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## **HOSPITAL IMAGE AS A MODERATING VARIABLE ON THE EFFECT OF HOSPITAL SERVICE QUALITY ON THE CUSTOMER PERCEIVED VALUE, CUSTOMER TRUST AND CUSTOMER LOYALTY IN HOSPITAL SERVICES**

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### **Abstract**

This is an explanatory research, analyzing the hospital image as a moderating variable on the effect of hospital service quality on customer perceived value and trust. Research was conducted at several hospitals in Surabaya Indonesia, especially to outpatients. Data was collected by survey to the outpatients of the hospitals. The purpose of this research was empirically examining the effects of hospital service quality on customer perceived value and customer trust, examine effects of customer perceived value and customer trust on customer loyalty. Moreover This research also examined the variable of hospital image as a moderating variable in the effects of hospital service quality on customer perceived value and customer trust. The result of this research gave a perspective to hospital management about the importance of building patient trust, since trust is very important, even more important than satisfaction level. Further studies with more emphasis on identifying the factors building patient trust to the hospital in order to raise customer loyalty should be conducted.

**Keywords:** Hospital Service Quality, Customer Perceived Value, Customer Trust, Hospital Image, Customer Loyalty

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### **1. Introduction**

Hospitals are a specific and intangible service. Consumers (patients) cannot experience a hospital service until they decide to become the hospital's patients. A decision to choose a hospital may be based on several factors such as the service quality, values gained from the service, and trust on the service. The aim of this research was to empirically examine the effects of hospital service quality on customer perceived value and customer trust. Next, it was to examine effects of customer perceived value and customer trust on customer loyalty. This research also examined the variable of hospital image as a moderating variable in the effects of hospital service quality on customer perceived value and customer trust. According to Gronroos (1984), there are two components of service quality, namely technical quality and functional quality. Technical quality includes the service's main attributes, while functional quality refers to the service delivery. Gronroos (1984) included image of service provider as the third dimension. Parasuraman *et al.* (1985) introduced evaluation of service quality by using customers' perceived service quality with a gap model, that is, the gap between their expectation and their

perception of the service. Measurement was conducted with a scale containing five dimensions: reliability, responsiveness, assurance, empathy, and tangible.

## 2. Literature Reviews

Brown and Swartz (1989), evaluating medical service from consumers' perspective through gap analysis, proved that interaction with doctors is the most significant variable in influencing consumer satisfaction. The use of these dimensions of service quality was modified and tailored to the type of service from the object of the research. Boshoff and Gray (2004) conducted a study in South African hospitals by using the dimensions of service quality, namely communication, tangible, empathy of paramedics, assurance, and responsiveness of the security and administrative personnel and the doctors. Some authors compose their own framework to conceptualize and measure the service quality in hospitals.

The following are the results of the analysis conducted by Padma *et al.* (2009) producing postulates on the quality dimensions of hospital services, namely:

- Infrastructure dimension. It is a tangible dimension which includes facilities, equipment and service atmosphere as well as hygiene level.
- Personnel quality dimension. It is employees' attitude related with empathy, responsiveness, courtesy, interpersonal care and human elements of service delivery.
- Process of clinical care dimension. This consists of primary quality, technical quality, quality processes in the medical treatment and its results, the reliability and understanding of diseases.
- Administrative procedures dimension, which is the service delivery processes unrelated with serving the human.
- Safety indicators.
- Corporate image, which contains image, reputation and brand image.
- Social responsibility and stakeholder focus.
- Trustworthiness of the hospital, which includes patient confidence, relationship of mutual respect, and trust of the patient on the hospital.

### 2.1. Customer Perceived Value

Customer perceived value is the difference between the benefits received by the consumer and all the cost he has spent on it. Customer perceived value is a very useful framework to be applied in many situations. It is important for a marketer to continuously analyze the benefits received by the consumer and all the costs he has spent on it, and then compare it with what the competitors did. This is to keep the company's products or services high in customers' list in providing benefits.

### 2.2. Customer Trust

Trust is the willingness to depend on a company (Kotler and Keller, 2012). Trust is determined by several factors such as ability, integrity and honesty. Personal interaction with employees of the company, overall opinion on the company and perception of trust will evolve with experience. Furthermore, it is argued that the company will be trusted if it honestly provides information in full, provides incentives to employees in proportion to their meeting the consumers' needs, partners with consumers to help them and provides a valid comparison with its competitors. The effect of hospital service quality on the customer perceived value is based on some concepts stating that the quality of service healthcare has special properties, so that determining the dimensions of service varies. Padma *et al.* (2009) researched some groups of patients using the five dimensions of service quality by Parasuraman *et al.* (1988), namely reliability, responsiveness, tangible, empathy and assurance. A development that can be observed on the model of The European Customer Satisfaction Index. There are linkages among the five variables and in the revised model a new variable emerged: perceived value. In

the revised model, it is described that perceived quality affects perceived value. Based on these descriptions, the first hypothesis is specified as follows:

***H<sub>1</sub>: There is an effect of hospital service quality on customer perceived value.***

Effect of service quality on trust is based on the idea that trust is an important factor in healthcare, as posited by Ranaweera and Prabhu (2003), showing that trust is a stronger feeling than satisfaction, thus closely associated with loyalty, making this factor very important to be studied. Therefore, it is important to study factors affecting the formation of trust. A study conducted by Doney and Cannon (1997), shows that perceived service quality has significantly influenced trust. Based on these descriptions, the second hypothesis is specified as follows:

***H<sub>2</sub>: Hospital service quality influences customer trust.***

The effect of both customer perceived value and customer trust on customer loyalty is based on the definition of customer perceived value which is the difference between the benefits gained by the customer and the price paid and time and energy sacrificed by the customer to obtain a product or service. As stated by Kotler and Keller (2012), when a customer perceives or feels benefits of products or service he has received compared to his sacrifices, the customer's perceived value is high. The higher the benefits perceived by the customer, the higher the customer's desire to repeat consuming the product or service. Based on these descriptions, the third hypothesis is specified as follows:

***H<sub>3</sub>: Customer perceived value influences customer loyalty.***

Customer trust's effect on customer loyalty is based on the assertion of Ranaweera and Prabhu (2003) that trust is an emotion stronger than satisfaction and can therefore be used to predict loyalty. His study confirmed that trust has a positive effect on loyalty. Another author, namely Hsu (2008), also found that trust has an effect on loyalty. In hospital service, it is believed that the patient confidence on a hospital or healthcare determines loyalty to the hospital and health service in question. Therefore, the fourth hypothesis can be composed as follows:

***H<sub>4</sub>: Customer trust affects customer loyalty.***

Customer perception of the benefits is formed when consuming the goods or services. Customer trust is an important factor, because trust is expected to affect his loyalty to the company, thus he is expected to be a long-time customer. In many cases, the extent of consumer trust is enhanced by the company's image. This is logical, because sometimes consumers do not know for sure about the quality of service that they will use, thus the company's image can be used as a reference in the decision. Tarus and Rabach (2013) conducted a study in Kenya on corporate image as a moderating variable that strengthened the relationship between the variables of service value, service quality, customer loyalty and social pressure. The results showed that the corporate image strengthened the effect of the relationship between these variables. Based on the above explanation and Tarus and Rabach's study (2013), the fifth and sixth hypotheses are formulated as follows:

***H<sub>5</sub>: Hospital image moderates the effect of service quality on customer perceived value.***

***H<sub>6</sub>: Hospital image moderates the effect of service quality on customer trust.***

Based on the conceptual framework and the formulation of the hypotheses, causal relationships between the latent variables can be described in the following model of analysis. Figure 1 shows the relationship among all variables of this research.

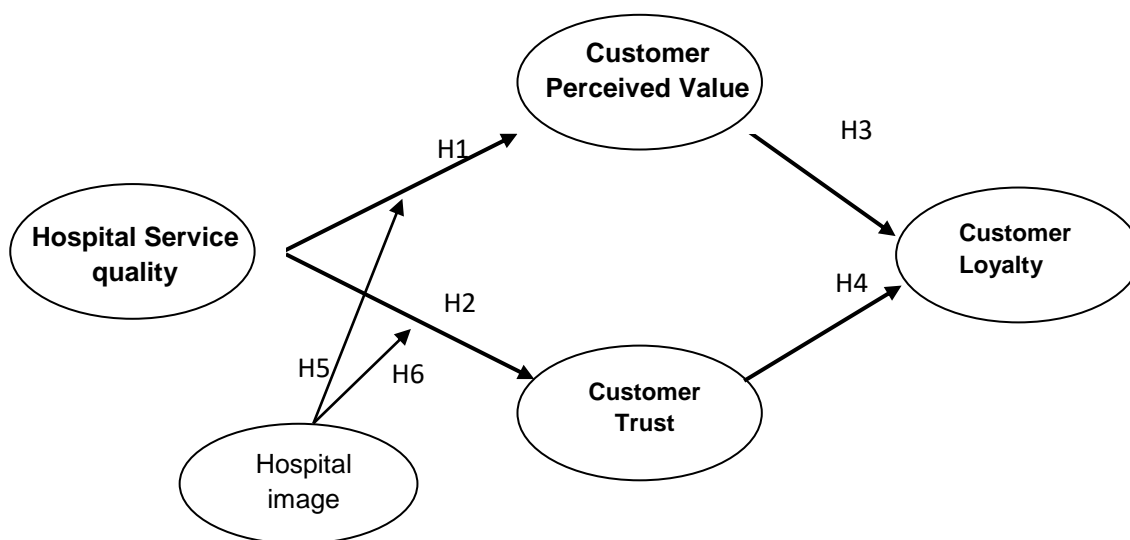


Figure 1. Model of Analysis

### 3. Methods

This research was an explanatory research, with the aim of analyzing the causal relationships among variables of hospital service quality, customer perceived value, trust, and loyalty. This study also used hospital image as a variable moderating the effect of hospital service quality on customer perceived value and trust. The study was conducted at several hospitals in Surabaya that had outpatients. Data collection was done through survey by distributing questionnaires. Further, the effect between the independent, intervening, dependent and moderating variables were analyzed using Partial Least Square.

There were several variables in this study, classified as exogenous, intervening, endogenous and moderating variables. The exogenous variable is hospital service quality. The intervening variables are customer perceived value and customer trust. The endogenous variable is customer loyalty. Finally, the moderating variable is hospital image.

Hospital service quality is the quality of service experienced by the patient in the process of healthcare in the hospital concerned. Quality of service can be categorized into two components: technical service quality and functional service quality. In hospital service, what is categorized as technical service is the medical service provided. Whereas, functional service quality is related to how the service is delivered; in other words, the process of service. Several indicators were developed for hospital service quality, namely, infrastructure, quality of personnel, the process of clinical services and administrative procedures (Padma, LP, Rajendran, C., 2009).

Customer perceived value is the value difference between the benefits received and sacrifices made, such as financial, time and energy sacrifices to get the benefit. The definition of perceived value may be viewed from the perspective of the producer and that of the consumer. This study used the consumer's perspective following Tarus and Rabach (2013). Measurement was done by measuring the excess of benefits received for the sacrifices made to obtain medical, administrative, and personnel services from the hospital.

Customer trust is the patient trust on the hospital providing health services. The indicators used were based on Yap *et al.* (2012), namely the feeling of reliance on the hospital, and the belief in the honesty and reliability of the hospital.

Customer loyalty is patient's faithfulness to the hospital healthcare. There are two types of loyalty: behavioral and attitudinal; as stated by Yap *et al.* (2012), behavioral loyalty is the

behavior of repurchase, indicating preference. Meanwhile, attitudinal loyalty is the consumer intention to recommend and to repurchase it.

Hospital image is a variable that moderates the effect of hospital service quality on customer perceived value and customer trust. A high image is believed to affect customers in perceiving the products or services offered by the company and are measured through the hospital's reputation and status. The population in this study was outpatients who were getting health services for their illnesses in some hospitals in Surabaya. Data analysis used path analysis to detect causal relationships among variables in the research model.

Path analysis represents a problem in an image forming a path diagram and determines the structural equations that express relationships among variables in the path diagram (Noor, 2014). The method used to analyze the data quality test, hypothesis testing, was the Partial Least Square (PLS). Partial Least Square is a very powerful analysis method because it is not based on many assumptions. In this study, the calculation process with PLS was assisted with SmartPLS software. In addition to confirming a theory, the PLS can be used to explain the presence or absence of relationships among latent variables. The PLS can simultaneously analyze constructs formed with reflexive and formative indicators.

#### **4. Results**

Service quality had four components as indicators; namely, infrastructure, quality of personnel, the process of clinical services procedure and administrative procedure. The results of study on 120 respondents showed that the completeness level of the facilities and infrastructure of the hospitals visited by the respondents was quite high. The assessment value range was between 1 (very low) to 5 (very high). Overall, the average value for the infrastructure was 3.59. Personnel quality was assessed by six indicators; namely the politeness levels of administration staff, responsiveness and attention of paramedics, capabilities and expertise of doctors in providing medical services perceived by respondents, ability and skills of paramedics in serving patients, cooperation between doctors and paramedics in serving patients, hospitality and attention of doctors in understanding the feelings and needs of the patient. The results showed that the respondents rated personnel quality about 3.58. Clinical Service Procedure related to the main quality of the technical process of providing treatment (medical measures) along with the results, its reliability and understanding of the disease suffered by the patient. The results showed that the overall average of respondents' assessment on clinical care procedures was 3.57. Administrative service procedure refers to the level of the ease of process and administrative procedure in the hospital, the level of ease of service up to diagnosis taking and the level of convenience in settling the payment procedure. Results of research on the procedure of administrative services showed that the overall average score of this variable was 3.46.

Customer perceived value was measured by two parameters; namely on the comparison between the price paid, time and energy sacrificed, and the benefits in the form of medical services received by the patient and administration services by hospital officials. The research result on the variable of customer perceived value was that overall average value was 3.44. Customer trust is a level of patient confidence, this variable has three indicators: belief in the reliability of the hospital, belief in the honesty of the hospital in providing healthcare and belief that the hospital will go unethical. The research results of the questionnaires showed that overall the customer trust was relatively high: 3.81. Customer loyalty has three indicators reflected in the following. First, they prefer the hospital concerned rather than other hospitals. Second, there is an intention to return to the hospital concerned if the customer requires medical assistance again. Thirdly, there is an intention to recommend the hospital in question to others. The research results on customer loyalty showed that the respondents' overall average customer loyalty was 3.74.

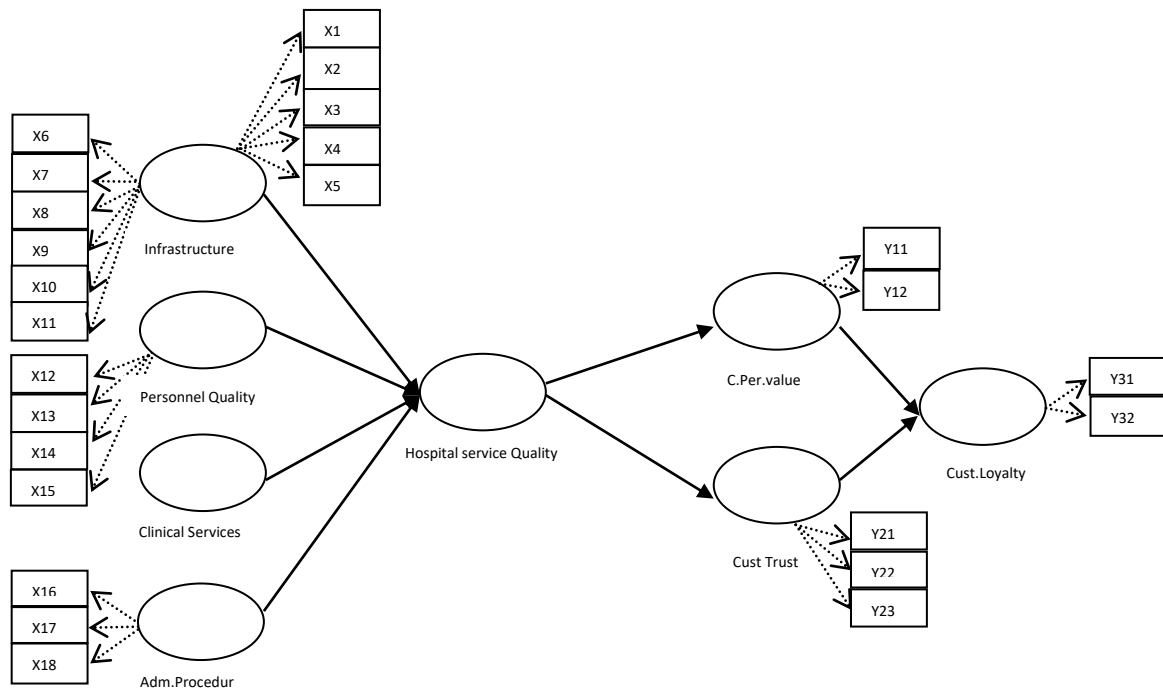
Hospital image is a moderating variable to the effect of hospital service quality on the customer perceived value and the effect of hospital service quality on customer trust. The research results on the variable of hospital image showed that the average image of the hospitals was 3.8.

#### 4.1. Validity and Reliability Tests

Validity test was conducted to determine the validity of the measurement instrument (questionnaire). The validity test showed that the items of the instrument have met a validity requirement of minimum 0.3. Reliability test was conducted to determine the consistency of the instrument (questionnaire). Hospital Service Quality, Customer Perceived Value, Customer Trust, Customer Loyalty and Hospital Image had a Cronbach alpha value of 0.938, 0.876, 0.852, 0.905 and 0.894 respectively. Based on the calculations with SPSS, all the variables included in this study had a Cronbach alpha value above 0.6. This means that all variables of the study were reliable.

#### 4.2. Structural models of causal relationships among variables

Figure 2 shows the relationship among variables and also an outline of structural model describing the relationships among latent variables.



**Figure 2. Structural model of causal relationships between exogenous and endogenous latent variables**

The structural model above depicts the causal relationships between exogenous variable (hospital service quality) and intervening variables (customer perceived value and customer trust) and endogenous variable (customer loyalty).

#### 4.3. Path coefficient estimate of latent variables

The parameter estimation process in the PLS was conducted with smartpls software version 3. The following is the calculation output of path coefficient excluding moderating variables:

It can be seen that the reflective indicator of the latent variables had item/indicator scores with constructs showing reliable values of more than 0.7, according to the outer loading. Discriminant validity of the measurement model can be determined by measuring the cross

loading of the constructs. If the correlation between constructs and measurement indicators is greater than the size of the other constructs, then the constructs are considered valid. Another method that can be used to assess the discriminant validity is to compare the square root of average variance extracted (AVE) of each construct with the other constructs. If the value of the root of AVE of each construct is higher than the correlation among constructs, then the validity of discriminant is considered good. It is recommended that the AVE should be greater than 0.5. The PLS calculation results on this research construct generated AVE values above 0.5, except for hospital service quality which had an AVE value of 0.492 (approaching 0.5). This is because the hospital service quality variable is formed by the other latent variables; namely infrastructure, procedures, clinical services, administrative processes and personnel quality, so that it can be said that the overall construct validity can be considered good. Further, assessment on the reliability of the model used the results of calculations of construct composite reliability; used as a reference in assessing the reliability were consistency and Cronbach's Alpha with a composite reliability value greater than 0.7.

The Composite Reliability Value for a construct was above 0.7, it can be declared that the model was reliable. Next, from the Cronbach Alpha values, it can be seen that the values for all variables were also above 0.7, meaning that the model can be judged as reliable.

The path coefficient shown in Table 1, is an estimated path that connects latent variables of the research and an estimate of loading between latent variables and their indicators.

**Table 1. Path Coefficient**

	Cust.loyalty	Cust.perval	Cust.trust	Hospital.ser.qual
Cust omer loyalty				
Customer Perceived Value	0.001			
Customer Trust	0.768			
Hospital Service quality		0.464	0.656	

To test the significance of the path analysis results, bootstrapping was conducted. The calculation results of bootstrapping produced numbers as shown in Table 2:

**Table 2. Mean, STDEV, T-Values, P-Values of the causal relationships among latent variables**

	Original Sample (O)	Sample Mean (M)	Standard Error (STERR)	T Statistics ( O/STERR )	P Values	
Hospital.ser.qual -> Cust.perval	0.464	0.469	0.091	5.078	0.000	Significant
Hospital.ser.qual -> Cust.trust	0.656	0.659	0.055	11.838	0.000	Significant
Cust.perval -> Cust.loyalty	0.001	0.003	0.066	0.021	0.983	Not significant
Cust.trust -> Cust.loyalty	0.768	0.771	0.053	14.500	0.000	Significant

Based on the Table 2 above, shows that Hypothesis 1, Hypothesis 2 and Hypothesis 4 were supported (significantly) while the Hypothesis 3 was rejected or not significant.

#### 4.4. Structural model of the relationships among the latent variables (moderating)

Based on the conceptual framework of related concepts as described previously, the following is the design of the structural model that describes causal relationships between the exogenous variable (i.e. hospital service quality) and the endogenous variable (i.e. customer perceived value) with hospital image as a moderating variable. Path analysis with moderating variable (hospital image) on the effect of hospital service quality on customer perceived value:

The structural model above depicts the causal relationships between the exogenous variable (hospital service quality) and the intervening variable (customer perceived value) and hospital image as a moderating variable. Next, to determine the significance of the estimated path coefficients and the estimated hospital image as a moderating variable (strengthening or weakening), the causal relationship between hospital service quality and customer perceived value were as follows:

**Table 3. Mean, STDEV, T-Values, P-Values for causal relationships between the latent variables of hospital service quality and customer perceived value**

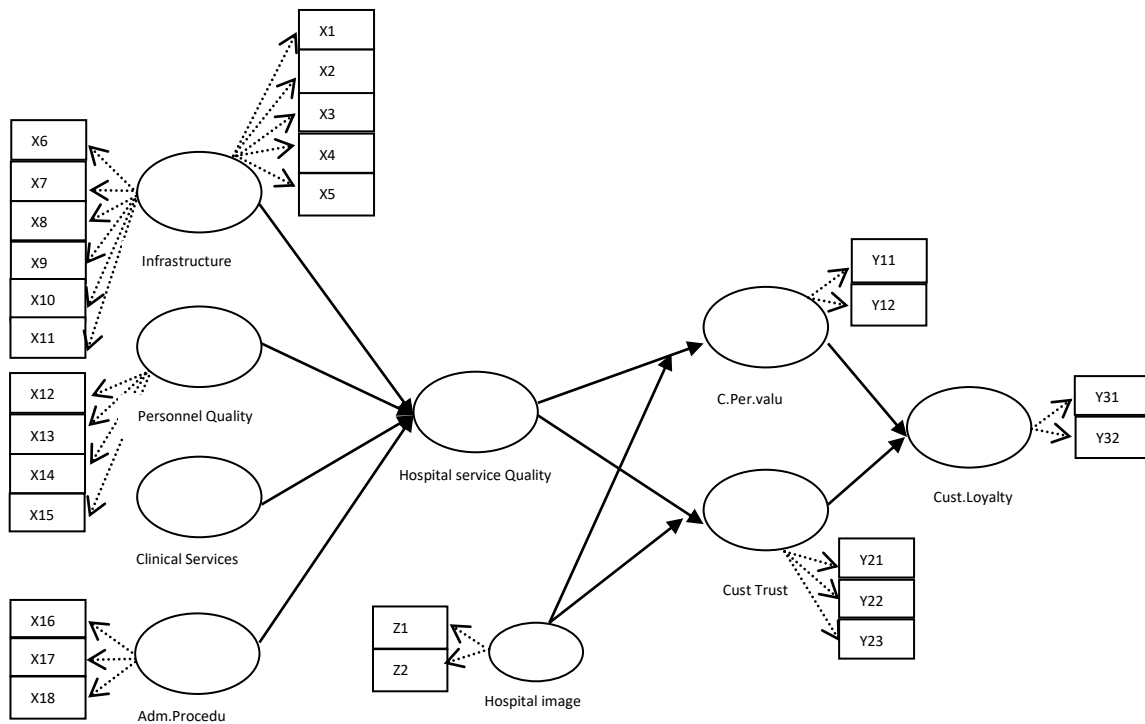
	Original Sample (O)	Sample Mean (M)	Standard Error (STERR)	T Statistics ( O/STERR )	P Values	
Hospital image -> Cust.perval	0.300	0.283	0.114	2.642	0.009	Significant
Hospital.ser.qual -> Cust.perval	0.248	0.255	0.110	2.261	0.024	Significant
Interaction Effect: Hospital image (Product Indicator) -> Hospital.ser.qual -> Cust.perval	-0.174	-0.213	0.104	1.674	0.095	Not significant

Based on Table 3, it is clear that the effect of the variables hospital service quality and hospital image on the variable customer perceived value was significant, because the P value was greater than 0.05. Meanwhile, hospital image as a variable moderating the effect of hospital service quality on customer perceived value was apparently not significant, because the P value was greater than 0.05.

Based on the conceptual framework of related concepts as described previously, the following is the design of the structural model that describes causal relationships between the exogenous variable (i.e. hospital service quality) and the endogenous variable (i.e. customer perceived value) with hospital image as a moderating variable.

Figure 3 shows the structural model of the variable of hospital image as a moderating variable of the effect of hospital service quality on customer trust. The structural model depicts the causal relationships between the exogenous variable (hospital service quality) and the intervening variable (customer trust) and hospital image as a moderating variable.





**Figure 3. Structural model of the relationship of hospital image as a moderating variable of the effect of hospital service quality on customer trust**

To determine the significance of the estimated path coefficients and the estimated hospital image as a moderating variable (strengthening or weakening), the causal relationship between hospital service quality and customer trust was shown in the Table 4 as follows:

**Table 4. Mean, STDEV, T-Values, P-Values for a causal relationship between the latent variables hospital service quality and customer trust**

	Original Sample (O)	Sample Mean (M)	Standard Error (STERR)	T Statistics ( O/STERR )	P Values	
Hospital image -> Cust.trust	0.643	0.629	0.079	8.091	0.000	Significant
Hospital.ser.qual -> Cust.trust	0.229	0.233	0.072	3.183	0.002	Significant
Interaction Effect: Hospital Image (Product Indicator) -> Hospital.ser.qual -> Cust.trust	-0.004	-0.033	0.088	0.048	0.962	Not significant

## 5. Discussion

The first hypothesis was developed based on the development of the model "The European Customer Satisfaction Index". Yap *et al.* (2012) show the existence of the relationship with the new emerging variable: perceived value. This study produced the path coefficient of 0.464 and showed a significant effect.

Trust is an important factor; it is even a stronger feeling than satisfaction, so that it can be argued that trust is an important factor that should be pursued, particularly by health services such as hospitals. A study conducted by Yap *et al.* (2012) showed that the perceived service quality has significantly affected trust. These results indicated that the path coefficient of 0.656 and hospital service quality significantly affected trust. These results supported the study by

Yap *et al.* (2012). Results of this study have an important implication on the factors that cultivate trust that should be the priority of hospital managers.

Kotler and Keller (2012) stated that when a customer perceives or feels the benefits of products or service is above the sacrifices, then the customer perceived value is high. The higher the benefits felt by the customer, the higher the customer's desire to repeat consuming the product or service. However, these results did not support what was stated by Kotler and Keller (2012). These results showed that the effect of customer perceived value did not significantly influence the customer loyalty, the path coefficient is 0.002, and the bootstrapping produced P value greater than 0.005, so it was declared insignificant. Conceptually, this seems hard to accept, but this is actually very interesting, that in the healthcare sector the value factor is apparently not comparable with the amount of money, time and effort. It is because health simply cannot be compared with money or other sacrifices in general. Patients will sacrifice anything for their health.

The hypothesis "the effect of customer trust on customer loyalty" was based on Ranaweera and Prabhu's study (2003) which confirmed that the trust had a positive effect on loyalty. Another author, namely Hsu (2008), also found that trust had an effect on loyalty. It was further argued that in hospital service, it is believed that the patient trust in a hospital or healthcare determines his loyalty to the hospital and health service in question. The results also confirmed previous studies stating that trust significantly affects patient loyalty. This was indicated by the path coefficient of 0.77 and through bootstrapping analysis which produced a significant P value. These results should encourage hospital management to prioritize increasing patient trust to the hospital. The hypotheses that hospital image moderates the effect of service quality on customer perceived value and that hospital image moderates the effect of service quality on customer trust were based on the premise that when consumers do not know for certain about the quality of service of a hospital, the company's image can be used as a reference in their decision making. Tarus and Rabach (2013) conducted a study in Kenya on corporate image as a moderating variable that strengthened the relationship between the variables of service value, service quality, customer loyalty and social pressure. Their study showed that the corporate image strengthened the effect of the relationship between these variables. But in this study, it turned out that hospital image did not moderate the effect of hospital service quality on customer perceived value and trust. This can be explained based on the analysis that, when a patient determines which hospital to treat his illness, he does not consider the image, but the functional factors such as location, suitability of the doctor and the service level, based on information he has acquired.

## **6. Conclusion**

The first hypothesis stated that the hospital service quality significantly affects customer perceived value. The second hypothesis stated that the hospital service quality significantly and directly affects customer trust. The third hypothesis, stated that the customer perceived value has no effect on customer loyalty. This result is not support many previous research about the relationship of customer perceived value to customer loyalty. Customer perceived value mean that customer get more benefit of advantage from the price they paid, generally its can create repurchase or loyalty. Health care service, specially hospital is a unique service, the key operators in the core processes are highly trained professionals (medical specialist) who involved in delivering services. The relationship between the prices and actual performance is not direct. Quality and service measures are largely based on opinion. That's why the benefit or advantage cannot be measure by evident.

The fifth and sixth hypotheses stated that hospital image moderates the effect of hospital service quality on customer perceived value and customer trust; these proved insignificant. It means that hospital image did not strengthen or weaken the causal relationships between hospital service quality to customer perceived value and customer trust. Based on the above conclusions, specifically for the hypothesis rejected, it can be explained that healthcare, i.e. hospital, is a specific service which cannot be equated with services offered by other companies in general. In hospital service, customer trust is an important factor, since in hospital

service literally life and death as potential outcome. The practical implications of these findings for hospital managers are that they should prioritize in building a patient trust, because trust is very important in this case, even more important than satisfaction level. Further research with more emphasis on the factors forming hospital patients' trust, the determining factors and priorities needs to be done.

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