

# HORIZONTAL PROFIT AND LOSS ANALYSIS AT PDAM SURYA SEMBADA SURABAYA

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**Abstract:** Financial reports can be a medium for making decisions by management in an effort to develop company performance. In connection with the background that has been stated, the problem that will be discussed in this study is how to do a horizontal analysis on the income statement of PDAM Surya Sembada Surabaya. The objective of this study is to measure the financial performance obtained from the income statement at PT PDAM Surya Sembada Surabaya. The descriptive method was utilized in this research, which serves as an object of research based on the data provided systematically during the examination. The result of this study is according to the data above, it can be viewed in the amount of operating income which decreased by 2.45% or 21,100,962 in 2019. The decrease was caused by water revenues of 2.16% or 16,823,356 in 2019, and non-water revenues experienced an increase of 5.17% or 4,277,606 in 2019. Then the total operating expenses decreased by 2.33% or 13,128,794 in 2019. This decrease was due to operating expenses which decreased by 3.12% or 13,468,502 in 2019 and depreciation and amortization expenses experienced a decrease of 10.11% or 8,236,114 in 2019. The conclusions is horizontal financial statement analysis can also compare three or more financial reports. Where data from earlier periods can be used as a basis for comparison for all previous dates or periods. Horizontal analysis can be done in absolute or percentage form.

**Keywords:** Income Statement, Financial Statements, Quantitative Descriptive

## 1. Introduction

A company can be said to have strong competitiveness if the company is able to get an economy above the average profit of its competitors or other industries. If the company performs activities better than its competitors, starting from planning, managing, and marketing for products and so on. To carry out these activities, the company must have adequate resources and cannot be imitated by other companies, therefore the company must know the condition of performance, namely by identifying financial statement data inside the company. Financial statement is the primary resource for financial decision-making.

When making decisions, financial statements are used as a guide, internal and external stakeholders are involved. In order to make decisions regarding the company's future prospects, a review of the financial accounts is required. An important source of information for investors is published financial reports. Companies need the right decisions for solving problems that exist within the company, making plans to solve problems within the company, the company

requires various information needed. The information concerns the company's performance issues related to the company's achievements in a certain period.

Regional Drinking Water Company, commonly known as PDAM, is one of the regionally held corporate that distributes clean water to the citizen of Surabaya. In Indonesia, PDAMs are presently available in each province, district, and municipality. PDAM is a way of supplying safe and fresh water that is managed and controlled by the executive and regional legislative officials. The history of PDAMs typically begins with the invention of drinking water in 106 regencies or cities, which is then followed by the establishment of the BPAM (Drinking Water Management Agency), in addition to the embryo of PDAMs that manage drinking water services and infrastructures, where the establishment of this local government-owned industrial system is also the responsibility of the Central Government.

According to historical information about the establishment of PDAM Surabaya, which taken directly from the official website of PDAM Surabaya, where the establishment of PDAM Surya Sembada, the city of Surabaya is a relic of the Dutch era in 1890, when the first provision of drinking water for the city of Surabaya was obtained from a spring in the village of Purut in Pasuruan Regency and was transported by train. At that time the construction of the Pandaan spring drinking water supply system was carried out by Carel Willem Weijs. The completion of the work took 2.5 years. On October 8, 1903, the inauguration of the work on the drinking water supply system for Pandaan springs. After that, IPAM Ngagel I and II began to be established and their capacities continued to be increased in line with the increasing number of subscribers, which was increasing every year. Then the Drinking Water Company was handed over to the Government of the Republic of Indonesia (Surabaya Municipality) in 1950. Then Karangpilang I and II IPAMs were also started to be established and their capacity was increased in line with the increasing number of Surabaya residents who needed clean water. And the construction of a magnificent PDAM office building located at Major General. Prof. Dr. Moestopo No. 2 Surabaya, which was funded by pure PDAM funds, was implemented in 1991.

According to the results of Ali's research (2014), explained that the analysis's findings demonstrated the financial condition of PDAM Surya Sembada Surabaya during the last year from 2019 to 2020. From the results of the horizontal analysis on the income statement, it decreased in 2019. Meanwhile, according to Ahmed and Shakawat in the research of Sumartini & Widhiyani (2014) explains financial reports as a means of internal information that a company may use to evaluate its performance and financial health.

Financial reports can be a medium for making decisions by management in an effort to develop company performance. In connection with the background that has been stated, the problem that will be discussed in this study is how to do a horizontal analysis on the income statement of PDAM Surya Sembada Surabaya. The purpose of this study is to measure the financial performance obtained from the income statement at PT PDAM Surya Sembada Surabaya.

## **2. Literature Review**

### **Understanding Financial Statement**

Subramanyam (2012) emphasizes that financial statements are a byproduct of the financial reporting process, which is controlled by accounting rules and standards, manager incentives, and corporate implementation and supervision systems. Meanwhile, according to Karsin (2015) financial statements are reports that show the company's financial condition at this time or in a certain period.

Financial statements, as said by (Harahap, 2015), are the output and conclusion of the accounting process. As part of the decision-making process, this financial report will become information material for its users.

### **Purpose of Financial Statement**

As a result of an accounting procedure, financial statements may be utilized as a way of communicating the company's financial data or operations and parties interested in the data or company activities. As a result, financial statements serve a variety of purposes and have an impact on decision making and have an impact on decision making.

Based on Financial Accounting Standards (2015) the objectives of financial statements are to provide information about an entity's financial position, outcomes, and changes in the financial position that can be used by a large number of users to make economic decisions. The Financial Statements' goals are as follows (Kasmir, 2015):

1. Help in providing details on the type and amount of assets owned by the company during this time period.
2. Supply data about the types and quantities of obligations and capital held by the company during this period.
3. Give details about the type and rate of income generated within a specific period of time.
4. Share data about the amount and types of costs incurred by the company during a specific time period.
5. Describe the management's effectiveness during a specific time period for the company.
6. Inform the audience about the financial statements' notes.
7. Other accounting information.

The purpose of the Financial Reports is primarily to provide a medium of financial information on business activities for management to use as a reference when making a decision.

### **Kinds of Financial Statement**

Financial reports are presented by management to all interested parties in the company. Each user of financial statements has different needs, based on these needs it is necessary to classify the types of financial statements. There are five types of financial statements that are prepared in general (Kasmir, 2015).

A balance sheet is a document that shows a company's financial situation as of a particular date. A company's position in terms of the quantity and variety of its assets (assets) and liabilities is referred to as its "financial position" (liabilities and equity). Jonic (2017) said that Financial Statement is connected. Three financial statements are prepared at the end of each accounting period. First, the income statement shows net income for the month. Next, the statement of retained earnings shows the beginning and ending Retained Earnings balances and the reasons for any change in this balance. Finally, the balance sheet presents asset, liability, and stockholders' equity account balances.

An income Statement (Income Statement) is a financial report that reflects the results of a company's activities over a specific period. Both the quantity and the sources of revenue are displayed on this income statement. The number of costs and the categories of costs incurred during a specific period was also depicted. The company is considered profitable if its total revenue exceeds its expense. If the revenue is less than the entire cost, the company is considered to be failure.

Warren, Reeve, & Duchac (2016) explained that the most important outcome of the accounting cycle is the financial statements. The income statement is prepared first, followed by the statement of owner's equity and then the balance sheet. The statements can be prepared directly from the adjusted trial balance, the end-of-period spreadsheet, or the ledger. The net income or net loss shown on the income statement is reported on the statement of owner's equity along with any additional investments by the owner and any withdrawals. The ending owner's capital is reported on the balance sheet and is added with total liabilities to equal total assets.

A capital change report outlines the amount and kind of capital that is currently under control. The report then outlines the changes and causes of capital changes in the company.

### **Characteristics of Financial Statement**

Financial statements are historical in nature, which means that financial statement data is taken from the past and is comprehensive, meaning that financial statements must be made in full on all aspects related to money (Kasmir, 2015).

In the other hand (Kieso, Weygandt, & Warfield, 2020) explained that there is three essential characteristics of accounting. The essential characteristics of accounting are (1) the identification, measurement, and communication of financial information about (2) economic entities to (3) interested parties.

The recording carried out in the preparation of financial statements must be completed in accordance with the applicable standards, and must be related to the format of the company's financial statements.

Kieso, Weygandt, & Warfield (2020) said that, A single, widely accepted set of high-quality accounting standards is a necessity to ensure adequate comparability. Globalization demands a single set of high quality international accounting standards. But how is this to be achieved? Here are some elements:

1. Single set of high-quality accounting standards established by a single standard setting body.
2. Consistency in application and interpretation.
3. Common disclosures.
4. Common high-quality auditing standards and practices.
5. Common approach to regulatory review and enforcement.
6. Education and training of market participants.
7. Common delivery systems (e.g., eXtensible Business Reporting Language—XBRL).
8. Common approach to company governance and legal frameworks around the world.

The characteristics of Reporting Financial Statement might be different for each country. (Elliott & Elliott, 2009) explain that the issue is far from clear but most writers agree that the following are among the main factors influencing the development of financial reporting in each country: the character of the national legal system, the way in which industry is financed, the relationship of the tax and reporting systems, the influence and status of the accounting profession, the extent to which accounting theory is developed, accidents of history, and language. Those factors make the difference type of reporting financial statement.

Elliott & Elliott (2009) also explain that there are many other differences in economic and cultural conditions, which have led to an array of different financial reporting practices around the world. An understanding of this improves the awareness of potential misinterpretation when appraising financial statements prepared in other countries. It is useful to appreciate the reasons for these variations in order to improve understanding of the business activities represented by the accounts. Even with increasingly international regulations, these differences remain important because they influence the way people in different countries interpret and apply international rules.

### **Definition of Income Statement**

Suyanto (2016) said that the Profit/Loss Report is a systematic report on income, costs and profit/loss earned by the company during a certain period (usually one year). The company's operations are summarized in the profit/loss statement throughout the course of a specific



accounting period. In addition, it is expected to provide information related to the level of profit (Return on Investment), risks, and other company's operational capabilities.

Van Horne and Wachowicz (2016) say that The Profit/Loss Statement is a summary of the company's revenues and expenses for a certain period, ending with the net profit or loss for the period. The income statement analyzes the company's financial performance over a specific time period.

Widjadja Tunggal (2017) said that the Profit/Loss Report is a report that provides an overview of a business unit's income as well as costs during a specific time period.

### **Items in Income Statement**

The Income Statement consists of all income, both operating income (operations) and income outside of business (non-operating). The components of the income statement are income and expenses.

For accounting purposes, income is classified into several parts, namely operating income and non-business income. Operating income is income derived from the main activities of the entity. Operating income is derived from the sale of goods and services. Meanwhile, non-business income is income that is not derived from the main activities. The entity also earns side income such as interest income, dividend income, rental income, and so on.

Wahlen, Baginski, & Bradshaw (2017) describes that there are many variations in income statement format appear in corporate annual reports. Most commonly, firms list various sources of revenues from selling their goods and services and then list the cost of goods sold. Some firms choose to report a subtotal of gross profit (sales revenues minus cost of goods sold), which is an important measure of the inherent profitability of a firm's principal products and services. Firms then subtract the various operating expenses (for example, selling, general, and administrative expenses) and report a subtotal for operating income. The income statement then reports income amounts from investments (interest income and equity income), expenses associated with financing (interest expense), and nonoperating gains and losses. Firms commonly aggregate operating income with the nonoperating income items to report income before income taxes. Firms then subtract the provision for income taxes to compute and report the bottom-line net income.

Piper (2010) said that The reasoning behind separating Operating Expenses from Non-Operating Expenses is that it allows for the calculation of Operating Income. In theory, Operating Income is a more meaningful number than Net Income, as it should offer a better indicator of what the company's income is going to look like in future years. The effect of this focus on Operating Income as opposed to Net Income has been to cause many companies to make efforts to classify as many expenses as possible as Non-Operating with the intention of making their Operating Income look more impressive to investors. As a result of this "creative accounting," it's become a bit of a debate which income figure is, in fact, the better indicator of future success.

Expenses are grouped according to the expenditure function. Expenses are typically divided into two categories: operating expenses and non-operating expenses. Operating expenses include all costs incurred to generate operating income. In general, operating expenses are grouped into two parts, namely marketing expenses and administrative expenses.

Marketing expenses include all expenses used to carry out marketing or sales of goods, services and transportation. Examples are sales clerk salaries, advertising (advertising), sales expenses, sales transport expenses, overtime expenses, and so on.

Meanwhile, administrative expenses include expenses that occur in carrying out the direction, supervision, and implementation of the entity's tasks. For example, office staff salaries, office rent expenses, electricity expenses, water and telephone expenses, equipment expenses, insurance expenses, meeting expenses, meetings, and so on.

Meanwhile, non-business expenses include expenses used for activities outside the entity's main or main activities. For example, interest expense and other expenses.

### **Two Formats of Income Statement**

Bahri (2020) There are two forms of the Income Statement as follows:

#### **1. Single Step Form or Free Traits Method**

A single-step income statement is where all income and all expenses are grouped together. Thus, the presentation of income and expenses are grouped according to their function and not by function within the entity. The single form of income statement is only known as one type of profit.

#### **2. Staged Step Form or Functional Load Method**

The step-by-step income statement recognizes various forms of stages before net income after tax. Revenues and expenses are grouped according to their function. It's presentation provides relevant and more accurate information to report users. An entity should disclose additional information based on the nature of the expense.

### **Purpose of Income Statement**

Ittelson (2019) said that the Income statement gives one important perspective on the health of business, and that it's profitability. (Carter, 2006) also said that in stating the objective of a business, many people first think of profit. Although profit is indispensable in a successful business, it is only one goal and cannot be sole objective.

Fridson & Alvarez (2002) explained, The goal of analyzing an income statement is essentially to determine whether the story it tells is good, bad, or indifferent. To accomplish this objective, the analyst draws a few initial conclusions, then puts the incomestatement into context by comparing it with income statements of earlier periods, as well as statements of other companies.

### **Definition of Financial Statement**

Financial Statement Analysis, according to Maith (2013), is a continuous evaluation of the company's financial performance beginning with the prior year, the current year and the next period to obtain relevant information for users. Meanwhile, Ariyati (2020) said that Financial Statement Analysis describes management performance proactively and dynamically within a certain period.

Based on (Subramanyam, 2014) book, Financial statement analysis is the application of analytical tools and techniques to general-purpose financial statements and related data to derive estimates and inferences useful in business analysis. Financial statement analysis reduces reliance on hunches, guesses, and intuition for business decisions. It decreases the uncertainty of business analysis. It does not lessen the need for expert judgment but, instead, provides a systematic and effective basis for business analysis.

Before discussing financial analysis methods, we must understand what is meant by financial statement analysis.

Analysis of financial statements is to break down financial report items into simpler information units and see relationships that are significant or that have meaning between one and another, both between quantitative and non-quantitative data which aims to inform conditions deeper financials that are very important in the process of making the right decisions (Harahap, 2018). Analysis of financial statements includes the company's financial position which is used to assess the company's financial performance. The benefits of analyzing financial statements yourself are to find out and evaluate the performance of a company's financial effectiveness.

The financial report itself is a report that describes the financial condition and results of a company's operations at a certain time or a certain period of time (Harahap, 2018). Followed by Kamir's opinion, according to Kasmir (2018:28) financial reports generally consist of balance sheets, profit and loss statements, reports on changes in capital, and cash flow statements.

In short, financial statement analysis is the process of breaking down financial statement items involving a balance sheet and income statement into a simple unit of information that is used to tell the company's financial condition. The benefits of analyzing financial statements yourself are to find out and evaluate the performance of a company's financial effectiveness. Meanwhile, according to Hery (2018:113) financial report analysis is very useful not only for internal companies, but also for investors and other stakeholders.

From some of the financial analysis terms above, it is possible to conclude that there are detailed records of financial information related to the company to determine the needs and health of a company so that to achieve maximum goals it is necessary to have accurate and well-structured financial reports.

### **Purposes of Financial Statement**

The objectives of Financial Statement Analysis are as follows (Hidayat, 2018):

1. Presenting useful information for users about the company's financial condition.
2. In order to comprehend the company's state, it can find out the results of profits earned during a certain time target.
3. As a means to predict the future time so that decision makers are ready to make the right plans.
4. As a tool to diagnose a problem that will occur, especially about good information.
5. As a tool to evaluate the performance of management that has been carried out

In the other hand, (Kramer & Johnson, 2009) wrote that the accounting profession has identified the objectives of financial reporting as follows:

- a. To provide information that is useful in making investment and credit decisions
- b. To provide information that is useful in assessing cash flow prospects
- c. To provide information about the resources of a business, claims to those resources, and changes in them

Fraser & Ormiston (2013) said, the objective of the financial statement user is to find and interpret this information to answer questions about the company, such as the following:

- a. Would an investment generate attractive returns?
- b. What is the degree of risk inherent in the investment?
- c. Should existing investment holdings be liquidated?
- d. Will cash flows be sufficient to service interest and principal payments to support the firm's borrowing needs?
- e. Does the company provide a good opportunity for employment, future advancement, and employee benefits?
- f. How well does this company compete in its operating environment?
- g. Is this firm a good prospect as a customer?

Information is gold to the investor, so much of the book explains how the analyst identifies the appropriate information and organizes it in a way to indicate intrinsic value (Penman, 2010). Organizing the accounting information—financial statement analysis—is of particular importance. The analyst does not want to be overwhelmed by the huge amount of information available on firms and so looks for efficient ways of organizing the information, of reducing it

to manageable proportions. He desires simple, straightforward schemes but is wary of ad hoc schemes that are too simple.

Not only for investor or managerial, Financial Statement also needed for Government. The primary goal of governmental accounting is to ensure proper tracking of the inflows and outflows of taxpayer funds using the proscribed standards (Franklin, Graybeal, & Cooper, 2019). Some governmental accountants also prepare and may also audit the work of other governmental agencies to ensure the funds are properly accounted for. The major difference between accountants in governmental entities and accountants working in public accounting firms and corporations relates to the specific rules by which the financial reporting must be prepared.

Accounting information is used by various persons (Nayak, 2019). In addition to proprietors, Management, Suppliers of Goods and Services, Banks and Financial Institutions, Prospective Investors, Government, Customers, Employees, Regulatory Agencies, Courts, Creditors, and for Researchs and Statisticians.

Thian (2022) says that the Financial Statement Analysis Procedures include:

1. Collect financial data and supporting data as completely as possible for a certain period.
2. Fill in the numbers in the financial statements into certain formulas and measure or calculate them carefully.
3. Provide an interpretation of the results of calculations and measurements made.
4. Report the results of the analysis.
5. Make recommendations based on the findings of the analysis.

### Methods of Analyzing Financial Statement

There are two methods used in profit report analysis as follows (Herispon, 2016):

#### 1. Horizontal Analysis

Meanwhile, horizontal analysis is an analytical technique for evaluating a series of financial report data over a certain period of time. The purpose of this is to determine whether an increase or decrease has occurred. Horizontal analysis can be performed on any of the items included in the statement of comprehensive income, statement of financial position and each component of the statement of cash flows. For example, this analysis can be done on sales revenue; cost of goods sold equity and shareholder liabilities. It can also be carried out at ratios such as current ratio, acid test ratio, and residual ratio. Horizontal analysis can be done in absolute or percentage form.

A comparison of financial statements over a period of time or over a period of time to see progress is called a "horizontal analysis.". This horizontal analysis is the same as trend analysis or trend analysis (trend percentage analysis) which represents the financial position of the company's progress as a percentage. To see the financial trend remains up or down.



### Horizontal Analysis Formula

$$\text{Horizontal Analysis (absolute)} = \text{Amount in Comparison Year} - \text{Amount in Base Year}$$

$$\text{Horizontal Analysis (\%)} = \frac{\text{Amount in Comparison Year} - \text{Amount in Base Year}}{\text{Amount in Base Year}} \times 100$$

**Figure 1: Horizontal Analysis Formula**  
**Sources: Herispon, 2016**



Horizontal analysis certainly has different characteristics and calculation methods from vertical analysis. Therefore, everyone must be careful in determining what analysis to use so that the output of the analysis matches the information needed. In horizontal analysis, the output that we will get is changes to the components of financial statements from one period to another. Horizontal financial report analysis can also compare three or more financial reports. Where data from earlier periods can be used as a basis for comparison for all previous dates or periods. One example is the increase or decrease experienced by one or two or more components in the financial statements.

So that the horizontal analysis report will make it easier for us to make decisions about what things need to be done in connection with the changes that have occurred. Changes that occur need to be known to see the development of the financial condition of a company after these changes are known whether there has been an increase or decrease or the reasons for these changes can still be known.

Changes in the balance sheet financial statements for a period can be caused by various factors, for example (Alwiyah, Zaifuddin, & Warda, 2021):

1. There is acquisition of new assets;
2. There is a reduction in assets such as settlement of debts;
3. Changing the active form from remaining smooth;
4. There are changes which are changes caused by the company's profits and losses and the costs incurred;
5. There is an increase or decrease in share capital; And
6. Other changes.

From the results of this comparative analysis of financial statements, it can be seen the nature and tendencies of changes that occur later. The results of this analysis can be shown in the form:

1. Amount in rupiah;
2. Amount of decrease in rupiah;
3. The amount of increase in rupiah;
4. Comparison in percentage;
5. Comparison in the form of a ratio.

There are 3 steps to analyze financial statements with the horizontal method (Tuovila, 2022):

### **Step 1: Gather Financial Information**

To perform a horizontal analysis, we must first collect financial information from one entity over several time periods. Most horizontal analyzes require pulling quarterly or annual financial statement data, although certain account balances can be pulled if you are looking for a certain type of analysis.

Note that the gaps between each financial statement are consistent. You can choose any interval (month-to-month, year-to-year, etc.), but each recurring financial statement must be equally spaced in terms of when it was issued compared to other financial information.

### **Step 2: Determine the Comparison Method**

With financial information in hand, it's time to decide how to analyze that information. There are several main comparison methods.

First, directional comparison simply looks at the results from one period and compares them to another. For example, the total revenue for the entire company in the most recent quarter might be \$75 million, while the total revenue for the entire company for the current quarter might be \$85 million. This type of comparison is most often used to look at easily identifiable high-level differences.

Second, analysis of variance determines not only the dollar amount but also the direction of change for a particular ledger account. As opposed to simply identifying the difference between two numbers, analysis of variance seeks to determine a company's financial health by identifying changes in direction, frequency of direction, or how each financial result compares to internal targets (i.e. budgets).

Finally, horizontal analysis can include calculating the percentage change from one period to the next. As a company grows, it often becomes more difficult to maintain the same growth rate, even if the company grows in pure dollar terms. The percentage method is most useful when identifying changes over a longer period of time where there may be significant deviations from the base period to the current period.

### **Step 3: Identify Trends and Patterns**

With the calculated bits of information now embedded into financial reports, it's time to analyze the results. Identifying trends and patterns is encouraged by asking specific, targeted questions. For example, top management might ask "how well did each geographic area manage COGS over the past four quarters?". These types of questions guide him to choose a particular method of horizontal analysis and a particular trend or pattern to look for.

## **2. Vertical Analysis**

Vertical analysis is comparing one item with other items to determine the ratio of investment in each asset to total assets to determine wealth structure, estimate the proportion of capital, long-term debt, and short-term debt to total debt. Check the percentage composition of costs incurred in relation to sales (in the balance sheet) or (in the income statement) in one financial statement so that you can see the results of the current financial statement analysis. This vertical analysis is also known as static analysis because it is only by drawing conclusions about the period without knowing its application. Vertical analysis can be equated with financial statement analysis using a percentage per component or it can also be called a common size statement.

According to Kasmir (2013) Vertical (static) analysis is an analysis carried out for only one period of financial statements. The information obtained is only for one period and the development of the company is not known from period to period. By using vertical analysis, financial reports are used to measure the relationship between the quantity of various items compared to the total number of items in the financial statements for a certain period. Vertical analysis is also called static analysis because this analysis helps to determine the relationship between items with one another or the relationship between various items that appear in the financial statements. Vertical analysis is a technique that reveals each financial statement item as a percentage of the basic amount (Weygandt, Kimmel, & Kieso, 2013).

Vertical analysis of financial statements is a direct process regarding the calculations required. So it will be very possible that this analysis is practical and can be done quickly. So that we can also focus on other analyses. This is also an advantage of vertical analysis of financial statements. This analysis is one of the easiest analytical methods, even though data for the previous year is not required, this method can also be used as a comparison of financial statements with previous year's reports and to analyze the profit and loss for that period. In addition, vertical analysis also helps to understand the percentage/share of each item; Where helps to understand the structural composition of the various components such as costs, expenses, assets and liabilities.

However, of course there are still many shortcomings of this analytical method. Vertical analysis of financial statements does not help make firm decisions because there are no standardized percentages or ratios for changes in components of the income statement or

balance sheet. In addition, organizational liquidity cannot be measured precisely using this vertical analysis. And then, because there is no consistency in the ratios of the elements, it also reduces the effectiveness of financial statement analysis using this method.

Just like horizontal analysis, we must know what data or information we want to get from financial statement analysis. In contrast to horizontal analysis, vertical analysis emphasizes more on highlighting significant relationships in the financial statements.

### Vertical Analysis Formula

$$\text{Vertical Analysis Formula (Income Statement)} = \frac{\text{Income Statement Item}}{\text{Total Sales}} \times 100$$

$$\text{Vertical Analysis Formula (Balance Sheet)} = \frac{\text{Balance Sheet Item}}{\text{Total Assets (Liabilities)}} \times 100$$

**Figure 2: Vertical Analysis Formula**

There are several steps in the vertical analysis of financial statements. The following are the steps (Olmo, 2022):

1. **Select the Time Period**  
 First, decide which period you want to analyze. You can analyze multiple periods separately, then do a horizontal analysis to look for trends. If you already use templates for your financial statements, it's easy to include the formulas for vertical analysis by adding columns or a new section.
2. **Gather Data**  
 Once you know what time period to focus on, you need to choose the documents and values you want to analyze. For example, you could choose to study the contribution of each revenue stream to the total amount of revenue using the information from the balance sheet. In addition to the data for your company, collect the same data for similar companies in your industry. You can calculate the proportion of each line item from the total based on publicly available financial data.
3. **Calculate Line Items as % of Total**  
 Since you have all the data you need, it's time to calculate the % of the corresponding total for each line item, both for your data and that of your competitors. For each line item, use the following formula:  

$$\text{Percentage of total} = (\text{line item value} / \text{total value}) * 100$$
4. **Analyze & Compare Results**  
 Now, it's time for the most important step - analyzing and interpreting the results for the period. The interpretation of these results is likely to be more accurate if you can compare them to previous results, as well as those of your competitors.

### 3. Method

This analytical research uses the Horizontal Method which uses secondary data from 2019 to 2020. Using measuring tools to examine the position of the financial statements, more precisely, is to identify the financial movements of the data for each financial statement item such as the income statement that has been presented. in the 2019-2020 period. Descriptive method was used in this study and then data was collected through secondary sources obtained from the company's website. The company's income statement and balance sheet are the main data sources in this study, and the financial statements also include the company's accountability to internal and external parties.

**Sample/Participants**

Describe the research's sample or participants, as well as the setting, if applicable. Most studies will have people as participants, but a sample might be a set of cases or components. You should describe sample-related information, including how the sample was chosen, sample size, and relevant demographic details about the sample. You should determine which demographic factors are crucial to your research as the researcher-author. For instance, a participant's GPA, age, or IQ score may be considered an important demographic trait in one study but not in another. The accurate data about your research's sample (such as the mean age or the proportion of men and women in each group) should give an overall picture of the participants.

**Instrument(s)**

Define the instrumentation as applicable. You should also clarify the instruments you selected in your research and explain their purposes. When you used existing instruments created by others, you should report on their validity and reliability. When accessible, more information regarding the instruments may be reported.

You may, for example, indicate the quantity and variety of items involved, the length it took to finish the instrument, and how test standards are reported. Make sure you have the necessary permissions and copyright information or include the instrument within your research. Describe how you developed it and the types of items you used if you established a data gathering instrument (such as a questionnaire or an achievement exam). When relevant, indicate how you evaluated the instrument's reliability and validity, as well as whether you tested it before using it.

**Procedures for collecting data**

This section explains how the research was carried out. It describes what happened and how you conducted the examination in as much specifics as needed. This part is essential in experimental research where the intervention must be described in depth. A description of the training required to use a new experimental teaching strategy, as well as the types of instructions to be delivered to survey participants, are examples of data to include in this section. This section should also include a reasonable timeline for various stages of the investigation.

**Data analysis**

The "Data collecting and analysis" section allows for coordination between data collection techniques and data analysis.

**4. Result and Discussion**

Depending on the calculation results and the outcomes of horizontal analysis research, it can be explained that there is an increase and decrease every year. The increase and decrease experienced by PDAM Surya Sembada Surabaya can be seen from the following table, by describing the percentage value in 2020 and 2019.



	TH.2020	TH.2019	
<b>PENDAPATAN USAHA</b>			
Pendapatan Air	795.926.292	779.102.936	16.823.356
Pendapatan Non Air	86.980.612	82.703.006	4.277.606
<b>Jumlah Pendapatan Usaha</b>	<b>882.906.904</b>	<b>861.805.942</b>	21.100.962
<b>BEBAN USAHA</b>			
Beban Operasi	445.625.738	432.157.236	13.468.502
Beban Perbaikan dan Pemeliharaan	41.372.719	49.948.541	-8.575.822
Beban Penyusutan dan Amortisasi	89.701.729	81.465.615	8.236.114
Beban Bunga	-	-	
<b>Jumlah Beban Usaha</b>	<b>576.700.186</b>	<b>563.571.392</b>	13.128.794
<b>LABA USAHA</b>	<b>306.206.718</b>	<b>298.234.550</b>	7.972.168
<b>PENDAPATAN (BEBAN) NON USAHA</b>			
Pendapatan Non Usaha	23.020.323	35.053.022	-12.032.699
Beban Non Usaha	-2.372.735	-1.641.598	-731.137
<b>Jumlah Pendapatan (Beban) Non Usaha</b>	<b>20.647.588</b>	<b>33.411.424</b>	-12.763.836
LABA SEBELUM PAJAK PENGHASILAN	326.854.306	331.645.974	-4.791.668
<b>PAJAK PENGHASILAN</b>	<b>69.645.988</b>	<b>76.212.662</b>	-6.566.674
<b>LABA SESUDAH PAJAK</b>	<b>257.208.318</b>	<b>255.433.312</b>	1.775.006

Figure 3: Profit and Loss Report 2019 and 2020 PDAM Surya Sembada Surabaya  
Sources: Processed Data from the Official Website

According to the data above, it can be viewed in the amount of operating income which decreased by 2.45% or 21,100,962 in 2019. The decrease was caused by water revenues of 2.16% or 16,823,356 in 2019, and non-water revenues experienced an increase of 5.17% or 4,277,606 in 2019.

Then the total operating expenses decreased by 2.33% or 13,128,794 in 2019. This decrease was due to operating expenses which decreased by 3.12% or 13,468,502 in 2019 and depreciation and amortization expenses experienced a decrease of 10.11% or 8,236,114 in 2019.

Meanwhile, repair and maintenance expenses increased by 17.17% or 8,575,822 in 2019. On the operating profit side, it also decreased by 2.67% or 7,972,168 in 2019 this decrease was due to a decrease in operating expenses. by 2.33% or 13,128,794 in 2019 and operating income decreased by 2.45% or 21,100,962 in 2019.

Meanwhile, the amount of non-business income experienced a change of 38.20% or 12,763,836 in 2019 the change was due to an increase in non-business expenses of 44.54% or 731,137 in 2019. What is interesting to note is the post of total non-business income. is non-business income which decreased by 34.33% or 12,032,699 in 2019.

Likewise, with profit after tax which experienced a change of 0.69% or 1,775,006 in 2019 the change was caused by profit before income tax which decreased by 1.44% or 4,791,668 in 2019 and on the income tax side there was an increase by 8.62% or 6,566,674 in 2019.

## 5. Conclusions

Each method of analyzing financial statements has advantages and disadvantages. However, these methods can be very useful if we really understand what kind of information we want. On the one hand, horizontal analysis offers output in the form of information data on changes to components of financial statements from period to period. Horizontal financial statement analysis can also compare three or more financial reports. Where data from earlier periods can be used as a basis for comparison for all previous dates or periods. One example is the increase or decrease experienced by one or two or more components in the financial statements. Horizontal analysis can be done in absolute or percentage form.

While the vertical analysis of financial statements is used to measure the relationship between the quantity of various items compared to the total number of items in the financial statements for a certain period. Vertical analysis is a technique that expresses each financial statement item as a percentage of the base amount. In contrast to horizontal analysis, vertical analysis emphasizes more on highlighting significant relationships in the financial statements.

Based on the findings of study and discussions conducted at PDAM Surya Sembada Surabaya, it can be concluded that the profit and loss statement of PDAM Surya Sembada has slightly increased. On the operating profit side, it increased by 2.67% or 7,972,168 in 2020 compared to 2019, although the total operating expenses also increased by 2.33% or worth 13,128,794 in 2020 compared to 2019, but operating revenues also increased. by 2.45% or worth 21,100,962 in 2020 compared to 2019. Meanwhile, the amount of non-business income decreased by 38.20% or worth 12,763,836 in 2020 compared to 2019. Then the profit after tax increased by only 0.69% or 1,775,006 in 2020 compared to 2019.

So, it can be concluded that the achievement of PDAM Surya Sembada Surabaya in 2020 can be seen from the position of the income statement which experienced a slight increase compared to 2019.

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