



## The Role of Social Media Toward Patient Satisfaction and Patient Loyalty in Private Hospitals

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### ABSTRACT

It has been a challenge for hospitals to meet patient satisfaction with health services provided. There are many factors related to patient satisfaction, one of them is communication, especially in this digital era where the patients can access easily through social media. Not only communication between hospitals and patients, but also communication between patients and doctors play an important role. To address the underlying mechanism between these predictors in the context of social media and patient loyalty. This study used an observational-descriptive design with 302 respondents who have received a service from a private hospital either outpatient or inpatient. They are selected by simple purposive sampling. Data were collected using an online questionnaire. Data was analyzed using PLS-SEM. Patient trust toward hospital, strength of hospital patient communication, and perceived image of hospital are not associated with patient satisfaction. Perceived image of doctor is positively associated with patient satisfaction and patient satisfaction is positively associated with patient loyalty. In social media context, perceived image of doctor is positively associated with patient satisfaction. We need to improve patient satisfaction in order to increase patient loyalty.

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### 1. Introduction

In this modern era, it has been a challenge for hospitals to meet patient satisfaction with health services provided. The increasing number of health service providers will lead to higher competition so that patient loyalty is needed to make hospitals survive (Zhou et al., 2017). Hospitals are required to maintain patient loyalty by improving the service quality. Good health services are the services that can fulfill the needs of every user in health services in accordance with the level of satisfaction of the average population (Fatima et al., 2018). In addition, those service implementations are qualified according to the established standards and professional codes of ethics. If patients are not satisfied with the services, they will tend to move to another hospital. This shows that patient loyalty is an important factor in market competition among hospitals (Kumar & Shah, 2004).

Patients need a variety of information to know which hospitals provide good services and products. In the past, this information could be obtained directly by experiencing as a patient or information from relatives or friends who became patients. However, in this digital era, information is easily obtained via the internet, in the form of hospital's website, patient testimonials, and various social media that allow patients to interact (Househ et al., 2014). Thus, patients can evaluate and compare the health services provided even before taking the treatment.

The impact of social media has been changing from Web 1.0 which only focuses on media display, limited to reading without interacting to Web 4.0 which refers to community interactions on social media, even including interactions between humans and machines. Moreover, it is becoming increasingly important to be able to react quickly and decisively to events on social media (IMS Institute, 2014). This especially happens to Generation Z, which is called the social media generation, as they use the internet as their main source for gathering information (Issa & Isaias, 2016).

A survey conducted by the Pew Research Center and the American Life Project in 2012 showed that one in every three people searched online for information related to their health problems, including choosing a hospital. Continuous communication between the hospital and the patient improves the hospital image toward the patients. Hospitals must also be able to effectively use social media as a communication tool (Sütcü & Erdal, 2014). Thus, the hospitals can get more loyal patients who are willing to get services from the same hospital for a long time.

Not only communication between hospitals and patients, but also communication between patients and doctors turns out to play an important role. Through social media owned by doctors, patients feel more informed and emotionally supported (Bartlett and Coulson, 2011). Better communication between patients and doctors will increase the patient's satisfaction toward their doctors (Mehra and Mishra, 2021). Patient satisfaction also reflects the good quality of hospital services (Clever et al., 2008). Satisfied patients will be loyal to their doctors and tend to have a positive attitude towards related service products, including hospital services. (Berger, 2014)

In a competitive environment, patient loyalty is important for hospitals so that they don't lose their patients. Patient loyalty and adherence to medical treatment are significant things to improve the patient's health status. So, patient loyalty must be well managed by the health care provider. To effectively manage, the factors that influence patient loyalty must be understood. These factors include "patient trust towards hospital", "strength of hospital-patient communication", "perceived image of hospital", "perceived image of doctors", "patient satisfaction", and "patient loyalty".

This study aims to examine the underlying mechanism between these predictors in the context of social media and patient loyalty.

## 2. Methods

This quantitative research used an observational-descriptive design with a cross sectional approach. The population of this study are all individuals who use social media and have seen or received information through social media about a private hospital. This study used purposive sampling with a sample of 302 respondents who have received a service from a private hospital either outpatient or inpatient.

The sample was collected during February 2022 by sending out the form link to fill the questionnaire digitally. The study used a questionnaire containing 35 question items as the indicators for 6 variables; namely Patient Trust toward Hospital variable consists of five indicators, Strength of Hospital-Patient Communication variable consists of five indicators, Perceived image of Hospitals consists of five indicators, Patient Satisfaction variable consists of four indicators. Patient Loyalty variable consists of seven indicators adopted from Tosyali, et.al. (2019). In addition, Perceived Image of Doctors variable consists of five indicators adopted from Pronk, et. al (2021).

All variables are limited in terms of social media. For example, patient trust toward hospital means the trust that is being built through social media. Hospital-patient communication is limited to the communication through social media. Also, the perceived image of either hospital or doctor is the image from social media. Patient satisfaction is defined as "a person's positive feeling of pleasure or disappointment resulting for comparing a product or services perceived performance or outcome in relation to his or her expectations" (Anand, Kaushal, & Gupta, 2012). Therefore, patients sharing high levels of satisfaction as well as positive experiences on social media may be able to influence the market when it comes to loyal patients (Tosyali et al., 2019). Patient loyalty means a loyal attitude toward a healthcare provider (Sumaedi et al., 2015). Respondents were asked to report how certain of the written statements according to what they thought, felt or experienced using a Likert scale: strongly disagree (1), disagree (2), neutral (3), agree (4), strongly agree (5).

Before distributing the actual data, a preliminary study was conducted where all indicators were valid and reliable for the distribution of the actual questionnaire. Data was analyzed using Partial Least Squares - Structural Equation Modeling. Evaluation of the outer model measurement model is carried out with a convergent validity test with the condition that the loading factor value is above 0.4. In this test, there is one indicator that is removed, namely PS2 and PS4 because it has an outer loading value below 0.4. The average variance extracted (AVE) value is above 0.5 and the composite reliability value must be greater than 0.7 (Hair et al., 2017). After that, an evaluation of the structural model (inner model) was carried out with the criteria that the research results were accepted if the t-statistic > 1.65.

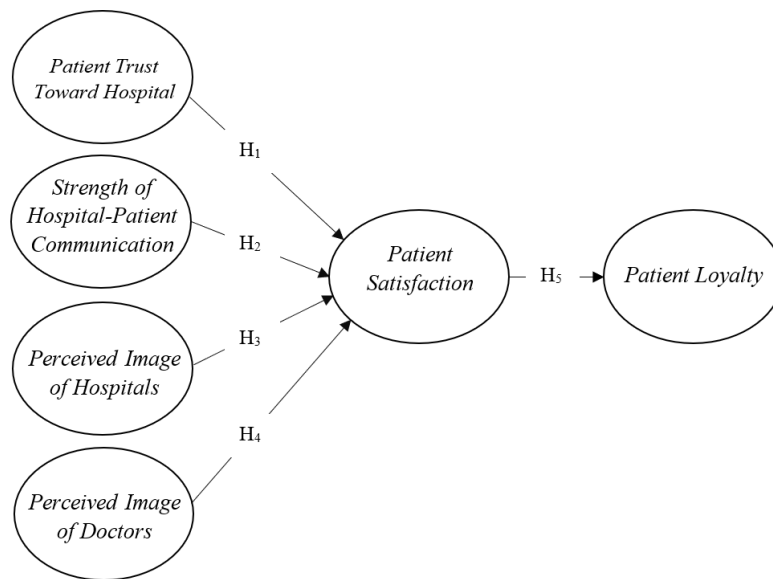


Figure 1. Research Model

### 3. Results and Discussion

#### 3.1 Results

##### a. Respondents' Demographic Profile

A total of 302 respondents were acquired from the research. The majority of respondents were female (51.3%). The majority of the respondent age group were between 26-35 years old (58.3%). Most of the respondents worked as private sector employees (41.4%), doctors (22.2%), and other professions such as pharmacists, nutritionists, and housewives. The majority of respondents have a bachelor degree (62.3%) and master degree (15.2%). Respondents are mostly living in Jakarta (39.7%), Bogor/Depok/Tangerang/Bekasi (32.5%) and other places such as Bali, Bandung, D.I. Yogyakarta (19.9%). Instagram is the most preferred social media which is often used by most of the respondents (80.8%). The rest of the details can be seen in table 1, the demographic table.

Table 1. Demographic Table

Variable	Category	Count	Percentage (%)
Gender	Male	147	48.7
	Female	155	51.3
	Total	302	100

Age	17 - 25	43	14.2
	26 - 35	176	58.3
	36 - 45	47	15.6
	46 - 55	15	5.0
	55 and above	21	7.0
	Total	302	100
Occupation	Students	23	7.6
	Private Sector Employee	125	41.4
	Government Employee	19	6.3
	Entrepreneur	20	6.6
	Doctor	67	22.2
	Nurse	9	3.0
	Others	39	12.9
	Total	302	100
Education	High School	27	8.9
	Diploma	14	4.6
	Bachelor	188	62.3
	Master	46	15.2
	Doctoral	9	3.0
	Specialist Doctor	14	4.6
	Others	4	1.3
	Total	302	100
Domicile	Jakarta	120	39.7
	Bogor/Depok/Tangerang/Bekasi	98	32.5
	Surabaya	9	3.0
	Bandung	9	3.0
	Medan	6	2.0
	Others	60	19.9
	Total	302	100
	Preferred Social Media	Instagram	244
YouTube		24	7.9
TikTok		2	0.7
Facebook		17	5.6
Twitter		3	1.0
Others		12	4.0
Total		302	100

## b. Validity and Reliability Test

Testing convergent and discriminant validity is the method most often used in research to measure the Ghozali & Latan (2015) model. The indicator's convergent validity test is seen from the loading factor value for each construct indicator. The results of the actua test can be seen in table 2 and all indicators have an outer loading value above 0.4 and the average variance extracted (AVE) value for all variables is above 0.5 and has a composite reliability (CR) value above 0.7.

**Table 2.**  
Measurement of Validity and Reliability

Constructs & Item	Outer Loadings
<b>Patient Trust Toward Hospital (PTH) (CR = 0,846 / AVE = 0,525)</b>	
[PTH1]: I am more confident in a hospital where I can get information about health services from that hospital.	0,733
[PTH2]: I feel my healthcare needs are being fulfilled when I meet the medical staff at the hospital.	
[PTH3]: I feel safe about my health when I meet the medical staff at the hospital.	0,702
[PTH4]: I feel closer to the hospital I trust.	
[PTH5]: For me, a trusted hospital is more important than a cheap one.	0,737
	0,813
	0,623
<b>Strength of Hospital-Patient Communication (HPC) (CR = 0,864 / AVE = 0,562)</b>	
[HPC1]: A hospital, which shares information through social media to raise public awareness of health issues, has fulfilled one of its duties as a health practitioner.	0,715

[HPC2]: I get information on health issues through the hospital's social media.	0,729
[HPC3]: Social media is a good opportunity for hospitals to attract new patients.	0,806
[HPC4]: The information that patients share about the hospital through social media allows me to gain more insight into the hospital.	0,821
[HPC5]: The hospital's response to complaints made by patients on social media indicates that the hospital cares about its relationship to patient satisfaction.	0,667
<b>Perceived Image of Hospital (PIH) (CR = 0,880 / AVE = 0,595)</b>	
[PIH1]: By using social media, I think hospitals will be more familiar with their patients.	0,738
[PIH2]: By using social media, I think the hospital will be more confident in its image.	0,718
[PIH3]: Hospitals that have more followers on social media have a better image than those with less followers.	0,822
[PIH4]: Hospitals followed by famous people on social media have a better image.	
[PIH5]: I think hospitals that treat famous people offer a better quality of service.	0,835
	0,736
<b>Perceived Image of Doctor (PID) (CR = 0,897 / AVE = 0,594)</b>	
[PID1]: Doctors who are active on social media in terms of health education have a better image.	0,722
[PID2]: Doctors who have more followers on social media have a better image.	0,760
[PID3]: I will look for doctors based on online recommendations (ratings) given by the community to go to the hospital where the doctor works.	0,798
[PID4]: I feel that information from social media about doctors will influence my decision to consult the hospital where the doctor works.	0,847
[PID5]: Doctors who share success stories on social media regarding the surgery/treatment/etc that have been done will strengthen the reputation of the hospital.	0,800
[PID6]: I feel that doctors who share positive personal (non-medical) stories through social media can increase emotional closeness with patients, thereby strengthening the patients' confidence in going to the doctor.	0,688
<b>Patient Satisfaction (PS) (CR = 0,931 / AVE = 0,771)</b>	
[PS1]: If I am satisfied with the quality of hospital services, I will share the story through social media.	0,847
[PS3]: If I am satisfied with the quality of hospital services, I will recommend the hospital through social media.	
[PS5]: If I am satisfied with the quality of a doctor, I will recommend the doctor through social media.	0,875
[PS6]: If I am satisfied with the quality of a doctor, I will recommend the hospital where the doctor works through social media.	0,905
	0,884
<b>Patient Loyalty (PL) (CR = 0,919 / AVE = 0,620)</b>	
[PL1]: I feel comfortable when I visit this hospital.	0,746
[PL2]: I will visit this hospital again because I am satisfied with the service.	0,758
[PL3]: I will continue to receive services from a hospital that I trust despite the limitations.	0,659
[PL4]: I will not give up on this hospital because this hospital has won my trust.	0,818
[PL5]: I feel relieved after receiving services from this hospital.	0,852
[PL6]: I always say good things to people around me about this hospital.	0,851
[PL7]: I recommend this hospital to everyone who asks for advice.	0,808

Notes: CR = Composite Reliability; AVE = Average Variance Extracted

A good discriminant variable can be shown based on the square root of the AVE for each construct which is greater than the correlation between constructs in the model (Ghozali & Latan, 2015). Afterwards, we calculated discriminant validity of all existing variables has been achieved because the square root value of the AVE in each has been greater than the correlation between constructs. From the results of the discriminant validity test all variables have fulfilled the criteria to proceed the study.

**Table 3.**  
Measurement of Validity and Reliability

	HPC	PID	PIH	PL	PS	PTH
<b>ECV</b>	<b>0,750</b>					
<b>PID</b>	0,537	<b>0,771</b>				
<b>PIH</b>	0,583	0,626	<b>0,771</b>			
<b>PL</b>	0,499	0,440	0,514	<b>0,787</b>		
<b>PS</b>	0,375	0,512	0,392	0,502	<b>0,878</b>	
<b>PTH</b>	0,592	0,356	0,453	0,556	0,216	<b>0,724</b>

Multicollinearity test uses VIF (Variance Inflation Factor) to evaluate the level of collinearity. If the VIF is five or more, it is recommended to remove one of the indicators from the variables involved (Hair

et al., 2017). The results of the multicollinearity test in this study can be seen in table 4, where there is no multicollinearity. Thus, this study is clear from multicollinearity and able to proceed.

**Table 4.**  
Multicollinearity Test (VIF)

	HPC	PID	PIH	PL	PS	PTH
ECV	-	-	-	-	2,036	-
PID	-	-	-	-	1,775	-
PIH	-	-	-	-	1,960	-
PL	-	-	-	-	-	-
PS	-	-	-	1,000	-	-
PTH	-	-	-	-	1,583	-

The measurement of R-Square value as we can see in table 5, has a value of 0.252 from the patient loyalty which indicates that it has an ability value of 25.2% and the remaining 74.8% is influenced by other factors not included in this study. Other factors that might contribute such as service quality variables on patient loyalty through patient experience. If the service received is below the expected service as advertised, the patient will be dissatisfied and lose loyalty to the healthcare provider and vice versa (Tianur and Hapzi, 2019). Patient satisfaction variable has an R-Square value of 0.281 or 28.1% and the remaining 71.9% is influenced by other factors not included in this study. The quality of service also has a positive and significant effect on patient satisfaction. The better quality of service, the better patient satisfaction with health needs. Other variables such as waiting times, cleanliness, comfort are also associated with patient satisfaction (Puppala et.al., 2020).

**Table 5.**  
R-Square Value

	R Square	R-Square Adjusted
PL	0,252	0,249
PS	0,281	0,271

### c. Hypothesis Testing

In testing the significance of the correlation coefficient between the independent variable and the dependent, it can be determined by doing the t test. The minimum value of t-statistics in this study is 1.65 with a significance of 0.05. The table 6 below shows hypothesis testing regarding whether it is significant or not. Before distributing the actual data, a preliminary study was conducted in which all indicators were valid and all variables were reliable and feasible for the distribution of the actual questionnaire.

**Table 6.**  
Hypothesis Testing

Hypothesis	Original Sample	T Statistics (>1,65)	Results	Conclusion
[H1] PTH → PS	-0,046	0,700	Significant	Rejected
[H2] HPC → PS	0,139	1,714	Significant	Rejected
[H3] PIH → PS	0,079	0,921	Significant	Rejected
[H4] PID → PS	0,405	5,652	Significant	Accepted
[H5] PS → PL	0,502	10,325	Significant	Accepted

## 3.2 Discussion

### H1. Patient Trust Toward Hospital is not Associated with Patient Satisfaction

The first hypothesis in which patient trust toward hospital will be positively associated with patient satisfaction is rejected. This is in contrast to the study by Tosyali in 2019 where patient trust will be

positively associated with patient satisfaction through social media, which will positively predict patient loyalty. In a more recent study, there is one more important variable which is involved between patient trust and patient satisfaction. Patient satisfaction affects patient trust and patient commitment, not the other way around (Durmus and Akbolat, 2020). Another study also found that patient satisfaction influences patient trust through variables such as accuracy, comfort, dimensions of speed, and hospitality (Cahyati, 2021). Although doctors' technical competence may be adequate, it was not the patients' main concern. On the other hand, patients are more concerned about service processes such as communication and referral arrangements. Thus, patients are more likely to express dissatisfaction about those dimensions even when they already have high trust in their doctors (Chen et.al., 2020).

#### H2. Hospital-Patient Communication is not Associated with Patient Satisfaction

The second hypothesis in which strength of hospital-patient communication will be positively associated with patient satisfaction is rejected. This might be related due to some health information online being not well defined or well referenced which questions its reliability. (Pirraglia and Kravitz, 2012). On the other hand, enormous diversity of health contents from specialized health sources makes it difficult to understand. This lack of understanding is mostly caused by the use of messages that used too much medical jargon.

Moreover, some people are afraid of false information or false understanding in social media due to the gap of knowledge. Despite the shortcomings, there is still some potential for hospital communication through social media if managed appropriately according to the society's needs. The hospital institution must adapt its messages to society's level of knowledge, either in the health sector or the communication activity itself (de Las Haras-Pedrosa et al., 2020).

#### H3. Perceived Image of Hospital is not Associated with Patient Satisfaction

The third hypothesis where the perceived image of hospital will be positively associated with patient satisfaction is rejected. This might be because there is still one crucial factor between perceived image of hospital and patient satisfaction which is service quality. Given the importance of the hospital image, an excellent hospital brand may be achieved through the improvement of perceived service quality (Wu, 2011). A recent study also shows that hospital service significantly mediates the relationship of hospital brand image with patient satisfaction. Thus, it indicates that improving hospital brand image through improving facilities and environment plays an important role by indirectly affecting patient satisfaction (Raka, 2021).

#### H4. Perceived Image of Doctor is Positively Associated with Patient Satisfaction

The fourth hypothesis is that the perceived image of doctor will be positively associated with patient satisfaction is accepted. Doctors play a significant role in reassuring patients and enhancing their experience through effective communication (Blackburn et.al., 2019). The difference between the perceived image of doctor and the perceived image of hospital is the level of interpersonal aspects and communication. Perceived image of doctor is more personal while perceived image of hospital is corporate. Another reason is researchers found that patients offered reasons for visiting certain hospital such as trusting the doctor or having experienced a pleasant medical experience previously in the same hospital (Kubicek et al., 2012).

Nowadays, patients can access telemedicine where they can consult with the doctor through applications. These applications provide a rating system by which doctors rank posts on the site on the basis of perceived credibility (Chretien and Kind, 2013). Studies also show that electronic communication between doctor-patient may also improve patient satisfaction by having questions

answered and increasing the time spent communicating. Hence, improving patient care and health outcomes (Househ, 2013).

#### H5. Patient Satisfaction is Positively Associated with Patient Loyalty

The fifth hypothesis in which patient satisfaction will be positively associated with patient loyalty is accepted. The result of this study is similar to the research conducted in D.I. Yogyakarta, where patient satisfaction can affect patient behavior, such as loyalty, which may result in making healthcare recommendations to their family, relatives or friends. In addition, loyalty can improve patient adherence with medical treatments. Patients' experience in using the health service also affects other people who need to utilize the same services because recommendations are usually rapidly acknowledged as a reference to select a place of health care (Rosyidah et al., 2018). Another study also found that when patients are satisfied with the service being provided, patients will lead to repetitive purchase behavior thus providing patient loyalty (Woratschek et al., 2020).

#### 4. Conclusions

Patient trust toward hospital, strength hospital-patient communication, perceived image of hospitals are not associated with patient satisfaction. On the other hand, perceived image of doctor is positively associated with patient satisfaction, also patient satisfaction is positively associated with patient loyalty. Doctors should be active in social media in terms of education, sharing stories regarding the treatments, surgeries, or even personal stories. Creating good social media for hospitals is important, but it is more important to build doctors' social media than to build hospital's social media only to increase patient satisfaction. In the future, we need to evaluate other possible factors in social media which may be associated with patient satisfaction

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