performances of Cooperatives in Ifugao, Philippines

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Abstract: In this paper, we analyze the financial conditions and performances of cooperatives in Ifugao, Philippines, and evaluate them against the standards set by the Cooperative Development Authority of the Philippines. The research finds that while the cooperatives have good deposit liabilities and external borrowings, they exhibit poor asset efficiency and earnings per share ratios. Asset efficiency has a significant positive impact on profitability and earnings per share, while external borrowings positively affect the latter. The study recommends that cooperatives address their financial issues for sound financial management and stakeholder satisfaction.

Keywords: financial conditions, financial performances, cooperatives, Ifugao, Philippines.

1 Introduction

A cooperative is an entrepreneurial organization by the members and for the members who collectively endeavor to achieve their interests and intentions towards inclusive wealth and welfare. It is a "people centred enterprises owned, controlled and run by and for their members to realize their economic, social, and cultural needs and aspirations" [1]. It is "an autonomous and duly registered association of persons, with a common bond of interest, who have voluntarily joined together to achieve their social, economic, and cultural needs and aspirations by making equitable contributions to the capital required, patronizing their products and services and accepting a fair share of the risks and benefits of the undertaking in accordance with universally accepted cooperative principles" [2].

Universally, cooperatives substantially supply occupations and opportunities, affiliating more than 12% of the global population, employing more than 280,000,000 global people and generating more than $2,146,000,000 global total turnover [3]. Locally, Philippine cooperatives nationally figure to 18,848 as of 2020, registering more than 11,500,000 members, providing more than 364,700 jobs and owning more than P511,800,000,000 worth of assets [4]. They provide substantially numerous activities and employments that drive resources and revenues addressing the need for sustainability consistent with the Sustainable Development Goals (SDGs) [5]. Constantly, cooperatives in Ifugao, Philippines are contributory to economic, environmental and social welfare by diminishing poverty, creating employment, improving food security, empowering societies, creating rural markets and developing human capital. Therefore, cooperatives are importantly instrumental in advancing the local and global economies and societies through their purposes and potentials.

However, these cooperatives are challenged by the absence of markets and credit facilities, and by the presence of poor management and low value [6]. Further, they suffer pressing problems from their opening to their operating - across producing, packaging, organizing, managing and marketing activities, adversely affecting the earning and consuming abilities of the cooperatives and members [7]. Hence, their influence on the economy and society have been impaired [8].

The Corona Virus 2019 pandemic has had a significant impact on cooperatives, causing a major shift in the global and local landscape and conduct of individual and societal events and entities, governmental, non-governmental, commercial, non-commercial incidents and institutions. Notably, this pandemic has effected radical transformations of differing degrees and dispositions on national and international investments, productions, distributions, consumptions, savings and other exchanges. Awfully agitated by the Corona Virus 2019 pandemic, cooperatives in different countries have declined in accounts, in actions and in assets attributed to lessened economic undertakings in terms of productions and distributions along with the loss of members and customers. Consistently, cooperatives in the Philippines have dramatically demoted in terms of efficiency and effectiveness resulting from restrictions and reductions in the different business aspects [9]. Cooperatives in the Ifugao Province have been greatly affected by the challenges of these difficult times.

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In its context, it operationalizes financial strategy as the concept by which organizations acquire and apply financial resources aimed to meet the organizational needs and demands pursuant to their vision and mission [10]. Financial leverage is the ability of the organization to soundly use capital through the optimal mixture of liabilities and equity, while financial efficiency as the ability of the organization to efficiently expend resources and further financial performance as the ability of the organization to effectively achieve its entrepreneurial goals [11].

In view of the foregoing, this paper proceeds its study to contribute theoretical and practical knowledge on cooperatives, particularly on their financial leverage, liquidity and performances in the context of an upland province. Primarily, it addresses the absence of a specific study that evaluates the cooperatives' financial conditions and performances against the authority's financial standards. It also addresses the absence of studies working on the same topic and in similar context, particularly on the effect of financial conditions on cooperatives' financial performances in Ifugao, Philippines; henceforth, the novelty of this paper. It also provides information upon which cooperative management can better create their managerial and operational decisions and actions towards optimal cooperative efficiency and efficacy.

2 Methodologies

2.1. Research Design

This study employed a descriptive-correlational research design to determine the financial conditions and performances of cooperatives in Ifugao, Philippines, and to evaluate them against the Profitability, Institutional Strength, Structure of Assets, and Operational Strengths (PISO) of the Cooperative Development Authority (CDA) Memorandum Circular Number 2013-15. Such memo underlines that the performance report serves as a monitoring device by which cooperatives identify their potentials and problems and examine their conditions and circumstances. It also determines the effect of financial conditions on the financial profitability of these cooperatives.

2.2. Population and Sample

The operating cooperatives in the Philippines nationally numbered to 18,848 in year 2020 [4]. They are dominated substantially by multi-purpose, then relatively by credit, agriculture, transport and consumer cooperatives. Accordingly, only 10,900 are reporting while 6,769 are non-reporting and 1,179 are newly registered. However, only 962 cooperatives, about 5% of the national figure, are identified with the Cordillera Administrative Region. The total number of registered cooperatives in Ifugao is eighty, from which only ten are considered by the study.

These cooperatives were chosen through purposive sampling method to consider only those operating within the geographic proximity, particularly near Lagawe, the capital of the Ifugao Province being a mountainous terrain. It excluded those cooperatives outside the province. This is to diligently consider only those respondents within research capacity in consideration of health concerns to uphold safety and security among these stakeholders amidst the pandemic. They are predominantly multi-purpose and are substantially medium-sized, serving specifically many farmers, gardeners, government employees, local business owners, among other community members.

2.3. Data Gathering Instruments

In coordination with the proper officials of the respondent cooperatives, the researcher requested through formal communication their audited financial reports for years 2020 and 2021. The financial data were extracted from these reports and the financial ratios were computed based on the formula as per PISO of the CDA. Deposit Liabilities to Total Assets (DLTA) is computed as total deposits divided by total assets while External Borrowings to Total Assets (EBTA) is computed as total external borrowings divided by total assets. Liquidity Ratio (LR) is calculated by dividing the quantity liquid assets less short-term payables by the total members deposits while Asset Efficiency Ratio (AER) is calculated by dividing the net surplus by the total assets. Profitability Ratio (PR) is computed as net operating surplus divided by gross revenue while Earnings per Share (EPS) is computed as net surplus divided by paid up capital.

2.4. Treatment of Data

To undertake the financial analysis, ratios were computed and evaluated against the financial standards as per PISO of the CDA. It then used regression to determine the effect of financial conditions on the financial profitability of these cooperatives. To validate the regression results, it performed analyses of the regression's goodness of fit and predictive performance.

3 Results and Discussions

3.1. Financial Conditions among Cooperatives in Ifugao

3.1.1. Financial Leverage among Cooperatives in Ifugao

The results in Table 1 show the cooperatives' DLTA that measures how much of the total assets are funded by deposit liabilities. Based on the PISO, a cooperative earns five points if it has deposit liabilities to total assets ratio of 30% to 40%. Further, a ratio of above 40% to 50% and of 20% to 29% merits four points, while a ratio above 50% to 60% and below 20% to 10% merits three points. Furthermore, a ratio above 60% to 70% and below 10% to 5% merits two points, while a ratio above 70% and below 5% merits one point. Finally, a ratio of zero merits zero points.

Cooperative 2 has deposit liabilities to total assets ratio of 39% and 37% respectively in 2020 and in 2021. As such, it has attained the standard ratio, meriting 5 points out of 5 points. The ratios indicate that it has maintained its leveraging efforts that earned them such an outstanding remark. Cooperative 4 has deposit liabilities to total assets ratio of 27% and 30%, respectively, in 2020 and in 2021.

As such, it has attained the standard ratio of 5 points in 2021, improving from the 3 points in 2020. Such an improved score indicates that it has enhanced its leveraging efforts towards such an enhanced performance.

Table 1: Financial Leverage of Cooperatives in Ifugao

FINANCIAL LEVERAGE									
		DEPOSIT LIABILITIES TO TOTAL ASSETS				EXTERNAL BORROWINGS TO TOTAL ASSETS			
Coop	Type	2020	*Points per PISO*	2021	*Points per PISO*	2020	*Points per PISO*	2021	*Points per PISO*
1	Multi-Purpose	63%	2	61%	2	7%	4	9%	4
2	Multi-Purpose	39%	5	37%	5	39%	2	37%	2
3	Multi-Purpose	2%	1	2%	1	15%	4	23%	3
4	Multi-Purpose	27%	3	30%	5	53%	1	51%	1
5	Multi-Purpose	49%	4	49%	4	13%	4	12%	4
6	Multi-Purpose	42%	4	41%	4	12%	4	12%	4
7	Multi-Purpose	54%	3	57%	3	12%	4	11%	4
8	Multi-Purpose	45%	4	49%	4	11%	4	8%	4
9	Multi-Purpose	55%	3	56%	3	10%	4	7%	4
10	Multi-Purpose	60%	3	60%	3	11%	4	11%	4

Cooperatives 5, 6 and 8 have deposit liabilities to total asset ratios of 49%, 42% and 45% respectively in 2020 and 49%, 41% and 49% respectively in 2021. Hence, they merit 4 points out of 5 points. Cooperatives 7, 9 and 10 have ratio of 54%, 55% and 60% respectively in 2020 and 57%, 56% and 60% respectively in 2021. Hence, they merit 3 points out of 5 points.

Cooperative 1 has a ratio of 63% in 2020 and of 61% in 2021, meriting 2 points in both years. Cooperative 3 has a ratio of 2%, earning only 1 point in both 2020 and 2021. The results indicate that these cooperatives have not met the standard ratio, suggesting their inefficiencies, to some extent, relative to managing their deposit liabilities to total assets.

The standard ratio of 30% to 40% signifies that the deposits made by members should fittingly fund total assets. Regarding the use of debt and equity, cooperatives are encouraged by the standard such a capital structure where member deposits should finance 30% to 40% of the total assets, be it savings deposits, time deposits, among other types of deposits to generate an optimal financial leverage. However, different ratios besides this standard ratio indicate risks attributed to the trade–off between the use of debt and equity.

The cooperatives disclose in their financial statements that these debts are dominated primarily by savings and time deposits, their current liabilities, and secondarily by loan payables, their non-current liabilities. The hugeness of these debts implies the risks of default by which these cooperatives incur enormous interest expenses among other charges and penalties. Indeed, they further disclose that the immensity of these debts entails significant amount of financing costs, occupying a significant percentage of their total costs.

Based on the PISO, the EBTA measures how much of the total assets have been funded by external borrowings. A cooperative earns five points if it has zero external borrowings to total assets ratio. More, a ratio of 1% to 20% merits four points, while a ratio above 20% to 30% merits three points. Moreover, a ratio above 30% to 40% merits two points, while a ratio above 40% merits one point.

Cooperatives 1, 5,6,7,8,9 and 10 have external borrowings to total assets ratio of 7%, 13%, 12%, 12%, 11%, 10% and 11% respectively in 2020. They have the ratio of 9%, 12%, 12%, 11%, 8%, 7% and 11% respectively in 2021. As such, they score 4 points out of 5 points in both years. Further, Cooperative 3 has the ratio of 15% in 2020 and 23% in 2021, scoring 4 points and 3 points, respectively, a drop that indicates a decline in their leverage efforts. Furthermore,

Cooperative 2 has a ratio of 39% and 37%, scoring 2 points for both 2020 and 2021. Finally, Cooperative 4 has a ratio of 53% and 51%, scoring 1 point for both 2020 and 2021.

The results as shown in Table 1 show that none of the cooperatives under study has met the standard ratio, suggesting their inefficiencies, to some extent, relative to managing their external borrowings to total assets. The standard external borrowings to total assets ratio are set at zero, indicating that the cooperatives should have no external borrowings relative to the total assets. Such a standard ratio suggests that cooperatives entail only deposit liabilities and share capital that should be generated by cooperative members. Consistently, this is to encourage members to cooperatively contribute to the cooperative resources through deposits or capital.

Citing Prasad and Ravinder (2012), Wakaisuka-Isingoma et al., (2016) [12] say that organizations having ample amount of capital assures depositors' confidence, including creditors' confidence, ascertaining them that their deposits and credits, respectively, will be paid off. In cases where some cooperatives have increasing or decreasing leverage ratios, such cases pertain to the changing composition of resource funding, whether they either acquire or disburse liabilities or equities.

Noteworthy, however, some cooperatives raise their concern over some members who do not willfully increase their share capital, attributed to their lack of commitment to consistently contribute to the cooperatives' efforts to internally generate financial resources. Consistently, Iliopoulos and Valentinov (2018) [13] stressed that the eroding member commitment and the proliferating member apathy causing a decrease in their capital contributions and financial savings are among the challenges of cooperatives include. With such minimal funds internally generated, they then resort to borrowing from external parties to cater to the rising requests for financial services. As such, they increase their liabilities.

In some cases, some members select to pay the required minimum share capital and instead subscribe to the saving services of these cooperatives to earn interest incomes, rather than gaining dividend interests. Savings allow them to withdraw their deposits at once when their needs arise, and contrarily they cannot instantly withdraw their share capital when their needs arise. Contrarily, capitals afford dividends, however at times are being retained and are not being regularly reverted to the members.

3.1.2. Financial Efficiency among Cooperatives in Ifugao

Based on the PISO, the liquidity ratio measures how much of the total members' deposits can be paid by the net liquid assets. A cooperative earns five points if it has a liquidity ratio of 15% to 30%, indicating that for every peso member deposit, there should be .15 and to .30 net liquid asset as payment. Further, a ratio below 15% to 10% and above 30% to 50% merits four points, while a ratio below 10% to 5% and above 50% to 60% merits three points. Moreover, a ratio below 5% to 1% and above 60% to 80% merits two points, while a ratio above 80% or below 1% merits one point. Finally, a ratio of zero or negative merits zero points.

As reflected in Table 2, Cooperatives 1 and 2 have a 43% and 45% liquidity ratio, respectively, in 2020. They have a ratio of 46% and 43%, respectively, in 2021. Thus, they score 4 points out of 5 points. Cooperative 7 has 51% and 43% ratio, scoring 3 and 4 points respectively in 2020 and 2021. Such a raise indicates an increase in its liquidity efforts. Cooperative 9 has the ratio of 52% and 63%, scoring 3 and 2 points respectively in 2020 and 2021. Such a drop indicates a decline in their liquidity efforts.

Table 2: Financial Efficiency of Cooperatives in Ifugao

FINANCIAL EFFICIENCY									
		LIQUIDITY RATIO				ASSET EFFICIENCY RATIO			
Coop	Type	2020	*Points per PISO*	2021	*Points per PISO*	2020	*Points per PISO*	2021	*Points per PISO*
1	Multi-Purpose	43%	4	46%	4	3%	1	2%	1
2	Multi-Purpose	45%	4	43%	4	0%	1	1%	1
3	Multi-Purpose	-125%	0	-385%	0	-2%	1	-1%	1
4	Multi-Purpose	153%	1	127%	1	4%	1	1%	1
5	Multi-Purpose	64%	2	68%	2	3%	1	2%	1
6	Multi-Purpose	97%	1	101%	1	4%	1	5%	2
7	Multi-Purpose	51%	3	43%	4	2%	1	2%	1
8	Multi-Purpose	104%	1	93%	1	3%	1	5%	2
9	Multi-Purpose	52%	3	63%	2	4%	1	4%	1
10	Multi-Purpose	60%	3	60%	3	4%	1	4%	1

Cooperative 5 has 64% and 68% liquidity ratio, gaining 2 points, respectively, in 2020 and 2021. Cooperatives 4, 6 and 8 have the ratio of 153%, 97% and 104% respectively in 2020 and 127%, 101% and 93% respectively in 2021, consistently gaining 1 point. Cooperative 3 has a -125% and -385% ratio, gaining zero points, respectively, in 2020 and 2021. The results show that none of the cooperatives under study has met the standard ratio, suggesting their inefficiencies, to some extent, relative to managing their liquidity.

Based on the PISO, the asset efficiency ratio is computed as net surplus divided by total assets, measuring how much net surpluses are being generated given the total assets. A cooperative earns five points if it has an asset efficiency ratio of 20% and above. More, a ratio of 15% to below 20% warrants four points while a ratio of 10% to below 15% warrants three points. Moreover, a ratio of 5% to below 10% warrants two points while a ratio below 5% warrants one point.

Cooperatives 1 to 10, have asset efficiency ratio of 3%, 0%, -2%, 4%, 3%, 4%, 2%, 3%, 4% and 4% respectively in 2020. They have the ratio of 2%, 1%, -1%, 1%, 2%, 5%, 2%, 5%, 4% and 4% respectively in 2021. Given these ratios, they all earn 1 point for 2020. However, in 2021, two cooperatives have improved, earning 2 points while the rest have maintained 1 point. The results show that no cooperatives under study have met the standard ratio, suggesting their inefficiencies, to some extent, relative to managing their asset efficiency.

The cooperatives critically convey a minimal net surplus relative to the total assets. The cooperatives have not generated the net surplus that the resources can optimally produce. To an extent, they have not efficiently and effectively extracted the optimal sales attributed to the constraints the pandemic has created. They could not maximally transact their internal and external businesses because social and commercial affairs and activities were limited.

Citing Derviz and Podpiera (2008), Wakaisuka-Isingoma et al., (2016) [12] further underline that the quality of assets, including equity, measures the organization's financial strength. Hence, those cooperatives having quality assets indicate that they are financially strong. Conversely, those with poor quality assets suggest that they are financially weak. Those performing assets meaningfully contribute to the financial performance. Contrarywise, those non-performing assets indicate insignificance, being detrimental to profitability ratio.

3.1.3. Financial Performance among Cooperatives in Ifugao

Based on the PISO, the profitability ratio measures how much net surplus is extracted from the gross revenue. A cooperative earns five points if it has a 30% and above profitability ratio. Hence, the profitability ratio should be 30% and above to earn five points, indicating a corresponding .30 and more peso net surplus for every peso gross margin. More, a ratio of 25% to below 30% gains four points, while a ratio above 10% to below 25% gains three points. Moreover, a ratio of 5% to below 10% gains two points, while a ratio below 5% merits one point. In case of break-even and net loss, the cooperative earns zero points.

As reflected in Table 3, Cooperatives 1, 6, 8 and 9 have a profitability ratio of 39%, 37%, 30% and 45%, respectively, in 2020. They have a ratio of 36%, 45%, 35% and 41%, respectively, in 2021. They earn 5 points out of 5 points in 2020 and 2021.

Table 3: Financial Performance of Cooperatives in Ifugao

FINANCIAL PERFORMANCE									
		PROFITABILITY RATIO				EARNINGS PER SHARE			
Coop	Type	2020	*Points per PISO*	2021	*Points per PISO*	2020	*Points per PISO*	2021	*Points per PISO*
1	Multi-Purpose	39%	5	36%	5	0.11	0	0.10	0
2	Multi-Purpose	6%	2	10%	3	0.03	0	0.05	0
3	Multi-Purpose	-7%	0	-2%	0	- 0.03	0	- 0.01	0
4	Multi-Purpose	32%	5	13%	3	0.21	0	0.07	0
5	Multi-Purpose	22%	3	17%	2	0.08	0	0.06	0
6	Multi-Purpose	37%	5	45%	5	0.10	0	0.14	0
7	Multi-Purpose	23%	3	25%	4	0.08	0	0.08	0
8	Multi-Purpose	30%	5	35%	5	0.08	0	0.12	0
9	Multi-Purpose	45%	5	41%	5	0.13	0	0.14	0
10	Multi-Purpose	29%	4	33%	5	0.12	0	0.12	0

However, Cooperative 4 has 5 points in 2020, and only 3 points in 2021, with profitability ratio of 32% and 13%, respectively. Cooperative 5 has 3 points in 2020, and only 2 points in 2021, a profitability ratio of 22% and 17% respectively. Such a drop indicates a decrease in their profitability efforts.

On the other hand, Cooperative 2, 7, and 10 show an increased profitability ratio from 2020 to 2021, attributed to their enhanced profitability efforts. In particular, Cooperative 2 has a ratio of 6% and 10%, earning 2 and 3 points, respectively, in 2020 and 2021. Cooperative 7 has a ratio of 23% and 25%, earning 3 and 4 points, respectively, in 2020 and 2021. Cooperative 10 has a ratio of 29% and 33%, earning 4 and 5 points, respectively, in 2020 and 2021. Cooperative 3 sustained net loss -7% and -2%, earning zero points, in 2020 and 2021.

Based on the PISO, the earnings per share ratio is computed as net surplus divided by the paid-up capital, measuring how much net surplus is generated from the using the paid-up capital. A cooperative earns five points if it has earnings per share ratio of two pesos and fifty cents (P2.50) and above. A ratio of P2.00 to below P2.50 awards 4 points while a ratio of P1.50 to below P2.00 awards 3 points. A ratio of P1.00 to below P1.50 awards 2 points while a ratio of below P1.00 to P0.75 awards 1 point. Finally, a ratio of zero or negative awards zero points.

The results show that all the cooperatives have zero points for the earnings per share. Cooperative 1 to 10 have earnings per share of .11, .03, -.03, .21, .08, .10, .08, .08, .13, and .12 respectively in 2020. They have earnings per share of .10, .05, -.01, ,07, .06, .14, .08, .12, .14 and .12 respectively in 2021. Such marginal earnings are attributed to the cooperatives' constraints and challenges that have crippled their business value chain, decreased their business abilities and increased their business costs – all these decreased the revenues while increasing costs and expenses, hence minimal net profit.

3.2. The Effect of Financial Factors on Financial Performance of Cooperatives in Ifugao

3.2.1. Profitability Ratio as the Dependent Variable

Descriptive Statistics

Table 4 shows that there are 20 observations for each of the variables, attributed to the financial data for two years, 2020 and 2021. These observations only considered financial reports for those years when peculiar circumstances affected by the pandemic adversely affected the respondent cooperatives. PR has a mean of .255 and a standard deviation of .1509. DLTA has a mean of .439 and a standard deviation of .1758 while EBTA has a mean of .182 and a standard deviation of .1451. LR has a mean of .402 and standard deviation of 1.1358 while AER has a mean of .025 and a standard deviation of .0193.

Table 4: Descriptive Statistics

Descriptive	Mean	Std. Deviation	N
PR	.255	.1509	20
DLTA	.439	.1758	20
EBTA	.182	.1451	20
LR	.402	1.1358	20
AER	.025	.0193	20

Correlation between Variables

Table 5 displays the correlation between the variables. Specifically, PR positively and significantly correlates with DLTA, LR, and AER at coefficients of .730, .607 and .919 respectively, with p values of .000, .002, and .000 correspondingly. It negatively and significantly correlates with EBTA, at coefficient of -.433 with p value of .028. DLTA negatively and significantly correlates with EBTA at coefficient of -.499, however significantly and positively correlates with LR and AER at coefficients of .613 and .664 respectively. Significances of such correlations figure at p values of .013, .002 and .001 respectively. EBTA positively correlates with LR at coefficient of .082; however, it negatively correlates with AER at coefficient of -.334. However, such correlations are not significant since the p values of .365 and .075 respectively. LR positively and significantly correlates with AER at coefficient of .661 with p value of .001.

Table 5: Correlation between variables

		PR	DLTA	EBTA	LR	AER
Pearson Correlation	PR	1.000	.730	-.433	.607	.919
	DLTA	.730	1.000	-.499	.613	.664
	EBTA	-.433	-.499	1.000	.082	-.334
	LR	.607	.613	.082	1.000	.661
	AER	.919	.664	-.334	.661	1.000
Sig. (1-tailed)	PR	.	.000	.028	.002	.000
	DLTA	.000	.	.013	.002	.001
	EBTA	.028	.013	.	.365	.075

	LR	.002	.002	.365	.	.001
	AER	.000	.001	.075	.001	.

Multiple Linear Regression

This study establishes in Table 6 that since the Durbin-Watson is 3.102, the variables exude no auto-correlation. Since the Variance Inflation Factor (VIF) figures are below 5, the variables exude no multi-collinearity. The variables do not include outliers since they are normally distributed. The model therefore satisfies the regression assumptions.

Further, this study establishes that the model fit is substantially predictive at adjusted R2 of .844. Particularly, the set of independent variables, DLTA, EBTA, LR, and AER, can substantially predict 84.4% of the variation in the dependent variable, PR. The model is significant, at p value of .000. Furthermore, this study establishes that only AER has significant positive effect on PR (β = 6.104, p = .000). DLTA, EBTA and LR have no significant effect on PR with coefficients of .152, -.086, and -.002 respectively and p values of .291, .549 and .945 respectively. The results then formulate the following regression equation.

PR = .052 + .152DLTA + -.086EBTA + -.002LR + 6.104AER

Generally, PR computes at .052 assuming the DLTA, EBTA, LR and AER number zero. It increases by .152 for every percent increase in DLTA, and by 6.104 for every percent increase in AER, assuming all other factors constant. However, it decreases by -.086 for every percent increase in EBTA, and by -.002 for every percent increase in LR, assuming all other factors are constant.

Table 6: Regression Results

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin Watson
1	.936[a]	.876	.844	.0597	3.102
a. Predictors: (Constant), DR, CR, ATR					
b. Dependent Variable: ROA					

Annova[a]					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.379	4	.095	26.612	.000[b]
Residual	.053	15	.004		
Total	.433	19			
a. Dependent Variable: PR					
b. Predictors: (Constant), AER, EBTA, DLTA, LR					

Coefficients[a]								
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
Model	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
Constant	.052	.079		.656	.522	-.116	.219		
DLTA	.152	.139	.117	1.094	.291	-.144	.447	.316	3.165
EBTA	-.086	.140	-.083	-.614	.549	-.384	.213	.454	2.203
LR	-.002	.022	-.011	-.070	.945	-.048	.045	.308	3.249
AER	6.104	1.113	.782	5.485	.000	3.732	8.476	.405	2.468
a. Dependent Variable: PR									

3.2.2. Earnings per share ratio as the Dependent Variable

Descriptive Statistics

Table 7 shows that EPS has a mean of .089 and a standard deviation of .0541.

Table 7: Descriptive Statistics

Descriptive	Mean	Std. Deviation	N
EPS	.089	.0541	20
DLTA	.439	.1758	20
EBTA	.182	.1451	20
LR	.402	1.1358	20
AER	.025	.0193	20

Correlation between Variables

Table 8 displays that EPS positively and significantly correlates with DLTA, LR and AER at coefficients of .562, .685 and .891 respectively, with p values of .005, .000 and .000 correspondingly. It negatively correlates with EBTA at coefficient of -.030. However, such a correlation is not significant with p value of .450.

Table 8: Correlation between variables

		EPS	DLTA	EBTA	LR	AER
Pearson Correlation	EPS	1.000	.562	-.030	.685	.891
	DLTA	.562	1.000	-.499	.613	.664
	EBTA	-.030	-.499	1.000	.082	-.334
	LR	.685	.613	.082	1.000	.661
	AER	.891	.664	-.334	.661	1.000
Sig. (1-tailed)	EPS	.	.005	.450	.000	.000
	DLTA	.005	.	.013	.002	.001
	EBTA	.450	.013	.	.365	.075
	LR	.000	.002	.365	.	.001
	AER	.000	.001	.075	.001	.

Multiple Linear Regression

This study establishes in Table 9 that since the Durbin-Watson is 2.505, the variables exude no auto-correlation. Since the Variance Inflation Factor (VIF) figures are below 5, the variables exude no multi-collinearity. The variables do not include outliers since they are normally distributed. The model therefore satisfies the regression assumptions.

Further, this study establishes that the model fit is substantially predictive at adjusted R2 of .851. Particularly, the set of independent variables, DLTA, EBTA, LR and AER, can substantially predict 85.1% of the variation in the dependent variable, EPS. The model is significant, at p value of .000.

Furthermore, this study establishes that EBTA and AER has significant positive effect on EPS at coefficients of .141 and 2.701 respectively, with p values of .011 and .000 respectively. DLTA and LR have no significant effect on EPS at coefficients of .049 and -.004 and p values of .331 and .621 respectively. The results then formulate the following regression equation.

EPS = -.024 + .049 DLTA + .141EBTA + -.004LR + 2.701AER

Generally, EPS computes at -.024 assuming DLTA, EBTA, LR and AER number zero. It increases by .049, .141 and 2.701 for every percent increase in DLTA, EBTA and AER respectively assuming all other factors constant. It decreases by -.004 for every percent increase in LR assuming all other factors constant.

EBTA having no significant effect on PR indicates that the cooperatives' extent of utilizing external debts to fund total assets does not affect their ability to generate net surplus relative to gross revenue. On the other hand, EBTA having significant effect on EPS implies that the extent of utilizing external debts to fund total assets does affect generating net surplus relative to share capital. Such an outcome designates that an optimal use of external borrowings can result to better and bigger earnings per share capital. An efficient and effective mixture of debt and equity suggests a sound share of liabilities and capitals to the total assets.

Table 9: Regression Results

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin Watson
1	.939[a]	.883	.851	.0209	2.505
a. Predictors: (Constant), AER, EBTA, DLTA, LR					
b. Dependent Variable: EPS					

Annova[a]					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	.049	4	.012	28.170	.000[b]
Residual	.007	15	.000		
Total	.056	19			
c. Dependent Variable: EPS					
d. Predictors: (Constant), AER, EBTA, DLTA, LR					

Coefficients[a]									
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
Model	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
Constant	-.024	.027		-.873	.396	-.083	.035		
DLTA	.049	.048	.158	1.005	.331	-.055	.152	.316	3.165
EBTA	.141	.049	.378	2.878	.011	.037	.245	.454	2.203
LR	-.004	.008	-.081	-.505	.621	-.020	.012	.308	3.249
AER	2.701	.389	.965	6.944	.000	1.872	3.530	.405	2.468
b. Dependent Variable: EPS									

AER having significant effect on PR and on EPS connotes that the cooperatives' efficiency and efficacy in utilizing their resources significantly and positively affects their ability to generate net surpluses relative to gross revenue and to share capital. Every peso of net surplus generated from every peso of total assets affect every peso of net surplus relative to every peso of revenue and of capital. Hence, the better ability to efficiently and effectively generate a net surplus of cooperatives projects their better ability to beneficially and proficiently deliver profits to members.

DLTA having no significant effect on PR and on EPS signifies that the amount of deposit liabilities does not affect the amount net surplus relative to gross revenue and to share capital. LR having no significant effect on PR and on EPS purports that the liquidity level does not affect profitability level. The ability of cooperatives to discharge their liabilities has no significant effect on their ability to generate net surplus.

4 Conclusions and Recommendations

This study aimed to evaluate the financial conditions and performances of cooperatives in Ifugao, Philippines. To achieve this, the study analyzed financial ratios from audited financial reports against the Profitability, Institutional Strength, Structure of Assets, and Operational Strengths (PISO) of the Cooperative Development Authority (CDA) Memorandum Circular Number 2013-15. Additionally, the study explored the impact of financial conditions on the financial profitability of these cooperatives.

The results showed that the cooperatives had a reasonably good deposit liabilities to total assets ratio, external borrowings to total assets ratio, and net surplus to gross revenue ratio. However, they had a relatively poor asset efficiency ratio and earnings per share ratio despite having a satisfactory level of liquidity. The study also found that the cooperatives' asset efficiency ratio significantly affected their profitability ratio and earnings per share ratio. External borrowings to total assets ratio had a significant effect on earnings per share ratio but not on profitability ratio. Deposit liabilities to total assets ratio and liquidity ratio had no significant effect on either profitability ratio or earnings per share ratio.

These findings serve as a diagnostic tool to assess how well the cooperatives are performing financially and to identify which financial factors significantly affect their financial performance. Therefore, the study provides valuable insights that can guide cooperative stakeholders in making informed decisions and taking relevant actions to improve the financial conditions and performances of their cooperatives.

This study suggests that the cooperatives in Ifugao should develop and implement strategies to maintain good financial ratios and improve those ratios that are currently performing poorly. To achieve this, they should establish clear and comprehensive planning, monitoring, and evaluation mechanisms to ensure that all financial resources are efficiently and effectively acquired, applied, and audited to prevent financial abuse and misuse. They should also enhance their operational efficiency and optimize their financial leverage to achieve sound profitability. Additionally, they should continue their efforts to address current and potential issues to achieve sound financial management and optimal financial performance, which will lead to stakeholder satisfaction and cooperative sustainability.

Finally, the study recommends that similar research be conducted in other contexts or within specific cooperative sectors, such as agriculture or aquaculture cooperatives, to expand the understanding of financial conditions and performances within the cooperative sector.

Conflicts of Interest Statement

The author certifies that he has NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject

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