



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)

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ABSTRACT: Cooperatives have an essential role in constructing national economic development, and their financial analysis is needed to evaluate the efficiency of their financial performance. This study aims to evaluate cooperatives' profitability, solvency, liquidity, and activity ratios in the years 2016–2018. The results will be analyzed using trend lines to determine if cooperative financial performance increased or decreased during that time. In this study, researchers employ liquidity ratios, specifically current ratios, as analytical tools. Solvency Ratios consist of Total Debt to Equity Ratio and Total Debt to Assets Ratio. Activity Ratios using ratios—accounts receivable turnover—and Profitability Ratios comprising Economic Profitability, Return on Assets, and Net Profit Margin. The study's findings and the subsequent discussion demonstrate that the results were excellent when the liquidity ratio was calculated using the current ratio from 2016 to 2018. The solvency ratio is excellent based on the Total Debt to Equity Ratio and Total Debt to Assets Ratio. Both the total debt-to-equity ratio and the total debt-to-total assets ratio show annual rises in their trend graphs. Economic profitability, return on assets, and net profit margin are used to calculate the profitability ratio, which yields excellent results. The Receivables Turnover ratio calculates the Activity Ratio, which yields subpar results. This analysis suggests that to raise activity ratios, attention should be paid to asset and operational management solutions that are more effective.

Keywords: Activity ratio, liquidity ratio, profitability ratio, solvency ratio.

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INTRODUCTION

Cooperatives as companies (Cooperative Enterprise) require performance research according to the achievements they achieve periodically, considering that the cooperative business's success will determine the business's level of health. This is intended so that cooperatives carry out business operations, including financing, investment, and savings, in accordance with the cooperative's identity and the principle of prudence so that they can increase trust and provide maximum benefits to members and the surrounding community (Haykal et al., 2021; Kuznetsova1 et al., 2021).

Cooperatives have an essential meaning in constructing national economic development, as stated in Article 33, paragraph (1) of the 1945 Constitution, which reads that the economy is structured as a cooperative venture based on the idea of kinship. Article 33 does not specify the cooperative, but the cooperative is the family's guiding philosophy. The single type of business that most closely aligns with economic democracy and the national ethos of mutual collaboration in Indonesia is the cooperative. Cooperatives operate under several guiding principles, such as open and voluntary membership, democratic management, equitable distribution of remaining business results (SHU) based on each member's level of business services rendered, capitalization limitations, and independence (Yuni et al., 2019).

If implemented correctly, these cooperative management principles are an advantage for cooperatives compared to other business entities. As one of the economic actors, cooperatives are expected to be able to become the pillars of the Indonesian economy. The more cooperative activities develop in Indonesia, the more they are required to be more professional and better in terms of handling and managing cooperatives. To do this, good and relevant accountability is needed for the information used as material for planning, making, and controlling cooperative policies (Haykal et al., 2021; Yuni et al., 2019). The success of cooperatives is their ability to transform themselves as proof of the increasing demands for cultural change (Dewi & Abundanti, 2021; Martínez-Victoria et al., 2018; Ramadhan & Suryaningrum, 2020). The ability to plan, make, and control the decisions that will be made is one of the important factors in the context of increasingly efficient cooperative operations (Pangestu & Hastuti, 2021). The cooperatives' performance can be analyzed using financial ratios, such as liquidity, solvency, profitability, and activity ratios.

Financial management in cooperatives, especially in Tirta Dharma PDAM in Samarinda, is an increasingly important challenge amidst the complex legal and economic demands that continue to develop. Tirta Dharma PDAM's operational success is not limited to effective air traffic control; This also affects business operations as the main foundation for company growth. Therefore, conducting a comprehensive financial performance analysis using solvency, profitability, and activity analysis is important. Although some research examines cooperatives' working conditions and financial performance, most research tends to be general.

Financial performance, which can be assessed by examining the financial data shown in the financial reports, is a description of each economy that a business may get during a specific time period through its operations to create profits profitably. Determining the effectiveness of cooperative management and the extent to which the inter-cooperative business has grown annually are the goals of financial report analysis. Using the Regulation of the Minister of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia Number: 06/Per/MKUKM/V/2006 about Guidelines for Assessment of Achievement Cooperatives, researchers in this study assess the financial performance of cooperatives (Republik Indonesia, 2006).

Table 1. Report on the remaining business results (SHU) of the Tirta Dharma PDAM Cooperative Samarinda City from 2016 to 2018

Year	SHU (Rp)
2016	795.028.328
2017	715.512.642
2018	563.107.542

Source: Tirta Dharma PDAM Cooperative Samarinda City

Based on Table 1, the remaining operating results (SHU) from 2016-2018 have decreased. This research places a lot of emphasis on the activities of PDAM Tirta Dharma in Samarinda. In accordance with Ministerial Regulation number 06/Per/KUKM/V/2006, which regulates cooperative requirements,

there is limited research specifically focused on overcoming this type of work stress at PDAM Tirta Dharma. For this reason, this research will analyze this case by thoroughly examining the working conditions of the PDAM Tirta Dharma cooperative based on previously agreed agreements. Therefore, the research question (RQ) is as follows:

RQ: What is the contribution of financial ratios - liquidity, solvency, profitability, activity - to the financial performance of the Tirta Dharma PDAM Cooperative in Samarinda?

This research data is analyzed based on Ministerial Regulation number 06/Per/KUKM/V/2006 as the basis for financial performance analysis. For a more contextual and relevant perspective on the financial condition of Karyawan Tirta Dharma PDAM, this research provides elements of liquidity, solvency, profitability, and activities within the work regulatory framework. It is hoped that the results of this research can significantly contribute to developing financial strategies that comply with existing regulations and practical guidelines for improving Karyawan Tirta Dharma PDAM in Samarinda. In addition, by using this approach, research is expected to provide more comprehensive and relevant information to support the development of thinking at the managerial level of cooperatives and become a valuable resource for researchers and practitioners in the fields of cooperation and finance.

LITERATURE REVIEW

Liquidity Ratio

The liquidity ratio is a ratio that shows the company's ability to fulfill its obligations or pay short-term money that must be fulfilled immediately. In other words, the liquidity ratio is a ratio that can be used to measure the extent of the company's ability to pay off its short-term obligations that are due soon (Pariyanti & Zein, 2018; Rondós-Casas et al., 2018). According to Hanafi & Halim (2016:75):

The liquidity ratio measures a company's short-term liquidity capability by looking at its current assets relative to its current liabilities (debt, in this case, is the company's liabilities). Even though this ratio does not talk about solvency (long-term liabilities) and is usually relatively unimportant compared to the solvency ratio, a bad liquidity ratio in the long term will also affect the company's solvency.

One of the formulas to calculate the liquidity ratio is the current ratio. According to Fahmi (2018:121), The current ratio is a commonly used measure of short-term solvency, the ability of a company to meet its debt needs when it matures. The current ratio measures a company's ability to meet its short-term needs using its current assets. The elements used to calculate the current ratio are total current assets and liabilities under 06/Per/M/KUKM/V/2006.

Solvency Ratio

A ratio called the solvency or leverage ratio is used to calculate how much of an organization's assets are financed by debt. This indicates the ratio of the company's debt to its assets. A company's capacity to meet all of its obligations—both short- and long-term—is gauged by its solvency ratio. The solvency ratio, according to Kasmir (2016:151):

is a statistic used to gauge how much of an organization's assets are financed by debt. This indicates the ratio of the company's debt to its assets. The solvency ratio is generally understood to be a tool for assessing a company's capacity to meet all of its short- and long-term financial obligations in the event that the business is dissolved or liquidated.

The solvency ratio, capital structure ratio, or leverage ratio is a ratio that describes the company's ability to fulfill all its obligations. This ratio measures the company's ability to meet its short-term obligations. Solvency ratios include the total debt-to-equity ratio and total debt-to-total assets ratio. The debt-to-capital ratio is a ratio used to measure the proportion of debt to capital. This ratio is calculated as the quotient between total money and capital (Pariyanti & Zein, 2018). This ratio compares the amount of funds provided by creditors and the amount of funds originating from the company owner. This ratio determines what portion of each rupiah of capital is used as collateral for debt. The debt-to-assets ratio is used to compare total debt and total assets. This ratio measures how much the company's assets are financed by debt or how much the company's debt affects asset financing. This ratio calculates how far creditors provide funds.

Profitability Ratio

The culmination of various corporate actions and practices is profitability. The ability of a business to turn a profit is gauged by profitability ratios. A firm needs to be lucrative in order to thrive. Thus, this is a component that needs to be given careful consideration. It will be difficult for businesses to draw in outside money if they are not making a profit. According to [Kasmir \(2016:196\)](#):

The profitability ratio is a metric used to evaluate a business's potential for profit. This ratio also indicates how well a company's management is doing its job. The earnings from sales and investment income demonstrate this. The key is that the ratio's application demonstrates the business's efficiency.

The amount that equity contributes to net profit is displayed by the Return on Equity ratio. The amount of net profit produced from each rupiah of funds invested in equity is indicated by this ratio. The Return on Asset ratio is a useful tool for determining how likely an investment is to yield expected returns ([Mardhiyah & Saifuddin, 2022](#)). A ratio called net profit margin is used to calculate the proportion of net profit to net sales. The amount of a company's potential to make net profit at a specific sales level is determined by its profit margin.

Activity Ratio

The activity ratio measures the efficiency level regarding the benefits of the company's resources or assesses its ability to carry out its daily activities. According to [Kasmir \(2016:206\)](#):

The activity ratio measures the efficiency level of utilizing the company's resources or assesses its ability to carry out daily activities. This ratio is also known as the asset utilization ratio, which is used to assess the company's effectiveness and the intensity of the company's assets in generating sales.

A ratio called receivables turnover calculates how long it takes to collect receivables over a given period or how frequently the money invested in these receivables gets repaid. Naturally, this situation is better for the business since the greater ratio indicates less working capital is being invested in receivables. Understanding the effectiveness and age of receivables collection is possible using the receivables turnover ratio.

Previous Research

[Warda et al. \(2017\)](#), conducted research with the title Analysis of Cooperative Financial Performance in Rejosari Multi-Enterprise Cooperatives (KSU), Rejosari Village, Tenayan Raya District, Pekanbaru City. The results of their research proved that the financial performance of the Rejosari Multipurpose Cooperative (KSU) in Pekanbaru City from 2011 to 2015 has shown good performance because several financial ratios continue to increase year by year. Meanwhile, Research by [Suratiningsih \(2019\)](#) proved that the financial performance of cooperatives assessed using the time series method shows the progress of almost all ratios is good. Only 2 of the 14 ratios analyzed are not good, namely Long-Term Debt Ratio and Gross Profit Margin. The same result was also found in the study of [Wulandari \(2018\)](#) titled Financial Performance Analysis of Mitra Sejahtera Abadi Pakem Sleman Yogyakarta Savings and Loans Cooperative (KSP). She found that the financial performance of the Cooperative, as assessed by the current ratio and return on capital, was analyzed in poor condition. The ratio of total debt to total assets, Net profit margin, and return on assets are analyzed in good condition.

RESEARCH METHOD

Research Focus

This research was conducted at the Tirta Dharma PDAM Cooperative in Samarinda City with an emphasis on financial reports for three years, namely 2016 to 2018. This research focused on financial performance measured by liquidity, solvency, profitability, and activity ratios.

Research Framework

Based on the background of the problem, literature review, and previous research, Figure 1 shows the research framework.

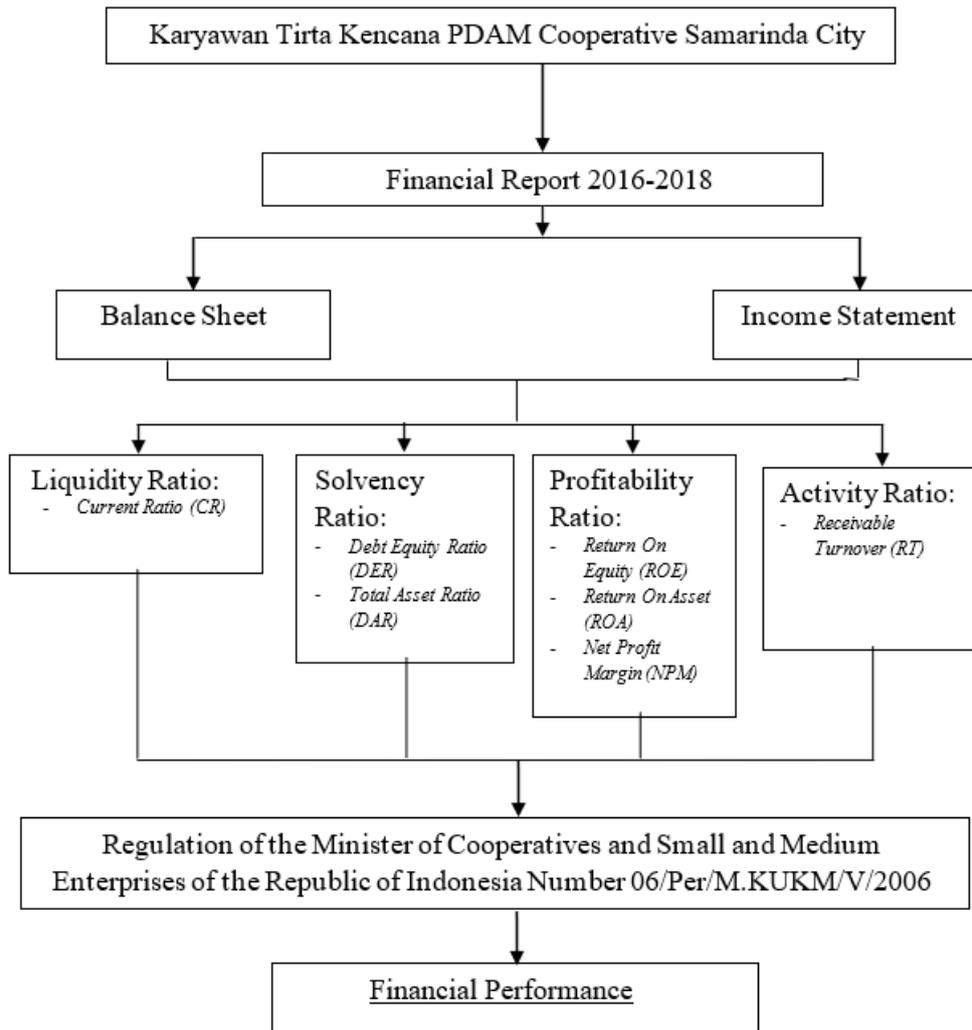


Figure 1. Research Framework

Type of Research and Data Collection

This research is descriptive and quantitative. The data used is empirical data in the form of facts or figures calculated based on the financial reports of the Tirta Dharma PDAM Cooperative, Samarinda City, by describing and explaining the financial performance of the Tirta Dharma PDAM Cooperative, Samarinda City.

Data collection was carried out using interview methods and secondary financial report data. In-depth interviews were conducted with the leadership of the Tirta Dharma PDAM Cooperative Samarinda City to get an overview of financial performance for the 2016 to 2018 period.

Operational Definition

Table 2 shows the operational definition and the formula for the financial ratios used in this study.

Data Analysis

The Republic of Indonesia's Number.06/Per/KUKM/V/2006 Regulation of the Minister of Cooperatives and Small and Medium Enterprises, dated May 1, 2006, on Guidelines for Assessment of Achievement Cooperatives (Cooperative Award), served as the basis for the data analysis. The assessment standards for every financial ratio are displayed in Table 3-6.

Table 2. Operational Definition and Financial Ratios

Financial Ratios	Operational Definition	Formula
<u>Liquidity Ratio:</u> Current Ratio (CR)	A ratio that compares current assets with current liabilities. The higher the current ratio, the stronger the cooperative's financial position	$CR = \frac{\text{Current Assets}}{\text{Current Liabilities}} \times 100\%$ (Kasmir, 2016)
<u>Solvency Ratio:</u> Debt to Equity Ratio (DER)	Comparison between the amount of debt and own capital. This ratio measures the cooperative's ability to fulfill all its obligations using its capital. The lower the debt-to-equity ratio, the better the company's or cooperative's fundamental condition.	$DER = \frac{\text{Debt}}{\text{Equity}} \times 100\%$ (Kasmir, 2016)
Debt to Total Assets ratio (DAR)	Measures how much the company's assets are financed by debt or how much the company's debt influences asset financing. The smaller the Debt to Total Asset Ratio, the less debt the cooperative uses to obtain assets.	$DAR = \frac{\text{Debt}}{\text{Total Assets}} \times 100\%$ (Kasmir, 2016)
<u>Profitability Ratio:</u> Return on Assets (ROA)	Measures the company's overall ability to generate profits with the total amount of assets available within the company. The higher the ROA ratio, the higher the net profit generated from each rupiah of funds embedded in total assets.	$ROA = \frac{\text{SHU}}{\text{Total Assets}} \times 100\%$ (Kasmir, 2016)
Return on Equity (ROE)	The measurement of the income available to cooperative owners for the capital they invest. The higher the ROE ratio, the higher the reputation of the company or cooperative in the eyes of capital market players. Cooperatives have proven to be able to make the best use of capital.	$ROE = \frac{\text{SHU}}{\text{Equity}} \times 100\%$ (Kasmir, 2016)
Net Profit Margin (NPM)	the cooperative's ability to generate net profits from its net sales. The greater the NPM, the more productive the cooperative's performance will be, thereby increasing investor confidence in investing capital in the company or cooperative.	$NPM = \frac{\text{SHU}}{\text{Income}} \times 100\%$ (Kasmir, 2016)
<u>Activity Ratio:</u> Receivable Turnover (RTO)	Shows how many times a company collects its receivables in a certain period. The faster the receivables turnover, the more effective the cooperative will be in processing its receivables.	$RTO = \frac{\text{Income}}{\text{Receivable}} \times 1 \text{ time}$ (Kasmir, 2016)

Source: As stated in the Table

Table 3. Liquidity Ratio Valuation

CR	Criteria
200% - 250%	Very good
175% - <200%	Good
150% - <175%	Good enough
125% - <150%	Less good
125%	Not good

Source: Peraturan Menteri Nomor.06/Per/KUKM/V/2006

Table 4. Solvency Ratio Valuation

DER	DAR	Criteria
<70%	<40%	Very good
70% - <100%	40% - <50%	Good
100% - <150%	50% - <60%	Good enough
150% - <200%	60% - <80%	Less good
200%	80%	Not good

Source: Peraturan Menteri Nomor.06/Per/KUKM/V/2006

Table 5. Profitability Ratio Valuation

ROA	ROE	NPM	Criteria
10%	≥21%	15%	Very good
7% - <10%	15% - <21%	10% - <15%	Good
3% - <7%	9% - <15%	5% - <10%	Good enough
1% - <3%	3% - <9%	1% - <5%	Less good
1%	<3%	1%	Not good

Source: Peraturan Menteri Nomor.06/Per/KUKM/V/2006

Table 6. Activity Ratio Valuation

RTO	Criteria
≥12 times	Very good
10 times – <12 times	Good
8 times - <10 times	Good enough
6 times - <8 times	Less good
<6 times	Not good

Source: Peraturan Menteri Nomor.06/Per/KUKM/V/2006

Based on Table 3-6, financial ratios are analyzed to determine whether the cooperative has good financial performance so that it can maintain business continuity.

RESULTS AND DISCUSSION

Overview of Tirta Dharma PDAM Cooperative in Samarinda City

Tirta Dharma PDAM Cooperative Samarinda City is located at Jalan Tirta Kencana No. 1. Samarinda City is a cooperative whose members are civil servants as a joint venture based on the principle of kinship to improve the welfare of members, which includes social, economic, and cultural aspects. The members of this cooperative are employees of the cooperative and employees of PDAM Tirta Dharma itself. Cooperative Tirta Dharma PDAM Samarinda City is a cooperative that was founded in 1982. The initial members of the cooperative were 50 people; to date, the members have reached 600 people. The business sector in this cooperative is a cooperative that operates in various business sectors, including savings and loans, motor vehicle rental, health insurance, necessities, and others. The cooperative's vision is to provide excellent service to members. The cooperative's mission is, first, to improve the welfare of members. Second, increase human resources, and third, develop a transparent culture.

Figure 2 shows the organizational structure of the Tirta Dharma PDAM Cooperative in Samarinda City. Cooperative organizations have two separate organizations: an operational organization and a supervisory organization. A summary of the results of the interview with the head of operations and supervision regarding the separation is as follows:

“Organizations commonly separate operations and supervision to achieve efficiency, transparency, and better risk management. Separating responsibilities makes it more difficult for individuals or groups to manipulate or abuse operational processes without being detected, increasing transparency and accountability... while also reducing risk...”

Organisasi memisahkan operasi dan pengawasan untuk mencapai efisiensi, transparansi, dan manajemen risiko yang lebih baik. Pemisahan tanggung jawab mempersulit individu atau kelompok untuk memanipulasi atau menyalahgunakan proses operasional tanpa terdeteksi, sehingga meningkatkan transparansi dan akuntabilitas... sekaligus mengurangi risiko.(in Bahasa)

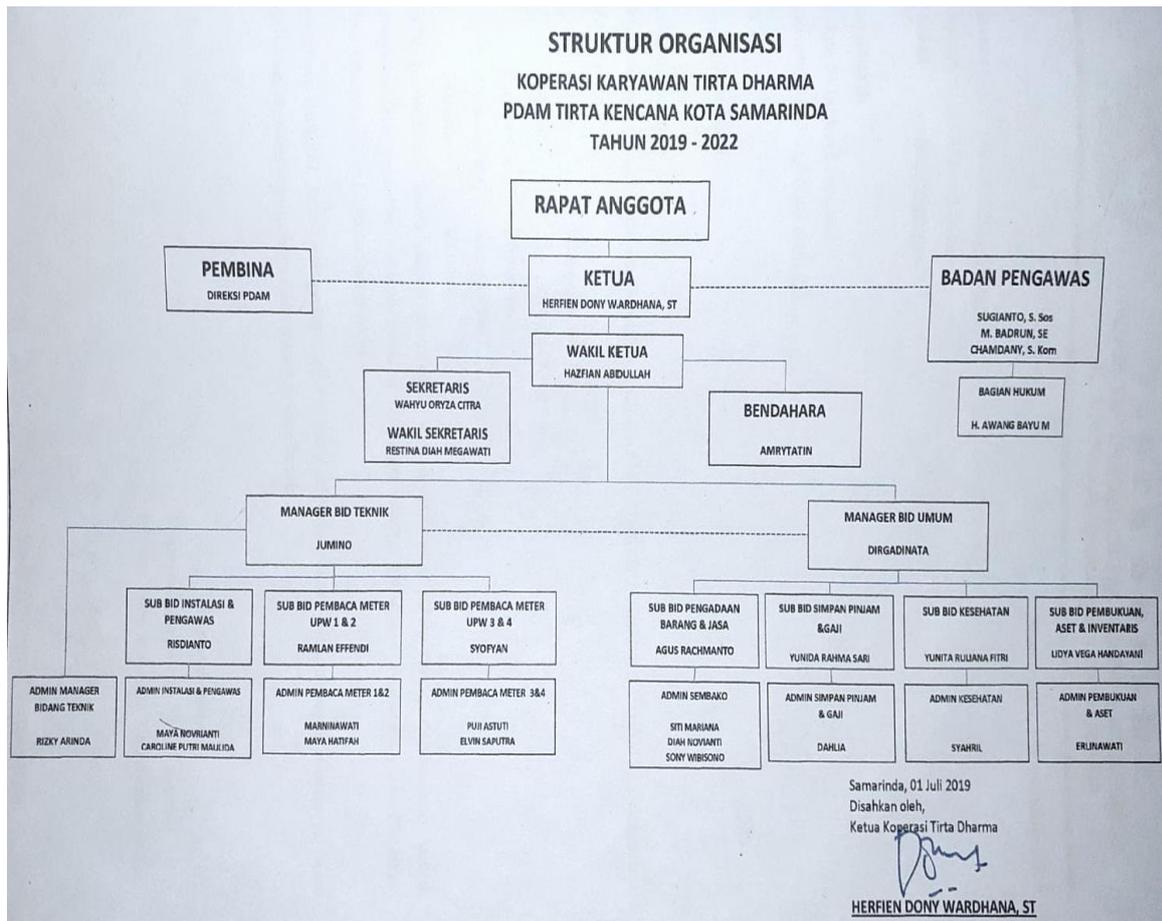


Figure 2. Organizational Structure of the Tirta Dharma PDAM Cooperative Samarinda City
Source: Tirta Dharma PDAM Cooperative Samarinda City

Financial Ratio Analysis

The data analyzed in this chapter is the financial report data of the Tirta Dharma PDAM Cooperative of Samarinda City, which consists of the Balance Sheet and Profit and Loss. The analysis is carried out to answer the problems previously stated, so a financial ratio analysis will be carried out consisting of liquidity ratios, solvency ratios, profitability ratios and activity ratios in the profit and loss report and balance sheet (Dewi & Abundanti, 2021).

Liquidity Ratio Analysis

Liquidity ratio analysis is carried out by calculating the current ratio. Table 7 shows the results of the Current Ratio analysis of the Tirta Dharma PDAM Cooperative, Samarinda City, 2016-2018. The current ratio in 2016 was 47,251%; in 2017, it decreased by 42,599% to 2,326%; in 2018, it decreased again by 127% to 2,199%. The decrease in the current ratio in 2017 and 2018 was due to the increase in current assets and liabilities. The increase in current assets is due to an increase yearly in each item in current assets. This shows that cooperatives have increased their ability to guarantee cooperative short-term debt payments. The increase in current debt is due to an increase every year in the balance sheet report item, namely counter-deposit deposits.

Based on the results of research on the financial performance of the Tirta Dharma PDAM Cooperative in Samarinda City for the 2016-2018 period, the liquidity ratio, namely in terms of the current ratio, is in very good criteria, the average value of the current ratio is 17,259%, which means that the Tirta Dharma Cooperative PDAM is considered capable of paying its short-term obligations. The results of this research align with previous research conducted by Wulandari (2018) that the current ratio cannot be used to predict changes in future profits because the function of the current ratio is to measure the company's ability to pay debts.

Table 7. Calculation of the Current Ratio of the Tirta Dharma PDAM Cooperative Samarinda City for 2016, 2017, and 2018 (in rupiah)

Tahun	Aktiva Lancar	Hutang Lancar	Current Ratio	Keterangan	Interval	Kriteria	Keterangan
				Naik / Turun			
(1)	(2)	(3)	(4) = (2):(3)	(5)	(6)	(7)	(8)
2016	1.838.798.827	3.891.548	47.251%	-	200%-250%	Sangat Baik	Sehat
2017	2.108.205.057	90.619.921	2,326%	(44,925%)	200%-250%	Sangat Baik	Sehat
2018	2.492.500.613	113.300.931	2.199%	(127%)	200%-250%	Sangat Baik	Sehat

Note: Tahun = year, Aktiva Lancar = Current Assets, Hutang Lancar = Current Liabilities, Naik/Turun = Increase/decrease, Sangat baik = Very good, Sehat = healthy

Source: Data processed (2022)

The current ratio value from 2016 to 2018 is included in the interval 200–250% including the criteria, as per the Regulation of the Minister of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia Number 06/Per/M.KUKM/V/2006 concerning Guidelines for Assessment of Achievement Cooperatives/Award Cooperatives. Excellent. In 2018, it was 2,199%, meaning that current assets worth Rp 2,199 guaranteed a return for every Rp 1 of current debt. Thus, the financial performance of the Tirta Dharma PDAM Cooperative in Samarinda City from 2016 to 2018 based on current ratio analysis above 150% as measured by Ministerial Regulation and KUKM Number: 06/Per/M.KUKM/V/2006 shows the cooperative's financial condition is healthy. This result does not support research that found the current ratio is not good (Pariyanti & Zein, 2018; Suratiningsih, 2019). It was found that the liquidity ratio of the BMT Separan Savings and Loans and Sharia Financing Cooperative in Pasir Sakti District, East Lampung is still below the established standards or is not liquid enough (Pariyanti & Zein, 2018). The results of this research support research conducted by (Mardiyah & Saifuddin, 2022; Warda et al., 2017) which proves that the liquidity ratio at KPRI WARPEKA Gresik falls within healthy criteria.

Solvency Ratio Analysis

The total debt-to-equity ratio (DER) and the total debt-to-total-assets ratio (DAR) are computed in order to do a solvency ratio study. According to Table 8, the total debt-to-equity ratio (DER) was 0.45% in 2016. It climbed to 9.35% in 2017 by 8.90%, and then to 10.30% in 2017 by 0.95% more. The rise in the ratio of total debt to own capital was the cause of this increase in the total debt-to-equity ratio. In other words, the total debt exceeded the capital. This demonstrates that the capacity of the capital now in place to ensure cooperative debt payments has diminished. The value of the Total Debt to Equity Ratio from 2016 to 2018 is in the interval <70%, including very good criteria, according to the Regulation of the Minister of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia Number 06/Per/M.KUKM/V/2006 concerning Guidelines for Assessment of Achievement Cooperatives/Award Cooperatives.

Financial performance in terms of solvency, namely Total Debt to Capital (Total Debt to Equity Ratio) is in good condition with an average value of Total Debt to Capital of 0.18%. This shows that own capital has the ability to guarantee Cooperative debt payments. Results of the analysis of the total debt to equity ratio of the Tirta Dharma PDAM Cooperative, Samarinda City for 2016, 2017 and 2018. In 2018 the total debt to equity ratio was 10.30%, which means that per IDR 1 total debt was guaranteed by its own capital of IDR 0.10. Thus, the financial performance of the Tirta Dharma PDAM Cooperative in Samarinda City from 2016 to 2018 based on Debt-to-Equity Ratio analysis or ratio intervals below 150% as measured by Ministerial Regulation and KUKM Number: 06/Per/M.KUKM/V/2006 shows the condition healthy finances. This finding did not support the results from Gulo et al. (2022) that studied at Koperasi Konsumen Tokosa Sahabat Sehati Kota Gunungsitoli. They found that the level of awareness of members in actively paying off mandatory deposits and not being smooth in paying credit.

Table 8. Calculation of the DER of the Tirta Dharma PDAM Cooperative Samarinda City for 2016, 2017, and 2018 (in rupiah)

Tahun	Total Hutang	Modal Sendiri	TDER	Keterangan	Interval	Kriteria	Keterangan
				Naik / Turun			
(1)	(2)	(3)	(4) = (2):(3)	(5)	(6)	(7)	(8)
2016	3.891.548	859.529.500	0.45%	-	<70%	Sangat Baik	Sehat
2017	90.619.921	968.601.500	9.35%	8.90%	<70%	Sangat Baik	Sehat
2018	113.300.931	1.099.222.500	10.30%	0.95%	<70%	Sangat Baik	Sehat

Note: Tahun = year, Total Hutang = Total Debt, Modal Sendiri = Equity, Naik/Turun = Increase/decrease, Sangat baik = Very good, Sehat = healthy
Source: Data processed (2022)

The analytical results of the Tirta Dharma PDAM Cooperative, Samarinda City, from 2016 to 2018 are displayed in Table 9. The Total Debt to Total Assets Ratio value is included in the ratio interval < 40%, including very good criteria, according to the Regulation of the Minister of State for Cooperatives and Small and Medium Enterprises of the Republic of Indonesia Number 06/Per/M.KUKM/V/2006 concerning Guidelines for Assessment of Achievement Cooperatives/Award Cooperatives. The ratio of total debt to total assets was 0.13% in 2016 and climbed to 2.73% in 2017 due to a 2.60% growth. It rose by 0.42% to 3.15% in 2018.

Table 9. Calculation of the DAR of the Tirta Dharma PDAM Cooperative Samarinda City for 2016, 2017, and 2018 (in rupiah)

Tahun	Total Hutang	Total Aset	TDAR	Keterangan	Interval	Kriteria	Keterangan
				Naik / Turun			
(1)	(2)	(3)	(4) = (2):(3)	(5)	(6)	(7)	(8)
2016	3.891.548	2.878.376.487	0.13%	-	<40%	Sangat Baik	Sehat
2017	90.619.921	3.316.845.099	2.73%	2.60%	<40%	Sangat Baik	Sehat
2018	113.300.931	3.595.442.742	3.15%	0.42%	<40%	Sangat Baik	Sehat

Note: Tahun = year, Total Hutang = Total Debt, Naik/Turun = Increase/decrease, Sangat baik = Very good, Sehat = healthy
Source: Data processed (2022)

The ratio of total debt to total assets, which has an average value of 0.0041%, is likewise in excellent health. both in 2016 and 2017. The ratio of total debt to total assets in 2016 was 0.13%, meaning that a debt of IDR 0,0013 could be guaranteed for every IDR 1 asset. The ratio of total debt to total assets was 2.73% in 2017, meaning that a debt of Rp 0.27 could be guaranteed for every Rp 1 asset. The ratio of total debt to total assets was 3.15% in 2018, meaning that a debt of Rp. 0.31 could be guaranteed for every Rp. 1 asset. This is so that the overall debt can appropriately balance the value of all assets. In other words, because it can guarantee both its short- and long-term debt, the Tirta Dharma PDAM Cooperative of Samarinda City has promising futures. Thus, the financial performance of the Tirta Dharma PDAM Cooperative in Samarinda City from 2016 to 2018 based on the Debt to Total Asset Ratio analysis or ratio interval below 60% as measured by Ministerial Regulation and KUKM Number: 06/Per/M.KUKM/V/2006 shows healthy financial condition. The results of this research support research conducted by [Mardiyah & Saifuddin \(2022\)](#) and [Warda et al. \(2017\)](#) which proved that the solvency ratio at KPRI WARPEKA Gresik falls within healthy criteria ([Mardiyah & Saifuddin, 2022](#)).

However, the results of this study do not support research conducted by [Pariyanti & Zein \(2018\)](#) and [Wulandari \(2018\)](#), which proves that the solvency ratio of cooperatives in three years can be declared not yet solvable in meeting its long-term debt.

Profitability Ratio Analysis

Profitability ratio analysis is carried out by calculating return on equity (ROE), return on assets (ROA), and net profit margin (NPM). Table 10 shows that Return on Equity (ROE) in 2016 was 92.50%, in 2017 it decreased by 18.63% to 73.87% and again decreased by 22.64% to 51.22%.

Table 10. Calculation of the ROE of the Tirta Dharma PDAM Cooperative Samarinda City for 2016, 2017, and 2018 (in rupiah)

Tahun	SHU	Modal Sendiri	ROE	Keterangan	Interval	Kriteria	Keterangan
				Naik / Turun			
(1)	(2)	(3)	(4) = (2):(3)	(5)	(6)	(7)	(8)
2016	795.028.328	859.529.500	92.50%	-	=21%	Sangat Baik	Sehat
2017	715.512.642	968.601.500	73.87%	(18.63 %)	=21%	Sangat Baik	Sehat
2018	563.107.542	1.099.222.500	51.22%	(22.64 %)	=21%	Sangat Baik	Sehat

Note: Tahun = year, SHU = Return, Modal Sendiri = Equity, Naik/Turun = Increase/decrease, Sangat baik = Very good, Sehat = healthy
 Source: Data processed (2022)

Financial performance in terms of profitability, namely Return on Equity, is in very good criteria with an average Return on Equity value of 81.06%. Results of the Return on Equity analysis of the Tirta Dharma PDAM Cooperative, Samarinda City, 2016-2018. Based on the Regulation of the Minister of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia Number 06/Per/M.KUKM/V/2006 concerning Guidelines for Assessment of Achievement Cooperatives/Very Good Cooperatives. In 2018 Return on Equity was 51.22%, which means that per IDR 1 the remaining business results were guaranteed by own capital of IDR 0.5, which is very good. In 2018 Return On Equity was 51.22%, which means that per IDR 1 the remaining business results were guaranteed by own capital of IDR 0.51. The profits generated come from basic, mandatory and special savings as well as participation, donations, etc. Thus, the financial performance of the Tirta Dharma PDAM Cooperative in Samarinda City from 2016 to 2018 based on Return on Equity analysis or ratio intervals above 9% as measured by Ministerial Regulation and KUKM Number: 06/Per/M.KUKM/V/2006 shows the condition healthy finances.

Table 11 shows that the Return on Assets (ROA) in 2016 was 2,762%; in 2017, it decreased by 6.05% to 2,157% and again decreased by 5.91% to 1,566%. This decrease in return on assets occurred because SHU decreased while total assets increased.

With an average Return on Assets value of 12.94%, the Return on Assets is in extremely good shape. Results of the analysis of Return on Assets of the Tirta Dharma PDAM Cooperative, Samarinda City for 2016-2018. The Return on Assets value is included in the ratio interval $\geq 10\%$, including very good criteria, according to the Regulation of the Minister of State for Cooperatives and Small and Medium Enterprises of the Republic of Indonesia Number 06/Per/M.KUKM/V/2006 concerning Guidelines for Assessment of Achievement Cooperatives/Award Cooperatives. With a Return on Assets of 1,566% in 2018, total assets may generate IDR 1,566 in leftover business profits for every IDR 1. This is because total assets can be used well to generate profits. The profits generated can be managed by cooperative management so that they can take active action to expand/enlarge the existing business scope. Thus, the financial performance of the Tirta Dharma PDAM Cooperative in Samarinda City from 2016 to 2018 based on Return on Assets analysis or ratio intervals above 3% as measured by Ministerial Regulation and KUKM Number: 06/Per/M.KUKM/V/2006 shows the condition healthy finances.

Table 11. Calculation of the ROA of the Tirta Dharma PDAM Cooperative Samarinda City for 2016, 2017, and 2018 (in rupiah)

Tahun	SHU	Total Aset	ROA	Keterangan	Interval	Kriteria	Keterangan
				Naik / Turun			
(1)	(2)	(3)	(4) = (2):(3)	5)	(6)	(7)	(8)
2016	795.028.328	2.878.376.487	27.62%	-	≥10%	Sangat Baik	Sehat
2017	715.512.642	3.316.845.099	21.57%	-6.05%	≥10%	Sangat Baik	Sehat
2018	563.107.542	3.595.489.742	15.66%	-5.91%	≥10%	Sangat Baik	Sehat

Note: Tahun = year, SHU = Return, Naik/Turun = Increase/decrease, Sangat baik = Very good, Sehat = healthy

Source: Data processed (2022)

Table 12 shows that the Net Profit Margin (NPM) in 2016 was 5,620%; in 2017, it decreased by 0.62% to 5,198% and again decreased by 4.79% to 4,719%. This decrease in NPM occurred because the comparison of the increase between SHU and income showed that the increase in income was greater than that of SHU.

Table 12. Calculation of the NPM of the Tirta Dharma PDAM Cooperative Samarinda City for 2016, 2017, and 2018 (in rupiah)

Tahun	SHU	Pendapatan	NPM	Keterangan	Interval	Kriteria	Keterangan
				Naik / Turun			
(1)	(2)	(3)	(4) = (2):(3)	5)	(6)	(7)	(8)
2016	795.028.328	1.511.483.775	52.59%	-	≥15%	Sangat Baik	Sehat
2017	715.512.642	1.376.426.514	51.98%	(0.62%)	≥15%	Sangat Baik	Sehat
2018	563.107.542	1.193.147.371	47.19%	(4.79%)	≥15%	Sangat Baik	Sehat

Note: Tahun = year, SHU = Return, Pendapatan = Income, Naik/Turun = Increase/decrease, Sangat baik = Very good, Sehat = healthy

Source: Data processed (2022)

Regarding the findings of the Tirta Dharma PDAM Cooperative's Net Profit Margin analysis for the years 2016–2018, Samarinda City the Net Profit Margin value is included in the ratio interval ≥15%, including very good criteria, as per the Regulation of the Minister of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia Number 06/Per/M.KUKM/V/2006 concerning Guidelines for Assessment of Achievement Cooperatives/Award Cooperatives. With a net profit margin of 4.720% in 2018, each IDR 1 of total assets might contribute to the remaining IDR 4,720 in company profits. This demonstrates the cooperative's ability to make money, which affects the cooperative's capacity to produce SHU. Interest plays a significant role in generating more income, which accounts for this larger gain in income. The income cooperative receives this interest income from loans made by its members.

Therefore, the financial performance of the Tirta Dharma PDAM Cooperative in Samarinda City from 2016 to 2018 based on Net Profit Margin analysis or ratio intervals above 5% as measured by Ministerial Regulation and KUKM Number: 06/Per/M.KUKM/V/2006 shows a good financial condition Healthy. The results of this research support research conducted by [Mardhiyah & Saifuddin \(2022\)](#) and [Warda et al. \(2017\)](#), which proved that the profitability ratio falls within healthy criteria. However, the results of this study do not support research conducted by [Gulo et al. \(2022\)](#), which proves that the profitability ratio of cooperatives in three years can be declared not yet profitable in meeting its operational cost.

Activity Ratio Analysis

Activity ratio analysis is carried out by calculating Receivable Turnover (RTO). Table 13 shows that the Receivable Turnover (RTO) in 2016 was 3.07 times; in 2017, it decreased by 1.17 times to 1.90 times and again decreased by 0.48 times to 1.42 times.

Table 13. Calculation of the RTO of the Tirta Dharma PDAM Cooperative Samarinda City for 2016, 2017, and 2018 (in rupiah)

Tahun	Pendapatan	1/2 Saldo Piutang	Perputaran Piutang	Keterangan	Interval	Kriteria	Keterangan
				Naik / Turun			
(1)	(2)	(3)	(4) = (2):(3)	(5)	(6)	(7)	(8)
2016	1.511.483.775	492.882.228	3.07 kali	-	<6 kali	Tidak Baik	Tidak Sehat
2017	1.376.426.514	722.422.987	1.90 kali	< 1.17 kali	<6 kali	Tidak Baik	Tidak Sehat
2018	1.193.147.371	838.318.360	1.42 kali	< 0.48 kali	<6 kali	Tidak Baik	Tidak Sehat

Note: Tahun = year, Pendapatan = Income, Saldo Piutang = Receivable, kali = times, Naik/Turun = Increase/decrease, Tidak baik = Not good, Tidak Sehat = Not healthy

Source: Data processed (2022)

Financial performance at the Tirta Dharma PDAM Cooperative in Samarinda City in 2016-2018 in terms of activity ratio, namely seen from the receivable turnover ratio (receivable turnover) is in a bad condition where receivable turnover over the last three years has been below 6 times. Based on Regulation of the Minister of State for Cooperatives and Small and Medium Enterprises of the Republic of Indonesia Number 06/Per/M.KUKM/V/2006 concerning Guidelines for Assessment of Achievement Cooperatives/Award Cooperatives, Receivable Turnover value, the following are the results of the Receivable Turnover analysis of Tirta Dharma PDAM Cooperative Samarinda City 2016-2018. It is not a good criterion to enter the ratio interval less than six times. In 2018 Receivable Turnover was 1.42 times, which means that per Rp. 1 for ½ of the receivable balance can contribute to creating income of Rp. 1.42 rupiah.

This is caused by the large number of sales on credit and taking receivables for too long, the high and low turnover of receivables has a direct effect on the size of capital invested in receivables. It is said to be bad because the average value of receivable turnover is 2.13 times. So, seen from the receivable turnover of the Tirta Dharma PDAM Cooperative, Samarinda City is in a bad condition caused by factors that use assets that are less than optimal and also problems with cooperative management. Thus, the financial performance of the Tirta Dharma PDAM Cooperative in Samarinda City from 2016 to 2018 based on the Receivables Turnover analysis or ratio interval below 8 times as measured by Ministerial Regulation and KUKM Number: 06/Per/M.KUKM/V/2006 shows a good financial condition not healthy. This finding is aligned with other study that found the savings and loan activities by cooperative members were less than smooth, resulting in poor receivable turnover performance ([Kontogeorgos et al., 2018](#); [Rahman & Pratikto, 2022](#)). According to [Kontogeorgos et al. \(2018\)](#), the results of their research proved the existence of management inefficiencies, especially in conventional cooperatives. Therefore, it is necessary to innovate to increase cooperative activities.

CONCLUSION

Several conclusions that are crucial for understanding the cooperative's financial management were drawn from a thorough financial performance study of liquidity, solvency, profitability, and activities in cooperatives. In terms of liquidity, cooperatives display a level of ability to satisfy their short-term obligations well, giving stability in everyday operations. The cooperative's sound capital structure, which offers a strong basis for long-term growth, is indicated by the solvency ratio. A cooperative's capacity to make money from its operations is demonstrated by its high profitability, which is an indicator of its long-term viability and expansion.

Activity ratios that indicate a deterioration, however, require extra care. This can point to possible inefficiencies in cooperative operations and asset management. Reduced asset utilization efficiency and higher operational expenses could be the results of this deterioration, which could be detrimental to long-term profitability.

This analysis suggests that in order to raise activity ratios, attention should be paid to asset and operational management solutions that are more effective. In order to reverse this trend and guarantee the cooperatives' financial viability, measures should be taken to maximize asset utilization efficiency and streamline operational procedures. It is important to recognize the limits of financial performance analysis in this study. The accuracy and availability of the data used might be restricted. Furthermore, this study may not fully account for the major impact that market conditions and other external factors may have. It is advised that the variables that could lead to a decline in the activity ratio be thoroughly examined in future studies. To find any operational inefficiencies and offer more detailed strategic advice, more research can be done. Furthermore, by taking into account outside variables that may have an impact on cooperatives' overall financial performance, study can be furthered.

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Abbreviations

Perusahaan Daerah Air Minum (PDAM), current ratio (CR), debt-to-equity ratio (DER), debt-to-total assets ratio (DAR), return on equity (ROE), return on assets (ROA), net profit margin (NPM), receivable turnover (RTO).

Author's Contribution

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Availability of Data and Materials

Data can be requested by email to the corresponding author.

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