Measuring Performance of Padang Panjang Public Hospital in Achieving Its Targets Using the Balanced Scorecard Method

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ABSTRACT
The Balanced Scorecard is widely used in various institutions, including hospitals because it can measure performance in a comprehensive, coherent, balanced, and measurable manner. Performance measurement at Padang Panjang Public Hospital so far focused on the financial aspect. This study aims to measure the performance of Padang Panjang Public Hospital in achieving its target with the Balanced Scorecard method. There are 14 indicators of performance that are measured in this study, namely economic ratio, efficiency ratio, and effectiveness ratio that describe performance from a financial perspective; customer satisfaction, complaint handling, customer retention, and market share that describe performance from a customer perspective; BOR (Bed Occupancy Rate), ALOS (Average Length of Stay), Bed Turn Over (BTO), and Turn Over Interval (TOI) which describe performance on the internal business process perspective and employee turnover, employee training, and employee productivity which describe performance from a learning and growth perspective. This is a mixed-method study, whereby the quantitative phase is followed by the qualitative phase. Quantitative data was taken and processed from hospital documents in 2018 and 2019. Each performance indicator is assessed by comparing it with its target. Interviews were conducted to get an explanation of the results obtained. Five of the fourteen performance indicator measurements have not reached the target, namely efficiency ratio, effectiveness ratio, BOR, employee training, and employee productivity. To improve performance, the hospital can focus on employee performance which will affect other performance indicators by providing education, training as well as employee job satisfaction.
INTRODUCTION

The Balanced Scorecard is a performance measurement method that is widely used by organizations around the world either profit or non-profit organizations including hospitals. This is because the Balanced Scorecard is different from traditional performance measurement that focuses on finance only which is short-term value and does not describe the overall performance of organization. The Balanced Scorecard measures performance in a comprehensive, coherent, measurable, and balanced manner through four perspectives, namely financial perspective, customer perspective, internal business process perspective as well as learning and growth perspective as introduced by Kaplan and Norton more than 30 years ago.

Hospital is a complex organization that consists of human resources with various educational and professional backgrounds which provide various types of services, either medical or non-medical. Hospitals also require a large amount of capital in their operation and must continuously adapt to the development of science and technology. To assess the performance of the hospital with all its complexities, performance measurement is needed. Performance measurement is a method or tool used to record and assess the achievement of the implementation of activities through the results displayed in the form of products, services, or a process based on the goals, objectives, and strategies that have been made so that the organization progress can be known. The Balanced Scorecard can be applied to measure hospital performance and as a material consideration in making policy and preparation for further work plans.

Padang Panjang Public Hospital is owned by the regional government of Padang Panjang City. Performance measurement in Padang Panjang Public Hospital so far focused on the financial aspect. This can be seen in the Government Agency Performance Annual Reports which just provide hospital financial data. As a Badan Layanan Umum Daerah (BLUD), it is also necessary to know the hospital performances from the non-financial aspect according to the regulation.

Based on data from the finance department, the revenue of Padang Panjang Public Hospital has decreased in 2019. Likewise, the achieved revenue against the target tends to decrease annually. In 2017 the revenue exceeded the target (103%) then the number continued to decline in the following year, so it only reached 86% in 2018 and 2019. This could be caused by performances of non-financial aspects because they can influence each other. To get an overview of the overall performance (financial and non-financial), it is necessary to measure performance with the Balanced Scorecard method.

This study aims to measure the performance of Padang Panjang Public Hospital in achieving its target with the Balanced Scorecard method. It is hoped that this research can provide input and material evaluation for Padang Panjang Public Hospital in improving and maintaining hospital performance, so that they can provide the best quality services for society.

MATERIAL AND METHOD

This research was based on a mixed-method study design that was carried out sequentially, preceded by quantitative research and then followed by qualitative research. Quantitative research is required to cultivate numbers through mathematical calculation and statistics. The data was taken and processed from available documents at the hospital which contained data in 2018 and 2019. The performance measurement indicators are divided into four perspectives (financial, customer, internal business process as well as learning and growth) according to the Balanced Scorecard method. Determination of these indicators by considering several existing studies regarding performance measurement of hospitals with the Balanced Scorecard. The achievement of each performance indicator is analyzed by comparing it with the target or standard.

The purpose of qualitative research is to get an explanation of the result that has been obtained. Therefore, we have interviewed some informants. They are the director of the hospital (IF.1), the head of the administrative division (IF.2), the head of the service division (IF.3), and the head of the finance department (IF.4).

RESULTS

Financial Perspective

Financial perspective performance is mea-
sured using economic ratios, effectiveness, and efficiency ratios.\textsuperscript{11,12} Table 1 presents the measurement result.

The economic ratio was economic. It means that the hospital was able to manage its expenses so that it did not exceed the budget that had been set. The efficiency ratio that assessed the level of hospital independence was inefficient. It means that the income earned by the hospital from its services had not fully covered its expenses. The effectiveness ratio that assessed the level of income achievement was still not effective. It means that the achievement of income was still lack.

The economic ratio was economic, but the efficiency ratio was not efficient yet. It means that the hospital had not been able to finance itself for its routine operational costs, so there were amout of debts while the funds from the state budget (\textit{Anggaran Pendapatan Belanja Negara/APBN}) could only be used to purchase equipment and building construction. "Since the BLUD status, the hospital has not received fund from the local government, so all hospital operating costs must be financed itself. ....actually, the hospital have not been able to..., so we have debt. ...funding from the APBN could only be used to purchase equipment and building construction." (IF.4).

The effectiveness ratio has not been achieved due to decreased hospital income. This could be influenced by a decrease in income from services to patients because the largest income of hospital comes from there according to the informant’s statement as follows:

"Hospital revenue mostly comes from patient care, which is 98%." (IF.4).

Customer Perspective

Customer perspective performance was measured using indicators of customer satisfaction level, complaint handling, customer retention, and market share.

a. Patient Satisfaction

Patient satisfaction is only known in 2019 when a satisfaction survey was conducted by the hospital, while it is not known in 2018 because there was no measurement of patient satisfaction. The result of patient satisfaction in 2019 was 98.62\%. That has reached the standard (≥80\%).\textsuperscript{7} It means that the majority of patients were very satisfied with the services they received. The patient satisfaction survey was held in four service units of the hospital which are emergency, outpatient, inpatient, and support services (Table 2). Each service unit had some elements of assessment. The lowest assessment element was found in outpatient services and supportive services. Those are waiting time for the doctor’s examination and waiting time for support service processes.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Target*</th>
<th>Formula*</th>
<th>Result</th>
<th>Result</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Ratio</td>
<td>&gt; 100%</td>
<td>Economic</td>
<td>\begin{align*} &amp; \frac{\text{Expense}}{\text{Budget}} \ &amp; \times 100% \end{align*}</td>
<td>52,078,807,873</td>
<td>52,557,826,509</td>
</tr>
<tr>
<td>Efficiency Ratio</td>
<td>&lt; 90%</td>
<td>Efficient</td>
<td>\begin{align*} &amp; \frac{\text{Expense}}{\text{Income}} \ &amp; \times 100% \end{align*}</td>
<td>46,664,742,167</td>
<td>45,657,963,589</td>
</tr>
<tr>
<td>Effectivity Ratio</td>
<td>&gt; 100%</td>
<td>Effective</td>
<td>\begin{align*} &amp; \frac{\text{Income}}{\text{Target}} \ &amp; \times 100% \end{align*}</td>
<td>45,143,487,303</td>
<td>45,109,911,067</td>
</tr>
</tbody>
</table>

Based on income from hospital services and routine hospital operational expenses (excluding APBN)
*Mahmudi, Manajemen Kinerja Selor Publik, 2015
Table 2. Patient Satisfaction Survey in Service Unit

<table>
<thead>
<tr>
<th>Service Unit</th>
<th>Index of Satisfaction (%)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency</td>
<td>99.56</td>
<td>Assessment elements are between 97.37% and 100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assessment elements are between 86.03 % and 100%, the lowest is the waiting time for doctor’s examination</td>
</tr>
<tr>
<td>Outpatient</td>
<td>98.33</td>
<td>Assessment elements are between 86.03 % and 100%, the lowest is the waiting time for doctor’s examination</td>
</tr>
<tr>
<td>Inpatient</td>
<td>99.40</td>
<td>Assessment elements are between 95.89% and 100%</td>
</tr>
<tr>
<td>Supportive</td>
<td>98.10</td>
<td>Assessment elements are between 73.50% and 100%, the lowest is the waiting time for support service process</td>
</tr>
</tbody>
</table>

Source: Secondary data from Community Satisfaction Survey Report of Padang Panjang Public Hospital, 2019

Based on information obtained from informants (IF.3), waiting time for services was influenced by the accumulation of the number of patients on certain days and the availability of several polyclinic services that were not held every day.

“There was an accumulation of patients on certain days... so we will add the day of specialist doctors’ services, opening afternoon polyclinics, doctor’s schedule adjustment”. (IF.3).

b. Complaint Handling

Complaint handling is measured based on the number of written complaints that are reported to the customer service management unit and have been responded or followed up by the hospital management compared to the number of all written complaints reported in the same year. The standard percentage of complaint handling was ≥60%. Based on data in the complaint service unit of Padang Panjang Public Hospital, there were only 2 complaints in 2018 and 3 complaints in 2019 from patients that had been recorded and all of them had been handled. It can be measured that the handling of complaints at the Padang Panjang Public Hospital was 100%. It means that all written complaints were handled by the hospital. There was a possibility that there were unwritten complaints based on the confession from the complaint service unit itself and the informant (IF.3), some cases were handled directly and not recorded. Because of that, it could not be known with certainty how many total complaints were received. Even so, the informant (IF.3) emphasized that every incoming complaint was handled.

“We handled complaints on a case-by-case basis. ...not all complaints were recorded, because some complaints were handled directly, so they were not recorded.” (IF.3).

c. Customer Retention

Customer retention is calculated by comparing the number of old patients with the total visits in one year. Customer retention at Padang Panjang City Hospital is shown in table 3. It has exceeded the target/standard (60-70%). It means that the hospital was able to retain old customers (patient loyalty is high). On the other hand, there was a decrease in patient acquisition. Patient acquisition is the percentage between the number of new patients and the total number of patients. However, there was an increase in the total number of patient.

d. Market Share

Market share reflects the proportion of businesses controlled in a market segment. The measurement of hospital market share in this study was used to determine the number of patients based on the area that can be achieved by the hospital. Hospital market share was calculated based on the percentage of patient visits from outside the city. The target market share is an increase in the percentage. Table 3 shows the market share has increased which means that the hospital has dominated the segment of patients who come from outside the city.

Internal Business Process Perspective

Performance of internal business processes is measured using the indicators of Bed Occupancy Rate (BOR), Average Length of Stay (ALOS), Bed Turn Over (BTO), and Turn Over Interval (TOI).  

\[
BOR = \frac{\text{Total Number Inpatient Days}}{\text{Number of Beds} \times \text{Period}} \times 100\% 
\]

\[
ALOS = \frac{\text{Total Inpatient Days of Care}}{\text{Total Number of Patient Discharges (Life and Death)}} 
\]
The internal business process perspective performance is shown in Table 4. The value of BOR did not meet the target and showed a decrease, while ALOS, BTO, and TOI were in target. The following is the opinion of the informant regarding that Hospital’s Bed Occupancy:

“We found that specialist doctors often suggest patients out to other hospitals instead of doing treatment at the Padang Panjang public hospital.” (IF.1 & IF.4).

Further analysis is needed to find out about the BOR value as stated by the informant below:

“First, a problem analysis must be carried out to find out why the BOR value was low.” (IF.1).

### Learning & Growth Perspective

Performance in the learning & growth perspective was measured using the indicators of employee turnover, employee training, and employee productivity.

The internal growth & learning perspective performance measurement is shown in Table 5.

The employee turnover showed an increased but, that was still in accordance to the standard (<10%).

Employee training was low. The informant said that the training for its employees has been fulfilled. The hospital also held training internally and training for every new employee. However, the overall amount of employee training have not reached the standard (≥60%).

“For employee training that must have such as BTCLS in the ER generally, it had been done. We also held in-house training such as PPI, BTCLS, ATCLS, and PPGD...We also held training for every new employee.” (IF.2).

Employee productivity has decreased where there has been an increase in the number of employees while income has decreased. The following are the opinions of informants regarding employee performance.

“...Indeed, an increase in the number of employees should be accompanied by an increase in income, but of course, there are some factors can influence it. And the real goal of this hospital is not to make a profit.” (IF.2).

“The incentives were low, then we have added them so that employees will be happy and satisfied... Because satisfied employees will certainly affect their work.” (IF.1).

### Table 3. Customer Retention and Market Share

<table>
<thead>
<tr>
<th>Year</th>
<th>Old Patient</th>
<th>New Patient</th>
<th>Patient from the Outside City</th>
<th>Total Patient</th>
<th>Customer Retention</th>
<th>Customer Acquisition</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>66,318</td>
<td>8,203</td>
<td>33,547</td>
<td>74,521</td>
<td>89%</td>
<td>11%</td>
<td>45%</td>
</tr>
<tr>
<td>2019</td>
<td>83,979</td>
<td>8,413</td>
<td>52,323</td>
<td>92,392</td>
<td>91%</td>
<td>9%</td>
<td>57%</td>
</tr>
</tbody>
</table>

Source: Processed from Secondary Data from Medical Record Report of Padang Panjang Public Hospital, 2018 & 2019

### Table 4. The Internal Business Process Perspective Performance

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Beds</th>
<th>Total Inpatient Days</th>
<th>Total Inpatient Days of Care</th>
<th>Total Inpatient Discharges</th>
<th>BOR (Target: 60-85%)</th>
<th>ALOS (Target: 3-12 Days)</th>
<th>BTO (Target: 40-50 Times)</th>
<th>TOI (Target: 1-3 Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>150</td>
<td>31,373</td>
<td>23,155</td>
<td>7,562</td>
<td>57.30%</td>
<td>3.06</td>
<td>50.41</td>
<td>3.09</td>
</tr>
<tr>
<td>2019</td>
<td>150</td>
<td>30,335</td>
<td>22,358</td>
<td>7,253</td>
<td>55.41%</td>
<td>3.08</td>
<td>48.35</td>
<td>3.37</td>
</tr>
</tbody>
</table>

Source: Secondary data from Medical Record Reports of Padang Panjang Public Hospital, 2018 & 2019
DISCUSSION

The learning and growth perspective provides the infrastructure for achieving the goals of the other three perspectives. This includes employee. Employee or Human Resource (HR) is one element in the organization that has an important role. Hospital as a service organization, good employee performance will affect the hospital service process. One of the measures of employee performance used in this study is the level of training. Informants claimed that the training for employees has met the standards, but after the measurements, it is proven that employee training was still very low. This shows the advantages of the Balanced Scorecard performance measurement which was measurable.

Employee performance will affect performance from other perspectives. In this case, employee training can affect service and financial performance. According to Hasibuan, employee training will increase Efficiency and effectiveness of service, as well as increase income and greater competition. Research by Dalimunthe, et al and Faridayanti, et al have proved that there is a significant effect between job training on the work productivity of nurses, high training will increase nurse productivity.

Performance in the learning and growth perspective is input, the internal business process perspective is a process (service process), then the expected output in this case is the performance from the customer and financial perspective. In this study, internal business processes are shown in terms of BOR, ALOS, BTO, and TOI. The concern is that the bed utilization rate has not been achieved. As stated by the informant, this could happen because the actions of specialist doctors that often suggest patients out, even though they should be able to be treated at Padang Panjang Public Hospital. So, that bed occupation is influenced by employees (in this case, specialist doctors). There are many other factors that affect bed occupation. Based on research by Rosita and Tanastasya, the influential factors of BOR are internal and external hospital factors. The internal factors are culture, value systems, leadership, management systems, information systems, infrastructure, human resources, marketing, image, and others. Meanwhile, the external factors are geographical location, socio-economic conditions of consumers, community culture, suppliers, competitors, local government policies, regulations, and others. These factors can be investigated further by the hospital.

From a customer perspective, some points that need to be improved are waiting times for services and handling complaints (recording). It surely should be a concern for the hospital. To find objective data regarding service waiting times, both the waiting time for doctor services and waiting times to support services must be measured, because this is a part of the hospital performance assessment. Besides that, the hospital needs to measure customer satisfaction every year in accordance to regulation.

Financial performance is a result of the real-
ization of performance in fulfilling customer needs, implementing productive and effective internal business processes, and developing productive and committed personnel.\textsuperscript{10} Although hospitals with BLUD status are not required to generate profits, but hospitals must be productive to provide quality services for the society. The hospital's ability to finance operating expenses from the income it generates is part of the hospital's performance assessment by regulation.\textsuperscript{7} Based on this research, the financial performance of Padang Panjang Hospital has not reached the expected results. The efficiency and effectiveness ratio reflects the hospital's financial independence. The declining in revenue could be affected by the declining performance of the internal business process perspective (BOR). Based on research by Sirait showed that service performance (BOR, TOI, and ALOS) and financial performance have a significant influence on hospital financial independence.\textsuperscript{21} Also, research by Putri and Fauzi proved that BOR has a significant effect on financial performance.\textsuperscript{22} In line with this, research by Astuti and Hariani concluded that BOR is one of the main factors that need attention to increase hospital financial independence.\textsuperscript{23}

By the results of this study, it can be seen that five of the fourteen performance indicators measured have not reached the target which are the efficiency ratio, effectiveness ratio, BOR, employee training, and employee productivity. It must receive attention to improve hospital performance, considering that all aspects of these indicators are interrelated.

The author views that to achieve optimal hospital performance, the hospital management needs to start from the learning and growth aspect. In this case, it is employee performance, that is how to make the existing human resources in the hospital provide better and more productive services. Optimal employee performance is the most important requirement in achieving the hospital goal, to provide quality health services for the society. Employee performance also have a positive and significant effect on patient satisfaction as proven in the research by Setyorini, et al.\textsuperscript{24} It is necessary to increase employee performance with education and training in their field of service. Research by Faisal and Murkhana has proved that trained employee can improve quality.\textsuperscript{25} In addition, the most important thing in employee performance is employee satisfaction. Research by Rahmah, et al on health workers (nurses) has proved that there is a significant effect between job satisfaction and nurse performance.\textsuperscript{26} Likewise, Fitriati’s research also indicated that job satisfaction can improve employee performance. The research also proved that job satisfaction mediates the effect of empowerment and competence on employee performance.\textsuperscript{27} That shows employee job satisfaction is an influential factor in overall employee performance.

**CONCLUSION AND RECOMMENDATION**

Based on the results of the study, it can be concluded that there are some performance indicators at Padang Panjang Public Hospital that have not achieved the target. To improve its performance, the author recommends that hospitals can start by increasing employee performance in the form of building employee capabilities and commitment through education and training for employees as well as employee satisfaction.

**ACKNOWLEDGMENTS**

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**AUTHOR CONTRIBUTIONS**

Rahmi Hafianti, Yuniar Lestari and Erliningsih conceived and designed the experiments; Rahmi Hafianti performed the experiments; Rahmi Hafianti, Yuniar Lestari and Erliningsih analyzed the data; Rahmi Hafianti, Yuniar Lestari and Erliningsih contributed materials and analysis tools; Rahmi Hafianti wrote the paper.”

**CONFLICTS OF INTEREST**

The authors declare that there is no conflict of interest in influencing the representation or interpretation of reported research results.

**REFERENCES**


