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The Determinants of Healthcare Service Quality in Hospitals in Cities/Districts in Central Java

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ABSTRACT

This study aims to analyze the determinants of healthcare service quality in hospitals in cities/districts in Central Java, with healthcare services as the dependent variable and the number of general practitioners, specialist doctors, healthcare personnel, bed capacity, population size, hospital level in cities/districts, and economic growth as the independent variables.The research method used in this study is a descriptive analytic study with a quantitative approach. Secondary data were utilized, including hospital data from the Indonesian Ministry of Health website, economic data from the Central Bureau of Statistics (BPS) of Central Java website, and population data from the Indonesian Ministry of Home Affairs website. The research sample consists of 86 hospitals.The study employs a logistic regression analysis model where the dependent variable is a binary variable. The analysis results indicate a significant positive relationship between the number of specialist doctors and healthcare service quality. However, the number of general practitioners, healthcare personnel, bed capacity, population size, hospital level, and economic growth have less significant influence on healthcare service quality.These findings underscore the importance of human resources factors, such as the number of specialist doctors, in improving healthcare service quality. Therefore, support should be provided to encourage doctors to specialize in various medical fields. It is hoped that these findings can serve as a basis for making better decisions in human resources planning, thereby ensuring the provision of high-quality healthcare services to the public in cities/districts in Central Java.

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1. INTRODUCTION

A healthy and prosperous society, both physically and mentally, is a crucial foundation for the creation of a high-quality human resource that contributes to a progressive and prosperous nation. By enhancing the living standards of the people, optimizing the efficient utilization of resources, and reinforcing environmental protection, we can drive the economy and achieve national achievements. “China's

digital economy has played a significant role in promoting sustainable economic and social development by facilitating rapid economic growth, elevating the standard of living, maximizing resource efficiency, and strengthening environmental protection" [1].

The quality of healthcare services is a crucial factor in achieving optimal public health outcomes. In order to enhance the quality of healthcare services provided to the public in hospitals, government regulations and policies are necessary. The Minister of Health of the Republic of Indonesia Regulation No. 7 of 2021 regarding Healthcare Services under the National Health Insurance states that the provisions regarding the accreditation of healthcare facilities are one of the requirements for cooperation with the Social Health Insurance Organizing Agency, as stipulated in the Minister of Health Regulation No. 71 of 2013 regarding Healthcare Services under the National Health Insurance. These provisions need to be adjusted to the needs and characteristics of efforts to improve the quality of primary healthcare facilities to ensure the continuity of healthcare services.

The limitations of healthcare services can be illustrated by looking at the handling of the COVID-19 pandemic, especially in Central Java. Since it was first announced in mid-March 2020 until the first week of 2021, there have been more than 100,000 confirmed cases of COVID-19. Central Java became the second province, after Jakarta, to surpass 100,000 cumulative cases. The increasing number of cases has implications for the need for healthcare workers, but there is a shortage of medical personnel as they work simultaneously to serve thousands of patients. In addition to healthcare workers, there is also a mismatch between the required number of Personal Protective Equipment (PPE) and the available resources. Another resource utilized in hospitals to accommodate COVID-19 patients is bed capacity. The Bed Occupation Ratio (BOR) for COVID-19 patients reached 88% as of January 2021, while the WHO standard is a maximum of 60%. As of now, the Ministry of Health of the Republic of Indonesia has reported a shortage of approximately 30,000 doctors nationwide, with Central Java lacking 295 doctors.

Despite numerous efforts to improve the quality of healthcare services in hospitals, complex challenges still persist. One of the main challenges is the identification and understanding of significant factors that influence the quality of healthcare services in hospitals in Central Java. Quality of healthcare services in Iranian hospitals can be enhanced through the availability of resources, including medical personnel, general practitioners, and specialist doctors [2]. Quality of healthcare services, from the perspective of healthcare users (patients), showed that dr. Siswanto Air Force Hospital provides good-quality healthcare services based on the following aspects: tangibles (physical presence), such as comfortable hospital facilities, neat and clean staff, and complete, clean, and ready-to-use medical equipment [3]. Quality of healthcare services in Sweden is influenced by the quality of professionals, such as specialist doctors, general practitioners, and medical personnel [4].

2. LITERATURE REVIEW

A literature review is a systematic and comprehensive study of the relevant literature on a specific research topic or question. The purpose of a literature review is to identify, evaluate, and synthesize existing research within the chosen domain.

2.1 Healthcare Service

The definition of healthcare service can be explained as the efforts, either independently or collectively within an organization, to maintain and improve health, prevent and treat diseases, and restore the health of individuals, families, groups, and/or communities [4]. Generally, healthcare services provided to the public are primarily focused on preventive (prevention) and promotive (health improvement) services targeting the community. However, this does not imply that healthcare services do not

encompass curative (treatment) and rehabilitative (recovery) services.

2.2 *Service Quality*

Service quality refers to the extent of the difference between customers' reality and expectations regarding the services they receive [5]. Quality is the overall characteristics and attributes of a product or service that influence its ability to satisfy stated or implied needs [6].

In this study, healthcare service quality can be defined as the extent to which a hospital is capable of providing effective, safe, affordable, and patient-centered care. Healthcare service quality involves various aspects, including workforce resources, which consist of the number of general practitioners, specialists, as well as the expertise and competence of medical personnel. In addition to the internal aspects of the hospital, external factors include the population size and economic growth. In this study, healthcare service quality will be assessed based on patients' perceptions of their experiences in receiving care at the hospital.

2.3 *Human Resources*

Human resources are defined as the integrated skills derived from the intellectual and physical capabilities possessed by individuals [7].

In this study, human resources comprising general practitioners, specialists, and medical personnel can be understood as the collective expertise and competencies of these healthcare professionals involved in providing medical care and services. These human resources play a crucial role in the delivery of healthcare services, including diagnosing illnesses, providing medical treatments, performing specialized procedures, and offering patient care. They contribute to the overall quality and effectiveness of healthcare by utilizing their knowledge, skills, and experience to meet the needs of patients and ensure their well-being. The study examine aspects such as the availability, distribution, qualifications, and performance of general practitioners, specialists, and medical personnel to assess the adequacy and effectiveness of human resources in delivering healthcare services.

3. METHODS

This research uses a descriptive analytical research method with a quantitative approach. This approach is used to analyze the relationship between determinants that affect healthcare service quality in hospitals in cities/districts in Central Java. The subjects of this study are hospitals in cities/districts in Central Java. The objects of this study are the determinant factors that influence healthcare service quality in hospitals, including the quantity of general practitioners, specialists, healthcare personnel, bed capacity, population size, and economic growth. This research was conducted within a specific period in cities/districts in Central Java. The timing of the research was determined based on data availability and research needs. The research locations include General Hospitals (RSU) that represent cities/districts in Central Java. The sampling method used is purposive sampling. Hospitals in cities/districts in Central Java were selected based on certain criteria, such as service level, number of patients served, and geographical diversity. In this study, a number of hospitals representing various characteristics and conditions in cities/districts in Central Java will be selected. The instrument used in this study is secondary data obtained from official sources, namely the data on the quantity of general practitioners, specialists, healthcare personnel, and bed capacity available through the official website of the Ministry of Health, as well as population data and economic growth data obtained from the official website of the Central Bureau of Statistics (BPS). Data analysis will be conducted using

logistic regression. This method will be used to identify the relationship between the independent variables (quantity of general practitioners, specialists, healthcare personnel, bed capacity, population size, and economic growth) and the dependent variable (healthcare service quality). Logistic regression will be used to measure the significant influence and direction of the relationships between these variables.

By using this research method, it is expected to gain a deeper understanding of the determinants of healthcare service quality in hospitals in cities/districts in Central Java, as well as the contributions of each variable to healthcare service quality.

4. RESULTS AND DISCUSSION

This research utilized logistic regression analysis, where the dependent variable in this study is a binary variable with two possible outcomes. Logistic regression model is employed to determine the probability of a specific outcome of the dependent variable based on the values of the independent variables. The logistic regression model used in this study can be represented as follows:

logit (p)	=	ß0 + ß1 drum + ß2 drspesialis + ß3 tmedis + ß4temdur + ß5 penduduk + ß6rslevel + ß5 pdrb

Where:

p	=	probability of acceptance, with 1 indicating hospital accreditation < B, and 0 indicating hospital accreditation > 0 (dummy/binary variable)
drum	=	quantity of general practitioners (continuous variable)
drspesialis	=	quantity of specialist doctors (continuous variable)
tmedis	=	quantity of healthcare personnel
temdur	=	bed capacity (continuous variable)
penduduk	=	population size in cities/districts in Central Java (continuous variable)
rslevel	=	the level of hospitals located in cities/districts in Central Java (continuous variable)
pdrb	=	economic growth in cities/districts in Central Java (continuous variable)

The dependent variable in this study is the hospital accreditation, measured as a binary variable, where 1 indicates hospital accreditation above the threshold value B, and 0 indicates hospital accreditation below the value of 0. The observed independent variables are the quantity of general practitioners, quantity of specialist doctors, quantity of healthcare personnel, bed capacity, population size, and economic growth in cities/districts in Central Java. All independent variables are measured as continuous variable.

Table 1. Logistic Regression

Logistic regression — Number of obs = 86
LR chi² (7) = 70.52
Prob > chi² = 0.0000
Log likelihood = - 20.359684 — Pseudo R² = 0.6339

lakes	Odss ratio	std. err.	z	P>|z|	[95% conf.	Interval]
drum	1.020622	.0501663	0.42	0.678	.9268856	1.123838
drspesialis	1.084908	.033145	2.67	0.008	1.021852	1.151855
tmedis	1.004061	.003587	1.13	0.257	.9970556	1.011117
temdur	1.010257	.0076391	1.35	0.177	.9953951	1.025341
penduduk	.9999992	1.47e–06	- 0.55	0.582	.9999963	1.000002
rslevel	2.486317	3.613139	0.63	0.531	.144073	42.90723
ln_pdrb	1.367266	1.3581	0.31	0.753	.1951453	9.579612
_cons	6.95e–07	.0000119	-0.83	0.406	2.07e–21	2.33e+08

Source: processed secondary data, 2023

The logistic regression results indicate that the number of observations, in this case, is 86 data points. The LR chi-square value (7) = 70.52, where the number in parentheses represents the degrees of freedom. In this model, there are 7 predictors (independent variables), thus there are 7 degrees of freedom. The probability > chi-square = 0.00000, indicating the probability of obtaining a chi-square value assuming the null hypothesis is true (no relationship between the dependent variable and independent variables). In this case, the model is significant because the p-value < 0.05. The Pseudo R2 value is 0.6339, indicating that approximately 63.39% of the likelihood can be explained by the model.

To determine whether the independent variables have an effect on the dependent variable, we can examine the P-value > |z|. If the P-value > |z| < 0.05, then the independent variable is considered significant, indicating that it has an effect on the dependent variable. The results of this study show that the variable drspesialis is significant, as the P-value > |z| = 0.008 < 0.05, indicating that the drspesialis variable influences the quality of healthcare services in hospitals. On the other hand, the variables drum, tmedis, temdur, penduduk, rslevel, and pdrb are not significant, as their P-values > |z| > 0.05. This means that the variables drum, tmedis, temdur, penduduk, rslevel, and pdrb do not have an effect on the quality of healthcare services in hospitals.

Although not statistically significant in this study, factors such as the quantity of general practitioners, healthcare personnel, bed capacity, population size, and economic growth are still important in the context of providing holistic healthcare services. Further research is needed to gain a deeper understanding of these factors and identify potential interactions among these variables.

This study has limitations in terms of using secondary data, which may affect the accuracy and completeness of the data used. Therefore, further research with primary data collection involving direct respondents can provide a more comprehensive and in-depth understanding of the determinants of healthcare service quality in hospitals in cities/districts in Central Java.

Overall, this study provides a significant contribution to understanding the determinants of healthcare service quality in hospitals in cities/districts in Central Java. The findings of this research can be used as a basis for developing more effective policies and strategies to enhance the quality of healthcare services in hospitals, thereby providing optimal benefits for patients and the general public.

5. CONCLUSION

Based on the findings of this study, it can be concluded that there are determinants that influence the quality of healthcare services in hospitals in cities/districts in Central Java. The factors that have a significant impact on healthcare service quality are the quantity of specialist doctors.

In this study, it has been proven that the quantity of specialist doctors have a positive influence on the quality of healthcare services in hospitals. This indicates that having an adequate number of healthcare personnel, especially specialist doctors, can enhance the quality of medical services provided to patients. The expertise and specialization of specialist doctors contribute significantly to accurate diagnosis and appropriate treatment for patients.

However, other factors such as the quantity of general practitioners, healthcare personnel, bed capacity, population size, hospital level in cities/districts and economic growth have less significant impact on the quality of healthcare services in hospitals in cities/districts in Central Java. Although these factors play an important role in effective healthcare service delivery, the results of this study suggest that these variables may not be the main determining factors in determining the quality of healthcare services in hospitals in this region.

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Wenny Ana Adnanti was born in Semarang. She is a lecturer at STIE Widya Manggala. After completing her primary and secondary education in her hometown, she pursued a major in Economics and Development Studies (IESP) at Diponegoro University in 2000 and graduated with a Bachelor of Economics (SE) degree in 2004. She decided to further her education and earned her Master of Science (MSi) degree at Diponegoro University in 2013. in 2021, she pursued a second undergraduate degree in Accounting at STIE Widya Manggala and earned her Bachelor of Accounting (SAk) degree in 2022. Her passion for academia led her to enroll in the Doctor of Economics (PDIE) program at Sebelas Maret University (UNS) in 2023. She actively writes research articles that have been published in nationally indexed SINTA journals. Some of her recent publications include "Determinants of Financial Performance (ROA) of Manufacturing Companies in the Industry of Goods and Consumption" published in the SOLUSI Journal, "Analysis of the Health Assessment of State-Owned Commercials Bank using RGEC Method" published in the ECONBANK journals, and "Financial Ratio Analysis on the Profitablity of PT. Bank Mandiri (PERSERO) Tbk for the periode 2018-2021". She firmly believes that research and education are the keys to achieving sustainable economic development and equitable progress for all Indonesians.
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