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## THE MEDIATING EFFECT OF PATIENT SATISFACTION ON THE RELATIONSHIP BETWEEN SERVICE QUALITY, HOSPITAL IMAGE, TRUST AND PATIENT LOYALTY: EVIDENCE FROM INDONESIA

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### Abstract

The development of healthcare industry in Indonesia has become very potential market and faced keen competition. One of marketing strategy to win the high competition is to create patient satisfaction. The purpose of this study was to examine the mediating effect of patient satisfaction on the relationship between service quality, hospital image, patient trust and patient loyalty. The primary data for the study were collected from a self-administered mail survey of 337 questionnaires from the hospital patients resulting in a sample of 214 usable responses being returned. The results showed that service quality and hospital image had significant effect on patient satisfaction and loyalty, while patient trust did not affect significantly patient satisfaction and loyalty. In addition, the variable of patient satisfaction was found to have positive effect on patient loyalty. Specifically, patient satisfaction mediated the relationship between service quality, hospital image and patient loyalty. However, it did not mediate the relationship between patient trust and patient loyalty.

### Introduction

Nowadays, the increase of medical care services has become a major concern of every patient. Providing the health facilities and infrastructure are one of the main requirements in efforts to improve the community health. These health facilities could consist of hospitals and community health centers (Ministry of Health of the Republic of Indonesia, 2008).

The rapid technological developments have led to increased public knowledge of the health so that people are more selective in choosing health care facilities. Thus, every hospital is required to be able to provide the best health services to patients compared to its competitors. One marketing strategy to win competition is through the creation of consumer loyalty, which in this case is named by patient. Kotler and Keller (2014) conceptualize consumer loyalty is a commitment to provide services based on a positive attitude and is reflected in the repeated and consistent use of services.

In general, patient satisfaction has been recognized as the determinants of customer loyalty. Patient satisfaction is conceptualized as a comparison between perceived expectations and reality (Kotler & Keller, 2014). According to Rust and Oliver (1994), satisfaction is based on service quality; thus, the greater the service quality felt by patients, the more likely they will feel satisfied.

On the other hand, variables of service quality, hospital image and patient trust were found as antecedents of customer satisfaction. Service quality has been recognized as a key element that affects customer satisfaction. Patient services quality is an effort to meet the needs and desires of patients as well as the accuracy of delivery in balancing patient expectations (Parasuraman et al, 1990). Hospital image is the perceptions of a hospital in patient memory (Keller, 1993). In fact, a good image helps organizations to enter into new markets faster, enhance ability to expand services (Ruyter & Wetzels, 2000), attract efficient staff, build reputation, promote services (Alves & Raposo, 2010), give positive feelings to consumers and differentiate the brand (Aaker, 1991). Another variable that has the potential to influence patient satisfaction and patient loyalty is patient trust which is defined as a patient's belief that the physician will act in the patient's best interest and will provide appropriate treatment and medical care (Anderson & Dedrick, 1990; Thom & Campbell, 1997).



## Literature review

### Determinants of Patient Loyalty

Patient loyalty is another terminology of customer loyalty. Oliver (1999) defines customer loyalty as a commitment to repeat purchases or subscribe to products or services consistently in the future. As the practitioner interest in patient satisfaction with physicians has increased, so have the number of empirical and theoretical publications. There have been a number of studies focusing on the link between patient satisfaction and loyalty. Previous research has found that patient satisfaction significantly predicted patient loyalty (Gabel *et al.*, 1993; Lai *et al.*, 2009; Juhana *et al.*, 2015). Other studies found determinants of loyalty are service quality (Aliman & Muhamad, 2005; Sefnedi, 2019), hospital image (Allison *et al.*, 2004; Rai & Srivastava, 2013; Shpetim, 2012), and patient trust (Moreira & Silva, 2015). Therefore, this study developed hypotheses as follow:

H<sub>1</sub> : Patient satisfaction significantly affect patient loyalty.

H<sub>2</sub> : Service quality significantly affect patient loyalty.

H<sub>3</sub> : Hospital image significantly affect patient loyalty.

H<sub>4</sub> : Patient trust significantly affect patient loyalty.

### Antecedents of Patient Satisfaction

Customers or patient are either satisfied or disappointed based on a comparison made between their perception and service outcome expectation (Kotler & Keller, 2014). Patient satisfaction is among the most extensively researched constructs owing to its importance to hospital success. Conceptually, it has been defined as the feeling patients experience from their purchase (Oliver, 1999). Jahng *et al.* (2005) claim that satisfaction is a critical issue in the marketing field since satisfied customers or patients turn into loyalty and ensure profitability, which is crucial for most businesses.

Several empirical studies displayed the determinants of customer or patient satisfaction namely, service quality (Caruana, 2002; Mira & Sefnedi, 2019; Taqdees *et al.*, 2018), hospital image (Silva & Alwi, 2003; Chahal & Bala, 2012), and patient trust (Moreira & Silva, 2015). Based on the previous findings, , this study developed hypotheses bellow:

H<sub>5</sub> : Service quality significantly affect patient satisfaction.

H<sub>6</sub> : Hospital image significantly affect patient satisfaction.

H<sub>7</sub> : Patient trust significantly affect patient satisfaction.

### Patient Satisfaction as Mediator

It is true that there were no one previous researchers who examined the role of patient satisfaction as a mediator between service quality, hospital image, patient trust and patient loyalty simultaneously. Partially, Caruana (2002) found that customer satisfaction mediated the relationship between service quality and customer loyalty. Therefore, this study developed hypotheses bellow:

H<sub>8</sub> : Patient satisfaction mediated the relationship between service quality and patient loyalty

H<sub>9</sub> : Patient satisfaction mediated the relationship between hospital image and patient loyalty

H<sub>8</sub> : Patient satisfaction mediated the relationship between patient trust and patient loyalty

## Methodology

This study was based on an empirical investigation of hospital patients in provinces of West Sumatera, Indonesia. The questionnaire was developed and pretested using a small sample of patients, with the final instrument in English and a Indonesian language equivalent with a covering letter and instructions that was drop and pick to a random sample that included 251 questionnaires and yielding 204 usable questionnaires' being returned, accounting for an effective response rate of 81.3% and considered to be acceptable.

In accordance with the research objectives, this study adopted a questionnaire-based quantitative approach, which was developed by extensively reviewing the literature on service quality, image, trust, satisfaction, and loyalty to identify reliable measured used in previous studies. Service quality was measured using five dimensions namely tangibles, empathy, reliability, responsiveness, and assurance. The five dimension were



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measured by 22 items (Parasuraman *et al*, 1990). Hospital image was measured using six items (Engel *et al*, 1995) namely: location, nature and quality of diversity, price, advertising and promotion, personal sales, and physical attributes.

Patient trust was conceptualized as a patient's belief that the physician will act in the patient's best interest and will provide appropriate treatment and medical care (Thom & Campbell, 1997). This variable was measured with four items that adapted from McKnight *et al* (2002) namely *plays a good role, competent, capable and proficient, and knowledgeable*. Patient satisfaction was measured by seven items (Wu *et al*, 2010) that consist of good treatment, satisfied experience, making the right choice in using services, enjoying using the service, not regretting using the service, exceeded expectations, and satisfied with the service received. In addition, patient loyalty would be measured by twelve items (Caruana, 2002) namely (1) say positive things about hospital to other people, (2) intend to continue doing business with hospital, (3) encourage friends and relatives to do business with hospital, (4) seldom consider switching away from hospital, (5) doubt that I would switch, (6) really like doing business with hospital, (7) hospital is clearly the best to do business with, (8) believe this hospital is good, (9) try to use hospital every time I need service, (10) consider this hospital as my primary, (11) first choice when I need hospital service, and (12) primary place when I consider when I want to use hospital services.

### Results and discussion

Next, some descriptive statistics of the sample is provided. A profile of the private university participating in the study is presented in Table 1.

*Table 1. The Profile of Participating Respondents (n = 214)*

Data Demography	Categories	Frequency	(%)
Gender	Male	96	44,9
	Female	118	55,1
Age	17-27 years	27	12,6
	28-38 years	38	17,8
	39-49 years	61	28,5
	50-60 years	88	41,1
Formal Education	Junior High School	41	19,2
	Senior High School	57	26,6
	Bachelor	97	45,3
	Master / Postgraduate	19	8,9
Job Type	Government employees	62	29,0
	Private employees	52	24,3
	Trader	21	9,8
	Lecturer / Teacher	42	19,6
	Farmer	11	5,1
	Fisherman	19	8,9
	Student	7	3,3

*Measurement model assessment* (MMA) is useful for evaluating the relationship between indicators and latent variables. In other words, MMA shows how the manifest or observed variable represents the latent variable to be measured (Ghozali & Latan, 2015). Analysis of MMA consists of convergent validity and discriminant validity. Convergent validity is the extent to which items measuring certain variables together. In order to conduct convergent validity, there are four criteria that must be considered namely (1) outer loading > 0.7, (2) cronbach's alpha > 0.7, (3) composite reliability > 0.7, and (4) average extracted variance (AVE) > 0.5 (Hair *et al*, 2010).



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Table 2. Convergent Validity

Variables	Items	Outer Loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Patient Loyalty	LP1	0,750	0,915	0,930	0,597
	LP2	0,805			
	LP4	0,731			
	LP5	0,784			
	LP7	0,716			
	LP9	0,767			
	LP10	0,802			
	LP11	0,803			
	LP12	0,789			
	Patient Satisfaction	CS1			
CS2		0,842			
CS3		0,807			
CS4		0,704			
CS5		0,774			
CS6		0,804			
CS7		0,810			
Service Quality	KP4	0,760	0,958	0,962	0,630
	KP6	0,724			
	KP8	0,779			
	KP9	0,787			
	KP11	0,776			
	KP12	0,746			
	KP13	0,759			
	KP14	0,847			
	KP15	0,814			
	KP17	0,749			
	KP18	0,865			
	KP19	0,862			
	KP20	0,809			
KP21	0,844				
KP22	0,770				
Hospital Image	BI4	0,900	0,897	0,936	0,829
	BI5	0,916			
	BI6	0,915			
Patient Trust	K1	0,859	0,906	0,934	0,781
	K2	0,894			
	K3	0,895			
	K4	0,884			

Based on the analysis of convergent validity, it can be seen that the outer loading value of all items or indicators is greater than 0.7 so that it can be interpreted that all items used are valid. Cronbach's alpha and composite reliability were found to be greater than 0.7 so that it can be said that all latent variables namely patient loyalty, patient satisfaction, service quality, hospital image and patient trust have high reliability. In addition, the AVE value was found to be greater than 0.5 which means that the average variance of each latent variable fulfilled the requirements.

Discriminant validity explains the uniqueness of the constructs, where latent variables predict the value of indicators or items of each variable must be better than other variables. Based on the results of the discriminant validity analysis with cross loading method, it appears that the correlation score of each indicator or item to the latent variable is greater than the correlation indicator or item of a variable to other latent variables. So it can be



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concluded that the variables of patient loyalty, patient satisfaction, service quality, hospital image and patient trust have adequate discrimination (Hair *et al.*, 2010).

Table 3. Discriminant Validity

Items	Hospital Image	Patient Trust	Patient Satisfaction	Service Quality	Patient Loyalty
BI4	<b>0,900</b>	0,654	0,696	0,758	0,761
BI5	<b>0,916</b>	0,621	0,800	0,824	0,849
BI6	<b>0,915</b>	0,588	0,766	0,811	0,778
CS1	0,588	0,466	<b>0,734</b>	0,620	0,591
CS2	0,696	0,486	<b>0,842</b>	0,798	0,775
CS3	0,665	0,486	<b>0,807</b>	0,636	0,712
CS4	0,542	0,386	<b>0,704</b>	0,617	0,659
CS5	0,678	0,458	<b>0,774</b>	0,677	0,677
CS6	0,749	0,584	<b>0,804</b>	0,766	0,760
CS7	0,610	0,434	<b>0,810</b>	0,668	0,688
K1	0,552	<b>0,859</b>	0,500	0,568	0,539
K2	0,676	<b>0,894</b>	0,574	0,651	0,619
K3	0,575	<b>0,895</b>	0,546	0,585	0,586
K4	0,598	<b>0,884</b>	0,513	0,596	0,570
KP11	0,598	0,434	0,687	<b>0,776</b>	0,701
KP12	0,678	0,520	0,664	<b>0,746</b>	0,655
KP13	0,675	0,424	0,674	<b>0,759</b>	0,724
KP14	0,711	0,543	0,688	<b>0,847</b>	0,758
KP15	0,671	0,631	0,748	<b>0,814</b>	0,777
KP17	0,613	0,450	0,667	<b>0,749</b>	0,657
KP18	0,800	0,621	0,788	<b>0,865</b>	0,821
KP19	0,799	0,696	0,702	<b>0,862</b>	0,800
KP20	0,637	0,612	0,668	<b>0,809</b>	0,671
KP21	0,807	0,610	0,694	<b>0,844</b>	0,800
KP22	0,727	0,490	0,727	<b>0,770</b>	0,671
KP4	0,706	0,545	0,700	<b>0,760</b>	0,688
KP6	0,632	0,452	0,668	<b>0,724</b>	0,654
KP8	0,693	0,555	0,708	<b>0,779</b>	0,771
KP9	0,670	0,477	0,647	<b>0,787</b>	0,677
LP1	0,727	0,544	0,729	0,739	<b>0,750</b>
LP10	0,761	0,511	0,696	0,758	<b>0,802</b>
LP11	0,616	0,508	0,650	0,658	<b>0,803</b>
LP12	0,638	0,546	0,682	0,703	<b>0,789</b>
LP2	0,682	0,495	0,785	0,748	<b>0,805</b>
LP4	0,583	0,356	0,614	0,650	<b>0,731</b>
LP5	0,735	0,542	0,657	0,719	<b>0,784</b>
LP7	0,657	0,530	0,694	0,698	<b>0,716</b>
LP9	0,669	0,516	0,665	0,649	<b>0,767</b>

Structural Model Assessment (SMA) describes the relationship between latent variables based on substantive theory. SMA was evaluated by R square ( $R^2$ ) and Q square ( $Q^2$ ). R square is used to measure how endogenous variables are influenced by other variables. Ghazali and Latan (2015) explained R square results of 0.67 and above for endogenous latent variables in the structural model indicating the influence of exogenous (influencing) variables on endogenous (influenced) variables included in the strong category. Whereas if the



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result is 0.33 - 0.67 it is included in the moderate category, and if the result is 0.19 - 0.33 then it is included in the weak category.

Q Square (predictive relevance) is used to predict how well the observed value is generated by the model and also its parameter estimation. Q square value greater than 0 (zero) shows that the model has a predictive relevance value, while Q square value less than 0 (zero) shows that the model lacks predictive relevance. However, if the calculation results show a Q square value of more than 0 (zero), then the model is feasible to say it has a relevant predictive value. Where the results of Q square of 0.35 and above for endogenous latent variables in the structural model indicate the predictive relevance of exogenous (influencing) variables to endogenous (affected) variables included in the strong category. Whereas if the result is 0.15 - 0.35 it is included in the moderate category, and if the result is 0.02 - 0.15 then it is included in the weak category (Ghozali & Latent, 2015).

*Table 4. Discriminant Validity*

Endogenous Variable	R Square	Category	Q Square	Category
Patient Satisfaction	0,785	Strong	0,444	Strong
Patient Loyalty	0,881	Strong	0,481	Strong

From the table above, it can be seen that the R square obtained for patient satisfaction is 0.785, it can be interpreted that the influence of service quality, hospital image and patient trust on patient satisfaction 78.5% where the influence of exogenous variables on endogenous variables falls into the strong category. Meanwhile, Q square of patient satisfaction of 0.444 means that the quality of service, hospital image and patient trust in predicting patient satisfaction is included in the strong category.

On the other hand, the R square of patient loyalty is 0.881, this can be interpreted that patient loyalty is influenced by service quality, hospital image and patient trust 88.1%, whereby the influence of exogenous variables on endogenous variables is classified into strong categories. Meanwhile, the value of Q square owned by patient loyalty is 0.481 means that the quality of service, hospital image and patient trust in predicting patient loyalty is classified into the strong category. In order to test the hypotheses, this study performed Smart-PLS software version 3.2.8 with the bootstrapping method. The research hypothesis can be accepted if it has a T statistics > 1.96 and P values < 0.05, it can be interpreted that exogenous variables influence significantly endogenous variables (Hair et al, 2010).

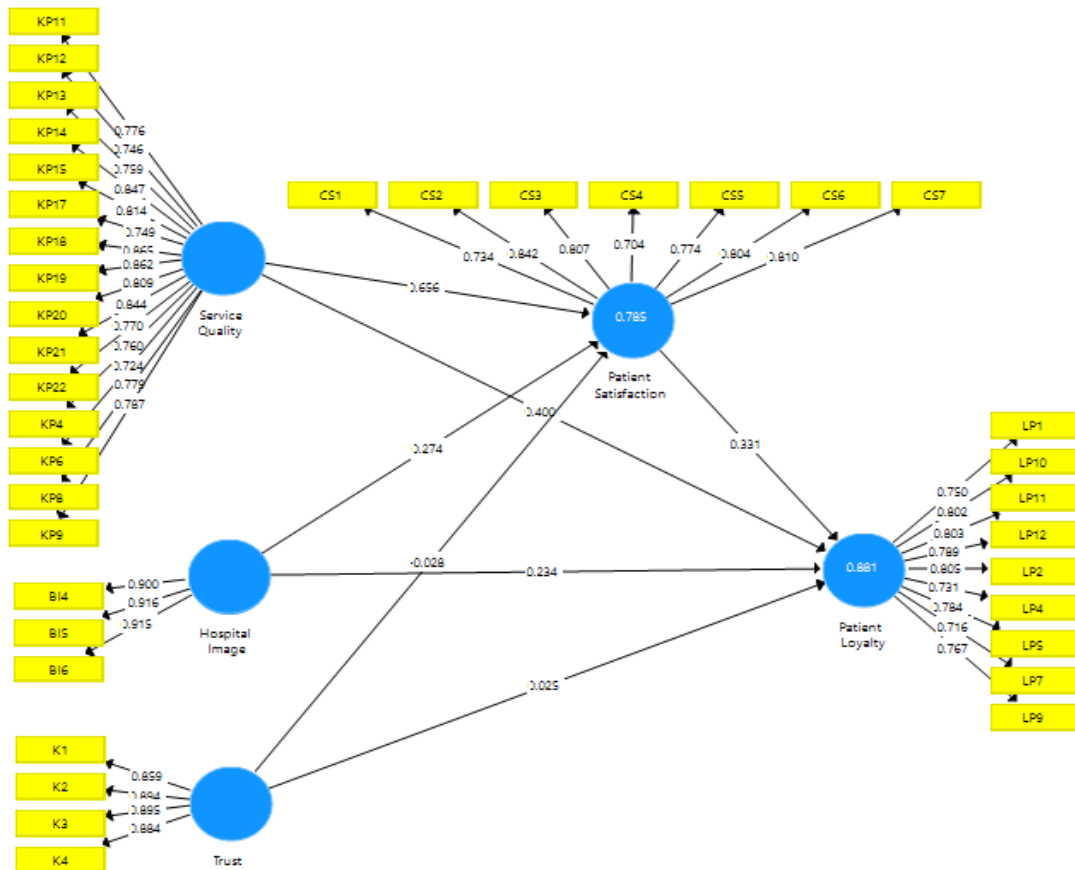


Figure 1: Structural Model Assessment

Table 5. The Results of Hypotheses Testing

Directions	Original Sample	T Statistics	P Values	Decision
Patient satisfaction → Patient loyalty	0,331	3,829	0,000	H <sub>1</sub> Supported
Service quality → Patient loyalty	0,400	3,569	0,000	H <sub>2</sub> Supported
Hospital image → Patient loyalty	0,234	2,610	0,009	H <sub>3</sub> Supported
Patient trust → Patient loyalty	0,025	0,481	0,631	H <sub>4</sub> Not Supported
Service quality → Patient satisfaction	0,656	7,040	0,000	H <sub>5</sub> Supported
Hospital image → Patient satisfaction	0,274	2,668	0,008	H <sub>6</sub> Supported
Patient trust → Patient satisfaction	-0,028	0,398	0,691	H <sub>7</sub> Not Supported
Service quality → Patient satisfaction → Patient loyalty	0,217	3,172	0,002	H <sub>8</sub> Supported
Hospital image → Patient satisfaction → Patient loyalty	0,091	2,133	0,033	H <sub>9</sub> Supported
Patient trust → Patient satisfaction → Patient loyalty	-0,009	0,386	0,700	H <sub>10</sub> Not Supported

Based on the results of the hypothesis testing shown in table 6, it can be seen that patient satisfaction has a significant effect on patient loyalty because it has t statistical of 3.569 (> 1.96) and p values of 0.000 (<0.05). The finding of this study means that the higher the patient satisfaction, the higher the patient loyalty will be. Thus, the first hypothesis (H<sub>1</sub>) could be accepted. The finding of the study is in line with previous studies (Gabel



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et al, 1993; Lai et al, 2009; Juhana et al, 2015) who found the positive relationship between patient satisfaction and patient loyalty.

The two exogenous variables of service quality and hospital image were found to have positive and significant effect on patient loyalty. These findings can be concluded that the better service quality and hospital image perceived by patients, the higher the patient loyalty will be. Thus, the hypotheses of H<sub>2</sub> and H<sub>3</sub> were accepted. The findings of the study are supported by some previous empirical studies (Aliman & Muhamad, 2005; Allison et al, 2004; Rai & Srivastava, 2013; Shpetim, 2012). However, patient trust did not have any significant effect on patient loyalty because patient trust has t statistics 0.481 (> 1.96) and p values of 0.631 (>0.05) and the hypothesis of H<sub>4</sub> was rejected. This finding means that the variance of patient loyalty is not explained by the variance of patient trust.

In addition, the variables of service quality and hospital image displayed to have positive and significant effect on patient satisfaction. The findings of the study can be interpreted that the better service quality and hospital image perceived by patients, the higher the patient satisfaction. Therefore, the hypotheses of H<sub>5</sub> and H<sub>6</sub> were supported. These findings are supported by some previous empirical studies (Caruana, 2002; Mira & Sefnedi, 2019; Taqdees et al, 2018; Silva & Alwi, 2003; Chahal & Bala, 2012). In contradiction, patient trust found to have no significant effect on patient satisfaction because patient trust has t statistics 0.398 (<1.96) and p values of 0.691 (>0.05). So, the hypothesis of H<sub>7</sub> was not supported. This finding could be concluded that the variance of patient loyalty is not explained by the variance of patient trust.

Furthermore, the three hypotheses of H<sub>8</sub>, H<sub>9</sub>, and H<sub>10</sub> were about the effect of patient satisfaction as mediator on the relationship between service quality, hospital image, patient trust and patient loyalty. The results showed that patient satisfaction mediated the relationship between service quality and patient loyalty. This was caused by the path of the indirect effect of service quality on patient loyalty through patient satisfaction had t statistics 3.172 (>1.96) and p values of 0.002 (<0.05). So, the hypothesis of H<sub>8</sub> was supported. Conceptually, this finding of the study means that the better the quality of service implemented, the higher patient satisfaction will be and can further increase patient loyalty. The finding of the study is in line with the study which conducted by Caruana (2002) and Sefnedi (2019) who found customer satisfaction mediated the relationship between service quality and customer loyalty.

In addition, the results showed that patient satisfaction was proven to mediate the relationship between hospital image and patient loyalty, since the path of the indirect effect of hospital image on patient loyalty through patient satisfaction had t statistics 2.133 (>1.96) and p values of 0.033 (<0.05). So, the hypothesis of H<sub>9</sub> could be accepted. This finding of the study means that the better the hospital image perceived by patients, the higher patients' satisfaction will be and can further increase patient loyalty. However, patient satisfaction was not empirically proven to have mediating effect on the relationship between patient trust and patient loyalty. This was caused by the path of the indirect effect of patient trust on patient loyalty through patient satisfaction had t statistics 0.386 (<1.96) and p values of 0.700 (>0.05). So, the hypothesis of H<sub>10</sub> was not supported.

### Limitation and direction for future research

Prior to discussing the directions for future research, some of the study's limitations are noted. One of the limitations of this study is its cross-sectional design. The results from this investigation should be considered in this light. Taking this study as a point of departure, longitudinal research is encouraged to examine the mediation effect of patient satisfaction on the relationship between service quality, hospital image, trust and patient loyalty over time. As such, future research should continue to monitor and evaluate the mediation effect of patient satisfaction on the relationship between service quality, hospital image, trust and patient loyalty. Future research should also replicate this study in another developing country of Southeast Asia (e.g., Thailand and Malaysia) to see if the findings of this study can be validated using another developing country as a sampling frame.





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