

## Effect of Perceived Healthcare Service Quality on Patient Loyalty Mediated by Patient Satisfaction at XY Hospital (Servqual Dimensional Approach)

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### Abstract

*The purpose of this study was to determine 1) the effect of hospital safety on patient satisfaction, 2) the effect of infrastructure on patient satisfaction, 3) the effect of staff competence on patient satisfaction, and 4) the influence of hospital safety, infrastructure and staff competence on patient loyalty mediated by patient satisfaction. At XY Hospital. The results of the study show several findings 1) the effect of hospital safety on patient satisfaction shows that the relationship between the two is positive 2) the influence of infrastructure on patient satisfaction shows that the quality of infrastructure increases, patient satisfaction also increases, 3) the influence of staff competence on patient satisfaction shows a direct influence by staff competence on patient satisfaction, 4) the effect of patient satisfaction on patient loyalty shows that patient satisfaction has a significant and positive effect on patient loyalty, the effect of hospital safety on patient loyalty mediated by patient satisfaction shows that health services affect patient loyalty through patient satisfaction. The effect of infrastructure on patient loyalty mediated by patient satisfaction shows that there is an indirect effect of hospital infrastructure on patient loyalty mediated by patient satisfaction. The effect of staff competence on patient loyalty by mediating patient satisfaction shows that there is a significant indirect effect of staff competence on patient loyalty mediated by patient satisfaction.*

### Keywords

patient satisfaction, health service quality, patient loyalty, servqual



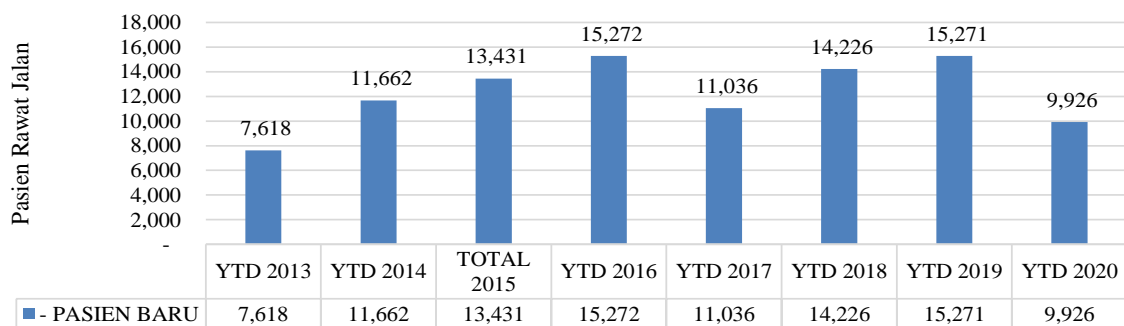
## I. Introduction

Patient satisfaction in getting the benefits of health providers will affect their attitudes and preferences to choose certain facilities and carry out consecutive treatments. This pattern of behavior is called Patient Loyalty, which is the key to success for healthcare providers. Other than that, patient loyalty namely the sustainability of patient satisfaction to continue to use the facilities and services provided by the hospital. Thus, the patient becomes a permanent patient. The form of determining the patient for treatment is evidence of Patient Loyalty where the patient becomes a customer, a regular who has a positive perspective and attitude towards the hospital.

The real rate or tariff for hospital services is the value of a service which is determined by the size of an amount of money based on the consideration that with this money value a hospital is willing to provide services to patients. Hospital rates are an aspect that is very concerned about by private hospitals as well as government-owned hospitals. (Mulyanti, et al. 2020)

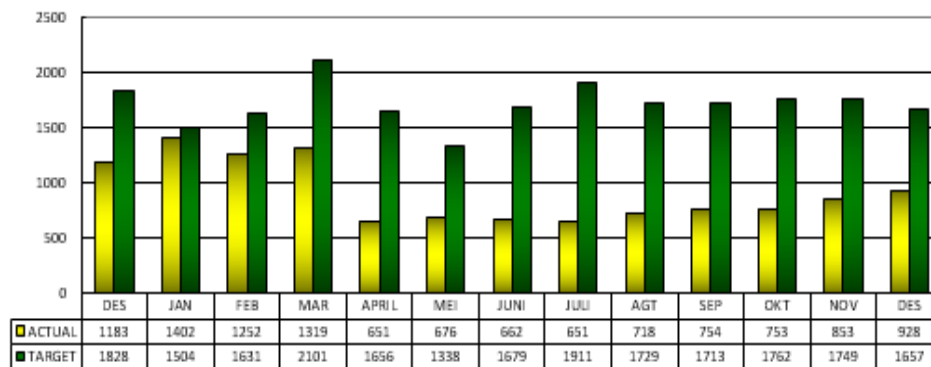
However, changes in service quality can change at any time and affect the performance and financing faced by hospitals and also for the community as prospective patients. The changes in question are 1) the many reasons people skip treatment, such as the dilemma of being afraid of being infected when visiting the facility, 2) being economically incapable of accessing care due to suspension and cancellation policies on a number of services.(Moynihan R, Sanders S, Michaleff ZA, 2021)

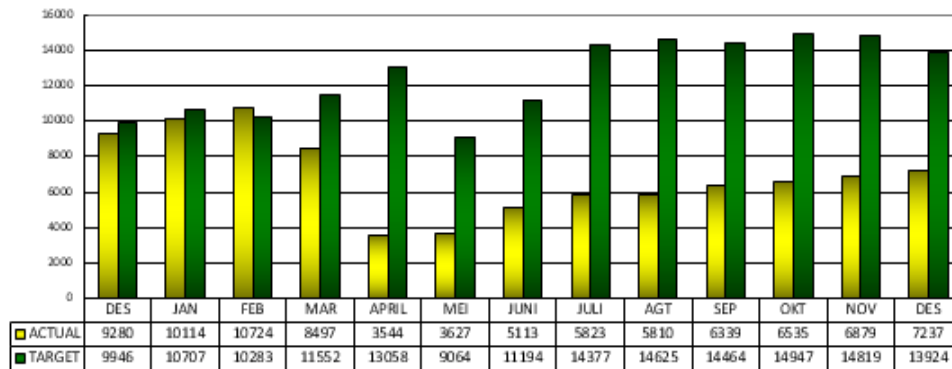
XY Hospital is a private hospital located in Tangerang which has been operating since December 12, 2012 and based on data obtained from the management of XY zHospital, it has progressed quite rapidly for approximately 8 years, which is marked by the increasing number of new patients (table 1). and the number of hospital employees who reach 250 people to support the needs and assistance of patients. This rapid progress is supported by the service facilities provided which can support patient needs such as fast response services around Gading SerpongCommunity Emergency Response(CER), as well as other excellent service facilities. Since 2014 XY Hospital has received a Five Star Plenary Accreditation status from the Hospital Accreditation Committee (XY Hospital Management). Despite having superior services, XY Hospital continues to strive to adapt and strive to be consistent with the changes that occur, especially during the COVID-19 pandemic.



**Figure 1.** Chart of New Patient Visits at XY Hospital 2013-2020  
 Source: XY Hospital Management (2020)

Based on medical record report data from ER patient visits and XY Hospital Polyclinic, it can be seen that there was a very significant decrease from December 2019 to December 2020, as shown in Figure 2.





**Figure 2.** Graph of ER and Polyclinic Patient Visits at XY Hospital in 2019-2020  
Source: XY Hospital Management (2020)

Figure 2 provides information about ER and Polyclinic Patient Visits at XY Hospital from December 2019-December 2020. Based on this figure, it is known that patient visits at the Polyclinic and ER did not reach the target than XY Hospital. Based on the data above, it raises questions regarding the reasons for the reduced XY Hospital visits for COVID-19 patients and non-COVID-19 patients, which are far from the expected target.

## II. Review of Literature

### 2.1. Patient/Customer Loyalty

*Customer loyalty* is the key to success for healthcare providers. Recognition of the patient's right to freely choose health services has encouraged intense competition among health care providers(Zhou, et al, 2017)One of the efforts implemented by the company to improve the quality of work is to increase customer loyalty. Customers with a high level of loyalty will usually continue to use a brand even though they have other alternatives.(Chandra & Keni, 2019) Customer loyalty is a set of attitudes related to purchasing behavior that regularly and systematically benefits the company compared to competing companies (Watson et al., 2015)

Kotler & Keller, (2016: 131)stated that customer loyalty is the customer's personal desire to repeat the purchase of goods or services even though there is influence or marketing from competitors that can cause switching behavior. Customer loyalty is also defined as the purchase of a product on an ongoing basis and a psychological process that results from commitment to the product(Thakur, 2016) It can be concluded that customer loyalty is a measure of customer loyalty using a brand of goods or a brand of service within a certain period of time where there are many options for goods or services that can fulfill desires and customers have the ability to obtain them.

### 2.2. Patient Satisfaction

*Customer loyalty* is demonstration and continuation of patient satisfaction in the use of the facilities and services provided by the hospital, as well as in continuing to be a patient of the hospital. Loyalty is evidence of patient satisfaction who has always been a customer, who has positive strengths and attitudes towards the hospital. Each patient has a different basis of loyalty, this depends on the objectivity of each(Agtovia F, 2017) Daryanto & Setyobudi, (2014: 30)states that customer satisfaction is a condition that is obtained if the service is in accordance with the needs and expectations of the customer. Customer loyalty is achieved by increasing the satisfaction of each patient and maintaining that level of long-term satisfaction. Customer retention is generally seen as a core task for hospital managers.

*Patient satisfaction* formed by evaluating patient quality, performance of clinical outcomes and weighing the costs incurred with the benefits of the health product received. (Rahmawati, 2016) Minarti & Segoro (2014) describes customer satisfaction as the customer's attitudes, reviews, and emotional reactions after purchase. Akroush et al (2015) explained that customer satisfaction is a cumulative construct in the form of a combination of expectations for service and perceptions of service performance over a certain period of time. Customer satisfaction is also defined as a description of the quality of a product or service provided to customers.

### 2.3. Service Quality

*Service quality* is one of the most important attributes in various utility industries, such as hospitals, besides safety and security, and price (which matches quality). Of course, quality service is not just a friendly smile from customer service, but more than that. Octabriyatiningtyas & Suryani (2019) explained that service quality is a level that is expected to meet customer desires, so that when the company is able to fulfill these desires well, then the company is perceived to have good quality. Chinonso & Ejem, (2020) argues that service quality is the difference between service expectations and customer perceived service.

### 2.4. Hospital Safety

According to WHO & PAHO (2015) Hospital safety (hospital security) can be defined as aspects of security and comfort offered by hospitals, namely the ability of services in full capacity with the same infrastructure, before, during and after the occurrence of an emergency or disaster, including the Covid-19 pandemic. The security and comfort referred to in this definition include building security, system security, medical equipment security, health service security and supply availability, especially in an emergency or recovery from a hazard that occurs. The Regulation of the Minister of Health (Permenkes) RI Number 66 of 2016 also states that the management of hospital infrastructure must also be carried out based on occupational health and safety aspects, where the hospital must ensure the security of the utility system, both for visitors, patients and patient companions, health workers, hospital staff and the environment. Okafor et al. (2018) confirmed that safety in terms of service is the management of safety in the workplace or facilities where the service is carried out and is also reflected in the attitudes, beliefs, perceptions and values of hospital staff and employees.

Hospital security is also important, especially in the midst of the increasingly widespread Covid-19 condition. Therefore, there are several hospital security strategies that are specifically carried out during the Covid-19 pandemic, namely: (Noh et al., 2020):

**Table 1.** Safe Hospital Strategy

Strategy	description
Hospital staff education and training	a) Hospital staff wear and remove Personal Protective Equipment properly and according to procedures; b) Hospital staff always behave and act carefully so as not to be infected or infect.
Hygiene and adherence to health protocols	a) The entire hospital environment is always cleaned and sprayed with disinfectant; b) All visitors and staff are required to wear masks in the hospital environment; c) Provision of a minimum distance of 1 (one) meter between individuals, both staff and hospital visitors; d) Availability of hand sanitizer in every corner/wall/reception desk at the hospital.
Guard at the hospital gate and/or door	a) Screening every visitor to ensure visitors are safe from infection, namely checking body temperature with a fever detector, as well as asking for symptoms of respiratory infection felt and travel history;

	b) Restrictions on open doors/gates.
Special clinic for visitors	a) The existence of a special clinic/handling for visitors who have symptoms that point to Covid-19 when checked at the hospital door; b) The existence of a clinic/special treatment for visitors who have symptoms of fever and infection in the respiratory tract.

## 2.5. Hospital Infrastructure

Sharma (2017) Infrastructure quality refers to the basic assets that exist and are crucial in the provision and quality of health service work. This includes both tangible and intangible assets. Intangible assets such as employee competence, experience skills, use of technology, enthusiasm for work, leadership, attitude and, most importantly, provide a competitive structure for patient care which can result in satisfaction. Tjiptono & Chandra (2011) states the quality of infrastructure, namely physical support for services, as well as the external appearance of employees. Company leaders have expectations to be able to take the initiative and have a strong desire to provide quality services and are able and direct employees to produce high work power.

## 2.6. Staff Competence

According to Ochonma et al. (2018), competence is an important aspect in working, both attitudes, actions and skills, which a person has so that they can increase their productivity or work results. It is important for hospital staff to have good competence considering that the hospital is a crucial facility that is responsible for improving the health status of the community.

# III. Result and Discussion

## 3.1. Evaluation of the Measurement Model (Outer Model)

Testing of the outer model or measurement model is focused on evaluating the reliability and validity of the measurement constructs used (Marliana, 2020). In this study, model testing was carried out through three methods, consisting of (1) composite reliability, (2) convergent validity, and (3) discriminant validity.

The measurement of construct reliability is carried out with composite reliability, where the variable is said to be constructably reliable if the composite reliability value is above 0.7. Convergent validity is measured to determine the outer loading value of each variable which will show the weight of each indicator as a measure of each latent variable. . according to Ghazali (2006), the limit of the outer loading value is 0.5; then if the loading factor of a variable is greater than 0.5 then the variable is validly convergent, conversely, if the loading factor is not greater than 0.5 then the variable must be eliminated and not included in the model. The outer loading value can also show the magnitude of the influence of each indicator in building a construct, an indicator is the strongest measure of the variable if it has the largest outer loading value among other indicators. The significance of the outer loading value in measuring the latent variable is stated based on the p-value, where if the value is less than 0.05 then the value is declared significant. *Discriminant validity* is the validity of another construct that is measured to test that a construct accurately measures only the construct being measured, and not another construct. Discriminant validity testing is determined by comparing the correlation value between latent variables with the AVE root. If the AVE root is greater than the correlation between latent variables, it indicates that the indicator is a valid discriminant.

**Table 2.** Measurement Model Evaluation

Constructs and Items	Outer Loading	P-value	Correlation Score Between Latent Variables				
			Hospital Safety	Infrastruc ture	Patient Loyalty	Patient Satisfaction	Staff Competence
<i>Hospital Safety</i> (root AVE = 0.830; CR = 0.939)							
HS1	0.725	0.000*)					
HS2	0.678	0.000*)					
HS3	0.863	0.000*)					
HS4	0.856	0.000*)	-	0.582	0.549	0.678	0.500
HS5	<b>0.912</b>	<b>0.000</b> *)					
HS6	0.828	0.000*)					
HS7	<b>0.919</b>	<b>0.000</b> *)					
<i>Infrastructure</i> (root AVE = 0.807; CR = 0.928)							
I1	0.779	0.000*)					
I2	0.665	0.000*)					
I3	<b>0.928</b>	<b>0.000</b> *)					
I4	<b>0.921</b>	<b>0.000</b> *)	0.582	-	0.380	0.726	0.682
I5	0.763	0.000*)					
I6	0.860	0.000*)					
I7	0.692	0.000*)					
<i>Patient Loyalty</i> (root AVE = 0.885; CR = 0.962)							
PL1	0.849	0.000*)					
PL2	0.948	0.000*)					
PL3	0.877	0.000*)					
PL4	0.769	0.000*)	0.549	0.380	-	0.630	0.466
PL5	0.848	0.000*)					
PL6	<b>0.957</b>	<b>0.000</b> *)					
PL7	0.928	0.000*)					
<i>Patient Satisfaction</i> (root AVE = 0.861; CR = 0.945)							
PS1	0.912	0.000*)					
PS2	0.720	0.000*)					
PS3	0.821	0.000*)					
PS4	0.880	0.000*)	0.678	0.726	0.630	-	0.678
PS5	0.893	0.000*)					
PS6	<b>0.924</b>	<b>0.000</b> *)					
<i>Staff Competence</i> (root AVE = 0.763; CR = 0.906)							
SC1	0.637	0.000*)					
SC2	0.616	0.000*)					
SC3	0.745	0.000*)					
SC4	0.797	0.000*)	0.500	0.682	0.466	0.678	-
SC5	0.806	0.000*)					
SC6	0.799	0.000*)					
SC7	<b>0.900</b>	<b>0.000</b> *)					

Description: AVE=average variance of extracted; CR=composite reliability; \*) significant (p-value < 0.05)

Table 2 shows that all outer loadings have converged validly because the value of each research variable is above 0.5. Table 1 also shows that each variable is declared discriminant validity, because the AVE root has a greater value than the correlation value between latent variables. Each variable is also declared reliable because the composite reliability value is above the value of 0.7.

### 3.2. Evaluation of the Structural Model (Inner Model)

The structural model test aims to determine the R-square value through the goodness of fit model test, the relationship between constructs, and the significance value. The value of R2 is used to measure the magnitude of the influence of certain independent variables on the dependent variable, then the value of R2 will only appear on the affected (dependent) variable.(Ghozali, 2006).

1. On *Patient Satisfaction* obtained R2 of 0.665; which means influence *Hospital Safety*, *Infrastructure*, and *Patient Loyalty* to *Patient Satisfaction* is 66.5%.
2. On *Patient Loyalty* obtained R2 of 0.396; which *Patient Satisfaction* has a large influence of 39.6% on *Patient Loyalty*.

In hypothesis testing, there are two types of influence to be analyzed or tested, namely (1) direct effect and (2) indirect effect. The direct effect analysis is carried out by utilizing the Bootstrapping function in PLS, where the null hypothesis (H0) will be rejected or the alternative hypothesis (Ha) will be accepted, if the p value is less than 0.05 at the 95% confidence level. Indirect hypothesis testing can be done with the Sobel Test procedure, where the indirect effect will be declared significant if the p value obtained is also less than 0.05.

**Table 3.**Hypothesis testing

Hypothesis	Direct Influence	Inner Weight	P-value
H1	<i>Hospital Safety -&gt; Patient Satisfaction</i>	0.342**)	0.004*)
H2	<i>Infrastructure -&gt; Patient Satisfaction</i>	0.339**)	0.002*)
H3	<i>Staff Competence -&gt; Patient Satisfaction</i>	0.276**)	0.003*)
H4	<i>Patient Satisfaction -&gt; Patient Loyalty</i>	0.630**)	0.000*)
Indirect Influence			P-value
H5	<i>Hospital Safety -&gt; Patient Satisfaction -&gt; Patient Loyalty</i>		0.005*)
H6	<i>Infrastructure -&gt; Patient Satisfaction -&gt; Patient Loyalty</i>		0.003*)
H7	<i>Staff Competence -&gt; Patient Satisfaction -&gt; Patient Loyalty</i>		0.004*)

\*) The relationship between variables is significant

\*\*) The relationship between variables is positive

### 3.3. Effect of Hospital Safety on Patient Satisfaction

Increasing hospital security and comfort is included as an effort by the hospital in providing safe and comfortable conditions for visitors so that they do not cause worry or fear while in the hospital. This security and comfort will then increase the satisfaction of visitors to the hospital environment. This is proven by the results of this study which showed a significant effect between Hospital Safety and Patient Satisfaction. Similar research results were obtained by Aiken et al. (2012); Fatima et al. (2018); Iswati (2017); Kagan et al. (2019); Widiyari et al. (2019) which shows a significant association between patient safety and patient satisfaction. Statement Suryawati (2004) confirmed that one of the indicators that affect patient satisfaction with a hospital is hospital comfort which consists of cleanliness and tidiness, safety of patients and hospital visitors, completeness of facilities, variations of patient menus and cleanliness of patient eating utensils.

### 3.4. Influence of Infrastructure on Patient Satisfaction

Infrastructure quality refers to basic resources, both tangible and intangible resources, and is an important component in providing quality health services(Sharma, 2017) where according to (Tjiptono & Chandra, 2011) This infrastructure includes physical facilities to support services and appearance of employees. The quality of hospital infrastructure must be guaranteed so that the quality of service to patients will also be guaranteed. This is evidenced

by the results of this study which showed a significant direct influence between hospital infrastructure and patient satisfaction. Study Fatima et al. (2018); Sandan & Sunartini, (1995); Sihombing & Sinulingga (2020) also showed a significant influence by hospital infrastructure on patient satisfaction.

The results of this study also show that the relationship between infrastructure and patient satisfaction is positive, which means that if the quality of infrastructure increases, patient satisfaction will also increase. Devi & Untoro's Research (2019); Chen et al. (2014); Fatima et al. (2018); Kulsum & Shah (2017); Astarman et al. (2019) also provides results showing that quality hospital infrastructure can increase patient satisfaction.

### **3.5. The Effect of Staff Competence on Patient Satisfaction**

Staff competence is the basic ability of a service provider in providing quality services and based on applicable procedures. Blegen (2006) narrowing this definition to hospital staff by stating that hospital staff are said to be competent if the staff is able to implement surveillance and early intervention to prevent or minimize the occurrence of more severe impacts or diseases. Of course, this is not only related to medical personnel, but also administrative staff who must be able to carry out basic surveillance, for example by ensuring the validity and completeness of patient data so that epidemiologists can then analyze disease trends that can be related to patient demographics. Blegen (2006) added that in addition to being competent in terms of knowledge, hospital staff must also be competent in terms of attitudes and skills, which are reflected in the way they interact and communicate. Each of these competencies will ultimately lead to a level of patient satisfaction. This study shows that there is a direct influence by staff competence on patient satisfaction which is positive. In other words, if the competence of the staff is getting better, the patient satisfaction will increase. Similar things were found by Badjamal (2014); Blegen (2006); Chang et al. (2014); Hamid et al. (2019); Sefnedi & Sasmita (2020); and Tang et al. (2019) which states that competent hospital staff can increase patient satisfaction. Hazfiarini & Ernawaty (2016) also found that the increase in the patient satisfaction index was also inseparable from the increase in the competency value of hospital staff consisting of easy-to-understand explanations, discipline, and responsibility, speed of service, skills, courtesy and friendliness.

### **3.6. Effect of Patient Satisfaction on Patient Loyalty**

Loyalty as a manifestation and continuation of a customer's satisfaction, in this case, a patient who gets satisfactory health services from a health care facility, will create an attachment so that the decision arises to become a permanent patient and always return to using the services of that facility. (Hamid et al., 2019). Likewise, the results of the study showed that patient satisfaction had a significant and positive effect on patient loyalty. These results are in line with the results of the study Afif & Suwandari (2019); Akbar et al., 2020; Astuti & Nagase (2014); Fatonah (2019); Juhana et al. (2015); Sefnedi & Sasmita (2020), that increasing a patient's satisfaction with hospital services will increase his loyalty to return to using services at the hospital. Patient satisfaction is formed by psychological conditions that arise as an outcome of the comparison between expectations and experiences received by patients. If a patient is satisfied with the service received, then his trust and confidence will also increase towards the hospital, where the patient believes that the hospital always provides optimal service to patients. This then becomes a supporting factor for the patient to remain loyal and always use the hospital's services in the following days (Juhana et al., 2015).

### **3.7. The Effect of Hospital Safety on Patient Loyalty by Mediation of Patient Satisfaction**

Patient loyalty can be defined as a patient's commitment to return to use the services of the same hospital even though they have received influence or marketing from competing hospitals. In other words, loyalty can be summed up as a measure of patient loyalty. This loyalty cannot arise without the encouragement or motivation that arises from the satisfaction of the patient with the previously obtained service. This shows that health services can affect patient loyalty through patient satisfaction. This study also proves this statement by showing the significance of the indirect effect given by *Hospital Safety* towards Patient Loyalty through intermediaries *Patient Satisfaction*. The same result was obtained by Fatima et al. (2018) and Akob et al. (2021), where patient satisfaction has an important role in mediating the effect of hospital security on patient loyalty. according to Akob et al. (2021), patient satisfaction with health services assessed from the patient's comfort and safety will influence on the patient's decision in choosing a hospital that has been trusted based on previous experience.

### **3.8. Influence of Infrastructure on Patient Loyalty by Mediation of Patient Satisfaction**

According to Hasan & Putra (2018) In order to optimize the quality of hospital services, an important effort to emphasize is efforts to improve infrastructure and health facilities. By improving the quality of infrastructure, hospitals and other service facilities can serve the community optimally, thoroughly and evenly, so that then community satisfaction can increase and encourage the formation of community loyalty to use health services again when needed. This is proven through this study which shows that there is an indirect effect of infrastructure on patient loyalty which is mediated by patient satisfaction. As also obtained by Devi & Untoro (2019); Fatima et al. (2018); Kulsum & Shah (2017); Sefnedi & Sasmita (2020); and Zineldin (2006).

### **3.9. The Effect of Staff Competence on Patient Loyalty with Mediation of Patient Satisfaction**

As mentioned earlier, that patients who are satisfied with the services of a hospital, will encourage the formation of patient loyalty to the hospital. The quality of health services is assessed by the competence of hospital staff in providing health services. The results of this study indicate that there is a significant indirect effect by staff competence on patient loyalty which is mediated by patient satisfaction. The same result was also obtained by Afif & Suwandari (2019); Fatonah (2019); Kesuma et al. (2013); and Personal et al. (2021). According to Afif & Suwandari (2019), the competence of a doctor and nurse in a hospital will increase the satisfaction of patients receiving health services. This satisfaction will elicit a positive response and assessment from the patient which then builds their loyalty and willingness to return to the same hospital when they need health services.

## **IV. Conclusion**

Based on the results of the study, the conclusion that can be drawn is that there is a significant direct effect between Hospital Safety, Infrastructure and Staff Competence on Patient Satisfaction, as well as the relationship between Patient Satisfaction and Patient Loyalty. The winner weight coefficient of the four direct effects is positive, which means that the relationship between the two related variables is positive, meaning that the better the security, infrastructure and competence of the staff at XY Hospital, the higher the patient satisfaction; and the higher the patient satisfaction, the patient's loyalty will also increase.

In addition to direct influence, indirect influence also occurs between Hospital Safety, Infrastructure and Staff Competence on Patient Loyalty with mediation *Patient Satisfaction*. The results show that the indirect effect between the three independent variables towards Patient Loyalty through intermediaries *Patient Satisfaction* is significant. In other words, patient satisfaction is an important thing that needs to be considered in mediating the effect of security, infrastructure and staff competence in XY Hospital on patient loyalty.

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