

PERFORMANCE EVALUATION ON PDAM TIRTAWENING OF BANDUNG CITY BASED ON BALANCED SCORECARD METHOD

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Abstract— *Perusahaan Daerah Air Minum (PDAM) Tirtawening is a local company engaged in the provision of drinking water in the Bandung city. PDAM Tirtawening has not used any method to evaluate their company's performance. The aim of this study is to design a performance monitoring and evaluate the performance of PDAM Tirtawening from 2011 to 2013 using the Balanced Scorecard method to propose the alternative strategy for them. Results from this study indicate that the performance of PDAM Tirtawening based on the Balanced Scorecard method is bad and under perform. Financial perspective performance have low revenue and not good recording system. The performance of the customer's perspective in general has been good but its targets too low. In the internal business process perspective, the production and distribution is not efficient and effective. In the perspective of learning and growth have no plan for employee quality growth. The purpose of evaluation is to give the company recommendation for strategy.*

Keyword—*Balanced Scorecard, Performance Evaluation, Business Strategy, Monitoring Dashboard, Local Company, PDAM*

Introduction

Badan Usaha Milik Daerah (BUMD) is a company owned by local government. The authority of local government establishes and manages BUMD in Government Regulation No. 25 of 2000 on government authority and the authority of cities as autonomous regions. The purpose of establishing BUMD is to contribute to the national economy, support business activities, provide assistance, and protection to small businesses. Local government is required to conduct regular evaluation in a certain period of time to monitor the performance of companies, stays in the good function, including Bandung city government.

In order to conform with the standards of defined success, performance evaluation have to be described. Performance is the result of works which have strong relationship with strategic purpose of organization and consument satisfaction [1]. Performance evaluation purpose is performance improvement. Performance evaluation can be valuable tools for company to communicate with employees to be inline with organizational expectations. At the organizational level, numerous studies have reported positive relationships between performance evaluation and performance improvement at both the individual and organizational levels [2].

Performance evaluation has traditionally only focused on the financial side. Company who managed to reach the level of profit high will be considered successful. A suitable model of performance measurement that includes not only with financial but also non-financial is created, namely, Balance Scorecard. Balanced Scorecard concept is a means to communicating strategic perception of a company in a simple and easily understood by all parties within the company based on four perspective of Financial, Customer, Internal Business Process, and Learning & Growth [3].

BUMD of Bandung city are expected to keep up with the annual performance. In this research, the Researcher selects PDAM Tirtawening as the object of the research, one of the "profitable" companies, from the other three BUMD. is specialized in drinking water service and wastewater treatment service. The history of the PDAM Bandung establishment starts from the Dutch colonialism in Indonesia. PDAM Tirtawening as BUMD has two aspects, Social aspects and Economy aspect. As the function of public services, the company engages in the filed of drinking water service and wastewater service. The purpose is to create an environment with adequate sanitation, which increases the level of healthiness and public prosperity. While as a business entity, PDAM Tirtawening is required to manage the company in professional way and following the principle of economy, effectiveness, and efficiency, therefore the company could generate revenue to finance the company sustainability and development and contribute to Local Original Revenues.

The information relating to the performance of the PDAM Tirtawening is little, therefore it is necessary to study the performance of PDAM Tirtawening from the perspective of financial performance and the performance non-financial in providing services to the public as social function. The company does not have their own Assessment of performance based on the Balanced Scorecard method, but the company only uses the analysis of financial statements (financial ratios). Therefore, in order to determine performance, companies can implement the Balanced Scorecard as a strategic-based measurement tool, such as financial perspective, internal business process perspective, customer perspective, and learning and growth. Balanced Scorecard excellence is to be able to give a measure that can be used as a basis for strategic improvements.

The Researcher wants to assess the company performance in a comprehensive manner of financial and non-financial evaluation. These problems will be formulated in accordance with the Balanced Scorecard Method. Based on the problem statement that already has been explained above, here is the research questions that needed to be answered:

1. How is the design of performance monitoring system based on Balanced Scorecard?
2. How is the PDAM Tirtawening Performance Evaluation based on Balanced Scorecard method?
3. What is the recommendation of alternative strategy that can be provided to the company?

Theoretical Framework

A. Performance

Mulyadi [4] defined that performance measurement can only be done if the definition of performance has been clearly established, both in terms of the scope of its activities, the entity coverage and period of implementation set of activities performed by the entity. Determination of performance indicators should be based on realistic estimates by taking into. Performance indicators should be:

- a) clear and specific
- b) easy to understand
- c) realistic and measurable
- d) flexible and sensitive to changes
- e) data can be collected, processed, and analyzed effectively and efficiently

B. Balance Scorecard

Norton & Kaplan [3] defined that Balanced scorecard is a new framework for integrating various sizes derived from the company's strategy. In addition to the size of future performance, balanced scorecard also introduced future financial performance drivers which include customer perspective, internal business processes, and learning and growth. To overcome habits that arise from the evaluation method which measures the performance of the company from the financial aspects, the Norton & Kaplan proposed the evaluation of business performance Balanced Scorecard (BSC). This idea is to Balanced the evaluation of financial and non-financial aspects, and gave birth to what is

called the Balanced Scorecard (BSC). In Kaplan and Norton Generic Balanced Scorecard there are four perspectives: Financial, Customer, Learning and Growth, and Internal Business Process. Why using Balanced Scorecard Method as the framework to design the Performance Evaluation system in BUMD? Parmenter [5] argued that Balanced Scorecard is align with the purpose and framework of using Performance Evaluation system and indicator for the company.

Establishing and maintaining a consistent strategic direction for the company begins with setting a clear vision for the company. A strong vision will connect these goals to the company's underlying values and will make it more understandable about how to achieve each particular goal. Vision is essential for developing a strategy-focused organization and alignment within the company [3]. The Vision, Mission, and strategy found in PDAM Tirtawening will be used to create the Balanced Scorecard measurement from four strategic perspectives: Financial, Customer, Internal Business Proses, and Learning & Growth. In this Research, The Financial Perspective the Researcher use 3 Indicators, Revenue, Operating Expense, and Profit After Tax. Operating Expense is the expense to run the business. Revenue is the amount of return the company gets from service or product selling. Profit shows how big company income based on Revenue minus Expenses. Profit After Tax shows the company their performance in their current year. Other than those indicators, the Researcher also uses gross margin ratio and profit margin ratio as the support for analysis.

The customer perspective chosen indicators that are taken from Company Business Plan 2013 are:

1. Solving Complaint

3. Customer Service Scope

Solving complaint indicates the the respond of the customer after given the service by the company. While, customer Service Scope is showing the capability of company in manage and give services to more customer

The Internal Business Process perspective chosen indicators that could be used to measure the process in PDAM Tirtawening taken from Business Plan 2013 are:

1. Production Output

3. Water Distributed

In this research, The water production output shows the output of the installment based on the capacity and reality of the current output capability. Level of water distributed shows the level of distribution from the output of water production.

The chosen indicators that could be used to measure the process in PDAM Tirtawening taken from Company Business Plan 2013 are:

1. Competence Employee

2. Human Resources Availability

Competence Employee shows the company the employee who have qualified of its competence. The company target for each year is 100% of employee is competence in their field. Competence employee could be achieved by training and good hiring. The higher means the quality is better. Human Resources Availability level shows the Number the company use. Human Resources Availability Indicator is already used by the company. According to Business Plan 2013, the optimum number is around 5.95~6. The employee resources should be enough to run the company well.

C. Strategy Map

The strategy map will be used to be the core of the performance monitoring system, which enables the organization to maintain the performance, while performance monitoring allows the organization to identify negative and positive performance events and trends. Ideally, the executive should be able to navigate from performance monitoring to evaluation, make knowledge-based decisions and take action to improve underlying processes [3].

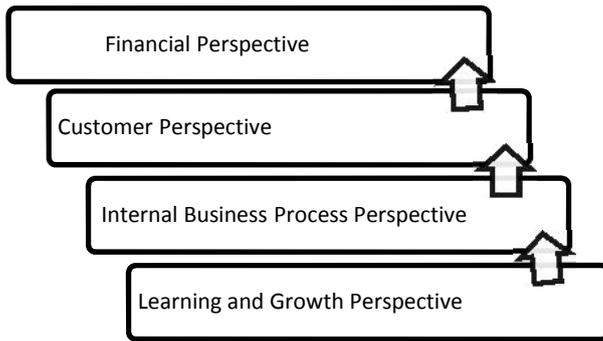


Figure 1. Balance Scorecard Roadmap

Indicator assessment of the performance used is the result of development in 2010 compiled by a team BPPSPAM cooperate with BPKP, PERPAMSI and a few PDAM [6].

In accordance with the characteristic aspect is concerned that the financial aspect with a weight of 25%, the aspect of service with a weight of 25%, the operational aspect with weights of 35%, and aspects human resources with a weighting of 15%

Methodology

A. Research Design

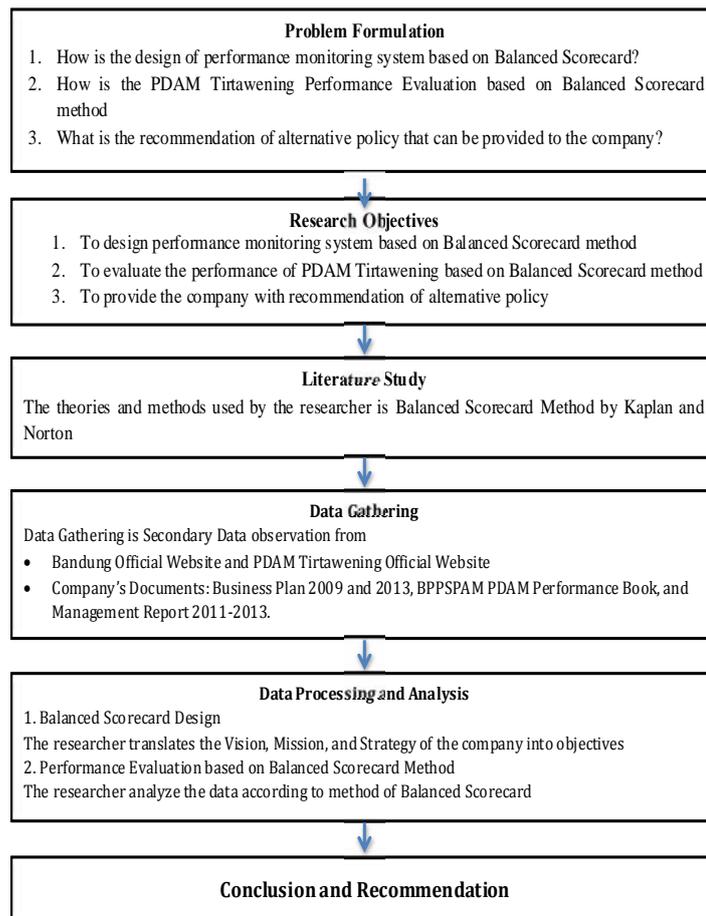


Figure 1. Research Design

B. Methods

First, The researchers conduct and observe about that the company background which is lacks in information about the performance evaluation of non financial performance. Second, the Researcher prepares the literature review based on the purpose of this research. Third, the Researcher collects data from the company to do the research. Forth, The Data of company Vision, Mission, and Strategy, which is taken from the company profile, will be translated into Balanced Scorecard Design. Third, the Researcher collects data from the company to do the research. Forth, the researcher creates Balanced Scorecard Design and does the evaluation of performance based on four perspectives of Balanced Scorecard. Fifth, the the final result of Balanced Scorecard design and Balanced Scorecard Evaluation will be final conclusion of this study

C. Data Collection

In this research, the Researcher collects secondary data from PDAM Tirtawening. The Researcher conducts quality and quantity analysis to gain results that could be proposed to PDAM Tirtawening improvement. The data that the researcher collects are shown below:

1. Company profile

The company background, Vision, Mission, Duites, and Organizational Structure are collected from Company Official website (www.pdmbdg.com) and Bandung Official Website (www.Bandung.go.id)

2. Historical data

a. Financial Statements are collected from company's Report 2011,2012, and 2013

b. Data of Pro Forma Income Statements are collected from Business Plan 2009

b. Data of Employee Number is taken from Official website (www.pdmbdg.com)

c. Data of customer Number, Data of Solving Complaint, Data of Employee Training, Data of Production Capacity, Data of Production output, Data of Water Loss, and Data of Employee Training are collected from company's Business Plan 2013.

Data Analysis

A. Balance Scorecard Strategy Map Design

First, the company has its own vision, fulfilling the community service of clean water and dirty water, which environmentally and sustainably minded. Second, the company has created Mission or purpose, which in their case is derived from their Vision. Third, the company has provided their own Strategy, which is derived from their Company Vision and Mission. Fourth the Researcher translates it into several strategic objectives.

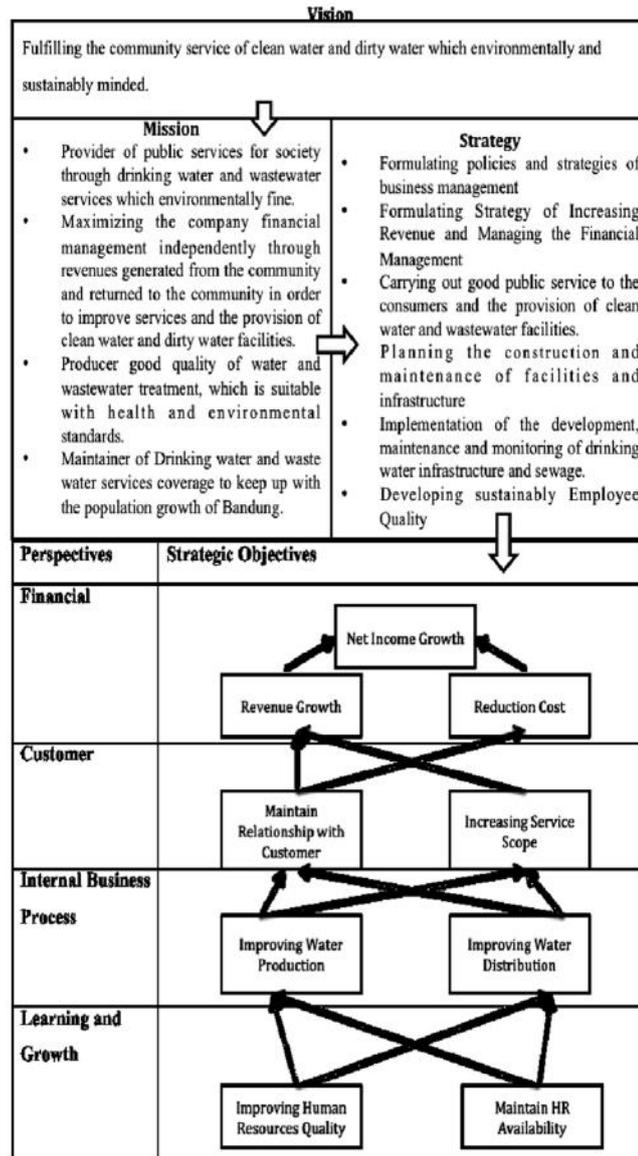


Figure 2. Strategy Map for PDAM Tirtawening

B. Performance Evaluation Based on the Balanced Scorecard Method

Evaluation based on Balanced Scorecard enables a more comprehensive evaluation. A comprehensive evaluation means broader evaluation, not only limited to the financial evaluation, but also the evaluation on other aspects of intangible assets such as customer, internal business processes, and learning and growth. The Performance of PDAM Tirtawening in 2011 from the overall result overview was bad and under perform. The Performance Evaluation can be seen in Table 1. The final score achievement is only 77.37 from 100. The PDAM Tirtawening performance best is from Customer Perspective, which reached 104.56% expectation. The least satisfying performance is from Learning and Growth perspective that reaches 51.37%. The total score of Learning and Growth Perspective is 7.71 from 15. Unsatisfying result is the indicator of Competence Employee, which reaches 19.4% of expectation

Table 1. Result of Performance Evaluation of PDAM Tirtawening 2011

A. Strategic Objectives	B. Indicator	C. 2011	D. Target	E. Realization % (C/D)	F. Weight (%)	G. Score (E*F)
Finance						
F1: Revenue Growth	Revenue (IDR)	160,44 M	217,76 M	73.70	8.33	6.12
F2: Reduction in Cost	Operating expense (IDR)*	84,38 M	102,40 M	121	8.33	10.07
F3: Net Income Growth	Profit after tax (IDR)	4,74 M	28,79 M	16.50	8.33	1.37
Total Perspective Score				70.49	25	17.55
Customer						
C1: Relationship with customer	Solving customer complaint (%)	100%	100%	100	12.50	12.50
C2: Increasing service scope	Drinking water service scope (%)	74.20%	68%	109	12.50	13.64
Total Perspective Score				104.56	25	26.14
Internal Business Process						
I1: Improving water production	Production output (m3)	2178	2550	85.40	17.50	14.95
I2: Improving water Distribution	Water distribution (m3)	1372	2178	63	17.50	11.03
Total Perspective Score				74.20	35	25.97
Learning and Growth						
L1: Improving HR Quality	Employee Competence (people)	150	773	19.40	7.50	1.455
L2: Maintaining HR Availability	Human Resources Availability**	5	6	83.30	7.50	6.25
Total Perspective Score				51.37	15	7.71
Total Score						77.37

The Performance of PDAM Tirtawening in the Year 2012 is also bad and less than expectation. There is evident for it, Performance Evaluation can be seen in Table 2. The final score achievement is only 76.06% from 100. The PDAM Tirtawening best performance is from Customer Perspective, which reached 99.4% expectation Customer Perspective scores 24.86 from 25. Results of these scores are the contribution of the two indicators of the percentage results. The indicator of solving customer complaint reached 95.7% of company's target and drinking water service scope even reaching 103.1% of expectation. The perspective, which is the least satisfying performance, is from Learning and Growth perspective that reaches 62.1%. The total score of Learning and Growth Perspective is 9.32 from 15.

Table 2. Result of Performance Evaluation of PDAM Tirtawening 2012

A. Strategic Objectives	B. Indicator	C. 2011	D. Target	E. Realization % (C/D)	F. Weight (%)	G. Score (E*F)
Finance						
F1: Revenue Growth	Revenue (IDR)	174,74 M	241,23 M	72.40	8.33	6.01
F2: Reduction in Cost	Operating expense (IDR)*	89,25 M	109,28 M	122.40	8.33	10.16
F3: Net Income Growth	by profit after tax (IDR)	1,49 M	40,38 M	3.70	8.33	0.31
Total Perspective Score				66.20	25	16.48
Customer						
C1: Relationship with customer	Solving customer complaint (%)	96%	100%	95.7	12.50	11.96
C2: Increasing service scope	Drinking water service scope (%)	72.20%	70%	103.14	12.50	12.89
Total Perspective Score				99.4	25	24.86
Internal Business Process						
I1: Improving water production	Production output (m3)	2045	2550	80.2	17.50	14.04
I2: Improving water Distribution	Water Distributed (m3)	1329	2045	65	17.50	11.38
Total Perspective Score				72.60	35	25.41
Learning and Growth						
L1: Improving HR Quality	Competence Employee (people)	310	758	40.90	7.50	3.07
L2: Maintaining HR Availability	Human Resources Availability**	5	6	83.30	7.50	6.25
Total Perspective Score				62.10	15	9.32
Total Score						76.06

The Performance of PDAM Tirtawening in 2013 from the four perspectives of Balanced Scorecard is less than expectation. There is evident for it, The Performance Evaluation can be seen in Table 3. The final score achievement is only 81.83 from 100. The PDAM Tirtawening best performance is from Customer Perspective, which reached 100.22% exceed the expectation. Customer Perspective scores 25.07 from 25. Results of these scores are the contribution of the two indicators of the percentage results. The indicator of solving customer complaint reached 95.4% of company's target and drinking water service scope even reaching 105% of expectation.

Table 3. Result of Performance Evaluation of PDAM Tirtawening 2013

A. Strategic Objectives	B. Indicator	C. 2011	D. Target	E. Realization % (C/D)	F. Weight (%)	G. Score (E*F)
Finance						
F1: Revenue Growth	Revenue (IDR)	235,69 M	254,10 M	92.8	8.33	7.70
F2: Reduction in Cost	Operating expense (IDR)*	108,30 M	115,34 M	106.5	8.33	8.84
F3: Net Income Growth	By profit after tax (M)	22,63 M	44,814 M	50.5	8.33	4.19
Total Perspective Score				83.25	25	20.73
Customer						
C1: Relationship with customer	Solving customer complaint (%)	95%	100%	95.40	12.50	11.93
C2: Increasing service scope	Drinking water service scope (%)	76.20%	72.5%	105.05	12.50	13.13
Total Perspective Score				100.22	25	25.06
Internal Business Process						
I1: Improving water production	Production output (m3)	2050	2550	80.39	17.50	14.07
I2: Improving water Distribution	water distributed (m3)	1374	2050	67	17.50	11.73
Total Perspective Score				73.70	35	25.79
Learning and Growth						
L1: Improving HR Quality	Competence Employee (people)	364	730	49.86	7.50	3.74
L2: Maintaining HR Availability	Human Resources Availability**	5.21	6	86.80	7.50	6.51
Total Perspective Score				68.35	15	10.25
Total Score						81.83

The performance achievement results of PDAM Tirtawening respectively are 77.07 in 2011, 76.06 in 2012, and 81.83 in 2013. The highest score is in 2013. Even though 2013 has the highest total scores, the Performance Monitoring is based on the Company target, which the result may difference if we compare the Performance yearly. It could be from the increasing service scope from Customer Perspective as well as the increasing price of sales as high as 40% for 2013; Moreover, each year could not be compared since each year has its own different targets.

C. Recommendation of Alternative Policy

The performance evaluation by the Researcher on the PDAM Tirtawening performance based on the Balanced Scorecard, it could be said that the performance is bad and under expectation. The performance achievement results of PDAM Tirtawening respectively are 77.07 in 2011, 76.06 in 2012, and 81.83 in 2013. The highest score is in 2013. It could be from the increasing service scope from Customer Perspective as well as the increasing price of sales as high as 40% for 2013. Even though 2013 has the highest total scores, the Performance Monitoring is based on the Company target, which the result may difference if we compare the Performance yearly.

The recommendation alternative policies for PDAM Tirtawening as general are as follow:

1. In Internal Business Perspective, the company should be more efficient in distributing water and increase the water production since the demand of water is still high. PDAM Tirtawening should implement better water distribution recording system and transparently documenting the operational Business. The problems in Internal Business Process Perspective are the company still only cover 70% of Bandung city [6], thus needs more water to be produced. The other problem is even with high production output, but the water distributed is low. Many of water distributed is loss unrecorded, symptom for implementing better recording system.
2. The company needs to revise the target of Service Scope in Customer Perspective This strategy is important and since it has positive impact to the revenue and net income; moreover, more customer means the water production could increase as well. All of the years score high in Customer Perspective since most of it could achieve the target. The score in 2011, 2012, and 2013 respectively are 26.14, 24.86, and 25.06. The problem In Customer Perspective is the company current service scope target has not updated yet [6]. The target has been passed in 2011 and even before. The real increase of service scope from 2011 to 2013 is only 2%.
3. The company should overcome the problem in Financial Perspective. The researcher suggests that the company to be transparent with the financial statement to the public. The report should be breakdown and with accountable accounting system with support of well-used information technology system. In Financial Perspective, year 2013 scores the highest though all of them are under target. All Years were lack in profit after tax since their Revenue are far from the target while the reason could be that the operating expense ratio is high, see Table 4.2. The problem is the expense was high. The Researcher finds and concludes that the accounting system is poor and need to be more transparent. Some of the entry needs to be readjusted.
4. The company should create target planning for the Employee Competence from Learning and Growth Perspective. Employee quality will affect the business process as well as improvement in many aspects of business. Completion of the competence employee is also considering the skills in process of information technology at all levels of employees to deliver information in order to achieve results efficiently and effectively. The lowest scores are in Learning and Growth Perspective where the scores respectively are 7.71 in 2011, 9.32 in 2012, and 10.3 in 2013. The problem is the company the Strategic Objective competence employee is low. The company has no annual target set for competence employee
5. Improvement of accountable and transparent administrative procedures and documentation of good governance, before implementing the evaluation based on the perspectives of the Balanced Scorecard in order to know what are the things that must be improved and to be maintained. The company needs to use the Balance Scorecard for performance evaluation. The company's current evaluation based on financial statement only is not enough. To implement the Balance Scorecard, the administrative recording and documentation should be fixed, accountable, and transparent, but the problem is the company is recording is still not publicly published and the recording is not breakdown completely.

Conclusions

This study managed to answer the research questions previously stated in Chapter I. Some of the conclusions from this study are:

1. The design of performance monitoring system based on Balanced Scorecard method for PDAM Tirtawening is the result of translation from Vision, Mission, and strategy of the company. Then, the Researcher creates Balanced Scorecard Strategy Map based on four perspectives: Financial, Customer, Internal Business Process, and Learning and Growth. Each Perspective has Strategic Objective and indicator. Learning and Growth Perspective has two Strategic Objectives, Improving Human Resources Quality with employee training ratio as indicator and Maintain HR Availability with maintain HR availability as indicator. Internal Business Processes Perspective has two Strategic Objectives, Improving Water Production with productivity level as indicator and Improving Water Distribution with water efficiency as indicator. In Customer Perspective, there is also two Strategic Objectives, Maintaining Relationship with Customer with solving customer

complaint as indicator and Increasing Service Scope with drinking water service scope as indicator. Financial Perspective has three Strategic Objectives, Revenue Growth with revenue as indicator, Reduction cost with operating expense as indicator, and Net Income Growth with profit after tax as indicator. The Researcher uses BPPSPAM weighing measurement for the company performance monitoring system.

2. From the overall performance of PDAM Tirtawening, generally, the result is bad since it is under the target performance so improvements are necessary. The performance achievement result of PDAM Tirtawening is 77.07 in 2011, 76.06 in 2012, and 81.83 in 2013 from minimum target 100. The highest score is in 2013 since there is an increase in price policy and growing service scope. The highest Perspectives performance is Customer Perspective following by Financial Perspective and Internal Business Perspective, while Learning and Growth Perspective scores the lowest of all. Based on the Problem, in Financial Perspective, the problem the accounting and recording is lack thus the expense was high. In Customer Perspective, the score are good but the target of service is underestimated, there is only 2% of increasing service scope from 2011 to 2013. In Internal Business Process Perspective, the problem is unrecorded water loss. In Learning and Growth Perspective, ratio of competence employee is poor and there is no integrated target plan for the employee development.
3. The recommendation policies for the companies:
 - a) Implement better water distribution recording system and transparently documenting the operational Business
 - b) The company needs to revise the target of Service Scope in Customer Perspective.
 - c) The researcher suggests that the company to be transparent with the financial statement to the public with the support of well used information technology system.
 - d) The company should create target planning for the Employee Competence from Learning and Growth Perspective.
 - e) Improvement of accountable and transparent administrative procedures and documentation of good governance before implementing the evaluation based on the perspectives of the Balanced Scorecard.

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