

# Performance Measurement of a Private Hospital during the Pandemic Covid-19

Yuyun Umniyatun<sup>1</sup>, Kris Febyta Aulia<sup>1</sup>, Sri Rahayu<sup>1</sup>, Teuku Nebrisa Zagladin Jacob<sup>2</sup>, Mochamad Iqbal Nurmansyah<sup>3</sup>

1. Universitas Muhammadiyah Prof. Dr. Hamka, Jl. Limau 2 Kebayoran Baru, Jakarta Selatan, Indonesia
2. SamMarie Basra Women and Children Hospital, Jl. Jend. Basuki Rachmat No.31, Pd. Bambu, Kec. Duren Sawit, Kota Jakarta Timur, DKI Jakarta 13420, Indonesia
3. Universitas Islam Negeri Syarif Hidayatullah Jakarta, Jl. Ir H. Juanda No.95, Ciputat, Kec. Ciputat Tim., Kota Tangerang Selatan, Banten 15412, Indonesia

## ARTICLE INFO

## ABSTRACT

### Keywords:

Pandemic  
 Covid-19,  
 Balanced scorecard, Performance,  
 Hospital

### Kata Kunci:

Pandemi  
 Covid-19,  
 Balanced scorecard,  
 Performa,  
 Rumah Sakit.

This study aims to analyze the performance of private hospitals during the COVID-19 pandemic through the BSC approach. This research uses a quantitative descriptive approach based on a case study at a private hospital in East Jakarta. A hospital employee-patient survey provided the main data. 2019–2020 hospital reports supplied secondary data. The results showed that, from the customer perspective, there was a decrease in performance in customer acquisition and retention. From the internal business process perspective, there is a decrease in bed occupancy rate and turnover interval. From a financial perspective, there is a decline in profitability and cost recovery rate. The learning perspective is considered good in employee satisfaction, low employee turnover, and regular training, so that it can be concluded that employee retention is well implemented. Overall, hospitals need to review key performance indicators from a customer perspective and internal business processes to improve financial performance.

### Corresponding author:

Yuyun Umniyatun  
 yuyun.umniyatun@uhamka.ac.id

### SARI PATI

*Penelitian ini bertujuan untuk menganalisis kinerja rumah sakit swasta pada saat pandemic Covid-19 melalui pendekatan BSC. Penelitian ini menggunakan pendekatan deskriptif kuantitatif berdasarkan studi kasus pada salah satu rumah sakit swasta di Jakarta Timur. Data primer bersumber dari survey kepada staf dan pasien rumah sakit. Data sekunder diperoleh dari laporan rumah sakit tahun 2019 dan 2020. Hasil penelitian menunjukkan bahwa pada perspektif pelanggan terjadi penurunan performa pada akuisisi pelanggan dan retensi pelanggan. Pada perspektif proses bisnis internal terjadi penurunan bed occupancy rate dan turn over interval. Pada perspektif keuangan terjadi penurunan pada profitabilitas dan cost recovery rate. Adapun perspektif pembelajaran dinilai baik pada kepuasan karyawan, turn over karyawan yang rendah dan adanya pelatihan rutin sehingga dapat disimpulkan bahwa retensi karyawan terlaksana dengan baik. Secara keseluruhan rumah sakit perlu meninjau kembali key performance indicator pada perspektif pelanggan dan proses bisnis internal untuk meningkatkan performa keuangan.*

Copyright © 2023 by Authors,

Published by IRJBS.

This is an open access article under the CC BY-SA License



## INTRODUCTION

Health services are one of the sectors that support the fastest economic growth in most developed countries (Meena & Thakkar, 2014). Healthcare has become a highly competitive and rapidly growing industry worldwide (Shafiq et al., 2017). In Indonesia, there has been an increase in the growth of profit-making private hospitals in the last 5 years, with an average growth rate of 43% (Trisnantoro & Listyani, 2018). This increase shows the potential of the health industry as a lucrative business. With the increasing growth of private hospitals also increases competition between hospitals. Competition between hospitals has a good impact because hospitals will provide better service in terms of products and services so that customer needs are met (Rivers Patrick A & Glover Sandra H, 2010). Research conducted in 53 hospitals proves that competition will improve clinical outcomes, reduce costs, and increase efficiency (The Health Foundation, 2011).

Norton and Kaplan developed the concept of a "balanced scorecard» (BSC) to assess business performance, where performance is assessed from four perspectives: the customer perspective, the internal business process perspective, the financial perspective, and the growth and learning perspective. (Kaplan & Norton, 1996). BSC in health services was developed and implemented not long after this concept was created, in the mid-1990s. BSC has been applied to overcome various challenges to improve the quality and safety of services, guide the administration of public or private health services, and support the profitability or competitiveness of companies in the system (Bohm et al., 2021).

As a profit-seeking business entity, healthcare services such as hospitals need to develop a balanced scorecard concept to assess their performance. Research shows that using BSC in healthcare services increases gross margin percentage, number of purchases per patient, return on investment, patient repeat rate, customer

satisfaction rate, patient referral rate, number of new patients, doctor consultation time, employee satisfaction rate, and staff turnover while decreasing adverse medical reaction rates, complaint rates, appointment times, waiting times, and dispute rates. So it was concluded that the BSC can improve the performance of a health service as a whole (Yi-Ming Liu, 2017).

The COVID-19 pandemic established by the World Health Organization in March 2020 had a huge impact on hospitals, such as the increasing number of hospitalized patients with severe cases due to suffering from COVID-19 disease, causing an increase in the length of stay. Another impact is the increase in hospital costs due to increased costs for labor, medicines, medical services provided, personal protective equipment, and other medical and safety supplies. Next is the decrease in outpatient visits (KaufmanHall, 2021). With the stipulation of a lockdown, the movement of people outside the home is limited, so that offices, schools, factories, and trips out of town and abroad are closed. The pandemic has also caused people to be afraid to check their health services at the hospital for fear of contracting the Covid-19 disease. In addition, many health workers who have suffered from COVID-19 have even died. As a result, many health services in hospitals were closed or not operating.

Several studies were conducted to determine the impact of the pandemic, including the overall number of hospitalizations and outpatient visits, which decreased by 27% and 22%, respectively, in May 2020, where the most substantial decrease was observed in pediatrics departments (65% and 51%, respectively) (Yamaguchi et al., 2022). Utilization of health services decreased by about a third during the pandemic, with considerable variation and greater reductions among people with less severe illnesses (Moynihan et al., 2021). A survey of employees was also carried out, with the results showing that 41.1% of employees were worried about contracting COVID-19 and that their fear of

transmitting it to their families was much greater than their own (Temsah et al., 2020). Conditions like this increase anxiety and stress for employees, which may have an impact on the quality of services provided to patients (Deriba et al., 2020; Temsah et al., 2020). Service quality will determine patient satisfaction, and during the COVID-19 pandemic, patient satisfaction is influenced by the availability of drugs, the availability of hand sanitizers and alcohol, social distancing arrangements, and clear instructions or signs (Deriba et al., 2020).

During difficult times like the current pandemic, it is very important for companies to keep business afloat and adapt to new realities. The COVID-19 pandemic cannot be predicted for how long it will last, even though the number of cases has been increasing. It takes a lot of effort and commitment from management so that the hospital can return to its original condition and survive amidst intense competition. Therefore, we need the right tools to help analyze the current situation and take the right steps to achieve future business continuity, namely the balanced scorecard (Bołtowiec, 2020). The four perspectives contained in the balanced scorecard can be measured by setting key performance indicators (KPIs). KPIs are indicators that focus on the aspects of an organization's performance that are most critical to the organization's current and future success (Parmenter, 2020). KPIs are measured to determine the long-term success of an organization. KPIs are reliable and meaningful in comparison (Velimirović et al., 2011). Hospitals use key performance indicators (KPIs) to monitor and evaluate performance relative to benchmark values or standards. KPIs illustrate trends and explain how progress is made over time. KPIs also aid in comparing results with approved standards or against other comparable organizations; this enables hospitals and healthcare organizations to improve the quality of their services by determining whether performance is at the desired level and identifying where improvements are needed (Parmenter, 2020). The study found that there were 50 KPIs used in hospitals. The 50 indicators are

divided into 10 categories. For example, the patient access indicators category measures four indicators: number of patients referred, number of patients accepted, percentage of patients accepted, and number of patients on the waiting list for admission (Khalifa & Khalid, 2015). KPIs can be structured through four balanced scorecard perspectives. For example: 1) from the financial indicator perspective, the indicators that are measured are the asset-liability ratio and the current ratio; 2) from the internal business process perspective, the indicators that are measured are the rate of bed utilization and average hospitalization days; 3) from the customer perspective, the measured indicators are inpatient and outpatient satisfaction; and 4) from the growth and learning perspective, the indicator measured is the ratio of doctors to nurses (Gao et al., 2018).

In hospitals that are already using this tool, a pandemic situation is an important time to redefine, update, and increase its use. KPIs that have been set in previous situations may not be relevant to the current situation, so they need to be reviewed (Bołtowiec, 2020). As an example of additional costs that are currently needed, such as the procurement of personal protective equipment and other sanitary equipment. Even though there has been an increase in costs, the quality of services can be higher because health workers feel safe and comfortable at work and patients feel protected from the possibility of transmission of COVID-19. Therefore, this study aims to analyze the performance of private hospitals during the COVID-19 pandemic through a balanced scorecard approach. By analyzing thoroughly from four perspectives (financial, learning and growth, customer, and internal business processes), we can provide current performance information so that hospitals can review the key performance indicators that have been used and emphasize perspectives that need to be improved.

## **METHODS**

### **Research design**

This study uses a quantitative descriptive approach

based on a case study at a private hospital in East Jakarta to analyze, test, and measure hospital performance using the Balanced Scorecard method. By illustrating events and offering useful information, case studies can help others understand the case (Alpi & Evans, 2019; Budgell, 2008). The hospital in Jakarta was chosen considering that Jakarta is the epicenter of the pandemic, so Jakarta is the city most affected compared to other cities (Atmakusuma, 2021; Kurniawan et al., 2014). Private hospitals were also chosen for analysis because they were more severely affected by the economy than government hospitals (Ambarwati, 2021; Giusman & Nurwahyuni, 2021). These conditions prompted researchers to analyze the performance of a private hospital in Jakarta.

**Balanced Scorecard Indicators**

The researcher measured the four perspectives of the balanced scorecard, namely the financial

perspective, the customer perspective, the internal business perspective, and the learning perspective (Kaplan & Norton, 2005). The indicators in each perspective are determined by previous research explorations and contextualization of the research location hospital’s strategy (Gurd & Gao, 2008; Raana et al., 2013; Rahimi et al., 2017; Sarwal R, et al., 2021; Si et al., 2017). Indicators for each perspective in this study are described in Table 1.

**Data collection and analysis**

The data for each of the indicators mentioned is sourced from hospital reports and surveys conducted with hospital staff and patients. Hospital reports started in 2019 and continued into 2020. Survey data collection was carried out by filling out questionnaires in 2020. A patient satisfaction survey was conducted with a total of 185 patients to determine patient satisfaction. A survey of employees was conducted with a total of 65

Table 1. Indicators of the Balanced Scorecard Variables Studied

Perspectives	Codes	Indicators	Definition	Sources
Customers (C)	C1	Customer acquisition	Percentage of hospitals attracting new patients	Hospital Report
	C2	Customer retention	Total number of patients who returned to the hospital for multiple visits or the degree to which the hospital maintains an ongoing relationship with the patient	
	C3	Patient Satisfaction	The level of patient satisfaction as measured through the dimensions of tangibles, reliability, responsiveness, assurance, and empathy (degree of satisfaction according to a Likert scale of 1 to 4)	
Internal Business Process (P)	P1	Turn over interval	The average length of time (in days) that elapses between the discharge of one inpatient and the admission of the next inpatient to the same bed	Medical Record Report
	P2	Bed occupancy rate	Utilization of available bed capacity in the hospital	
	P3	Bed turnover	Measures the productivity of hospital beds, i.e., the number of patients treated per bed in a given period	
	P4	TOI ( <i>Turn Over Interval</i> ):	The average number of days a bed is not occupied, from being filled to the next.	
	P5	GDR ( <i>Gross Death Rate</i> ):	General mortality rate for every 1000 patients discharged	

Perspectives	Codes	Indicators	Definition	Sources
Growth and Learning (G)	G1	Employee Satisfaction	The Job Descriptive Index assesses five aspects of job satisfaction: satisfaction with supervisors, coworkers, pay, opportunities for advancement, and the job itself. (degree of satisfaction according to a Likert scale of 1 to 5)	Staff questionnaire
	G2	Turnover staff	The number of workers who left compared to the number of workers.	Hospital Report
	G3	Employee training numbers	Number of trainings attended by employees	
Finance (F)	F1	Operating Margin	Operating Income/ Total Operating Revenues	Hospital Financial Report
	F2	Cost Recovery Rate	Total income/ Operating costs	
	F2	Current Ratio	Current Assets / Current Liabilities	

employees to measure employee satisfaction. The scale used is a Likert scale of 1-4 for the patient satisfaction questionnaire and a scale of 1–5 for the employee satisfaction questionnaire. The statistics in this study are descriptive statistics, including frequency, percentage, mean, and standard deviation, to analyze performance through 14 key performance indicators (KPIs).

**RESULTS AND DISCUSSIONS**

**1. Customer Perspectives**

**a. Customer Acquisition and Customer Retention**

Table. 2 Customer Acquisition and Customer Retention at the Hospitals Studied in 2019–2020

Years	Customer Acquisition	Customer Retention
2019	8.12%	111,78%
2020	9.49%	95,44%

In Table 2, it can be seen that the acquisition of hospital customers studied in 2020 increased from 2019 by 1.4%, while customer retention decreased by 16.4%. What is the worth of a good customer acquisition strategy? Several BSC studies in state-owned hospitals set a standard of 30%. According to one study, patient acquisition is considered good if the calculation results during the observation

period have increased, adequate if they have remained constant, and poor if they have decreased (Effendy et al., 2020). The 30% standard might be applied to government hospitals, whereas for private hospitals the standard could be too high, so it is better to pay attention to the increase in customer acquisition every year. Kotler pointed out that attracting a new customer may cost five times as much as retaining an existing one (Kotler & Keller, 2012). Therefore, customer acquisition is influenced by the company’s financial ability. In this study, there was an increase in customer acquisition at the hospital under study, which showed good performance, especially during a pandemic.

Customer retention is a form of loyalty related to loyal behavior, which is measured based on consumer buying behavior as indicated by the high frequency of consumers buying a product (Esti et al., 2013). Therefore, there is a relationship between customer retention and profitability. Good customer retention will increase customer satisfaction. Highly satisfied customers generally stay loyal longer, buying more when a company introduces new products or product enhancements. Loyal customers will speak

well of the company and its products to others, tend to pay less attention to competing brands, and are less sensitive to price. This means that loyal customers will buy the company's products regularly, increasing the company's profitability (Kotler & Keller, 2012).

When linked to profitability, the average profit per customer will increase over time due to six main factors: customer acquisition costs, basic profit, revenue growth, cost savings, referrals, and price premiums. Customer retention is considered good if the percentage is greater than or equal to 100%, but it should be noted if there is a downward trend in customer retention. Increasing the customer retention rate will automatically increase the number of consumers owned by an organization. In addition, increasing the retention rate will increase customer loyalty (customer tenure). The higher the customer retention rate, the greater the positive impact. (Kurniawan et al., 2014). A low retention rate will have an impact on decreasing hospital profits. In this study, it is necessary to further analyze the causes of this decline. However, one of the reasons for the decrease in retention in 2020 is the COVID-19 pandemic, in which people avoid going to the hospital for fear of contracting it.

Referring to the theory of customer relations management, the current marketing pattern has undergone a change, from one that originally focused on acquiring customers or finding new customers to one that now focuses on customer retention, namely maintaining loyal customers. Loyal customers (loyalty) are influenced by satisfaction with the products sold or services provided. Research conducted by Darmawan, et.al., (2020) states that simultaneously, perceived customer value and customer satisfaction have a significant influence on customer

retention. Another study conducted by Esti et al., (2013) proved that the results of a simple linear regression between the customer value variable and the customer variable showed a positive regression coefficient value, which means that the higher the customer value and satisfaction, the higher the customer retention. Good retention management can reduce marketing costs because there is no need to pay more to get back "lost" customers. Companies need to understand and meet customer needs so that customers believe that their needs can be met by the company. Thus, a good relationship is built between the company and the customer, which will ultimately increase the number of loyal customers. Customer retention is thus at the heart of customer relationship management (CRM). The company's paradigm and mindset are no longer governed by how to acquire new customers but how to retain existing customers. Existing customers are very likely to be able to use not only the products and services of the company they are currently using but also the products and services of other companies. If the customer is satisfied, the company can sell a different product or service (Kurniawan et al., 2014).

#### b. Patient Satisfaction and Service Quality Dimensions

Table. 3 Patient Satisfaction and Dimensions of Service Quality at the Hospitals Studied in 2020

Variables	Satisfied	Moderately satisfied
Patient Satisfaction	58,4%	41,6%
Service Quality	Good	Fair
Dimensions:		
Reliability	38,4%	61,6%
Responsiveness	49,2%	50,8%
Assurance	44,3%	55,7%
Empathy	55,7%	44,3%
Tangible	37,8%	62,2%
Average Quality	45,1%	54,9%

Source: Research results, 2021 (data processed)

Table 3 shows that in the customer satisfaction variable, customers who are satisfied are 58.4%. Customer satisfaction is measured by the quality of services provided by medical staff and medical support in relation to patient expectations, and patients report feeling happy while receiving treatment at the hospital. Customer satisfaction is a comparison between the services or results received by consumers and their expectations; the services or results received must at least be equal to or exceed the consumers' expectations. In this study, customers are satisfied with the services provided.

Next is service quality, which is measured using five measurement dimensions: reliability, responsiveness, assurance, empathy, and tangible outcomes. The results of the average assessment obtained were good at 45.1% and sufficient at 54.9%. This value indicates that more patients are in the sufficient category. The findings contained in this assessment are:

1. On the reliability indicator, some patients complain of the long waiting time to get service, especially in services in the administrative department where the number of officers is not comparable to the patients served,
2. In terms of responsiveness indicators (responsiveness), patients complain that medical staff have been unresponsive to their complaints and that administrative staff are overly complicated when providing services to patients,
3. On the assurance indicator, that pandemic conditions cause patients to worry about contracting COVID-19

because some medical personnel, particularly nurses in inpatient care, do not wear full PPE, causing patients discomfort,

4. On the patient empathy indicator, assess whether medical staff and medical support are easy to find, able to communicate well, and give attention to patients. Furthermore, medical staff can provide services regardless of the patient's socioeconomic status, and
5. Tangible indicators (direct evidence) include patients complaining about insufficient parking spaces.

Referring to the table above, some patients are satisfied with the services provided, but when viewed from the quality of service perspective, some patients consider it fair (quite good). The fairly good rating needs more attention from management on the dimensions measured, especially on low scores, namely reliability and tangible. On reliability, for example, reviewing KPIs in administrative services so that patients do not have to wait long to be served. On the tangible dimension, for example, by adding a parking area. The decreased quality of service during the pandemic was felt in other countries, such as Vietnam, where research results showed that during the COVID-19 pandemic the quality of service decreased because health services focused on preventing the spread of the virus. Factors that strengthen the ability to improve service quality again are the attitude of service and the professional capacity of the medical team. (Nguyen & Duong, 2021). Research in India states that although service quality and the dimensions of assurance, empathy, reliability, responsiveness, and tangibles remain

relevant during the COVID-19 pandemic, expectations for these five dimensions have decreased (Coutinho & Prasad, 2022).

## 2. Internal Business Process Perspective

Indicators	2019	2020	Minister of Health Standard No. 1171 of 2011
BOR	35%	44%	60 – 85%
AvLOS	3	3	3 – 9 days
TOI	5	4	1 – 3 days
BTO	58,15	52,7	40 – 50 times
GDR	4,3%	2,83%	<45%
NDR	0%	0%	<25%

Source: Medical Record Report, 2022 (data processed)

Based on Table 4, the BOR (bed occupancy rate) value in 2019 is 35%, and in 2020 it is 44%. This figure is still below the ideal BOR average of 60–85%. The average length of stay value in 2019 and 2020 shows the same performance of 3 days, and this value is within the ideal standard. In 2020, there was a decrease in the value of the turn-over interval to 4 days. This value is slightly above the ideal standard. BTO (bed productivity) in 2019 was 58.15 times per year, and in 2020 it was 52.7 times per year. This value is slightly higher than the ideal value of 40–50 times per year. The GDR value (gross death rate) in 2019 was 4.5%, and in 2020 it decreased to 2.83%. This value is quite good because it is far below the standard value, which is 45%. Likewise with the NDR value, where the value is 0%.

One of the most frequently used indicators of health is bed occupancy rates (BOR). Bed occupancy rate (BOR) is a number that indicates the occupancy rate of beds at each point in the inpatient ward. This BOR data can be used to determine the level of utilization of service facilities, determine the quality of hospital services, and determine the efficiency level of hospital services (Putri et al., 2017). A low BOR score indicates a lack of utilization of hospital facilities, while a high BOR score indicates a high level of utilization of hospital facilities. The ideal BOR standard is 75%-

85% according to Barber Jhonson or 60%-85% according to Permenkes No. 1171 of 2011. There are insufficient officers, facilities, and infrastructure; service rates are relatively high; hospital promotions are inconsistent; existing information systems are not yet integrated; and policies affect the course of hospital services. Competition between hospitals and the inconsistency of staff attitudes in providing services are the problems found in low BOR achievements (Widiyanto & Wijayanti, 2020). Mardian, et.al. (2016) stated that the factors causing low BOR in hospitals were related to inadequate human resources, inadequate facilities, and inadequate infrastructure or facilities. Indharwati (2017) stated that the factors that affect the bed occupancy rate (BOR) include service process factors and the attitude of officers when providing services. In this study, when compared to the ideal standard, the BOR of the hospital under study was still low. Therefore, it is necessary to identify the causes of this low BOR.

The average length of stay (AvLOS) describes the level of efficiency and quality of service; if applied to a particular diagnosis, it can be used for further observation. The ideal standard AvLOS value is 3–12 days. AvLOS calculations are needed to determine the level of utilization, quality, and efficiency of inpatient services at hospitals (Nurhayatun et al., 2021). If the AvLOS is more than 12 days, the possible causes include: chronic patients being admitted to a hospital designated for acute patients; weaknesses in medical services, including complications or no progress in results; and individual doctors who like to delay services. AvLOS from the hospital studies shows that the length of time the patient was treated was in accordance with the standard. So it can be interpreted that the efficiency of hospital services and service quality from the AvLOS aspect are good.

TOI (Turn Over Interval) is a measurement of the average number of days a bed is not occupied during a given time period. Alternatively, it displays the time between when one patient leaves the bed and when the next patient leaves. This value gives



an idea of the efficiency of bed utilization. Ideally, the vacant bed will not be filled within 1–3 days. The TOI value can be affected by several factors, such as the number of available beds, the number of beds occupied, and the number of patients discharged (alive and dead). The TOI studied in 2019 was 5 days, and in 2020 it was 4 days, so the average TOI is 4.5 days. The average score obtained shows that the TOI of the hospital studied is not efficient. Research conducted at Bhayangkara Hospital in Semarang showed that during 2009 the TOI rate was inefficient, which had an impact on the BOR value. If the TOI value is high, the BOR value will be low. (Rahmawati, 2009).

Bed Turn Over (BTO) shows the productivity level of the bed, which is an indicator of the quality of inpatient services. The ideal value of BTO is 40–50 times per year. If the value is far above the ideal value, it has the potential to have an adverse impact on the patient’s health. A bed that is used more than 40–50 times requires better maintenance. The large number of patients treated in each bed has the potential to spread disease-causing germs. It is not impossible that co-infections can be caused by poor bed conditions (Lestari & Wulandari, 2014). In 2019, the hospital BTO studied was 58.15 times per year, and in 2020, it was 52.7 times per year, so that the average BTO value at the hospital studied was 55.93 times per year. Based on Permenkes Number 1171 of 2011, the average is 57.04 times per year, which is a value slightly above the ideal rate, which is 40–50 times per year. This value should be maintained so as not to increase, so that the quality of the bed can be properly maintained.

The Gross Death Rate (GDR) and Net Death Rate (NDR) are important statistics in hospitals for evaluating care for more than or equal to 48 hours in a specific time period, indicating the quality of medical services, and can be used to plan future health services. These indicators are compared with national standards, where the National Standard GDR is 45 or 4.5 per year and the national standard NDR is 25 or 2.5 per year. The GDR of the hospitals

studied in 2019 was 4.3% and 2.83% in 2020, so the average GDR was 3.56%. This figure is far below the national standard. Meanwhile, the NDR rate was 0% in 2019–2020, which means that there were no patient deaths after being treated for more than 48 hours. The GDR and NDR rates in the hospitals studied were very good, so appropriate health services were provided according to the patient’s diagnosis. The hospital under study is a special mother-and-child hospital, which probably does not receive many patients with severe symptoms. However, proper diagnosis and action are needed so that the NDR rate remains zero.

The conclusion from the review of internal business processes in the hospitals studied was that the BOR and TOI figures were not good. This figure shows the level of productivity of the bed, which is still low. Therefore, it is necessary to further identify the reasons for this low productivity. Research conducted by Hermawan, et.al. (2019) shows that there is a significant relationship between BOR, BTO, and TOI to increase income, although it does not have a significant effect on profitability performance. It needs to be understood that income performance has a significant effect on profitability performance. Therefore, to increase the profitability of the hospital, one of the important things to do is to increase the productivity of beds.

### 3. Growth and Learning Perspectives

#### a. Employee Satisfaction

Table. 5 Employee Satisfaction at the Hospitals Studied in 2019 and 2020

No	Variables	Averages	Category
1.	Income other than salary	3,96	Moderately satisfied
2.	Promotion	3,76	Moderately satisfied
3.	Work colleague	4,41	Satisfied
4.	Supervisor	4,22	Satisfied
5.	Job description	4,28	Satisfied
	Average	4,12	Satisfied

Source: Research results, 2021 (data processed)

In Table 5, it can be seen that the satisfaction of the hospital employees studied was measured based on satisfaction with salary, promotion, superiors, co-workers, and the job itself. Coworkers have the highest level of satisfaction among hospital employees, with an average score of 4.41. The lowest level of satisfaction is in the promotion, with an average value of 3.76. When viewed in general, the level of employee satisfaction is included in the satisfied category with an average value of 4.12.

Job satisfaction is a positive emotional state that arises from an assessment of one's job or work experience. Factors that shape the job satisfaction of health workers include salary and benefits, the work environment, leadership, opportunities for growth, and the job itself. (Fatah Hidayat & Siwi Agustina, 2021). During the pandemic, the pressure on the hospital workforce to work was high because of the demands to serve patients and fears of contracting COVID-19. This can cause fatigue and work stress, which can affect psychological conditions, resulting in decreased job satisfaction (Zakiyah et al., 2022). Other studies have found that factors that are positively related to job satisfaction are prior job satisfaction, rewards, and communication. Meanwhile, the fear of being infected with COVID-19 has a negative impact on job satisfaction. Factors that significantly contribute to job satisfaction are inadequate preparedness, stress, and burnout (Afulani et al., 2021). In the same way, research done in Egypt showed that fear of COVID-19 had a negative effect on job satisfaction but a strong positive effect on the number of people who changed jobs (Abd-Ellatif et al., 2021). Employee satisfaction, such as salary, has almost no impact on patient satisfaction. This is in line with the basic principle that quality management of health services must always prioritize

patients, followed by salaries, costs, and efficiency (Janicijevic et al., 2013).

**b. Employee Retention**

Based on employment data for 2020, it is known that employee turnover is 0%, meaning that no employees left that year. In the previous year, 2019, it was known that employee turnover was 2%; this shows that not many employees left that year, so it can be concluded that employee maintenance has been going well. Employee retention is the company's effort to keep employees loyal so that high employee turnover can be avoided. There is a relationship between the level of customer satisfaction and employee retention. Customers prefer to deal with the same employees over and over again, so high employee turnover can destroy customer trust in the company. Employee retention is an ongoing process, and the best way to retain employees is to treat them like customers. If the company retains employees well, employees can retain customers (Gerson, 2022).

**c. Employee training**

Table. 6 Percentage of Employees Participating in Training at the Hospitals Studied in 2020

Frequency of Training	Number of Employees Participating in Training	Percentage
Never	9	13,8%
1 time a month	38	58,5%
1 time a year	9	13,8%
Specific time (uncertain)	9	13,8%
TOTAL	65	100%

Source: Research results, 2021 (data processed)

Table 6 shows that more than half of the employees (58.5%) have attended training at least once a month. As many as 13.8% of employees have never attended training due to lack of training or

other reasons. This is because these employees are not medical or paramedical employees. Employee training is the process of instilling specific knowledge, skills, and attitudes in employees to improve their qualifications and enable them to perform their duties according to standards. Training can meet the needs for smooth functioning at work, which helps increase employee job satisfaction (Asgarova, 2019; Hassan & Baker, 2018; Supatmi, et al., 2012). Employee training and development is the process of helping employees develop personal and organizational skills, knowledge, and abilities. Lack of training can result in lost productivity, lost customers, and poor relations between employees and managers, resulting in employee dissatisfaction, which means the company has retention problems and high turnover. Companies with high turnover have an impact on the direct costs that must be incurred (NN, 2011). It can be concluded that employee training is an important aspect for the hospital studied, as almost all employees have received training and more than half of employees receive training every month.

#### 4. Financial Perspective

Table. 7 Financial Performance of the Hospitals Studied in 2019 and 2020

Indicators	2019	2020	Percentage (Remarks)
Operating Margin	0,01	0,008	22,6% (down)
Cost Recovery Rate	1,03	1,02	0,9% (down)
Current Ratio	0,73	0,79	8% (up)

Operating margin measures a hospital's operating income from providing care services to patients. This shows the ability of the hospital to generate profits. The ratio obtained will show how much profit the hospital has. The standard value for health services is 0.02 (Zelman et al., 2003). The results of the research show that the operating margin ratio in 2019 was 0.01, and in 2020 it was 0.008. The ratios in both years were below standard, indicating that profits were still low or that the organization had

not been able to generate the expected profits. When compared to the operating margin ratio in 2019 and 2020, there was a decrease of 22.6%. This decline was driven by lower income as a result of fewer patient visits during the pandemic. Moreover, although basic expenses such as medicines and consumables decreased as a result of fewer patient visits, costs remained unchanged or even increased. There are several other indicators used to measure profitability ratios, namely return on assets and return on equity. If there is a tendency to decrease this ratio from year to year, this can disrupt hospital liquidity (Zelman et al., 2003).

Cost recovery rate (CRR) measures a company's ability to finance hospital operations. The CRR of the hospitals studied in 2019 and 2020 has reached the hospital's normal standard of > 1 (Zelman et al., 2003). Even though during the pandemic there was a decrease in CRR, the CRR was still within normal standards. The decline in CRR was due to a decrease in revenue. When analyzed from a cost standpoint, the cost of doing business has decreased in line with the decrease in the number of visits, but other costs have increased.

The current ratio is an indicator used to measure liquidity, namely the hospital's ability to meet short-term obligations, collect receivables, and maintain a cash position. The current ratio (current assets/current liabilities) is one of the most commonly used ratios and shows the ability of the hospital to pay its short-term obligations from cash, receivables, and inventories. The standard value of this ratio is >2.18; an interpretation of the value above the standard indicates either too many current assets, too few current liabilities, or both. A substandard value indicates too few current assets, too many current liabilities, or both (Zelman et al., 2003). The current ratio at the hospitals studied in 2020 has increased from 2019, but is still below normal standards, so it can be interpreted that hospitals still have difficulties fulfilling their short-term obligations. This indicates an increase in the amount of inventory, or the amount of inventory remains constant compared

to the previous year, but the decreased number of visits causes inventory turnover or sales to slow down. Hospitals that experience liquidity difficulties will pay their debts over a longer period of time, which allows them to apply for short-term loans from banks. Current liabilities that increase faster than current assets can reduce the current ratio so that hospitals are increasingly illiquid (Niedar et al., 2022).

From a financial perspective, it can be concluded that the financial performance of the hospitals studied was affected by the decrease in the number of patient visits due to the pandemic because it caused a decrease in revenue. The American Hospital Association (AHA) conducted four analyses of the factors affecting hospital finances during a pandemic. The four analyses are the effect of hospitalization of patients with COVID-19 on hospital costs, the effect of canceled and abandoned services caused by COVID-19 on hospital income, additional costs for purchasing personal protective equipment (PPE), and other additional support costs given to their workers (American Hospital Association, 2020). The estimated total financial impact over the four months (March–June 2020) was a loss of \$202.6 billion for America's hospitals and healthcare systems, or an average of \$50.7 billion per month. (American Hospital Association, 2020). Kaufman Hall projects hospitals across the country will lose an estimated \$54 billion in net profit over the year (KaufmanHall, 2021).

#### **MANAGERIAL IMPLICATIONS**

The COVID-19 pandemic caused a decline in performance, which resulted in a decrease in revenue. In performance research based on the BSC seen from four perspectives, it can be concluded that the customer perspective and internal business processes affect revenue. From the employee's perspective, the resulting performance is very good, so this can become a service strength in the future to improve other perspectives. The things that need to be done at the manager or leadership level at this time are to restore the condition or

performance of the company as it was in 2019, especially from three perspectives, namely the customer perspective, internal business processes, and finance. The steps taken are to develop a strategic plan for the hospital through the four BSC perspectives obtained from this study so that the strategic position of the hospital will be known. This position will determine the strategic direction to be carried out for the next five years. Government policies issued in anticipation of future pandemics require changes or developments to the physicality of the hospital. Therefore, hospitals need to prepare or seek sufficient funding to build them. This will certainly reduce some of the financial performance. However, by increasing the number of visits or opening new services, the operational burden of the hospital will be met.

Systematic reviews have demonstrated that the Balanced Scorecard (BSC) dimension can significantly contribute to mitigating the COVID-19 epidemic. According to Amer et al., (2022), the effective use of the 13 primary dimensions and 45 sub-dimensions can function as a comprehensive framework for health service organizations, enabling them to enhance their performance through planning, monitoring, evaluation, and continuous improvement efforts. Additional studies have provided evidence supporting the significant importance of Key Performance Indicators (KPIs) in enhancing the overall performance of the healthcare system, particularly in the context of the ongoing coronavirus pandemic crisis. Research conducted on Key Performance Indicators (KPIs) inside hospital settings offers valuable insights that might inform managerial decision-making in times of a pandemic catastrophe. The utilization of KPI clustering techniques offers hospital management a means to make informed decisions in high-pressure situations, thereby facilitating the enhancement of medical care quality through the effective implementation of suitable key performance indicators (KPIs) (Burlea-Schiopoiu & Ferhati, 2021).

## CONCLUSION

During the COVID-19 pandemic, there was a decline in hospital performance on several indicators as measured through the balanced scorecard framework. In the customer aspect, there was a decrease in customer acquisition and customer retention. Although patients are satisfied with the services provided, the quality of service in terms of tangibles and reliability is still low. From the internal business process perspective, there is a decrease in the bed occupancy rate and turnover interval. From a financial perspective, there is a decline in profitability and cost recovery rate. As for what is considered good overall, it is in the learning perspective where employee satisfaction is considered good, employee turnover is low, and routine training is carried out by the hospital. Hospitals have good potential in terms of employee retention, so providing excellent service to customers is expected to increase customer retention. Overall, hospitals need to review key performance indicators from a customer perspective and internal business processes to improve financial performance.

This research was conducted to find out the performance of hospitals during a pandemic and was carried out in private hospitals specifically for women and children. This hospital does not treat patients with COVID-19. This research is different from other studies that the authors have found, for example, similar research carried out in government-owned hospitals and receiving COVID-19 patients (Wawo et al., 2020; Zeho et al., 2020), research that compares health care institutions in developed countries and developing countries during the COVID-19 pandemic (Wagdi & Abouzeid, 2021), studies that do not use the BSC method (Jalilian et al., 2023; Kuosmanen et al., 2023), and the research was not done during the COVID-19 pandemic (Setiawannie & Rahmania, 2019). The limitation of this study is that it only involved one private hospital, so it cannot represent all types of hospitals in Indonesia. Future studies are expected to involve various types of hospitals. ■

## Acknowledgement

We would like to express our gratitude to Research and Development Institute University of Muhammadiyah Prof. Dr. Hamka and SamMarie Basra Woman & Children Hospital for their financial and material support throughout this entire process.

---

## REFERENCES

- Abd-Ellatif, E. E., Anwar, M. M., AlJifri, A. A., & El Dalatony, M. M. (2021). Fear of COVID-19 and Its Impact on Job Satisfaction and Turnover Intention Among Egyptian Physicians. *Safety and Health at Work*, 12(4), 490–495. <https://doi.org/10.1016/j.shaw.2021.07.007>
- Afulani, P. A., Nutor, J. J., Agbadi, P., Gyamerah, A. O., Musana, J., Aborigo, R. A., Odiase, O., Getahun, M., Onger, L., Malechi, H., Madadi, M. O., Arhinful, B., Kelly, A. M., & Awoonor-Williams, J. K. (2021). Job satisfaction among healthcare workers in Ghana and Kenya during the COVID-19 pandemic: Role of perceived preparedness, stress, and burnout. *PLOS Global Public Health*, 1(10), e0000022. <https://doi.org/10.1371/journal.pgph.0000022>
- Alpi, K. M., & Evans, J. J. (2019). Distinguishing case study as a research method from case reports as a publication type. *Journal of the Medical Library Association*, 107(1), 1–5. <https://doi.org/10.5195/jmla.2019.615>
- Ambarwati, W. (2021). Pembiayaan Pasien COVID-19 dan Dampak Keuangan terhadap Rumah Sakit yang Melayani Pasien COVID-19 di Indonesia Analisis Periode Maret 2020 – Desember 2020. *Jurnal Ekonomi Kesehatan Indonesia*, 6(1), 23–37. <https://doi.org/10.7454/eki.v6i1.4881>

- Amer, F., Hammoud, S., Khatatbeh, H., Lohner, S., Boncz, I., & Endrei, D. (2022). A systematic review: the dimensions to evaluate health care performance and an implication during the pandemic. *BMC Health Services Research*, 22(1). <https://doi.org/10.1186/s12913-022-07863-0>
- American Hospital Association. (2020). *Hospitals and Health Systems Face Unprecedented Financial Pressures Due to COVID-19*. American Hospital Association. [www.aha.org](http://www.aha.org)
- Asgarova, A. (2019). Impact of Employee Training on Employee Job Satisfaction and Achievement: A Case of Turkish Manufacturing Industry. *SSRN*. <https://dx.doi.org/10.2139/ssrn.3398117>
- Atmakusuma, T. D. (2021). COVID-19 in patients with transfusion dependent thalassemia in Indonesia: Characteristics of the disease and patients, and comparison between epidemiological data for COVID-19 and thalassemia in Indonesia and South-East Asia. *Hematology Reports*, 13(4), 91–96. <https://doi.org/10.4081/hr.2021.9379>
- Bohm, V., Lacaille, D., Spencer, N., & Barber, C. E. H. (2021). Scoping review of balanced scorecards for use in healthcare settings: Development and implementation. *BMJ Open Quality*, 10(3), 1–10. <https://doi.org/10.1136/bmjopen-2020-001293>
- Bohtowicz, F. (2020). Balanced scorecard and its adaptation to pandemic reality. *Academy of Management*, 4(3), 72–81.
- Budgell, B. (2008). Commentary Guidelines to the writing of case studies. *J Can Chiropr Assoc*, 52(4), 199–204.
- Burlea-Schiopoiu, A., & Ferhati, K. (2021). The managerial implications of the key performance indicators in healthcare sector: A cluster analysis. *Healthcare (Switzerland)*, 9(1). <https://doi.org/10.3390/healthcare9010019>
- Coutinho, S., & Prasad, Ch. V. V. S. N. V. (2022). Is Hospital Service Quality Relevant During COVID-19 Pandemic? *Journal of Health Management*, 24(3), 440–454.
- Darmawan, D., Arifin, S., & Purwanto, F. (2020). Studi Tentang Persepsi Nilai, Kepuasan Dan Retensi Pelanggan Kapal Penyeberangan Ujung - Kamal. *Jurnal Baruna Horizon*, 3(1), 156–169.
- Deriba, B. S., Geleta, T. A., Beyane, R. S., Mohammed, A., Tesema, M., & Jemal, K. (2020). Patient satisfaction and associated factors during COVID-19 pandemic in North Shoa health care facilities. *Patient Preference and Adherence*, 14, 1923–1934. <https://doi.org/10.2147/PPA.S276254>
- Effendy, L., Lestari, B. A. H., & Isnawati. (2020). Balanced Scorecard (Bsc) : Rekayasa Pada Entitas Rumah Sakit. *Jurnal Riset Akuntansi Aksioma*, 19(1), 155–182. <https://doi.org/10.29303/aksioma.v19i1.91>
- Esti, W., Lubis, N., & Wijayanto, A. (2013). Pengaruh Nilai Pelanggan Terhadap Retensi Pelanggan Melalui Kepuasan. *Jurnal Ilmu Administrasi Bisnis Universitas Diponegoro*. 3(1), 187-196. <https://doi.org/10.14710/jiab.2014.4419>
- Fatah Hidayat, A., & Siwi Agustina, T. (2021). Studying Healthcare Workers' Satisfaction During COVID-19 Pandemic Using Factor Analysis. *STRADA Jurnal Ilmiah Kesehatan*, 10(1), 1138–1151. <https://doi.org/10.30994/sjik.v10i1.718>
- Gao, H., Chen, H., Feng, J., Qin, X., Wang, X., Liang, S., Zhao, J., & Feng, Q. (2018). Balanced Scorecard-based Performance Evaluation of Chinese County Hospitals in Underdeveloped Areas. *Journal of International Medical Research*, 46(5), 1947–1962. <https://doi.org/10.1177/0300060518757606>
- Gerson, R. F. (2022). Employee retention: a customer service approach. *Radiol Manage*, 24(3), 16–23.
- Giusman, R., & Nurwahyuni, A. (2021). Evaluasi Pelayanan Rawat Jalan RS X pada Masa Pandemi Covid-19 melalui Segmenting, Targeting dan Positioning. *Jurnal Manajemen Kesehatan Yayasan RS.Dr. Soetomo*, 7(1), 72. <https://doi.org/10.29241/jmk.v7i1.599>
- Gurd, B., & Gao, T. (2008). Lives in the balance: an analysis of the balanced scorecard (BSC) in healthcare organizations. *International Journal of Productivity and Performance Management*, 57(1), 6–21.
- Hassan, A., & Baker, R. (2018). The Effect of Training on Job Satisfaction: A Review Paper. *The International Conference on Social Sciences and Humanities 2018*, August.
- Hermawan, D., Moehaditoyo, S. H., & Wardah. (2019). Pengaruh Bed Occupation Rate, Turn Over Interval, Average Length of Stay dan Bed Turn Over terhadap Kinerja Profitabilitas, dengan Kinerja Pendapatan sebagai Variabel Intervening (Study Kasus pada Rumah Sakit Milik Nusamed Healthcare Tahun 2014-2018). *Jurnal Ekonomi & Bisnis*, 4(April), 933 – 948.
- Indharwati, R. (2017). Sumber Daya Terhadap Rendahnya Capaian Bed Occupancy Rate (BOR) Berdasarkan Penilaian Pasien Rawat Inap di Rumah Sakit Paru Jember Tahun 2017. *Digital Repository Universitas Jember*, 20–35.
- Jalilian, H., Mohammad Riahi, S., Heydari, S., & Taji, M. (2023). Performance analysis of hospitals before and during the COVID-19 in Iran: A cross-sectional study. *PloS One*, 18(6), e0286943. <https://doi.org/10.1371/journal.pone.0286943>
- Janicijevic, I., Seke, K., Djokovic, A., & Filipovic, J. (2013). Healthcare workers satisfaction and patient satisfaction - Where is the linkage? *Hippokratia*, 17(2), 157–162.
- Kaplan, R. S., & Norton, D. P. (1996). *The Balanced Scorecard: Translating Strategy into Action* (1st ed.). The President and Fellows of Harvard College.
- Kaplan, R. S., & Norton, D. P. (2005). The balanced scorecard: Measures That drive performance. *Harvard Business Review*, 83(7–8), 1–17.
- KaufmanHall. (2021). Financial effects of COVID-19: hospital outlook for the remainder of 2021. *In American Hospital Association* (Issue September).

- Khalifa, M., & Khalid, P. (2015). Developing strategic health care key performance indicators: A case study on a tertiary care hospital. *Procedia Computer Science*, 63, 459–466. <https://doi.org/10.1016/j.procs.2015.08.368>
- Kotler, P., & Keller, K. L. (2012). *Defining Marketing for the 21st Century*. In Marketing Management (14th ed., p. 20). Prentice Hall.
- Kuosmanen, T., Tan, Y., & Dai, S. (2023). Performance analysis of English hospitals during the first and second waves of the coronavirus pandemic. *Health Care Management Science*. <https://doi.org/10.1007/s10729-023-09634-7>
- Kurniawan, D. F., Suroso, I., & Irawan, B. (2014). Analisis Pengaruh Customer Retention Program(CRP) Terhadap Loyalitas Melalui Kepuasan Nasabah Tabungan Pt. Bni 46, Tbk Cabang Jember. *Ekonomi Akuntansi Dan Manajemen*, 13(1), 1–15.
- Lestari, N. R., & Wulandari, R. D. (2014). Penyebab Bed Turn Over (BTO) Di Instalasi Rawat Inap RSUD dr. M. Soewandie. *Jurnal Administrasi Kesehatan Indonesia*, 2(September), 187–197.
- Mardian, A. H., Khoiri, A., & Sandra, C. (2016). Analisis Efisiensi Pelayanan Rawat Inap Rumah Sakit Daerah Balung Tahun 2015 melalui Pendekatan Barber-Johnson (Analysis of Efficiency of Balung Inpatient Hospital Service in 2015 by Barber-Johnson Approach). *Artikel Ilmiah Hasil Penelitian Mahasiswa*.
- Meena, K., & Thakkar, J. (2014). Development of Balanced Scorecard for healthcare using Interpretive Structural Modeling and Analytic Network Process. *Journal of Advances in Management Research*, 11(3), 232–256. <https://doi.org/10.1108/JAMR-12-2012-0051>
- Moynihan, R., Sanders, S., Michaleff, Z. A., Scott, A. M., Clark, J., To, E. J., Jones, M., Kitchener, E., Fox, M., Johansson, M., Lang, E., Duggan, A., Scott, I., & Albarqouni, L. (2021). Impact of COVID-19 pandemic on utilisation of healthcare services: A systematic review. *BMJ Open*, 11(3), 11–17. <https://doi.org/10.1136/bmjopen-2020-045343>
- Nguyen, N. M., & Duong, T. T. L. (2021). The Relationship between Hospital Service Quality and Customer Satisfaction: An Empirical Study from Vietnam. *Journal of Asian Finance*, 8(12), 553–561. <https://doi.org/10.13106/jafeb.2021.vol8.no12.0553>
- Niedar, A., Suryawati, C., Hardiawan, D., Vadra, J., Panjaitan, N. A., Widodo, P., Harto, P., & Adawiyah, R. al. (2022). *Manajemen Keuangan Dan Akuntansi Dalam Ekonomi Kesehatan*.
- NN. (2011). *Training and Development*. In Human Resource Management (Issue April, p. 217). University of Minnesota Libraries Publishing.
- Nurhayatun, S., Fitriyanti, N., & Sonia, D. (2021). Analisis Average Length Of Stay (AVLOS) Kasus Covid-19 Di Rumah Sakit X Bandung. *Jurnal Ilmiah Manusia Dan Kesehatan*, 4(3), 1–8.
- Parmenter, D. (2020). *Key Performance Indicators: Developing, Implementing, and Using Winning KPIs* (4th ed., Vol. 4). John Wiley & Sons, Inc.
- Putri, T. B., Dharmawan, Y., & Winarni, S. (2017). Gambaran Beberapa Faktor Terkait Pemanfaatan Bed Occupancy Rate (Bor) Di Rumah Sakit Umum Daerah Dr. R. Koesma Kabupaten Tuban. *Jurnal Kesehatan Masyarakat (e-Journal)*, 5(1), 168–173.
- Raana, G. N., Hossein, J. B., Ali, J., & Mohammad, A. J. (2013). Selecting Hospital's Key Performance Indicators, Using Analytic Hierarchy Process Technique. *Journal of Community Health Research*, 2(1), 30–38.
- Rahimi, H., Kavosi, Z., Shojaei, P., & Kharazmi, E. (2017). Key performance indicators in hospital based on balanced scorecard model. *J Health Man & Info*, 4((1)), 17–24.
- Rahmawati, Y. (2009). Pengaruh nilai A,O dan D Terhadap Nilai Turn Over Interval (TOI) Per Bangsa Perbulan di RS Bhayangkara Semarang Tahun 2009. *Skripsi*.
- Rivers Patrick A, & Glover Sandra H. (2010). Satisfaction : Research Model and Propositions. *Health (San Francisco)*, 22(6), 1–14.
- Sarwal R;, Prasad U;, Madangopal K;, Kalal S;, Kaur D;, Kumar A;, Regy P;, & Sharma J. (2021). Investment Opportunities in India's Healthcare Sector. In *NITI Aayog*.
- Setiawannie, Y., & Rahmania, T. (2019). Performance measurement of public hospitals through the integration of SWOT and balanced scorecard. *Jurnal Sistem Dan Manajemen Industri*, 3(2), 76. <https://doi.org/10.30656/jsmi.v3i2.1472>
- Shafiq, M., Naeem, M. A., Munawar, Z., & Fatima, I. (2017). Service quality assessment of hospitals in Asian context: An empirical evidence from Pakistan. *Inquiry (United States)*, 54. <https://doi.org/10.1177/0046958017714664>
- Si, S. L., You, X. Y., Liu, H. C., & Huang, J. (2017). Identifying key performance indicators for holistic hospital management with a modified DEMATEL approach. *International Journal of Environmental Research and Public Health*, 14(8). <https://doi.org/10.3390/ijerph14080934>
- Supatmi, M. E., Nimram, U., & Utami, H. N. (2012). Pengaruh Pelatihan, Kompensasi terhadap Kepuasan Kerja Karyawan dan Kinerja Karyawan. *Jurnal Profit*, 7(1), 25–37.
- Temsah, M. H., Al-Sohime, F., Alamro, N., Al-Eyadhy, A., Al-Hasan, K., Jamal, A., Al-Maglouth, I., Aljamaan, F., Al Amri, M., Barry, M., Al-Subaie, S., & Somily, A. M. (2020). The psychological impact of COVID-19 pandemic on health care workers in a MERS-CoV endemic country. *Journal of Infection and Public Health*, 13(6), 877–882. <https://doi.org/10.1016/j.jiph.2020.05.021>

- The Health Foundation. (2011). *Evidence scan: Competition in Healthcare*. April, 1–28.
- Trisnantoro, L., & Listyani, E. (2018). Jumlah RS di Indonesia Pertumbuhan RS Publik. *Perhimpunan Rumah Sakit Indonesia*, April, 70.
- Velimirović, D., Velimirović, M., & Stanković, R. (2011). Role and Importance of Key Performance Indicators. *Serbian Journal of Management*, 6(1), 63–72.
- Wagdi, O., & Abouzeid, W. (2021). Improving the Performance of Healthcare Institutions under Covid-19 by Using Balanced Scorecards: A Comparative Study. *Annals of R.S.C.B.*, 25(5), 5011–5019. <https://www.researchgate.net/publication/351373353>
- Wawo, A. B., Dharmawati, T., Anto, L. O., & Kalsum, U. (2020). Performance Analysis of a Public Hospital in the COVID-19 Pandemic Using the Balanced Scorecard. *International Journal of Innovation, Creativity and Change*. *Www.ijicc.Net*, 14, 486–507. [www.ijicc.net](http://www.ijicc.net)
- Widiyanto, & Wijayanti, R. A. (2020). Analisis Faktor Penyebab Rendahnya Bed Occupancy Rate (BOR) Di Rumah Sakit Mitra Medika Kabupaten Bondowoso. *J-REMI : Jurnal Rekam Medik Dan Informasi Kesehatan*, 1(4), 529–536.
- Yamaguchi, S., Okada, A., Sunaga, S., Ikeda Kurakawa, K., Yamauchi, T., Nangaku, M., & Kadowaki, T. (2022). Impact of COVID-19 pandemic on healthcare service use for non-COVID-19 patients in Japan: retrospective cohort study. *BMJ Open*, 12(4), 1–10. <https://doi.org/10.1136/bmjopen-2021-060390>
- Yi-Ming Liu. (2017). *Using Balanced Scorecard To Help Improve The Quality Of Care And Service For The Private Clinics In Taiwan*. John Hopkins Univeversity.
- Zakiah, A., Iswati, I., Rofi'ah, I. A., & Cahyani, S. T. (2022). Work Stress and Job Satisfaction of Nurses During The Covid-19 Pandemic. *Proceedings of the International Conference on Health and Well-Being (ICHWB 2021)*, 49(Ichwb 2021), 130–136. <https://doi.org/10.2991/ahsr.k.220403.018>
- Zeho, F. H., Setyowati, E., & Hermawan, R. (2020). The Impact of Pandemic Covid-19 on The Performance of Regional Public Hospital Based Approach to Balanced Scorecard In RSUD “X.” *Wacana*, 23(3).
- Zelman, W. N., Mccue, M. J., Millikan, A. R., & Glick, N. D. (2003). Financial Management of Health Care Organizations: An Introduction to Fundamental Tools, Concepts and Applications (3rd Ed.). In *International Journal of Health Care Quality Assurance* (2nd ed., Vol. 25, Issue 3). Blackwell Publishing. <https://doi.org/10.1108/ijhcqa.2012.06225caa.015>