The Influence Of Telemedicine Usability On Patient Loyalty Mediated By Patients' Trust And Satisfaction: A Study At Hospitals Of State-Owned Enterprises In Indonesia

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Abstrak

Penelitian ini bertujuan untuk menganalisis pengaruh penggunaan telemedicine rumah sakit terhadap loyalitas pasien yang dimediasi oleh kepercayaan pasien dan kepuasan pasien. Model penelitian ini diadopsi dari penelitian sebelumnya yang dilakukan di lingkungan rumah sakit, yang diuji secara empiris pada pengguna telemedicine rawat jalan di Rumah Sakit XYZ. Pengambilan data responden dilakukan secara purposive sampling dengan 165 responden yang memenuhi syarat. Pengumpulan data dilakukan melalui kuesioner dengan Skala Likert yang disebarkan secara online selama bulan September sampai dengan Oktober 2021, dan dianalisis lebih lanjut dengan PLS-SEM. Hasil penelitian ini menunjukkan bahwa penggunaan telemedicine memiliki pengaruh positif yang signifikan terhadap kedua variabel mediasi yaitu; kepercayaan pasien dan kepuasan pasien. Dari sepuluh hipotesis yang dikembangkan dalam penelitian ini, terdapat sembilan hipotesis yang berpengaruh positif signifikan terhadap variabel dependen loyalitas pasien yang dimediasi oleh variabel mediasi kepercayaan pasien dan kepuasan pasien. Perceived usefulness berpengaruh positif signifikan terhadap kepercayaan pasien, tetapi berpengaruh tidak signifikan terhadap kepuasan pasien. Persepsi kemudahan penggunaan, persepsi efektivitas, persepsi keandalan memiliki pengaruh positif yang signifikan terhadap kedua variabel mediasi kepercayaan pasien dan kepuasan pasien. Kepercayaan pasien dan kepuasan pasien berpengaruh positif signifikan terhadap loyalitas pasien. Model hasil ini memiliki akurasi prediksi yang besar sehingga perlu dikembangkan pada penelitian selanjutnya. Terdapat implikasi manajerial yang disarankan kepada manajemen rumah sakit dan rekomendasi untuk penelitian selanjutnya.

Kata Kunci: Telemedicine, Telehealth, *Kegunaan Telemedicine, Kegunaan yang Dirasakan, Kemudahan Penggunaan yang Dirasakan, Efektivitas yang Dirasakan, Keandalan yang Dirasakan, Kepuasan Pasien, Kepercayaan Pasien, Loyalitas Pasien*

Abstract

This study aims to analyze the influence of telemedicine usability to patient loyalty mediated by patient trust and patient satisfaction. The research model was adopted from previous study done in the hospital setting, that empirically tested on outpatient telemedicine user in Hospital XYZ. Data from respondent was taken by purposive sampling with 165 eligible respondent were obtained. Data Collection done through questionnaire with Likert Scale that distributed by online during September until October 2021, and further analysed by PLS-SEM. The result of this study demonstrated that Telemedicine Usability has significant positive influences on both mediating variables named; patient trust and patien satisfaction. From ten hypothesis developed in this research, there are nine hypotheses have significant positive influences toward dependent variable patient loyalty mediated by mediating variables patient trust and patient satisfaction. Perceived usefulness has positive significant influences toward patient trust, but has insignificant effect on patient satisfaction. Perceived ease of use, perceived effectiveness, perceived reliability has positive significant influences

toward both mediating variables patient trust and patient satisfaction. Patient trust and patient satisfaction have positive significant influences toward patient loyalty. This result model has large predictive accuracy therefore need to be develop in the further research. There are managerial implication suggested to the hospital management and recommendation for the future research.

INTRODUCTION

In December 2019, in Wuhan, China, there was a patient with symptoms pneumonia of unknown cause. This is the first time coronavirus disease 2019 (COVID-19) was discovered, this report is the beginning of extraordinary occurrence of coronavirus disease. (Xu et al., 2021) This case emerged first time in Wuhan, Hubei Province, China in December 2019 and has been spread all over the world. (Kronenfeld & Penedo, 2021) In March 2020, WHO declares COVID-19 to be a global pandemic Countries, cities, businesses and restaurants are closed mostly to reduce transmission and reduce the high number of patients and avoid flooding COVID-19 patients who come to health facilities. (Xu et al., 2021) The provision of primary health care during a pandemic is a challenge because disrupted health service providers, patient overload, inadequate protective equipment, lack of medical equipment, lockdown, and risk of spread infection of medical practitioners and patients. (Bokolo Anthony Jnr, 2020) Global challenge This allows health care providers to adapt to make a services that allow over long distances.

To reduce the risk of spreading coronavirus, hospitals improve the efficiency and effectiveness of the medical system by replacing health care and services with digital technology. The condition of the COVID-19 pandemic has resulted in irreversible changes common in the world of medical practice, making doctors adapt to use telemedicine in providing health services. Telemedicine is one of the strategies to prevent the spread of COVID-19 in Indonesia In many countries, telemedicine is the provision of health services using electronic communication technology that allows interaction doctor-patient distance. Patients and medical personnel do not need to meet in person in one place but still communicate through an application. (Kronenfeld & Penedo, 2021)

The Indonesian government also plans to increase control efforts disease and improve the quality of the referral system in the healthcare industry. Previously, the Indonesian government had provided steps to identify its citizens and their health records thoroughly through national insurance coverage. Telemedicine will help the government spread reach the sector and ensure accessible services to the public Indonesia. (Indonesian Ministry of Health, 2019) The Indonesian Ministry of Health has developed telemedicine in 2012. Applications made in cooperation with these third parties called Telemedisin Indonesia (TEMENIN), but in its application several obstacles were found, such as: understanding the use of technology that lack of understanding of the urgency of using telemedicine (Davis,281989; Nugraheni et al., 2020). On this basis, researchers feel the need to reviewing the use of telemedicine in different situations i.e. in during the COVID-19 pandemic as it is today, in face-to-face service very limited and at risk of increasing the spread of COVID-19.

The use of telemedicine services still has limitations if: compared to face-to-face consultations. Obtained from the results of data collection conducted by the Kaiser Family Foundation, barriers to use telemedicine, one of which is the age factor, there are 7 out of 10 elderly people aged 65 years and over who own and can operate a computer, smartphones, or tablets equipped with internet access and they competent in using it. In addition to inadequate infrastructure, elderly patients have a higher sense of concern about data security them (privacy) so it is often difficult to have discussions about the health of those who are sensitive and choose to be more comfortable doing face-to-face consultation (Cubanski, 2020). The results of previous research from Acharya and J. Rai (2016), obtained

82% of respondents were satisfied with treatment through telemedicine and would recommend telemedicine services to their families and relatives. Another study conducted by Welch et al (2017) found 53.7% respondents feel more comfortable using telemedicine services and 51.9% have the desire to reuse this service though still experience problems and difficulties in telemedicine services. Another study found that 29% of respondents experienced difficulties in use the app. Another obstacle faced by patients using telemedicine services in the form of unclear information and network disturbances internet, as well as communication with technicians. (Acharya & Rai, 2016)

Based on some of the problem issues in the pandemic era in paragraph previously, and some of the problems in the use of telemedicine services, The author wants to try to examine whether the use of telemedicine in one of the hospitals in Indonesia can increase patient satisfaction, patient trust, and encourage patients to be loyal to healthcare providers.

Literature Review

Loyalty is defined as a strong commitment to re-use a product/service of choice continuously, thus causing repeated purchases of the same product, even though there are other situational influences and marketing efforts of competitors. (Liu et al., 2021) In the current era, the health care industry is very hypercompetitive, demanding consumer loyalty through better health services (better care), affordability, personalization, and convenience (convenience) and also offer patients what they want. Keeping loyal patients improves health and the growth of healthcare provider and healthcare payer businesses. (Lacek Group,2020)

Patient loyalty is important for healthcare providers. Satisfied patient with one health service will become loyal customers and will choose come back to the hospital. If the patient receives high-quality service, patients will always be committed to the hospital. Satisfaction is significant factors influencing hospital preferences. (Burhanettin Uysal & Mehmet Yorulmaz, 2020)

From an attitudinal perspective, there is a lot of patient/consumer loyalty considered by previous researchers as a specific desire to continue relationship with service providers. (Yang & Peterson, 2004) From Behavioral perspective, patient / consumer loyalty is defined as a repeat customer, where consumers / patients will buy and choose the same product or the same service in a specific category. (Yang & Peterson, 2004) Oliver (1999) make 4 ascending brand-loyalty stages, referring to the pattern of cognition-affect conation . Stage 1, namely cognitive loyalty, consumers or patients will be loyal certain brands based on the information they know about the brand. Stage 2 is affective loyalty which refers to the patient's preference or positive attitude towards the brand. Stage 3 is conative loyalty or behavioral intention, which is a deep commitment to buy (good intention), this desire will have an impact on unconscious actions. Stage 4, namely action loyalty, where consumers or patients change their intention / desire becomes an action. Consumers / customers at this stage have the experience of action inertia, accompanied by the desire and desire to pass barriers to buying. (Yang & Peterson, 2004)

The concept of patient loyalty or patient commitment to one provider health services, which is defined as the customer's intentions and requests or patient to maintain a doctor-patient relationship as a result of the service high quality provided by the hospital. The patient will always increase their commitment and loyalty to hospitals that provide appropriate health care. Therefore, service quality and patient satisfaction is a prerequisite for a patient's loyalty to the home sick. (Uysal & Yorulmaz, 2020) Patients who are satisfied with home services sick will become loyal customers and tend to choose the hospital the same for treatment. The patient's commitment or loyalty to one home Pain will increase if the patient's confidence increases. In this context, can iIt is said that patient satisfaction is an important factor that affects the hospital preferences. (Uysal & Yorulmaz,2020)

Based on the focus group on the patient, there are 4 main factors that affect patient confidence in telemedicine services in hospitals . That is : 1. Patient Trust in the Organization; patient's individual beliefs about service provider organization. 2. Patient's Trust in Professionals: patient's individual belief in professional services in hospitals. 3. Patient's Belief in Therapy / Treatment: patient's individual beliefs the therapy he received

was effective for his illness. 4. Patient's Trust in Technology: patient's belief in technology. (Velsen et al., 2017) Patient trust in telemedicine services is area that is still highly researched. Nonetheless, trust is an antecedent importance of end-user acceptance of digital services and may, as such, becomes very important for patients when making decisions to use services telemedicine or not. (Velsen et al., 2017)

Satisfaction factor and possible use in the future, this related to the user's overall satisfaction with the telemedicine system and how willing users will be to use the same system in the future. Telemedicine Usability Questionnaire (TUQ) uses a broader definition of Usability that takes into account the utility and usability of technology. Utility refers to whether the technology function do what users need (Nielsen, 2012). Usability is so far which a product can be used by users to achieve certain goals with effectiveness, efficiency and satisfaction. (Parmanto et al., 2016) Early work in telemedicine usability evaluation was mainly focused on on patient satisfaction (Aoki et al., 2003; Heinzelmann et al., 2005), while then work to combine satisfaction, usefulness, convenience usage, and interaction quality (Bakken, 2006) & (Yip et al., 2003). Everything is a measure of effectiveness. TUQ usability factors include usability, convenience use, effectiveness, reliability, and satisfaction. (Parmanto et al., 2016)

Trust is crucial to economic development and social. Trusts can lower the cost of economic transactions and make it easier Patients to work together also share information. (Kovacs et al., 2019) Trust is important in healthcare, Especially in the relationship between doctor-patient and health care providers. (Kovacs et al., 2019) Uncertainty and information gap between patient and health provider, making patients unable to rely on formal contracts to ensure The outcome of this provider-patient interaction is optimal for them. (Kovacs et al., 2019) Patients choose healthcare providers, in the hope that the provider does not take advantage of their weaknesses. They expect all action. Provided by the provider is for the benefit of the patient. Once a trust is formed, there is no need to build high-cost control. mechanism, will further increase long-term relationship benefits. (Liu et al., 2021) Although the trust does not have a significant mediating effect role between word of mouth and patientrevisit, trusts still have a direct relationship (direct relationship) with WOM. Trust and satisfaction play an important role. mediation between perceived quality and intention to revisit. Gambarov et al research correlation between loyalty and trust, and found a relationship between the two significant and strongly positive, and trust plays an important role in mediating dimension. (Liu et al., 2021)

Satisfaction theory refers to patient satisfaction is a factor. It is important to predict patient loyalty. The higher the patient satisfaction, Increasing patient loyalty. Patient loyalty refers to to the patient's positive attitude towards a home service illness, and the desire to resume the service at a later date day. A quantitative study of 195 patients in 6 government hospitals and Private sector in Bangladesh finds patient satisfaction positive impact on patient loyalty in the medical industry. Satisfaction may increase through variables such as reliability, empathy and responsiveness, and Patient loyalty is strongly influenced by satisfaction. (Liu et al., 2021)

Telemedicine Usability Questionnaire (TUQ), TSQ, SUTAQ are three of the questionnaires on telemedicine most commonly used in previous research articles. (Hajesmaeel- Gohari & Bahaadinbeigy, 2021) TUQ is commonly used to evaluate several types of telehealth systems such as videoconferencing systems, computers, and mobile-based systems. In this study, the researcher use tuq as the questionnaire. The TUQ has a strong content validity incorporating items from the best current steps in telemedicine, which have been tested in rigorous previous validation research, and has been used in previous research conducted by some of these authors. Tuq's reliability, particularly internal consistency, is more than sufficient. (Parmanto et al., 2016) TUQ is created as a complete questionnaire covering a variety of usability factors, including usefulness, ease of use, effectiveness, reliability, and satisfaction. Below is a brief explanation of each of the usability factors assessed in TUQ. (Layfield et al., 2020)

This Perceived usefulness variable describes the patient perception assessment of telemedicine users to the ease of using this system, whether the patient of this telemedicine user feels the same perception as getting face-to-face services or not. (Parmanto et al., 2016) This can be reviewed from the effective time, cost, desire of patients to try using telemedicine. (Yip et al., 2003)

This perceived ease of use variable explains the perception of telemedicine users about whether the system used is easy to learn in facilitating patients for treatment. For example, systems that use intuitive icons are easier to learn than command-based systems. (Parmanto et al., 2016)

This perceived effectiveness consists of interface quality measures and the interaction quality measures , this perceived effectiveness variable explains the perception of telemedicine users' patient assessment of improvements in their health condition if using this telemedicine service. Indicators can be improvements in quality of life, improvement in health status, patient knowledge, diagnostic confidence, patient-reported outcomemeasure. (Yip et al., 2003)

Interface quality measures the interaction between the patient and telemedicine technology or computer systems. These include graphical user quality interfaces, ease of navigation, and an overall impression of how patients interact with telehealth systems. (Parmanto et al., 2016)

Interaction quality measures a patient's interaction with clinicians, including audio and video quality, the similarity of doctor-patient interaction through this telemedicine system to face to face. This construct is unique to the telemedicine system and has been used extensively in telemedicine questionnaires. (Parmanto et al., 2016)

Reliability refers to how easily users can return to the correct system in the event of an error or error. For example, if a user clicks the wrong button, the system will provide a guide to return to the flow. Ideally this telemedicine system should be as reliable as a regular face-to-face service. Reliability and validity of data transmission are essential for patient safety. (Parmanto et al., 2016) This perceived reliability variable explains the telemedicine user's perception of the system whether reliable or not. For example, when an error occurs when used, the system can show how to repair. (Parmanto et al., 2016)

From the above research model and the variables described above, This research wants to discuss and find out the effect of usability services telemedicine against variable dependent patient loyalty mediated by patient satisfaction and patient trust mediation variables. Based on theory above, hypotheses of this research can be formulated as follows:

H1 = perceived usefulness has a positive influence on patient trusts
H2 = perceived usefulness has a positive influence on patient satisfaction
H3 = perceived ease of use has a positive influence on patient trusts
H4 = perceived ease of use has a positive effect on patient satisfaction
H5 = perceived effectiveness has a positive influence on patient trusts
H6 = perceived effectiveness has a positive influence on patient satisfaction
H7 = perceived reliability has a positive influence on patient trusts
H8 = perceived reliability has a positive influence on patient satisfaction
H9 = patient trust has a positive influence on patient loyalty
H10 = patient satisfaction has a positive influence on patient loyalty

METHOD RESEARCH
Data Collection

Primary data is obtained directly from the respondent through questionnaires. The questionnaire was conducted. by providing several written statements via online to respondents to be answered or given consent. Questionnaires used , it was first translated from English to Indonesian.

Data taken from respondents who have used Telemedicine service at this hospital. In addition to variable questions, questionnaires It also comes with questions about

respondents' demographic profiles, age and level of education and experience related to hospital services.

Measures

For questions variables, each statement given, are equipped with five answers in the form of a Likert scale with five points, starting from: (1) Strongly Agree until (5) Strongly disagree. The data analysis method used in this study using a multivariate analysis approach (Bougie & Sekaran, 2020) in this research model there are seven variables with ten paths and two mediation variables. Therefore, an analytical method is needed that can test the influence between variables. Simultaneously or simultaneously leading to its bound variable (independent) Furthermore from the various multivariate analysis methods available, selected using partial least square analysis method - structural equation modeling (PLS-SEM) based on variance.

RESULTS AND DISCUSSION

Respondent Demographic Profile

Respondents to this study were obtained through questionnaires that distributed online from September to October 2021. Spread questionnaire online through google form, by way of questionnaire link given to eligible respondents. It can be explained that 34% of respondents to xyz hospital telemedicine users are patients over the age of 50 years, and 66% of respondents to telemedicine users aged <50 years. This can be explained that in respondents at the age of >50 years there are limitations in using gadgets. The majority of respondents aged <50 years are more flexible and easy to operate gadgets.

Table 1 . Respondents' demographic profile

Description	Category	Number	Percentage (%)
Age (Years)	20	3	2
	21 - 30	40	24
	31 – 40	52	31
	41 – 50	36	22
	> 50	34	20
Total		165	100
Gender	Female	101	61
	Male	64	39
Total		165	100
Education	Middle School	2	1
	High School	35	21
	Bachelor's	107	65
	Postgraduate	20	12

Description	Category	Number	Percentage (%)
Total		165	100
Occupation	Proffesional	19	12
	Private Sector Employee	66	40
	Entrepreneur	8	5
	Students	8	5

	Civil Employee	8	5
	Others	55	34
Total		**165**	**100**
The Purpose of healthcare	General Practitioner	68	41
	Cardiologists	12	7
	Internists	45	27
	Pulmonologists	16	10
	Neurologists	0	0
	Obstetry and Gynaecologists	0	0
	General Surgeon	0	0
	Urologists	0	0
	Others	24	15
	Total	**165**	**100**
Payment Method	Own / Family	39	24
	Company Reimbursement	59	36
	Private Insurance	25	15
	BPJS Kesehatan	38	23
	Others	4	2
Total		**165**	**100**

*Government's health insurance

From table 1 above, it can be seen the educational background of respondents Telemedicine users in Hospital XYZ are 65% have a level of education last Bachelor's degree, 12% of respondents with postgraduate degree education level, and 23% respondents with high school education level & equivalent. With an respondents' education background can be considered the capable of their understanding about the questions in questionnaires well, they can be more critical in answering all questions in questionnaire, and also has a high expectation of the quality of hospital they want to get.

Based on the work background of 40% of service user respondents telemedicine xyz hospital is a private employee of the company being around xyz hospital, this can illustrate that Telemedicine service respondents at XYZ hospital are respondents who have a steady job, be able to pay for the health services you want they get so that respondents have expectations of quality of service that when compared to other labor employees.

Measurement of Reliability and Validity

The first stage in the analysis of the outer model is to look at the reliability indicators (Hair et al., 2019). The outer loading value is the value required as the limit for each indicator so that it can be said to be reliable. In PLS-SEM, an indicator can be said to be reliable if the outer loading value is more than 0.708. (Hair et al., 2019).

Table 2. Outer Loading Values

Variabel	Indikator	*Outer Loading*	Hasil
Perceived Usefulness	USE1	0,846	Reliable
	USE3	0,890	Reliable
	USE4	0,890	Reliable
ived Ease Of Use	EOU1	0,825	Reliable
	EOU2	0,875	Reliable
	EOU3	0,850	Reliable
	EOU4	0,849	Reliable
	EOU5	0,868	Reliable
Perceived Effectiveness	EF1	0,789	Reliable
	EF2	0,896	Reliable
	EF3	0,851	Reliable
	EF4	0,889	Reliable
	EF5	0,787	Reliable
Perceived Reliability	REL1	0,846	Reliable
	REL2	0,826	Reliable
	REL3	0,843	Reliable
	REL4	0,837	Reliable
Patient Satisfaction	SAT1	0,933	Reliable
	SAT2	0,930	Reliable
	SAT3	0,941	Reliable
Patient Trust	TR1	0,922	Reliable
	TR2	0,909	Reliable
	TR3	0,873	Reliable
	TR4	0,880	Reliable
Patient Loyalty	LO1	0,820	Reliable
	LO2	0,888	Reliable
	LO3	0,881	Reliable
	LO4	0,895	Reliable
	LO5	0,888	Reliable

From the test results shown in table 2 above, obtained from 30 indicators, there is 1 indicator that is not reliable, namely the USE2 indicator is not used in the calculation, because it has an outer loading value of <0.708 which is 0.611 so it is considered unreliable to measure the construct. While the other 29 indicators are considered reliable, it can be concluded that they are reliable to measure their respective constructs.

The second stage in the analysis of the outer model is looking at construct reliability. (Hair et al., 2019) In the outer reliability test model with reference to Cronbach's alpha and composite reliability values. The required value is Cronbach's alpha value above 0.7 as the lower bound, while the composite reliability value is expected to be between 0.7 to 0.95. The composite reliability value of 0.95 can be considered as an upper bound, if a value greater than this value is found, it can be concluded that all indicators in this research model have been declared reliable to be able to measure their respective constructs, it is suspected that

there is redundancy of the indicators used (Hair et al., 2019). The results of the construct reliability test are as shown in the table below:

Table 3. Construct Reliability Values

Variabel	Chronbach's Alpha	Composite Reliability	Hasil
perceived usefulness	0,848	0,908	Reliabel
perceived ease of use	0,907	0,931	Reliabel
perceived effectiveness	0,898	0,925	Reliabel
perceived reliability	0,859	0,904	Reliabel
patient trust	0,918	0,942	Reliabel
patient satisfaction	0,928	0,954	Reliabel
patient loyalty	0,923	0,942	Reliabel

From the table 3 above, it was found that all variables have a Cronbach Alpha value above 0.7. Furthermore, in the composite reliability table, all variables have values between 0.7 as the lower limit to 0.95 as the upper limit so that no redundancy issues are found. From the data from the consistency test, it can be concluded that all indicators in this research model have been declared reliable to be able to measure their respective constructs.

The third stage in the analysis of the outer model is a convergent validity test. In testing construct validity or in a reflective model called convergent validity, the value used as a reference is the average value of the variance or average variance extracted (AVE). A variable can be declared valid if the AVE value is more than 0.50. (Hair et al.,2019) The test results are shown in the table below:

Table 4. Average Variance Extracted Values

Variabel	*Average Variance Extracted (AVE)*	Hasil
Perceived Usefulness	0,767	Valid
Perceived Ease Of Use	0,729	Valid
Perceived Effectiveness	0,711	Valid
Perceived Reliability	0,702	Valid
Patient Trust	0,804	Valid
Patient Satisfaction	0,873	Valid
Patient Loyalty	0,765	Valid

The fourth stage in the analysis of the outer model is the validity test, the next is to look at the discriminant validity in the model (Hair et al., 2019), this test is carried out to find out whether a construct or variable has indicators that have been discriminated against properly to measure the construct independently. Specific. The reference value used in the discriminant validity test is the Fornell-Larcker Criterion. This can be interpreted that the indicator on one variable has been the most appropriate and specific to measure the construct (Henseler et al, 2015).

Table 5. Discriminant Validity Using the Fornell – Lacker Criteria

	patient loyalty	patient satisfaction	patient trust	perceived ease of use	perceived effectiveness	perceived reliability	perceived usefulness
patient loyalty	0,875						
patient satisfaction	0,796	0,935					
patient trust	0,855	0,832	0,896				
perceived ease of use	0,727	0,775	0,786	0,854			
perceived effectiveness	0,771	0,792	0,812	0,772	0,843		
perceived reliability	0,767	0,826	0,799	0,704	0,812	0,838	
perceived usefulness	0,694	0,595	0,653	0,680	0,607	0,555	0,876

From table 5 Fornell Larcker above, based on the four parameters of the reliability and validity test results on the outer model as above, namely the reliability indicator (outer loading), construct reliability (Cronbach's alpha and composite reliability), construct validity (average variance extracted or AVE), and discriminant validity (Fornell-Lacker) can be drawn a general conclusion. Namely that in the measurement model of this study (measurement model) all indicators are reliable and valid to measure their respective constructs specifically. With these results, this research stage is feasible to continue in the next analysis stage, namely the inner model test (structural model).

Structural Model

The value of R-squared or the coefficient of determination can be seen from two aspects, the first is explanatory power or the ability of the independent variables in the research model to explain the dependent variable. The second is predictive accuracy or how strong the ability of independent variables in the research model can predict the dependent variable to a certain degree, which is measured from weak to strong degrees. (Hair et al., 2019). The R-squared value can be referred to as substantial or strong if the value is equal to or greater than 0.75. The R-squared value is said to be moderate to strong if the value is equal to 0.50 - 0.75. The value of R-squared is weak if the value is equal to 0.25 - 0.50. However, if the R-square value is found above 0.9, it can be considered overfit. (Hair et al., 2019). The results of the model test through bootstrapping resulted in the R2 value for each variable, as shown in Figure 1.
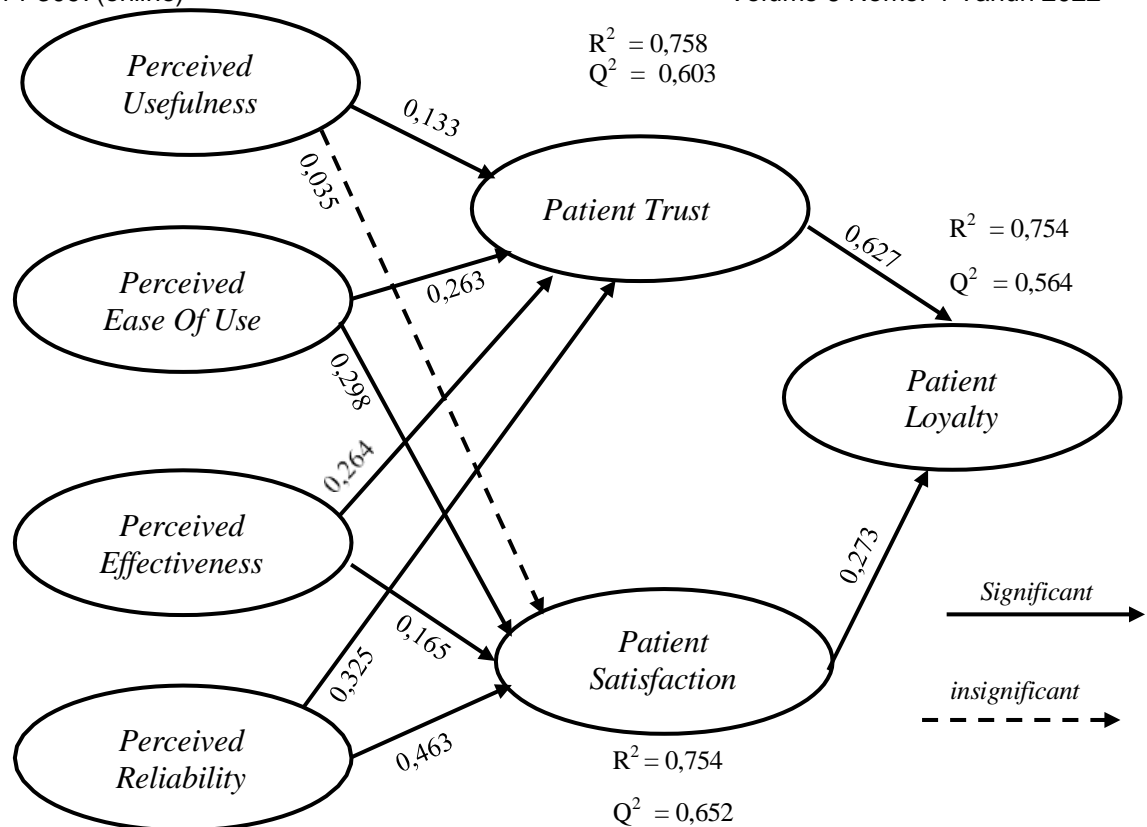
Figure 1. Structural model – a dashed arrow represents a statistically insignificant relationship between variables

The next step in analyzing the quality of the research model using PLS-SEM is through the Q-squared test, which aims to determine the predictive relevance of a variable in the research model. The Q-squared value is in the range 0 to 1. (Sarstedt et al., 2020) if the Q-squared value is found to be more than 0 to 0.25 then it is said to have small predictive relevance, if the Q-squared value is found is between 0.25 to 0.5, it is said to have medium predictive relevance, while if the Q-squared value is more than 0.5, it is said to have large predictive relevance. The higher the Q-squared value, the more precise the predictive ability of a variable to predict research output which is relatively the same if there is a change in data parameters (Hair et al., 2019). Therefore it can be said that this value can indicate the quality of the proposed model for empirical testing. The Q2 value is obtained from the results of calculations using the blindfolding menu on PLS-SEM, with the results as shown in the Figure 1 above.

From Figure 1 above, it can be seen that the dependent variable patient loyalty has a large predictive relevance with a Q value of 0.363. While the patient satisfaction mediating variable has a Q value of 0.652 which is classified as having large predictive relevance, the patient trust mediation variable has a Q of 0.603 which is large predictive relevance. Therefore this research model is considered to have a large predictive ability on the dependent variable patient loyalty (patient loyalty).

In the more advanced Q-Squared test an approach with PLS Predict is used in the SmartPLS 3.3 calculation. This method is considered more accurate than blindfolding (Hair et al., 2019). The predictive ability of PLS predict is considered more sensitive to changes in input data parameters. In table 4.17 above, the Q _predict value for the dependent variable patient loyalty, namely 0.689, can be ascertained to have large predictive relevance.

Hypotheses Testing

In the analysis of the structural model, the next stage that becomes the focus of answering research questions is through a significance test on ten paths or paths that exist in

this research model. The test aims to determine the significance of the influence between variables in the research model so that it can be generalized at the population level. This test was carried out using the bootstrapping method with re-sampling with SmartPLS™ 3.3 . The results of hypothesis testing are assessed by looking at two empirical data, namely the significance value and the coefficient whose direction must be in accordance with the direction of the proposed hypothesis because the nature of this hypothesis is directional so that a one-tailed test is carried out. If the T-Statistic value is greater than the T-table value, namely 1.645 (with an alpha of 0.05), then the relationship between variables can be declared significant. The analysis of this research model was carried out using a one-tailed hypothesis test with a significance level of 0.05. After seeing the significance, then see how big the coefficient (standardized coefficient) in each path or path. If both conditions are met, the hypothesis can be said to be supported.

Table 6. Hypotheses Testing

Hypotheses	Path	Standardized Coefficients	T Statistics	Hasil
H1	*perceived usefulness -> patient trust*	0,133	**1,912**	**Hipotesis Didukung**
H2	*perceived usefulness -> patient satisfaction*	0,035	**0,445**	**Hipotesis tidak didukung**
H3	*perceived ease of use -> patient trust*	0,263	**3,032**	**Hipotesis Didukung**
H4	*perceived ease of use -> patient satisfaction*	0,298	**3,214**	**Hipotesis Didukung**
H5	*perceived effectiveness -> patient trust*	0,264	**3,258**	**Hipotesis Didukung**
H6	*perceived effectiveness -> patient satisfaction*	0,165	**1,923**	**Hipotesis Didukung**
H7	*perceived reliability -> patient trust*	0,325	**4,857**	**Hipotesis Didukung**
H8	*perceived reliability -> patient satisfaction*	0,463	**5,811**	**Hipotesis Didukung**
H9	*patient trust -> patient loyalty*	0,627	**8,403**	**Hipotesis Didukung**
H10	*patient satisfaction -> patient loyalty*	0,273	**3,358**	**Hipotesis Didukung**

*significant at p < 0,05

The table 6 above can show that of the ten hypotheses in the research model, there are 9 significant hypotheses with positive coefficient values in accordance with the direction of the proposed hypothesis. One hypothesis H2 has an insignificant effect between perceived usefulness on patient satisfaction because it has a T value. -Statistics below 1,645 . While the other nine hypotheses have a significant effect, because they have T-statistics values above 1.645.

DISCUSSION
Practical Implications

The findings from this research on hospital management can provide managerial implications in the form of suggestions for hospital managers and owners, especially type B hospitals to improve the quality of telemedicine services at type B BUMN hospitals in the city of Cilegon. Management needs to see that there are factors that need to be considered in increasing the use of telemedicine services at this hospital. Improving the quality of telemedicine services at this hospital will ultimately have a significant influence or impact on patient satisfaction with hospitals, will also affect patient trust on the reputation of the hospital, and in the end will also affect the patient's desire to use telemedicine services in hospitals. this is back. These things will affect the behavior of patient loyalty to health providers / hospitals.

The suggestions that can be given are as follows; The first suggestion is to increase the perception of usefulness and ease of use for the use of this telemedicine service, a simpler, more capable, credible, and reliable telemedicine service application is needed to make it easier for patients to interact with hospital service providers, starting from registration, patient assistant nurses, technical payment, doctor's consultation, to the delivery of medicine to the house.

The second suggestion is to increase the perception of the effectiveness of using telemedicine services at this hospital, it is necessary to improve the quality of the hardware used, the internet network, the software used for consulting with doctors so that the quality of teleconsultation can be more effective, and it doesn't take a long time. A strong internet network will increase the effectiveness of this telemedicine service, so that the time it takes for patients - doctors to interact will be more effective and efficient. The quality of the gadgets used also needs to be considered, both in terms of audio and video quality when conducting teleconsultation, if needed, you can use a microphone for service personnel so that the voice can be heard more clearly so that the quality of information provided will be better understood by patients. In addition, the speed of response from officers, including administrative officers, nurses, doctors, and pharmacy officers, needs to be increased in order to support effective and efficient telemedicine services. Speed in drug delivery is one important thing that needs to be improved because it will have an impact on patient satisfaction with this telemedicine service. In addition, increasing the timeliness of attending doctors during video calls, explaining information about changes in practice hours doctors, explanations of information from doctors play an important role in increasing patient satisfaction.

The third suggestion is to improve the quality of telemedicine services provided, it is necessary to pay attention to the quality of the human resources providing these services, both the training provided for doctors, information technology officers, administrative officers, pharmacy officers, nurses, financial officers, etc. Hospital management can provide service excellence training for officers who work in hospitals in order to provide the best service, and improve the quality of good service so that patient satisfaction can be achieved. Management can also provide training such as effective communication for all hospital staff, in order to improve the quality of service which will have an impact on patient satisfaction and patient trust.

The fourth suggestion is to reach out and provide effective information about telemedicine services provided by this XYZ hospital, to introduce this service through digital marketing so that the wider community has easier access to health services. Companies that want to achieve customer loyalty must focus on developing satisfaction and perceived value. (Yang & Peterson, 2004).

CONCLUSION

From the structural model analysis, it is known that this research model with a focus on patient loyalty has had strong predictive accuracy with large predictive relevance. So that it can be said to have adequate explanatory and predictive model quality. Therefore this

research model can be replicated and used in further research in the field of hospital organization, especially to examine the role of using telemedicine services on patient satisfaction, patient trust, and patient loyalty. This research is recommended for hospitals with a better organizational structure larger ones, such as type A hospitals or government hospitals, where there are different categories of respondents.

The findings of this study are in line with previous research, there is a significant direct effect between patient satisfaction and patient loyalty on the use of telemedicine service applications during the COVID-19 pandemic. There is an indirect / mediating effect between the experience of patients using telemedicine during the COVID-19 pandemic and patient loyalty. There is a direct influence between patient satisfaction and this allows patients to consult via telemedicine applications during the COVID-19 pandemic with the aim of reducing contact and maintaining social distance during the COVID-19 pandemic, telemedicine services to hospital providers must always be improved both in service quality and quality. information provided to the patient. (Sari et al., 2021)

The findings of this study are in line with previous research on patient loyalty, Anbori et al., (2010) said patient loyalty is a hospital service plan strategy to reach customers in the long term through the provision of better service quality. To reach patient loyalty, service providers must meet patient needs and patient expectations (Aliman and Muhammad, 2016). Anbori et al., (2010) also said that the aspect of service quality is important for patients and will lead patients to patient satisfaction and the desire to use this hospital service again. Previous research found that patient satisfaction and patient loyalty were significantly related. And both factors have a significant relationship with nursing services, administration, etc. (Ahmed et al., 2017) Fornell (1992) says loyal customers do not mean satisfied customers, but satisfied customers will become loyal customers. To achieve patient loyalty, hospital providers must communicate continuously with patients to understand patient needs and patient expectations (Ahmed et al., 2017). So for hospitals, it is necessary to improve good relations and continuous communication with patients. This in the long run will also affect the good reputation of the hospital

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