The Measurement Analysis of Public Health Center Service Performance UsingBalanced Scorecard

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Abstract: Public health center is a facility in public health sectorpresented by the regional government. Public health center provides nonprofit services, prioritizing the best health service for the community. As a public organization, public health center is also demanded to be responsible forits entire performance to the regional government and the community. Balanced Scorecard is a proper choice to measure the public health center performance in financial and non-financial aspects. The objective of this research was to improve the service performance of a public health center using BSC. This performance measurement utilizedquantitative method,which started from describing every indicator of achievementdataof each perspective that has been collected and recapitulated. Then,the measurement continued with comparing the indicatorsof achievement result withevery performance target of the perspective before determining the weight of every perspective.After giving score and criteria for each indicator of the perspectives, the performance was assessed. In-depth interview was carried out involving the head of administration, survey team, Financial Manager of Special Allocation Funds (DAK), Financial Manager of Health Insurance (JKN), person in charge of National Health Insurance, and the head of management and planning. Thus,there were six (n=6) samplesin this research. The performance measurement of public health center using BSC identified that the highest performance assessment was the Internal Business Process perspective with 39.93%.The financial perspective was still low with 20.67% andon the third place was the learning and development perspective with 16.96%.Meanwhile, the lowest performance was the customers'perspective amounting to13.94%. The following step is an interpretation of the performancemeasurements results using Balanced Scorecard inthe radar charts. The publichealth center, as a nonprofit organization, needs to pay more attention to the learning and development perspective by utilizing the funding by JKN and DAK to improve the staff competencies.Besides, it is also necessary to increase the customer perspective as the lowest performance by optimizing the Complaint Center function.
Keywords: balanced scorecard, health care, nonprofit, performance.

1. Introduction

   Performance measurement is one of the strategiesof an organization to evaluate the outcomes of the activities carried out by each work unit before comparing them to the established benchmarks. The conventional performance measurement system is commonly used by a conventional management team to measure performance. Conventional performance measurement emphasizes on financial aspects. Performance is also set as a

standard based on the company potential. Performance is divided into two, namely: individual performance and organizational performance.[1]

Based on financial aspects,performance measurement is considered inadequateto inform real and complete information regarding the condition of an organization. Financial measurement only explains past performances and short-term benefits. The increasing complexity and variability of an organizational environment requires management with increasingly broad perspectives. According to these limitations and demands, it is necessaryfor performance measurement system to provide an approximate overview by combining financial and non-financial perspective comprehensively.

Kaplan and Norton statethat[2]:

"Balanced Scorecard provides executives with a comprehensive framework that translates a company's strategic objectives into a coherent set of performance measures."

Balanced Scorecard concept developed byKaplan and Norton is a measuring performance method that incorporates four aspects/perspectives in the implementation, i.e.,financial perspective, customer perspective, internal business perspective, as well aslearning and growth perspective.[2]

The Balanced Scorecard is considered appropriate for measuring the performance of nonprofit public organizations. That is because not only does Balanced Scorecard measure financial aspect, but also the non-financial one. It is suitable for public organizations that do not regard profits as its key performance measurement, but as satisfactoryservice for the community.

The application of Balanced Scorecard in the business sector aims to increase competitivenessas it emphasizes more on scores, missions, and achievement for the public sector. From the financial aspect, the business sector will prioritize on profit, growth, and market share, while the public sector focuses on measuring productivity and efficiency.[3]

The Balanced Scorecard can help nonprofit agencies determine how to add value for the sake of the community since it measures the impact of the organization's stated objectives, services, and results. When alignment occurs within all these components, the value is added. Frequently, the services do not meet the organization's objectives or may not have the desired impact on the community it serves. In these instances, the Balanced Scorecard is functioned to point out the discrepancies and help the leaders to readjust their plans to attain new objectives.[4]

Health care organizations have relied so much on the use of non-financial statistics and, therefore, most of them believe that they already utilize the Balanced Scorecard. However, Balanced Scorecard is often considered a mere simple list of steps that are easily collected without a direct or clear connection withthe missions or strategies of the organization.[5]

Health Center is a local government agencythat is engaged in the public healthsector. The activities in the Health Center are supposedly nonprofit, prioritizing the best health services for the community. As a public organization, the Health Center is responsible for itsperformance to the local government and the community. Balanced Scorecard is the right choice to measure the performance of the Health Center from both financial and non-financial aspects.

A comprehensive review admitsthat Balanced Scorecard has been introduced in various fields related to health care, both profit and nonprofit agencies, including hospitals, health services, Ministry of Health, long term care services, mental health centers, pharmaceutical services, and health insurance companies.Not only can Balanced Scorecardbe used to develop management strategies, but it also can be used to evaluate health programs, service quality and program development, accreditation, and evaluation of performance measurement.[6]

The description above is the basis for implementing Balanced Scorecard as a tool to measure performance atPacarkeling Health CenterinSurabaya City. Our performance measurement aimed to assess the success of the organization in achieving its vision, missions, goals, and strategies, especially with regard to the implementation of the National Health Insurance program. The purpose of this study was to reveal the result of performance measurements using Balanced Scorecard at Pacarkeling Health Center.

2. Methods

This performance measurement used a quantitative method with the following stages:

a.   Describing each indicator achievement data for each perspective that has been collected and recapitulated in a table to facilitate reading.

b.   Comparing theachievementtargetting at each performance indicator for each perspective to identify the performance of Pacarkeling Health Center

c.   Determining the weight of each perspective.

The weighting was done by using a generic model by Kaplan and Norton that has been modified asseen inTable 1.

Table 1. Weighting Using the Generic Model

No.	Perspective	Weight
1.	Financial	20 %
2.	Customer	30 %
3.	Internal Business Process	30 %
4.	Learning and Growth	20 %
	Total	100 %

Source: Modified, Kaplan, and Norton (2000)

This weighting wasmodified to help adjust the form of the organization as a nonprofit health care facility. The weight was determined based on the level of importance of the perspective. The customer and internal business process perspective had greater weight compared to other perspectives. This wasdue to the National Health Insurance and SpecialAllocation Funds capitation for Pacarkeling Health Center that was strongly affected by the number of National Health Insurance participants, the population, and the performance of the CBFSC (Capitation Based on Fulfillment of Service Commitment) service.

d.   Providing scores and criteriasof each indicator for each perspective

The scoring of each indicator in each criteria followed the result of the internal agreement and the existing standards. The following scores were the standard of each indicator:

Table 2. Scoring and Criteria of Each Indicator for Each Perspective

Criteria	Score
Very Good	4
Good	3
Enough	2
Less	1

e.   Conductingthe performance assessment for each perspective

To assess the performance of each indicator, we employedthe following formula:

$$\text{Performance} = \frac{\text{Total Score}}{\text{Maximum}} \times 100\ \%$$

Score

Afterwards, the result of the performance evaluation was grouped into the categoriesas seen in Table 3 and Table 4.

Table 3. Performance Assessment Result

No.	Performance Result	Criteria
1.	85 - 100	Very Good
2.	70 - <85	Good
3.	55 - <70	Enough
4.	<55	Less

Table 4. Balanced Scorecard Assessment Score

Variable	Interval	Criteria	Score
Financial Perspective (Weight = 20%)			
Economic Ratio	85% - 100%	Very Good	4
	70% - <85%	Good	3
	55% - <70%	Enough	2
	<55%	Less	1
Effectiveness Ratio	85% - 100%	Very Good	4
	70% - <85%	Good	3
	55% - <70%	Enough	2
	<55%	Less	1
Efficiency Ratio	85% - 100%	Very Good	4
	70% - <85%	Good	3
	55% - <70%	Enough	2
	<55%	Less	1
Customer Perspective (Weight = 30%)			
Customer Acquisition	>15%	Very Good	4
	10% - 15%	Good	3
	5% - <10%	Enough	2
	<5%	Less	1
Customer Satisfaction	85 - 100	Very Good	4
	70 - <85	Good	3
	55 - <70	Enough	2
	<55	Less	1
The perspective of Internal Business Process (Weight = 30%)			
Contact Rate	>150‰	Achieved	4
	150‰	Safe	3
	<150‰	Unsafe	2
Non-specialty Referral Ratio	<5%	Achieved	4
	5%	Safe	3
	>5%	Unsafe	2
Prolanis Ratio	>50%	Achieved	4
	50%	Safe	3
	<50%	Unsafe	2
Learning and Growth Perspective (Weight = 20%)			
Level of Employee Training	>50%	Very Good	4

Variable	Interval	Criteria	Score
	35% - 50%	Good	3
	20% - <35%	Enough	2
	<20%	Less	1
Employee Retention		The smaller, the better	

3. Result

Balanced Scorecardof performance measurementwas based on four key perspectives, including:

3.1   Balanced Scorecard Measurement

3.1.1. Financial Perspective

Financial perspective is closely associated with the level of effectiveness and efficiency. The indicators to measure performance consist of economic ratios, effectiveness ratios, and efficiency ratios. The following are the results of the performance measurement of each indicator.

The average 2016-2018budget ceiling forPacarkeling Health Center from the National Health Insurance and Special Allocation Funds wasIDR 3,082,639,493, with an average realization of IDR 2,560,736,009. The average economic ratio was 82.87%. The realizationwas included in the good category even though it did not reach 100%. It was due to the many programs ofNational Health Insurance in which the officials or person in charge were responsible for double tasks and work.

Table 5. Economic Ratioin Pacarkeling Health Center

No.	Year	Capitation Budget Ceilingof National Health Insurance + Special Allocation Funds (IDR)	Realization of Capitation Spendingof National Health Insurance + Special Allocation Funds (IDR)	Economic Ratio (%)
1.	2016	2,893,045,993	2,408,570,418	83.25
2.	2017	2,942,624,496	2,312,378,205	78.58
3.	2018	3,412,247,991	2,961,259,405	86.78
	Total	9,247,918,480	7,682,208,028	
	Average	3,082,639,493	2,560,736,009	82.87

Source: 2016-2018Financial Data Related to National Health Insurance in Pacarkeling Health Center

The annual average income target of National Health Insurance and Pacarkeling Health Center wasIDR 2,089,321,708, with an average annual revenue realization of IDR 2,988,422,051. The average effectiveness ratio was 147%. The realization of the revenue exceeded the target because it was added to the remaining excess of capitation funds in the National Health Insurance budget in the previous year.

Table 6. Effectiveness Ratio in Pacarkeling Health Center

N o.	Year	Capitation Revenue Targetof National Health Insurance + Special Allocation Funds (IDR)	Realization of Capitation Revenueof National Health Insurance + Special Allocation Funds (IDR)	Effectivenes s Ratio (%)
1	2016	2,246,691,383	2,967,488,541	132.08
2	2017	2,358,961,490	2,917,878,150	123.69
3	2018	1,662,312,250	3,079,899,463	185.28
	Total	6,267,965,123	8,965,266,154	
	Averag e	2,089,321,708	2,988,422,051	147

Source: 2016-2018 Financial Data ofPacarkeling Health Center

The average revenue realization from the National Health Insurance and Special Allocation Funds for PacarkelingHealth Center was IDR 2,988,422,051each year, with an average annual expenditure realization of IDR 2,560,736,009. The Average Efficiency Ratio was of 86% and categorized as very good, implyingthat Pacarkeling Health Center performed efficiently.

Table 7. Efficiency Ratio in Pacarkeling Health Center

No .	Year	Realization of Capitation Revenueof National Health Insurance + Special Allocation Funds (IDR)	Realization of Capitation Spendingof National Health Insurance + Special Allocation Funds (IDR)	Efficienc y Ratio (%)
1	2016	2,967,488,541	2,408,570,418	81.17
2	2017	2,917,878,150	2,312,378,205	79.25
3	2018	3,079,899,463	2,961,259,405	96.15
	Total	8,965,266,154	7,682,208,028	
	Averag e	2,988,422,051	2,560,736,009	86

Source: 2016 - 2018 Financial Data ofPacarKeling Health Center

The assessment of the performance using Balanced Scorecard proved that the achievement score based on the financial perspective was 20.67% with the highest score in the Effectiveness Ratio indicator. It indicatedthat Pacarkeling Health Center utilized the National Health Insurance and Special Allocation Funds capitation budget effectively as presented in Table 8.

Table 8. Balanced Scorecard Measurement Result for 2018 Performance Data Based on the Financial Perspective

Perspective		Strategic Target(Finance Score 20.67%)							
Descrip tion	Ratio to Perspec tive	Descripti on	Percent age of	Outcome Measure s	Realiza tion 2018	Targe t 2018	Target Acheive ment	Wei ght	Sco re
A	B	C	D	E	F	G	H	I	J
Finance	20.00%	Optimiz ation of Capitatio	30.00 %	Econom yst Ratio	82.87%	100.0 0%	82.87%	6.00 %	4.97 %

		n Expenditure Realization of JKN							
		Increased Effectiveness of Capitation Income Realization of JKN	30.00 %	Effectiveness Ratio	147.00 %	100.00%	147/00%	6.00 %	8.82 %
		Increased Effectiveness Capitation of Spending JKN	40.00 %	Efficiency Ratio	86.00%	100.00%	86.00%	8.00 %	6.88 %

3.1.2. Customer Perspective

The indicators used to measure performance based on customer perspective included the level of customer acquisition and the score of customer satisfaction at Pacarkeling Health Center. Customer Acquisition was used to measure the capability of a Health Center to attract customers[4].

Pacarkeling Health Center servedNational Health Insurance participants, and the total number increased in 2016, with 28,566 participants. In 2017, it experienced a significant increase by 11.84%, rounding up National Health Insurance participants in Pacarkeling Health Center to 32,402 people. In 2018, however, it decreased by 0.11%as seen in Table 9.

Table 9. Customer Acquisition in Pacarkeling Health Center

No.	Year	Total National Health Insurance Participants	Increase/(Decrease)	%
1	2016	28,566		
2	2017	32,402	3.84	11.84
3	2018	32,365	-37	-0.11

Source: 2016 – 2018 Data ofNational Health InsuranceParticipants in Pacarkeling Health Center

In carrying out its duties, Pacarkeling Health Center served 61,038 people among the community in 2018 as seen in Table 10.

Table10. Customer Acquisition in Pacarkeling Health Center Viewed from the TotalSurrounding Population

No.	Year	Total Population	Increase/(Decrease)	%
1	2016	61,000		
2	2017	61,108	108	0.18
3	2018	61,038	-70	-0.11

Source: 2016 – 2018 Pacarkeling Health CenterProfile

Subsequently, this research discovered that the average score of satisfaction in one year at Pacarkeling Health Centerwas 77.1. This scorewas categorized as good, presumingthat the customers of Pacarkeling Health Center were satisfied with the service they received.

The notion of customer satisfaction refers to two variables, including perceived service and expected service by the customer.[7]Customers are satisfied when the service they receive exceeds their expectations. At the same time,dissatisfaction mayoccur when customers feel that the service they receive is below their expectations.[8]

In Table 11, theperformance assessment using Balanced Scorecard confirmsthat the achievement score based on the customer perspective was 13.94% with the highest score in the Customer Satisfaction indicator. It indicatesthat Pacarkeling Health Centerhave effectively provided the health service.Hence, the customersagreeto visit and to participate in each health activity planned by Pacarkeling Health Center.

Table 11. Balanced Scorecard Measurement Result for 2018 Performance Data Based on Customer Perspective

Perspective		Strategic Target			(Customer Score 13.94%)				
Description	Ratio to Perspective	Description	Percentage of	Outcome Measures	Realization 2018	Target 2018	Target Acheivement	Weight	Score
A	B	C	D	E	F	G	H	I	J
Customer	30.00%	An Increased in the Number of JKN Participants	50.00%	Custimer Acquisition	-0.11%	10%	-1.10%	15.00%	-0.17%
		Increased Customer Satisfaction	50.00%	Value of Customer Satisfaction	77.10%	82.00%	94.02%	16.00%	14.10%
			100.00%				90.92%	30.00%	13.94%

3.1.3. Internal Business Process Perspective

In this perspective, the researchers used the performance assessment indicators set by the Social Insurance Administration Organization, including the Contact Rate, Non-Specialty Referral Ratio, and Prolanis Ratio. These indicators were not utilized until the beginning of 2017. Therefore, this performance measurement was carried out trimonthly in 2018. The assessment carried out by the Social Insurance Administration Organization of Surabaya City followed this system: if Pacarkeling Health Center was categorized as unsafe in January and February, but categorized safe in March, then the trimonthly assessment for Pacarkeling Health Center would be in the safe category. In other words, the evaluation was conducted in every 5th (fifth) day of the following month. These are the results of performance measurement based on the internal business processesperspective.

Pacarkeling Health Center had acontact rate every fourth quarter in 2018, of 195.89‰. This achievement has met the target set by Social Insurance Administration Organization of Surabaya City, which was 150‰. Thus, Pacarkeling Health Center was in the safe category. This achievement couldincrease the capitation value obtained by Pacarkeling Health Center for IDR 6,000 per capitation as seen in Table 12.

Table 12. Contact Rate in Pacarkeling Health Center in 2018

No.	Quarterly	Contact Rate (‰)	Target (‰)	Criterion
1.	I	239.73	150	Safe
2.	II	219.66	150	Safe
3.	III	190.99	150	Safe
4.	IV	195.89	150	Safe

Source: Social Insurance Administration Organization of Surabaya City – Pacarkeling Health Centerin 2018

Pacarkeling Health Center averagely had a non-specialty referral ratio in the fourth quarter of 2018 of 0%. This achievement has met the target set by Social Insurance Administration Organization of Surabaya City, which was less than 5%. Pacarkeling Health Center was in the achievement category. This achievement couldincrease the capitation value obtained by Pacarkeling Health Center.

Table 13. Non-Specialty Referral Ratio in Pacarkeling Health Center in 2018

No.	Quarterly	Non-specialty Referral Ratio (%)	Target (%)	Criterion
1.	I	0	< 5%	Achieved
2.	II	0	< 5%	Achieved
3.	III	0	< 5%	Achieved
4.	IV	0	< 5%	Achieved

Source: Social Insurance Administration Organization of Surabaya City – Pacarkeling Health Center in 2018

Pacarkeling Health Center had a prolanis ratio in the fourth quarter of 2018 of95.08%. This achievement has met the target set by the Social Insurance Administration Organization of Surabaya City, which was more than 50%. Thus, Pacarkeling Health Center was in the achievement category. This achievement could increase the capitation value obtained by Pacarkeling Health Centeras presented inTable 14.

Table 14. Prolanis Ratio in Pacarkeling Health Center in 2018

No.	Quarterly	Prolanis Ratio (%)	Target (%)	Criterion
1.	I	82.76	> 50%	Achieved
2.	II	77.05	> 50%	Achieved
3.	III	93.44	> 50%	Achieved
4.	IV	95.08	> 50%	Achieved

Source: Social Insurance Administration Organization of Surabaya City – Pacarkeling Health Center in 2018

The assessment of the performance using Balanced Scorecardrevealedthat the achievement score based on the internal business process perspective was 39.95% with the highest score in the Contact Rate indicator. It indicatedthat Pacarkeling Health Centerhasoptimally provided the health service, both in Individual Health Care and Community Health Care.

3.1.4 Learning and Growth Perspective
The indicators used to measure the performance of the Pacarkeling Health Center based on this perspective included the level of employee training and retention.

Learning and growth perspective provides an assessment supportive to the quality of service and personnel required to realize financial, customer, and internal business process targets. A research[1]uses the level of employee training as a benchmark, implyingthat the improvement in employee capability is assessed from the increase in training/seminars held by the Health Center or by an external party. The higher the level of the training, the better the ability of the employees in providing the service.

Pacarkeling Health Center has sent its employees to join training to increase the competency of averagely 24 people annually. This competency improvement includes training, seminars, workshops, and even formal education for the employees. Competency improvement is expected to improve employees' skills.

According to the report, no employee quitted Pacarkeling Health Center in the pastthreeyears. Moreover, the organization welcomed a number of new employees. Itproved the strong commitment of the employees to continue working at Pacarkeling Health Center. Pacarkeling Health Center provided services to every staff, both medical and non-medical, regulated based on the amount of capitation received by Pacarkeling Health Center. This service was a form of appreciation for the staff for providing optimal health services.

Employee retention is a process in which the employees are encouraged to stay in an organization for a maximum period of time or until the completion of a project where the employee retention is beneficial to the organization as well as the employees. An organizational context factor where an organization rewards employees for trying to improve their performance and to encourage loyalty and retention is in accordance with Luthans' statement[9].

Figure 4 displays that the assessment of the performance using Balanced Scorecard impliesthat the achievement score based on thelearning and growth perspectivewas16.96% with the highest score in the level of employee training indicator. It indicates that Pacarkeling Health Centeris committed to improving its staff competencies, for the sake of the development of skills and expertise, to optimally contribute to the organization's objectives.

3.2 Alternative Strategies

After measuring the performance of each perspective using Balanced Scorecard, the overall results are explained in Table 16.

Table 16. Pacarkeling Health Center Balanced Scorecard Spiders Graph

Finance	Customer	Growth and Learning	Internal Business Processes
20.67%	13.94%	16.96%	39.95%

The tablepresents that:

a.   The highest performance appraisal is based on the Internal Business Process perspective.

b.   Financial Perspective shows dissatisfying result.

c.   The third position is the learning and growth perspective.

d.   The poorest performance is based on the customer perspective.

4. Discussion

The highest performance appraisal was based on the internal business process perspective due to the collaboration with the National Health Insurance and Special Allocation Funds in the health servicesimplementation, especially in the Management Administration, Individual Health Care, and Community Health Care. This perspective was linked to the Health Center activities.[10]

Financial Perspective led todissatisfying result since it has not affected the use of funds significantly and there were still many programs that have not been covered by the National Health Insurance and Special Allocation Funds due to limited number of personnel. There were still many workers who took on double duties[11]. It confirmed that although the funding is available, the programs planned may not be realized without the adequate number of personnel. The empowerment of optimal human resources can be done by reviewing the Workforce Plan for the need of additional health workers and non health workers.[12]

The third position was the learning and growth perspective. Some of the proposed activities including training and competency improvement were only available for medical personnel while non-medical personnel were still totally neglected.[13]However,Pacarkeling Health Center employees were seriously committed to their job, evidenced by the absence of employee turnover during the past three years.

The poorest performancewas based on the customer perspective.[14] The result of the satisfaction survey conducted by both internal and external parties were categorized good. However, it still required improvement since the average score was still below 80. Pacarkeling Health Center should pay more attention to every patient or customer complaint, not to mention those in the complaintsand suggestions box, the ones received by the Complaint Center of Social Insurance Administration Organization of Surabaya City, or the ones received by the Public Health Office of the city. It is expected to foster the customers' trust for Pacarkeling Health Center.

5. Limitation of the study

The limitation of this study was analyzing the performance of Pacarkeling Public Health Centerusing four perspective in Balanced Scorecard measurement.

6. Conclusion

Based on the result and discussion we can conclude that Pacarkeling Public Health Center needs to develop some strategic plans to improve its performance. It includes, first, increasing the number of eligible employees for training opportunities or other competency improvements. Second, optimizing the utilization of the National Health Insurance and

Special Allocation Fundsto improve the employee competencies, for both program implementation and community empowerment. Accordingly, the community members are expected to have their skills improved too. Third, the disseminationof complaintsand suggestions box for Pacarkeling Health Center should be consideredto improve public health services.

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