



**ANALYSIS OF THE HEALTH SERVICE QUALITY AND SERVICE INNOVATION OF DOKTER MUTER ON PATIENT SATISFACTION**

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**ABSTRACT**

Dokter Muter (Near by Doctors and other health workers through integrated services) is an innovation of the Lumajang District Health, Population Control and Family Planning Office (Dinkes P2KB). This innovation aims to bring access to health services closer to remote or geographically challenging areas. The purpose of this study was to determine the effect of health service quality and the Doctor Muter service innovation on patient satisfaction in Lumajang District. The population of this study were patients who had received or were receiving Dokter Muter services in 25 health centers. The data collection method was a questionnaire using Likert scale. This study used a cross-sectional design with proportional stratified random sampling technique. The number of samples in this study was 384 respondents. Data analysis was done using path analysis. Based on the results of the study, it is known that the path coefficient value of service quality on patient satisfaction  $\beta = 0.234$  is positive with a p-value of 0.000, so that service quality has an influence on patient satisfaction. The path coefficient value of Dokter Muter's service innovation on patient satisfaction  $\beta = 0.639$  is positive with a p-value of 0.000, so Dokter Muter's service innovation has an influence on patient satisfaction. The R-squared value for the patient satisfaction variable is 0.707, which means that 70.7 percent of the patient satisfaction variable is influenced by Dokter Muter's service quality and service innovation, and the remaining 29.3 percent is influenced by constructs outside the model.

Keywords: health service quality; innovation; patient satisfaction

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**INTRODUCTION**

User satisfaction with health services is one of the very important factors in determining the success of a healthcare facility (Manzoor et al., 2019). Satisfaction with health services is measured using the Community Satisfaction Index (IKM), which is outlined in the Regulation of the Minister for Administrative Reform and Bureaucratic Reform of the Republic of Indonesia Number 14 of 2017. The IKM scores of Puskesmas in Lumajang district fluctuate, but there are several Puskesmas that tend to decline. One of the things that affects the decline in the IKM score is access to health services. In health services for pregnant women, K4 coverage is an SPM indicator which was not achieved in 2021, namely 95.6%. One of the causes of low antenatal visits is influenced by the distance between users and health care facilities, the further the distance between users and health care facilities, causing pregnant women to be reluctant to make pregnancy visits (Retnaningtyas et al., 2022). The low number of visits to healthcare facilities resulted in an absolute maternal mortality figure of 46 deaths in Lumajang District in 2021.

Parasuraman, Zeithaml, and Berry analysed the dimensions of service quality based on five aspects of quality components. The five aspects of service quality components are known as Servqual (Service Quality)(Muninjaya, 2014). Servqual has contributed to identifying problems and determining the first steps for service providers to evaluate service quality. The quality dimensions consist of tangibles, reliability, responsiveness, assurance and empathy. To improve the quality of health services, in 2021 the Lumajang District Health, Population Control and Family Planning Office has innovated DOKTER MUTER (Near by Doctors and other health workers through Integrated Services) which aims to bring access to health services closer to remote or geographically difficult areas and integrated health services and programmes.

Den Hertog identified four dimensions of service innovation: service concept, client interface, service delivery system, and technology choice(Dhewanto et al., 2014). The Dokter Muter innovation that has been carried out by the Lumajang District Health, Population Control and Family Planning Office has never been monitored and evaluated both on the activities and the satisfaction of patients who receive its services. Therefore, it is necessary to analyse the quality of Dokter Muter's innovative health services on patient satisfaction using the Servqual method in Lumajang district.

## **METHOD**

The study sites were 25 health centres in Lumajang district. The study period was March - June 2024. The research approach was quantitative with a cross sectional design. The sampling technique in this study is probability sampling, which is a sampling technique that provides equal opportunities for each element (member) of the population to be selected as a sample member (Sugiyono, 2022). Cluster sampling in 25 health centres working areas, then proportionate stratified random sampling, because people who use Dokter Muter innovations have an unequal number in each working area. . The sample size was determined using the formula from Isaac and Michael with an error rate of 5%. The number of samples obtained was 384 samples. The inclusion criteria aim to obtain the sample criteria desired by the researcher based on the research objectives.

The dependent variable of this study was patient satisfaction. Patient satisfaction consists of conformity to expectations, interest in visiting again, and willingness to recommend. The independent variables of this study were health service quality and service innovation of Dokter Muter. Service quality consist of reliability, responsiveness, assurance, empathy, and tangibility. Service innovation consist of technology, new service concept, and customer interaction. Research procedures include interviews respondents using a research questionnaire instrument with likert scale. The results of all statements on the questionnaire are valid and reliable Data analysis in this study using path analysis assisted by SmartPLS. The study protocol has been approved by the Faculty of Dentistry Committee, Jember University, Number: 2373/ UN25. P/ KEPK/DL/2023

## **RESULT**

The study encompassed a sample size of 384 patient, employing a proportionate stratified random sampling in 25 health centres. The characteristics of the research subjects are outlined in Table 1. Description of health service quality variables, Dokter Muter service innovation and patient satisfaction are outlined in Table 2. Health service quality indicator are reliability (X1.1), assurance (X1.2), tangibility (X1.3), empathy (X1.4), and responsiveness (X1.5). Dokter Muter service innovation indicator are technology (X2.1), new service concept (X2.2), and customer interaction (X2.3). Patient satisfaction indicator are conformity to expectations (Y1), interest in visiting again (Y2) and willingness to recommend (Y3). The

inferential statistical analysis used in this study consist of outer model, inner model, and boothstraping.

Table 1.  
Respondent characteristics (n= 384)

Respondent Characteristics		f	%
Age	17 - 25 years	43	11,9
	26 – 35 years	103	26,8
	36 – 45 years	101	26,3
	46 – 55 years	80	20,8
	56 – 65 t years	57	14,8
Gender	Male	91	23,7
	Female	293	76,3
Last Educatuion	Not attending school	47	12,2
	Primary School	86	22,4
	Junior High School	98	25,5
	Senior High School	122	31,8
	Diploma	5	1,3
	Scholar	26	6,8
Jobs	Students	3	0,8
	Civil servants	22	5,7
	Private employee	6	1,6
	Housewife	218	56,8
	Self-employed	57	14,8
	Others	78	20,3

Table 2.  
Description of health service quality variables, Dokter Muter service innovation and patient satisfaction

Variables	Category	f	%
Health service quality	Good	207	54
	Sufficient	177	46
	Low	0	0
Dokter Muter service innovation	Good	165	43
	Sufficient	219	57
	Low	0	0
Patient satisfaction	Good	187	49
	Sufficient	197	51
	Low	0	0

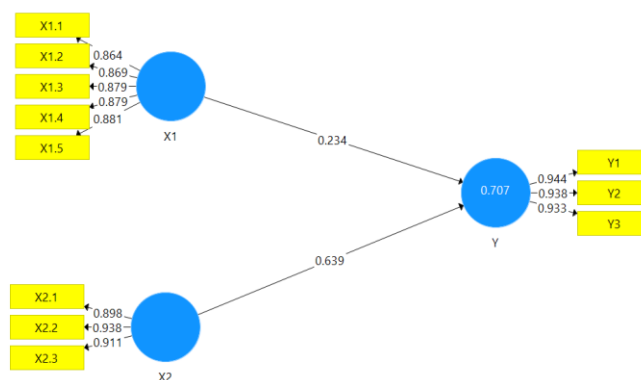


Figure 1. Outer Model Evaluation

The inferential statistical analysis used in this study is path analysis. Evaluation of the measurement model (outer model) is used to assess the validity and reliability of the model. Outer model was presented in Figure 1. The convergent validity test results are used to describe the construct correlation with its indicators. The results of convergent validity testing are presented in table 3. The Cronbach's alpha and composite reliability test results for all

constructs have a value of more than 0.7, thus in this research model each research construct has reliable criteria. The result of reliability presented in table 4.

Table 3.  
Results of convergent validity

Variables	Item	Outer Loading	Ket
Health service quality (X <sub>1</sub> )	X <sub>1.1</sub>	0,864	Valid
	X <sub>1.2</sub>	0,869	Valid
	X <sub>1.3</sub>	0,879	Valid
	X <sub>1.4</sub>	0,879	Valid
	X <sub>1.5</sub>	0,881	Valid
Service innovation of Dokter Muter (X <sub>2</sub> )	X <sub>2.1</sub>	0,898	Valid
	X <sub>2.2</sub>	0,938	Valid
	X <sub>2.3</sub>	0,911	Valid
Patient satisfaction (Y)	Y <sub>1</sub>	0,944	Valid
	Y <sub>2</sub>	0,938	Valid
	Y <sub>3</sub>	0,933	Valid

Table 4.  
Results of composite reliability

Variables	Cronbach's Alpha	Composite Reliability	Description
Health service quality (X <sub>1</sub> )	0.923	0.942	Reliable
Service innovation (X <sub>2</sub> )	0.904	0.940	Reliable
Patient satisfaction (Y)	0.932	0.957	Reliable

The table above shows that all indicators already have a value above 0.70, thus it can be concluded that all dimensions and indicators used in this study are declared valid and reliabel. Evaluation of the structural model (*inner* model). The R-square value is used to determine how much (percent) the influence of exogenous variables on endogenous variables, that the R-square value for the Patient Satisfaction variable (Y) is 0.707 which means that this research model is moderate or 70.7 percent of the Patient Satisfaction variable (Y) is influenced by Health Service Quality (X<sub>1</sub>) and Service Innovation (X<sub>2</sub>) the remaining 29.3 percent is influenced by constructs outside the model. The results of the inner model are presented in table 5.

Table 5.  
Results of r -square value

Variable	R Square	R square Adjusted
Patient satisfaction (Y)	0.707	0,705

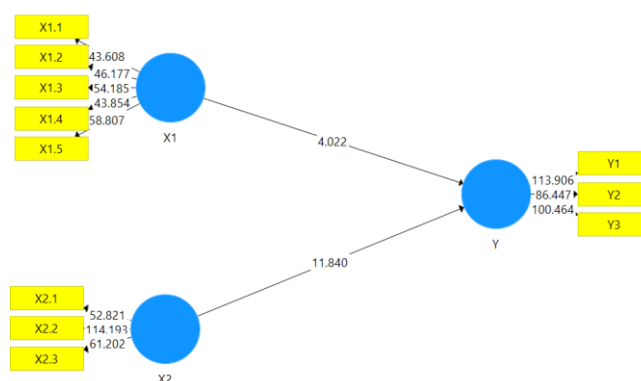


Figure 2. Result Bootstrapping

Hypothesis testing aims to determine how much influence the independent variable has on the dependent variable. The significance value can be obtained using the bootstrapping technique. The statistical test used for hypothesis testing is the t-test between variables. The results of testing direct effects with bootstrapping from PLS analysis can be seen in Figure 2 and Table 6.

Table 6.  
Result of the influence test between variables

Variables	Original Sample (O)	T Statistics ( O/STDEV )	P Values
X1 -> Y	0,234	4,022	0,000
X2 -> Y	0,639	11,840	0,000

In the table above, it is known that the path coefficient value of health service quality (X1) on patient satisfaction (Y) is  $\beta = 0.234$ , which is positive. The p-values are 0.000, so there is an influence of X1 on Y, while the path coefficient value of service innovation (X2) on patient satisfaction (Y) is  $\beta = 0.639$  which is positive. The p-values value is 0.000, so there is an effect of X2 on Y. From the figure above, it can be seen that service innovation is more influential than service quality on patient satisfaction.

## DISCUSSION

### Respondent Characteristic

The majority of the Dokter Muter's patients are in the productive age range and women. Women are more likely to receive services from Dokter Muter because they are more at risk and therefore utilize health services more. In the study, the last education of the respondents was mostly high school. The largest proportion of respondents were housewives. Gender roles may influence men's and women's preferences in choosing health facilities. The disparity in gender roles leads to a greater propensity for women to remain at home, while men are more frequently outside the home engaged in employment.

### The Effect of Health Service Quality on Patient Satisfaction

The results showed that the quality of health services has a positive and significant effect on patient satisfaction. Based on the results of hypothesis testing, it can be interpreted that the better the quality of health services, the higher the patient satisfaction of Dokter Muter in Lumajang District. Service quality can be defined as everything that focuses on efforts to meet the needs and desires of consumers accompanied by accuracy in delivering it so as to create a balanced match with costumer expectations (Sulistiyowati, 2018). Indicators of reliability show that medical personnel are fast in providing services and medical personnel are precise and accurate in providing the actions to be taken (Sari et al., 2021). The guarantee indicator relates to the patient's sense of security and comfort because of the trust in officers who have the right competence, credibility and skills in providing services and patients get guaranteed safe and comfortable services at Dokter Muter service activities (Arifin et al., 2021). Physical evidence in this service is a room that meets standards, complete services and neat and clean officers. The appearance of physical facilities, equipment, personnel and communication tools that can be captured by the five senses of consumers is an important means of increasing patient satisfaction (Kosnan, 2020). The empathy indicator is shown by health workers understanding the complaints of patients who come during Dokter Muter activities, and officers act in the interests of patients, and provide personal attention to patients. The responsiveness indicator has the highest R count, regarding the willingness and ability of health workers to immediately respond to patient complaints. Responsiveness has the most dominant influence on service quality (Essiam, 2013) (Adombor, 2020).

### **The Effect of Dokter Muter's Service Innovation on Patient Satisfaction**

The results of testing the second hypothesis show that Dokter Muter service innovation has a positive and significant effect on patient satisfaction. Based on the results of hypothesis testing, it can be interpreted that the better the service innovation, the higher the patient satisfaction of Dokter Muter in Lumajang District. Service innovation has an important role in increasing patient satisfaction in public services in Indonesia. The implementation of service innovation will provide a better experience, which in turn leads to increased patient satisfaction (YuSheng & Ibrahim, 2019) (Santosa, 2023). In line with Ozsoy's research, innovation can contribute to solving problems faced in the field (Ozsoy, 2022). The relationship between innovation and patient satisfaction also depends on human resources (Wikhamn, 2019). The human resources for Dokter Muter health services are health workers at 25 health centers. Dokter Muter innovation is measured by three (3) innovation indicators, namely the use of technology, interaction with consumers and the development of new services. The use of dental unit technology, portable ultrasound and health promotion tools at the location of the activity provides convenience to the health services provided. Technological innovation has a direct influence on improving health outcomes (Kahouli et al., 2024). In addition, technology in the health sector can also reduce social inequalities in receiving health services (Weiss et al., 2018). Interaction with consumers provides convenience in the service process, such as the active role of cross-sectors and health cadres in the village. The development of new services can provide benefits in remote villages so that health workers have closer access to people who need health services. Innovation strategies can improve patient satisfaction, sustainability and performance. In addition, with changing demographics and technology, it is recommended to continue to innovate and develop new strategies to increase patient satisfaction (Olasoji, 2022).

### **The Effect of Health Service Quality and Dokter Muter Service Innovation on Patient Satisfaction**

Service quality variables and Dokter Muter service innovation have a joint influence on patient satisfaction. Dokter Muter innovation is a sustaining innovation, namely an innovation process that brings new changes but still bases itself on the conditions of services and systems that are running or existing products (Suwarno, 2008). The regression coefficient of service innovation is greater so that Dokter Muter service innovation has a greater influence on patient satisfaction. Technological innovation has a direct influence on improving health outcomes (Kahouli et al., 2024). In line with (Thambusamy & Palvia, 2020) research, Innovation and service quality have an important role in mediating the relationship between information technology capabilities and healthcare provider performance. The health service institution, namely Lumajang District Health, Population Control and Family Planning Office, has an important role as a production factor to develop the quality of health service products through the Dokter Muter innovation. Health service standards periodically require modification, improvement or refinement so that health service organisations expectations of the level of health service quality can be achieved (Pohan, 2007). The Dokter Muter service is expected to improve the achievement of each indicator in the 25 health centres in Lumajang district.

### **CONCLUSION**

The results showed that the quality of health services has a positive and significant effect on patient satisfaction. Meanwhile, Dokter Muter's service innovation also has a positive and significant effect on patient satisfaction. The quality of health services and Dokter Muter service innovation jointly affect patient satisfaction in Lumajang district, where the innovation variable has a greater effect on patient satisfaction.

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