

# The effect of service quality and patient value on the patient satisfaction and loyalty

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**THE EFFECT OF SERVICE QUALITY AND PATIENT VALUE ON THE  
PATIENT SATISFACTION AND LOYALTY**

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**Abstract**

The objective of this research was to prove and analyze the effect of service quality and patient value on the patient satisfaction and loyalty. Several problems raised this research were whether the service quality influenced the patient satisfaction and loyalty, the patient value influenced the patient satisfaction and loyalty, and satisfaction influenced patient loyalty. The research population was all hospitalized patients and the sampling technique used accidental sampling, and the number of samples was 125 respondents. The data were analysed using structural equation modeling (SEM). The research results showed that service quality and patient value had a significant effect on the patient satisfaction; the service quality and patient value significantly influenced the patient loyalty; and patient satisfaction significantly influenced the patient loyalty as well.

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**Keywords:** service quality, patient value, patient satisfaction, and patient loyalty.

**INTRODUCTION**

Along with the development of the quality of Indonesian people as a whole, the field of public health needs to be considered properly to realize "Healthy Indonesia". Health is a human right so that every person has the right to receive fair, equitable and quality health services that are affordable for all Indonesian people. One of the health service facilities that plays an essential role in providing public health services is a hospital. Hospital is an institution in National Health System chain that carries out the task of providing health services to the entire community, therefore the development and health delivery in the hospitals need to be focused on reaching national goals in the health sector.

The era of the ASEAN Economic Community at the end of 2015, where the challenges faced by hospitals as health care providers would be even greater. The level of competition is increasingly open and integrated in ASEAN countries that are increasingly free so that opportunities in various foreign healthcare service institutions can easily enter Indonesia. This condition requires better healthcare service for hospital thereby it can be the most important assets and can even be used as weapons to defeat their competitors. The expected healthcare services are quality services, so they can reduce the number of morbidity and mortality and create a healthy and prosperous community. Therefore, hospitals are required to continuously enhance the healthcare

services in retaining patients by maintaining the trust of patients as consumers and paying close attention to customer needs in an effort to meet the desires and expectations of the health services provided. The quality of health services whether it is good or not depends on the ability of the hospital as the health service provider in meeting the expectations of patients as service users consistently, so that the patients feel worth getting treatment and feel satisfied and at last the patients are expected to be loyal. The quality healthcare service and patients feeling worth and satisfied are performance indicators for hospitals as health care providers. Only hospitals that can at least maintain and even improve their performance will be able to compete with others and develop further in the future.

Today, the interest in investigating hospital services is increasing because the demands of living standards starts to change and the demand for medical treatment is increasing to improve lifestyles. The improved quality of medical treatment service is a major concern for patients. Other factors which are also important are the availability of the best services, quality services from hospitals that respect for the patient satisfaction and maintenance (Alhashem et al., 2011; Arasli et al., 2008). Patients need value in relation to every inpatient treatment they experience so that they feel satisfied and be loyal to the hospitals providing service to them (Kessler and Mylod, 2011). The hospital as a health service facilitator has a strategic role to accelerate the improvement of public health status. At this time, the public is getting more critical in responding to health services of both public and private hospitals. The critical response to health services has led to a number of complaints they have felt. The results of the preliminary survey by interviewing the hospitalized patients in their free time while accompanied by their families indicated: **firstly**, the patients had complaints which were directed at the doctor, i.e the irregularity of the visit time to the patient; **secondly**, the patients complained the nurses' delay in responding to the patient's immediate request for services; **thirdly**, the patients concerned about administration staff, i.e many people still experienced high complexities in dealing with the administrative needs required by the patient or patient's family. Although most of patients stated they were satisfied and were also likely to come back later when they got sick or told their friends when they wanted to get good health care.

Conceptually according to Zeithaml and Bitner (2003: 72,81,86,97); Kotler and Keller (2012: 36, 136); Kotler (2003: 60-73); Lovelock and Wright (2002: 32-33, 71); Grewal and Levy (1998: 128,179); Griffin (2003: 86) the customer satisfaction and loyalty are influenced by service quality, product quality, price, situational factors, personal factors, and customer value; and customer satisfaction precedes customer loyalty. Kotler and Keller (2012: 136), states that satisfaction is a person's pleasure or disappointment which arises after comparing the performance or product outcomes thought compared with the expected performance, so that the customers feel satisfied and may even become loyal. A person is satisfied if the minimum results are able to meet his expectations, while someone feels dissatisfied if the results obtained are not able to meet their expectations. Satisfaction felt by someone will have an impact on the behavior of the reuse of products or services continuously generated so that loyalty is formed. The loyalty is formed due to the experience of using products or services. Loyalty in this research relates to what patients do after interacting with the process from hospital service providers. Griffin (2003: 86) shows that there is a relationship between service quality and customer loyalty. Kotler and

Keller (2012: 136) state that customer satisfaction is related to customer loyalty. Whereas Kotler (2003: 60-62) theoretically states that customer loyalty may result from customer satisfaction and customer satisfaction occurs because of the perceived customer value, and customer value is caused by the service quality received in accordance with customer expectations.

Some researchers develop the concept of service quality that can affect the patient satisfaction and loyalty by comparing various healthcare service industries from various countries (Aagja and Garg, 2010), (Arasli *et al.*, 2005, 2008), (Angur *et al.*, 1999), (Bhat and Malik, 2007), (Dabholkar *et al.*, 1996), (Jabnoun and Chacker, 2003), (Karatape *et al.*, 2005), (Lim and Tang, 2000), (Newman, 2001), and (Duggirala *et al.*, 2008) where their findings in the developing countries indicated that service quality covered seven dimensions, namely personal quality, infrastructure, administrative processes, clinical care processes, safety, overall experience in medical treatment, and social responsibility. Aagja and Garg, (2010) stated that the development of the services quality in public hospital includes five dimensions such as administration, medical services, overall services, processes charged to the patients, and social responsibility that will affect the patient satisfaction and loyalty. In Asian countries, Butt and Cyril de Run (2010), Sohail (2003) tested a service quality with a scale to measure the quality of health care services using five dimensions as a measure of service quality namely *tangibles, reliability, responsiveness, assurance, and empathy*.

Empirical study regarding the significant effect of service quality on customer satisfaction was conducted by Santoridis and Trivellas (2010); Rod *et al.*, (2009); Kiran and Kaur (2010); Chaniotakis and Lymperopoulos (2009); Yaya *et al* (2011); Vesel and Zabkar (2009); Deng *et al.*, (2010); and specific empirical study at the hospital was conducted by Amin and Nasharuddin (2013) showing that service quality had a significant effect on patient satisfaction. However, the results of the study by Andaleeb and Conway (2006); Parasuraman *et al.*, (1991); and Jones and Suh (2000) in the context of specific transactions indicated that the customer satisfaction is not significantly affected by service quality. Fu Cen and Huan Tsai (2008); Flin *et al.*, (2011); Duncan and Elliot (2002); Dedeke (2003) show that customer value has a positive and significant effect on customer satisfaction, while Deng *et al.*, (2010) stated that customer value has non-significant effect on customer satisfaction. Empirical study on significant effect of service quality on customer loyalty was conducted by Vesel and Zabkar (2009); Kiran and Kaur (2010); and Yaya *et al.*, (2011); Meanwhile the results of the study of Bloemer (1999) and Caruana (2002) showed that service quality had non-significant effect on customer loyalty, but through customer satisfaction first, that service quality did not directly affect customer loyalty. The study on positive and significant effect of customer value on customer loyalty was carried out by Fu Cen and Huan Tsai (2008); while Flin *et al.*, (2011) in strict competition condition stated that customer value had non-significant effect on customer value. Significant effect of customer satisfaction on customer loyalty is stated by Vesel and Zabkar (2009); Kim *et al.*, (2009); Deng *et al.*, (2010); Santoridis and Trivellas (2010); Yaya *et al.*, (2011); and Flin *et al.*, (2011), Kiran and Kaur (2010); but Amin and Nasharuddin (2013) stated that patient satisfaction had a significant effect on patient loyalty. Bloemer (1999) stated that customer loyalty is not significantly influenced by customer satisfaction but is significantly influenced by person's attitudes and behaviors, as well as mindset to choose products and services.



Regarding the background and the relationship between the variables of service quality, patient value, satisfaction, and patient loyalty, several problems raised in this research were whether the service quality affects patient satisfaction; patient value affects patient satisfaction; service quality affects patient loyalty; patient value may affect patient loyalty; and patient satisfaction may affect patient loyalty.

## **LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESES**

### **Service Marketing**

Modern economy today is characterized by an unlimited world era as a necessity of the development of information technology, which is increasingly rapid where the service sector grows along with a number of revolutionary changes in all fields, thus it dramatically influences the how people work and behave. Many new services are constantly emerging to meet the satisfaction desired and adjusted to human needs. Many service organizations grow widely and vary in their numbers and sizes. In the beginning of the XXI century, many international scale companies operated in large industries such as aviation, banking services, insurance, telecommunications, hospitals, and hotels. The growth of the service sector is triggered by strengths in the form of service markets through government policies, social changes, business trends, sustainability in information technology, and nationalization in its business. Lovelock and Wright (2002: 6) state that service represents economic activities that create value and provide benefits to customers at a specific place and time, and the service recipient will bring about the change desired or half of the expectations. The intended values and benefits are the advantages that customers get from the results of service performance. Service marketing shows the fundamental differences between goods and services. In short, the difference between goods and services can be described as: (1) tangible and intangible; (2) standardized and varied or diverse; (3) production activities are separated from consumption, and production and consumption activities occur simultaneously; and (4) nonperishable or durable and perishable or not durable. There is contrast difference between services and goods. Service management has an integrated approach consisting of eight components, namely: product elements; place, *cyberspace* and time; promotion and education; prices and other financing for users; process; quality and productivity; people; and physical evidence. Zeithaml and Bitner (2003: 2) put the term very simply that services are actions, processes, and performance. The achievement of service marketing success can be seen to be observed from the degree of customer satisfaction and customer loyalty that can be felt in respect to service quality and customer value that has been received and can be felt first.

### **Service Quality**

Service quality is all customer's impressions on the superiority or inferiority of services received and felt and can be used as a determinant of competitive advantage for the organization. High or low competitive advantage depends on the level of service quality received and perceived by the customer, which has been provided by the organization. The customer enjoying service always perceives service quality as indicated by customer impressions against the overall services

provided by service providers. Zeithaml *et al.*, (1990:18) state that the service is assessed as quality service when meeting customer expectations. Zeithaml and Bitner (2003:86) say that *service encounters or moments of truth* are very important events or events that can potentially show something critical in determining whether customers feel satisfied and loyal. Therefore, when *service encounters or moments of truth* occur repeatedly between customers and service providers and it turns out that they are considered good, then the overall service quality and total customer value can be considered good as well. This indicates that customers feel satisfied and in turn it will lead to loyalty to companies that have provided services to him. Zeithaml and Bitner (2003:82) state that customers do not feel that they accept quality as a one-dimensional concept, so that customer assessment of quality may include the perception of various factors reflecting quality. Consumers consider five dimensions as an assessment of service quality as stated by Zeithaml *et al.*, (1990:26) including: *reliability, responsiveness, assurance, empathy, and tangible*. These dimensions show how consumers organize information regarding the service quality in their minds.

### **Customer Value**

Today, the development of information technology is getting faster where everyone easily accesses the information needed so that the knowledge gained increases faster and influences person's mindset to behave and act. Customers tend to maximize value by finding cheap cost jumps with limited knowledge, mobilizing and earning income. Kotler *et al.*, (2009:133) argues that the perceived value of customers is the difference in the results of prospective customer evaluations of all benefits received with all costs paid from the offer and the perceived alternatives. Explanation of customer value can be approached by the value delivered or received by the customer through the difference between total customer perceived value and total cost or sacrifice incurred by the customer itself. Total customer perceived value is an accumulation of customer perceived benefits ranging from image value, personal value, service value, and product value. The accumulation of total costs or sacrifices incurred by the customer may range from psychic, energy, time, money, all of which are expressed by the size of the cost or in monetary units. Customer value is generated from the difference between the accumulation of total customer perceived benefits and accumulation of total costs or sacrifices incurred by the customer, resulting in the value received or delivered to and simultaneously perceived by the customer. Dimensions of customer perceived value which are total customer value according to Kotler (2003:60) may include perceived benefits, facilities enjoyed, psychological perception, easy access to location, and easy access to information. Customers get the benefits and assumptions of costs incurred, so that the marketers can increase the bargaining value to the customers with several combinations to increase emotional or functional benefits and/or reduce one or more different types of costs. Kotler (2003: 60-61) measures customer value with the following steps: (1) benefits, related to a set of economic problems; (2) facilities functionally perceived by the customers when assessing differences in benefits and attributes; (3) perception related to the psychological benefits of customers by comparing the performance of companies and competitors; (4) location related to the location of the company when the received and perceived benefits are compared with sacrifices to reach the company place; and (5) information

related to the received and perceived benefits to make contact via website compared with sacrifices to find information in order to obtain services.

### **Customer satisfaction**

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Satisfaction according to Kotler and Keller (2012: 150) is a person's feeling of pleasure or disappointment that results from comparing product's perceived performance in relation to expectations. Feelings of pleasure or disappointment resulting from perceptions compared with expected product performance, basically show various levels perceived by customers and is the result of evaluation of emotions that reflect customer's belief so that it can lead to positive feelings towards service providers which have provided services. Technical term "satisfaction" according to Zeithaml and Bitner (2003:75) is the customer's judge of the product or service in relation to meeting the expectations and needs of the product or service. Failure to bring them together will result in dissatisfaction with the product or service. Azrul (1996:31-36) describes the dimensions of customer satisfaction as patient's satisfaction for health services in each hospital in general as follows: (1) pleasant, namely health service must be delivered well so that they can be accepted by users of health services; (2) effective, namely the effectiveness as part of the ethical obligation and the basic principle of the health service standards, the more effective the health service is, the higher the health service will be; (3) affordable, the too expensive health services will not be affordable for all users of health services, therefore it is necessarily recommended to seek health services that are tailored to the financial ability of service users; (4) comfortable atmosphere, the atmosphere of providing comfortable service must be maintained. The comfort here is not only about the facilities provided but the most essential thing is concerning the attitude and behavior of the executive officers when delivering health services; (5) the best choice, health service is considered as quality service if it can provide freedom of choice, therefore freedom of choice must be carried out by health service providers; and (6) easy accessible, health services should not be too far away from residential areas in order to be easily reached by users of health services.

### **Customer loyalty**

It is not easy for each company to build customer loyalty, because according to Kotler et al., (2009: 148) the company needs to create tight and strong connectivity with customers, which is actually a big dream for all marketers and frequently this is the key for long term marketing success. Companies want to form a strong customer bonding by making different considerations. Kotler *et al.*, (2009: 153) argue that creating loyalty is the core of every business or a big dream for all marketers. Strong connectivity with customers can be created through a personal relationship, even though the institution may not know it but the company must recognize the client's name institutionally. Zeithaml and Bitner (2003:140-142) state in order that the customers become loyal: (1) there should be a interaction program with customers where it is related to medical personnel, (2) loyalty development program where hospital program is easily available, (3) personalizing marketing program where individual needs are easily available, and (4) *institutional ties* creation program where the connectivity is easily accessible.



### Hypotheses Development

The results of the literature review put forward by Zeithaml and Bitner (2003:81); Kotler and Keller (2012:36); Kotler (2003:60-62); Lovelock and Wright (2002:71) are about the effect of service quality on customer satisfaction. In addition, Santoridis and Trivellas (2010) state that service quality is the main predictor of the customer satisfaction, while Rod *et al.*, (2009), Kiran and Kaur (2010), Chaniotakis and Lympieropoulos (2009), Yaya *et al.*, (2011), Vesel and Zabkar (2009), and Deng *et al.*, (2010) state that service quality has a significant and positive effect on customer satisfaction. The effect of service quality on customer satisfaction in the field has been investigated in many studies (Amin and Isa, 2008; Caruana, 2002), and produced a controversial issue in the marketing literature. Some academics and researchers argue that service quality will precede customer satisfaction (Parasuraman *et al.*, 1985, 1988, 1991; McDougall and Levesque, 1994). In the hospital industry, Naidu (2009) in his study stated that there was a significant relationship between the health care quality and patient satisfaction. Patients will feel satisfied when the quality of hospital service is in line with their expectations and requests, consequently due to their greater expectations and requests, the patients feel satisfied (Chahal and Kumari, 2010). Therefore, the patients will choose the best and if they are dissatisfied with the hospital they choose, it is possible for them to switch to another hospital (Kessler and Mylod, 2011). Although, there is no agreement regarding the relationship between service quality and patient satisfaction in the hospital industry, a number of researchers in the health care industry more focus on measuring functional and technical quality rather than patient satisfaction (Bell, 2004; Gill and White, 2009), and continuous patient satisfaction can be measured using a proxy of patients' judge of service quality (Turriss, 2005). Based on the aforementioned description, the first hypothesis is formulated below.

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**H<sub>1</sub>:** Service quality has a significant effect on patient satisfaction.

The results of the study of theories put forward by Grewal and Levy (1998:179); Zeithaml and Bitner (2003:86 and 97); Kotler (2003:60-62) show that customer value influences customer satisfaction, while the results of empirical studies said by Fu Cen and Huan Tsai (2008), Flint *et al.*, (2011), Duncan and Elliot (2002), and Dedeke (2003) show that customer value affects customer satisfaction. Customers intended in the context of the hospital industry are patients who are similar to the results of the study of Turriss (2005), stating that the patients' judge of value and satisfaction can be measured using proxy. Based on the above description, the second hypothesis is formulated below.

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**H<sub>2</sub>:** The patients value has a significant effect on patient satisfaction.

Some theories reviewed according to Zeithaml and Bitner (2003:81) and Griffin (2003:86) show that service quality has an effect on customer loyalty, while the results of studies stated by Vesel and Zabkar (2009); Kiran and Kaur (2010); and Yaya *et al.* (2011) show that service quality has a significant effect on customer loyalty. Customers intended in the context of the hospital industry are patients who are similar to the results of the study of Turriss (2005) that the patients'



judge of service quality and loyalty can be measured using proxy. Based on that description, the third hypothesis is formulated below.

**H<sub>3</sub>:** Service quality has a significant effect on patient loyalty.

The results of the study of the theories put forward by Grewal and Levy (1998:128); Zeithaml and Bitner (2003:72) demonstrate that customer value affects customer loyalty. The results of the study stated by Fu Cen and Huan Tsai (2008) state that the customer value has a positive and significant influence on customer loyalty. Customers intended in the context of the hospital industry are patients which are similar to the results of the study of Turriss (2005) that the patients's judge of value and loyalty can be measured using *proxy*. Based on the aforementioned description, the fourth hypothesis is formulated below.

**H<sub>4</sub>:** The patients value has a significant effect on patient loyalty.

Review of several theories said by Kotler (2003:60-73); Kotler and Keller (2012:136); Lovelock and Wright (2002:71) show that customer satisfaction has an effect on customer loyalty. The results of empirical studies put forward by Vesel and Zabkar (2009); Kim *et al.*, (2009); Deng *et al.*, (2010); Santoridis and Trivellas (2010); Yaya *et al.*, (2011); Flin *et al.*, (2011); Kiran and Kaur (2010); Amin and Nasharuddin (2013) state that customer satisfaction has a positive and significant effect on customer loyalty. The results of the investigation by Kessler and Mylod (2011) state how patient satisfaction affects the desire to get good results from the hospital. The results show that the satisfaction is significantly related to loyalty. Although on overall the influence of satisfaction is relatively small, but the hospital experience has a very important meaning. The results of the study of Gaur *et al.* (2011) state that there is a significant relationship between patient satisfaction and loyalty. The results of this study also show that when patients increase their trust, it means they improve the relationship of satisfaction with the doctors and simultaneously increasing patients to be loyal. Consequently according to Garman *et al.*, (2004) it is essential that the relationship between patient satisfaction and doctors significantly increase the probability that patients will return to the hospital when they need health care. In this case, patients often develop their attitude towards purchasing behavior based on their past experience (Caruana, 2002; de Matos *et al.*, 2009; Fornell *et al.*, 1996), and show loyalty (Amin *et al.*, 2011; Kessler and Mylod, 2011; Wirtz *et al.*, 2007). There are similarities in the results of Eleuch's study (2011) in its main argument that in the health care industry, loyalty will be influenced by technical attributes and particularly influenced by impression of patients on the services determined and staff or service providers. Therefore, the interaction between patients and service providers is one of the main factors that determine loyal patients, so the fifth hypothesis is formulated below.

**H<sub>5</sub>:** Patient satisfaction has a significant effect on patient loyalty.

## RESEARCH METHODS

### **Population, Samples, and Sampling Techniques**

The population was all patients hospitalized in the RSUD Dr. Soetomo Graha Amerta Surabaya which was used as a generalization of research conclusions. The inclusion criteria are patients who were hospitalized for at least three consecutive days without interruption. Furthermore, they should be willing to be interviewed directly and/or accompanied by family, paid for themselves or get paid by their families or paid through health insurance claims, aged at least thirty years old and have worked, have a minimum education of junior high school graduates or equivalent. They must be able to perceive the services provided by RSUD Dr. Soetomo Graha Amerta Surabaya. The samples of the research were some of the members of the population who have characteristics of the population to be used as respondents to respond to some items of statement from the questionnaire by using a Likert scale score and the results are the estimated values. The population was unknown. This is because the existing recorded data cannot be issued by the authorized agency so that the sample size used for the required SEM approach according to Ferdinand (2002: 56) depends on the number of indicators used in the *latent* variable of research multiplied by 5 to 10, or it can also be determined directly i.e. between 100 and 200 people, so that this research involved 125 respondents. The sampling was done using *accidental sampling*, which is taking samples of patients hospitalized who were accidentally found at Dr. RSUD. Soetomo Graha Amerta Surabaya and met the criteria of the population to be respondents.

### **Analysis of Structural Equation Model (SEM)**

SEM analysis was done by some steps to form a structural equation model, through (1) the formation of a structural equation model was intended to develop a model having strong theoretical justification. The structural equation model is a confirmation technique i.e. a technique to test both new theories and theories that have been developed to be empirically retested; (2) the structural equation for this research was a recursive equation that fulfills some assumptions namely: (a) value between  $\varepsilon_1$  will be independent, (b) values between  $\varepsilon_1$ ,  $\varepsilon_2$  are mutually independent, and (3) direction of causality influence of endogenous variables is in the same direction or there are no endogenous variables having reciprocal influence.

### **Analysis Model Testing**

Goodness Of Fit Test can be examined by looking at various criteria that can be considered *good of fit* as shown in table 4.1 of *Goodness Of Fit Index*. The testing of overall model in the *goodness-of-fit* column shows that *degree of freedom* must be positive, while *ChiSquare* ( $X^2$ ) shows a fundamental testing tool to measure *overallfit*, such as the *likelihood ratio Chi Square statistic*.

## **RESEARCH RESULTS**

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### **Results of Validity and Reliability Test**

The results of validity tests done using the product moment Pearson correlation coefficient showed that statement items on the service quality, patient value, patient satisfaction, and patient loyalty variables are all significant, so it can be stated that all statement items to measure each indicator on all variables are valid and can be used for further analysis. The results of reliability testing using Cronbach's alpha showed that a questionnaire designed with Cronbach's alpha had a value of  $\geq 0.60$ . It means that the statement items of questionnaire on all variables can be declared reliable as a measure tool which generates consistent answers.

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**Results of Confirmatory Factor Analysis (CFA) Test**

The results of CFA test served to identify some inseparable indicators or have *undimensionality*. The results of CFA test on service quality, patient values, patient satisfaction, and patient loyalty variables showed *factor loading* value for each indicator on all variables, which is greater than 0.50. It means that all indicators of all variables reflected each variable.

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**Structural Equation Modeling (SEM) Analysis**

The analysis of the structural model serves to ensure that the model is in line with the data and ensure the presence or absence of influence among the variables studied. The *structural model* testing was done using *Maximum Likelihood Estimation (MLE)* model. The results of the calculation of the goodness of fit index values produced by the modification model are shown in the values of *Goodness of Fit and Cut-off Value Modification Model*.

Criteria	Model Results	Test	Critical Value	Remark
Probability X <sup>2</sup> Chi square	0,068		$\geq 0,05$	Fit
Cmin/DF	1,170		$\leq 2$ atau $2 - 3$	Fit
RMSEA	0,037		$\leq 0,08$	Fit
GFI	0,873		$\geq 0,90$	Marginal
AGFI	0,836		$\geq 0,90$	Marginal
TLI	0,979		$\geq 0,95$	Fit
CFI	0,982		$\geq 0,95$	Fit

The model modification results show all the goodness of fit criteria shown in Figure 1 by providing a good (fit and marginal) index, and having a better criteria of goodness of fit compared with the original model, namely full structural equation modeling as shown in Figure 1. The results of the evaluation of the intervening variables of the modification model were not good for patient satisfaction that must be passed through on the effect of service quality on patient loyalty, because the results of the path coefficient calculation were 0.2128 or the product of 0.56 and 0.38 which was smaller than the coefficient of direct effect pathway of the service quality on patient loyalty. This was also for patient satisfaction that must be passed on the influence of patient value on patient loyalty. As the results of the calculation of the path



coefficient are 0.1824 or the product of 0.48 and 0.38 which was smaller than the coefficient of direct effect path of the patient value on patient loyalty. This means that patient satisfaction is not good to be an intervening variable on service quality and patient value having an effect on patient loyalty because service quality and patient value directly and significantly affect patient loyalty with greater path coefficients, each of which is 0.478 and 0.2128.

**Hypothesis Testing**

After we have known the values of the path coefficient of all service quality, patient value, patient satisfaction, and patient loyalty variables; then the next step was to test the research hypothesis using Critical Ratio (CR) and P-value. The results of the Regression Weight and Standardized Regression Weight of structural equation model after modification was made can be seen in the results of the Regression Weight Causality Test.

Causality Relationships	Coef.	CR	P-value	Remark
Service quality → Patient Satisfaction	0.557	5.200	0.000	Significant
Patient Value → Patient Satisfaction	0.478	4.833	0.000	Significant
Service quality → Patient Loyalty	0.314	3.039	0.002	Significant
Patient Value → Patient Loyalty	0.256	2.609	0.009	Significant
Patient Satisfaction → Patient Loyalty	0.383	3.011	0.003	Significant

The results of hypothesis testing are shown as follows:

- The First Hypothesis** stated that the path coefficient value showed the effect of service quality on patient satisfaction by 0.557 with Critical Ratio = 5.200 and P-Value <0.05, which means that the research hypothesis is accepted. This means that the research hypothesis stating that the service quality had a significant effect on patient satisfaction is proven. Because the value of the path coefficient is positive, meaning that the service perceived by inpatients had good quality, then inpatients were satisfied. Conversely, if the service perceived by inpatients had no good quality, then inpatients felt dissatisfied.
- The Second Hypothesis** stated that the path coefficient value shows the effect of patient value on patient satisfaction by 0.478 with Critical Ratio = 4.883 and P-Value <0.05, which means that the research hypothesis is accepted. This means that the research hypothesis stating that the patient value has a significant effect on patient satisfaction is proven. Because the value of the path coefficient is positive, meaning that the patient value perceived by inpatients is valuable, then the inpatient felt satisfied. Conversely, if the patient value perceived by inpatients is not valuable, then inpatients felt dissatisfied.

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3. **The Third Hypothesis** stated that the path coefficient value indicates the effect of service quality on patient loyalty by 0.314 with Critical Ratio = 3.039 and P-Value <0.05, which means the research hypothesis is accepted. This means that the research hypothesis stating that the service quality has a significant effect on patient loyalty is proven. Because the value of the path coefficient is positive, meaning that the service felt by inpatients had good quality, then inpatients were loyal. Conversely, if the service perceived by inpatients had no good quality, then inpatients became disloyal.
4. **The Fourth Hypothesis** stated that the path coefficient value shows the effect of the patient value on patient loyalty by 0.256 with Critical Ratio = 2.609 and P-Value <0.05, which means the research hypothesis is accepted. This means that the research hypothesis stating that the patient value has a significant effect on patient loyalty is proven. Because the value of the path coefficient is positive, meaning that the patient value perceived by inpatients was valuable, then inpatients were loyal. Conversely, if the patient value perceived by the patient was of no value, then inpatients became disloyal.
5. **The Fifth Hypothesis** stated that the path coefficient value shows the effect of patient satisfaction on patient loyalty of 0.343 with Critical Ratio = 3.011 and P-Value <0.05, which means the research hypothesis is accepted. This means that the research hypothesis stating that patient satisfaction has a significant effect on patient loyalty is proven. Because the coefficient value is positive, it means that patient satisfaction felt by inpatients was satisfied, so that inpatients were loyal. Conversely, if patient satisfaction felt by inpatients was dissatisfied, then inpatients became disloyal. Examination results of the intervening/mediating variable were indicated by the results of hypothesis testing, it turns out that the effect of service quality on patient satisfaction was significant; the effect of patient value on patient satisfaction was significant; the effect of service quality on loyalty was significant; the influence of patient value on patient loyalty was significant; and the influence of patient satisfaction on patient loyalty was significant. Therefore, the position of patient satisfaction variable as a mediating variable in the context of the effect of service quality on patient loyalty through patient satisfaction is called as partial mediation. Likewise the position of the patient satisfaction as a mediating variable in the context of the influence of patient value on patient loyalty through patient satisfaction is also called as partial mediation.

## DISCUSSION

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### Effect of Service Quality on Patient Satisfaction

The linkage of service quality and patient satisfaction in line with the results of the study can be explored further by paying attention to the loading factors that require a value of  $\geq 0.50$  so that the appropriate inpatients have been reflected by all indicators, namely responsiveness, assurance, reliability, empathy, and tangible. However, the biggest loading factor is reliability which in this case relates to among other things: the broad knowledge of doctors, the reliable ability of doctors, the assured skills of doctors, the assured skills of nurses, the assured ability of other officers, provision of courteous services, providing friendly service, and reliable service security provided to inpatients. The broad knowledge and reliable ability of doctors to provide

services to these patients can be trusted because most of the doctors who handle inpatients are graduates from the medical faculty of Airlangga University and many graduates from advanced studies of foreign universities. The skills of the doctors can be assured because the doctors who handle inpatients are senior doctors who have the abilities and long-term experiences as medical personnel and the complexity in dealing with various diseases. The nurses had reliable skills to serve the hospitalized patients because the nurses who were in charge of providing services already had nursing certifications in their respective fields of profession. As for the provision of friendly service and guaranteed safety in providing reliable services, it can be seen from the results of interviews with several inpatients who have experienced inpatient care saying that the nurses providing services were so responsive when patients complained to them and were very fast providing care again with a polite and pleasant attitude. The existence of extensive knowledge and reliable abilities as well as assured skills of doctors might cause inpatients to feel satisfied when receiving their services. Likewise, the assured and reliable skills in providing services of both nurses and other administrative officers can also be a cause for inpatients to feel satisfied when receiving services. This indicates that the reliability of service quality played by doctors and nurses as well as other officers can make inpatients feel satisfied with the services provided by doctors, nurses and other administrative officers.

The results of this study can be explored further that the dominant indicator is the service quality that may cause the inpatients to feel satisfied, namely the reliability shown by the knowledge, abilities and skills of doctors, nurses and administrative staff which are extensive, reliable, can be assured, and delivery of polite, friendly and reliable services. As a result, inpatients felt satisfied with the first dominant indicator, namely affordable price, which shows that expenditures incurred for inpatient health care are still affordable for them.

The results of this study are in accordance with the theory conveyed by Zeithaml and Bitner (2003: 81); Kotler and Keller (2012: 36); Kotler (2003: 60-62); Lovelock and Wright (2002: 32-33) which show that there is a relationship between service quality and patient satisfaction. The empirical studies consistent with the researches put forward by Santoridis and Trivellas (2010); Rod et al., (2009); Kiran and Kaur (2010); Chaniotakis and Lympelopoulos (2009); Yaya et al., (2011); Vesel and Zabkar (2009); Deng et al., (2010); Amin and Nasharuddin (2013) state that service quality has a significant effect on patient satisfaction; whereas empirical studies stating that service quality has non-significant effect on patient satisfaction are indicated by the results of empirical studies by Andaleeb and Conway (2006); Parasuraman et al. (1991); and Jones and Suh (2000).

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#### **Effect of Patient Value on Patient Satisfaction**

The relationship between customer value and patient satisfaction in line with the results of the study can be further explored by paying attention to the loading factors that require a value of  $\geq 0.05$  so that inpatients who are eligible have been reflected by all indicators such as benefits, facilities, feeling, location, and information. However, the biggest main loading factor was the benefits received by patients, which were greater than the costs incurred, as well as the feeling of peace of mind felt by patients was greater than the costs incurred by hospitalized patients. The main factor that reflects the customer value in the results of this study is that the benefits



received by patients outweighed the costs incurred, and the feeling of peace of mind felt by patients was greater than the costs incurred by inpatients. The benefits received by inpatients were felt to be greater than the costs incurred, indicating that in term of physical condition, the patients felt recovery promptly and became healthy faster than the costs incurred. While the feeling of calm and security felt by the patient showed that psychologically the patients felt calm in their heart and there was no fear of sleeping in the hospital, both day and night because they felt fully awake by the nurses. In addition, any properties brought by patients in the hospital while undergoing hospitalization were safe, so there was no concern that the items carried will be lost. The benefits of feeling calm and safe felt by patients during their hospitalization were economically greater than the costs incurred by patients during hospitalization. As evidence of the response that the benefits received by patients outweighed the costs incurred and the feeling of peace of mind felt by patients was greater than the costs incurred, this indicates that patients feel worthy of staying overnight. The value felt by inpatients represents the cause that makes patients feel satisfied with the value delivered during their stay at the hospital.

The results of this study can be explored further that the indicators of the patient value having almost the same contribution to making the inpatients feel satisfied are first, the benefits shown by the economic benefits received such as giving treatment to fulfill the needs for food, drink, bathing, sleeping equipment and other daily primary needs were felt greater than the cost of the money spent. As a result, the inpatients were satisfied with the dominant indicator, which is affordable price, suggesting that expenditures for the needs of inpatient health services are still affordable. The results of this study are in accordance with the theory shown by Fu Cen and Huan Tsai (2008); Flin et al (2011); Duncan and Elliot (2002); Dedeke (2003) saying that there is a relationship between the patient value and patient satisfaction. However, the results of empirical studies in agreement with this study as conducted by Deng et al., (2010) show that the patient value has non-significant effect on patient satisfaction.

#### **Effect of Service Quality on Patient Loyalty**

The linkage of service quality and patient loyalty in line with the results of the study can be further explored as the cause of patient loyalty because there is a loading factor of service quality indicator requiring the  $\geq 0.50$  value that has been reflected by all indicators such as responsiveness, assurance, reliability, empathy, and tangible. However, the biggest loading factor is reliability, which in this case relates to among other things: the broad knowledge of doctors, the reliable ability of doctors, the assured skills of doctors, the assured skills of nurses, the assured skills of other officers, provision of courteous services, provision of friendly services, and assured security of reliable services to inpatients. The extensive and reliable knowledge, ability and skills of doctors in providing services to inpatients which can be trusted and assured will cause the inpatients to feel loyal. In addition, the loyalty of inpatients is further reinforced by the presence of nurses and other officers who were highly skilled and having assured capabilities as well as responsive in providing quality services to inpatients. This shows that the reliability of service quality played by doctors and nurses as well as other officers can make inpatients loyal to the hospital service, thus forming positive information to be conveyed to others. Extensive knowledge and reliable abilities and assured skills of doctors, nurses, and other administrative

officers can cause inpatients to feel satisfied when receiving their services. Likewise, the assured and reliable skills in providing services, either from doctors, nurses and other administrative officers are the causes for inpatients to feel satisfied when receiving services. This indicates that the reliability of service quality played by doctors, nurses, and other administrative officers can cause inpatients to be loyal.

The results of this study are in accordance with the theory shown by Zeithaml and Bitner (2003: 81); Griffin (2003: 86) saying that there is a relationship between service quality and patient loyalty. The results of empirical studies consistent with this study as stated by Vesel and Zabkar (2009); Kiran and Kaur (2010); Yaya et al., (2011); suggest that service quality has a significant effect on patient loyalty; whereas the results of empirical studies that are not consistent with this study carried out by Bloemer (1999) and Caruana (2002) which stated that service quality has non-significant effect on patient loyalty.

#### **Effect of Patient Value on Patient Loyalty**

The relationship between patient value and patient loyalty in line with the results of the study can be further examined by considering loading factors such as those requiring a value of  $\geq 0.50$  so that a decent inpatient has been reflected by all indicators, such as benefits, facilities, feelings, location, and information. However, the biggest loading factor is the benefits received by patients is greater than the costs incurred, as well as the feeling of peace of mind felt by patients is greater than the costs incurred by inpatients. The main factor that reflects the customer value of the results of this study is that the benefits received by patients outweighed the costs incurred, and the feeling of peace of mind felt by patients was greater than the costs incurred by inpatients. The benefits received by inpatients were felt to be greater than the costs incurred, indicating that in term of physical condition, the patients felt recovery promptly and became healthy faster than the costs incurred. While the feeling of calm and security felt by the patient showed that psychologically the patients felt calm in their heart and there was no fear of sleeping in the hospital, both day and night because they felt fully awake by the nurses. In addition, any properties brought by patients in the hospital while undergoing hospitalization were safe, so there was no concern that the items carried will be lost. The benefits of feeling calm and safe felt by patients during their hospitalization were economically greater than the costs incurred by patients during hospitalization. As evidence of the response that the benefits received by patients outweighed the costs incurred and the feeling of peace of mind felt by patients was greater than the costs incurred, this indicates that patients feel worthy of staying overnight. The value felt by inpatients represents the cause that makes patients feel satisfied with the value delivered during their stay at the hospital. The results of this study can be explored further that the indicators of the patient value having almost the same contribution to making the inpatients feel satisfied are first, the benefits shown by the economic benefits received such as giving treatment to fulfill the needs for food, drink, bathing, sleeping equipment and other daily primary needs were felt greater than the cost in the term of money spent. The results of this study are in accordance with the theory shown by Grewal and Levy (1998:128); Zeithaml and Bitner (2003:72) saying that there is a relationship between the patient value and patient loyalty. Furthermore, the results of empirical study consistent with this research done by Fu Cen and Huan Tsai (2008) showed that

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the patient value significantly influences the patient loyalty. However, the results of empirical study not in agreement with this study conducted by Flin et al., (2011) showed that the patient value has non-significant effect on patient loyalty.

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

The linkage of patient satisfaction and loyalty with regard to the results of the study can be further explored by paying attention to such loading factors that require a value of  $\geq 0.50$  so that the eligible inpatients have been reflected by all indicators which are fun, efficient, affordable, comfortable atmosphere, the best choice, and easy access. However, the biggest loading factor is the affordable expenditures of health care needs, while the biggest patient loyalty is the personal relationship between patients and medical personnel and doctors who were friendly for inpatients. Affordable expenditure for health care needs indicates a satisfaction that patients feel, which can be demonstrated by what patients need during hospitalization where their needs were always fulfilled with satisfying services by both doctors and nurses. The patients' complaints were always responded well and they got a pleasant solution, so that patients felt satisfied. There was a good personal relationship between patients and medical personnel and doctors, indicating customer loyalty. This can be shown that most patients undergoing hospitalization experienced more than one hospitalization and even the hospitalized patients frequently did not hesitate to recommend their good experiences to the relatives and friends if they wanted to be hospitalized at the hospital. Therefore, those inpatients felt satisfied as demonstrated by indicators of pleasant atmosphere, efficient, affordable, comfortable service, the best choice, and easy access. These attributes made inpatients become loyal. Inpatient loyalty was shown by the atmosphere of personal relationships between patients and medical personnel and doctors who were very friendly to hospitalized patients. The results of this study can be explored further that the indicator of customer satisfaction that causes inpatients to feel satisfied with the first dominant indicator of affordable expenditure, showing that expenditures for the inpatient health care needs were still affordable for them; and the second dominant indicator was the best choice, suggesting that the health services provided made inpatients feel more free to ask for the best choice while they were hospitalized. As a result, inpatients became loyal to the first dominant indicator, namely the personal relationship between patients and doctors, nurses and other administrative officers who was good and harmonious; and the second dominance indicator, which was easy to get individual needs which were indicated by the personal relationship between doctors, nurses and administrative staff to fulfill the patients' needs while undergoing inpatient care.

The results of this study are in accordance with the theory shown by Kotler (2003: 60-73); Kotler and Keller (2012: 136); Lovelock and Wright (2002: 71) saying that there is a relationship between patient satisfaction and patient loyalty. The results of empirical studies consistent with this study were carried out by Vesel and Zabkar (2009); Kim et al., (2009); Deng et al., (2010); Santoridis and Trivellas (2010); Yaya et al., (2011); Flin et al., (2011); Kiran and Kaur (2010); Amin and Nasharuddin (2013) which state that patient satisfaction has a significant effect on patient loyalty; whereas the results of empirical studies that are not consistent with this study conducted by Bloemer (1999) state that patient satisfaction has non-significant effect on patient loyalty.



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The five studies of the relationship between variables according to the research hypotheses indicate that the role of patient loyalty is reflected by indicators of excellent personal relationship between patients, medical personnel and doctors, easy to find out hospital programs, easy to meet individual needs, and easy access to hospitals. individual. The results of this study in terms of the indicator loading factor having the greatest role in patient loyalty was very good personal relationship with medical personnel and doctors. The personal relationship here is the relationship between inpatients at Dr. Soetomo Graha Amerta Surabaya and medical personnel and doctors, so that this gives a good impression for hospitalized patients. This good personal relationship made the hospitalized patients recommend such good services to other people in general and family or colleagues in particular, if they would like to be hospitalized.

#### 94 **Patient Satisfaction as an Intervening Variable**

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The results of examination of patient satisfaction as an intervening or mediating variable in the term of the effect of service quality on patient loyalty through patient satisfaction compared with the direct effect of service quality on patient loyalty showed that the path coefficient of the effect of service quality on patient loyalty was larger than the effect of service quality on patient loyalty through patient satisfaction. The results of this study indicate that service quality has a greater direct and significant effect on patient loyalty compared with the effect of service quality on patient loyalty through patient satisfaction. In the same way, the results of examination of patient satisfaction as an intervening variable in the effect of patient value on patient loyalty through patient satisfaction compared with the direct effect of patient value on patient loyalty displayed that path coefficient of the effect of patient value on patient loyalty was greater than the effect of patient value on patient loyalty through satisfaction patient. The results of this study also showed that the patient value has a greater direct and significant effect on patient loyalty compared with the effect of the patient value on patient loyalty through patient satisfaction. This indicates that patient loyalty to the hospital is not preceded by patient satisfaction but can be directly preceded by service quality. In similar fashion, indication of patient loyalty to the hospital was not preceded by patient satisfaction but can be directly preceded by the patient value.

However, theoretically, customer loyalty is preceded by customer's satisfaction of service quality and the perceived customer value (Zeithaml and Bit-ner, 2003: 74; Kotler et al., 2009: 133-134; Kotler, 2003: 73). This study is an implication of the uniqueness of service marketing in hospitals that is specific compared with service marketing in general, so that patient loyalty will be created because of an emergency situation, the results of doctor's recommendation, and the results of referral from other hospitals.

#### **CONCLUSION**

Service quality has a significant effect on the patient satisfaction. Furthermore, a positive sign of the effect indicates that the more quality services provided, the more satisfied they are. Conversely, if the service provided is perceived as not of quality, then they feel dissatisfied. The dominant indicator of service quality is reliability.

The patient value has a significant effect on the patient satisfaction. In addition, the positive sign of the effect shows that the higher the value is, then the more satisfied they are. Conversely, the

lower the value is, the more dissatisfied they are. The dominant indicator of value is benefits and feeling.

Service quality has a significant effect on the loyalty of hospitalized patients. In addition, the positive sign of the effect indicates that the more quality services provided, the more loyal they are. Conversely, if the service provided by the hospital is felt poor quality, then they become increasingly disloyal. The dominant indicator of service quality is reliability.

The patient value has a significant effect on patient loyalty in hospitalized patients. In addition, the positive sign of the effect shows that the higher the value is, the higher the loyalty will be. Conversely, if the value is lower, then they become more disloyal. The dominant indicator of value is benefit and feeling.

Patient satisfaction has a significant effect on patient loyalty. Furthermore, the positive sign of the effect shows that the more satisfied they are, the more loyal they will be. Conversely, if you are more dissatisfied, you will become increasingly disloyal. The dominant indicator of satisfaction is affordability. The dominant indicator of loyalty is the good relationship of patients with medical personnel and doctors.

#### **RECOMMENDATION**

The management of hospitals should maintain *reliability and increase responsiveness, assurance, empathy and tangibility* as dimensions of service quality that have been responded to by the hospitalized patients.

The management of hospitals should maintain the value of benefits and feelings and improve facilities, location, and information as dimensions of customer value.

The management of hospitals should maintain affordability and enhance pleasant and efficient services, pleasant atmosphere, best choice and easy access to get services from the dimensions of patient satisfaction. This effort should be made so that the hospitalized patients feel satisfied and become loyal.

#### **RESEARCH LIMITATIONS**

During the research processes, some efforts have been made to eliminate some weakening aspects, but it cannot be denied that there are still some limitations that are thought to influence the results of the study. Some limitations of the research identified here are (1) the search for international research journals that have similar research objects and subjects; (2) it is not easy to collect primary data to get patients as the right respondents as not all patients are willing to be respondents; and (3) in the context of hospital service marketing, it is possible to incorporate *word of mouth*, situational factors, personal factors, and brand image into the research model.

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