The Importance role of Customer Relationship Management in Building Patient Satisfaction : Do Doctor Performance and Accesibility Matter?

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ABSTRACT
The aim of implementation Customer Relationship Management (CRM) in hospitals is to get and retain customers and even work with consumers to achieve maximum results for the organization and consumers. However, it is necessary to pay attention to other factors that may affect the implementation of the CRM, such as accessibility and doctor performance. This study aims to prove whether doctor performance and accessibility factors will affect CRM, patient satisfaction and patient loyalty. This research is survey based using a questionnaire and the sample is taken by purposive sampling. A total of 207 samples were then processed using the Structural Equation Model (SEM) Partial Least Square (PLS) test, smartPLS. The result was CRM has a positive effect on patient satisfaction and patient loyalty. Patient satisfaction also has a positive effect on patient loyalty. Doctor performance is not proven to moderate the relationship between CRM and patient satisfaction. Accessibility was also not shown to moderate the relationship between patient. This study will provide input for future research regarding the relationship between CRM, patient satisfaction and patient loyalty by paying attention to doctor performance factors, so as to create a more comprehensive research model.

Keywords : *CRM, patient satisfaction, patient loyalty, doctor performance, accessibility.*

1. INTRODUCTION

The growth in the number of hospitals in Indonesia has recently been very rapid which has led to increased competition in this field [1]. To face this competition, hospital implementing customer relationship management (CRM) that can reduce negligence and errors in medication, and also increase and maintain patient visits to hospitals [2][3]. In general, CRM integrates Health Information System (HIS), web platforms, call centers, instant messaging, interaction platforms and online complaint handling to get and retain customers [4]. To measure the success of CRM implementation, the variable customer satisfaction is used as the main benchmark to maintain customer loyalty [5]. Study showed that CRM is significantly and positively correlated with patient satisfaction and patient loyalty, and patient satisfaction is also significantly correlated with patient loyalty [6].

But in the real practice, many factors influence patient satisfaction and patient loyalty, such as accesibility [7] and doctor performance [8]. These two factors are rarely studied in the field of hospital marketing and need to prove whether the two factors can increase or decrease patient satisfaction and loyalty to the hospital where the patient seeks the treatment. This study will prove whether doctor performance and accessibility factors will affect CRM, patient satisfaction and patient loyalty.

2. LITERATURE REVIEW

2.1. Customer Relationship Management

CRM is generally defined as a corporate approach to understanding and influencing customer behavior through meaningful communication to increase customer acquisition, customer retention, customer loyalty, and customer profitability [9]. CRM in a hospital is a method used by healthcare providers to learn all data that can be collected about patients and their prospects,

communicate relevant and timely information to them, and track results and create programs of necessary adjustments for patients [10]. CRM variables include 4 dimensions, customer service, communication, service quality and use of information technology [6].

2.2. Patient Satisfaction

Customer satisfaction is an outcome felt by consumers who feel that the organization's performance has met expectations. Customer satisfaction is the consumer's perception that his expectations have been met or exceeded [11]. Patient satisfaction is defined as the degree of correspondence between the patient's expectations of the ideal treatment and the perception of the actual treatment that has been received [12]. Patients satisfaction consist of 3 indicators, patient satisfaction due to the care provided by the hospital, the services provided by the hospital in accordance with the patient's imagination and value for money services [13], [6].

2.3. Patient Loyalty

Loyalty is an sustainable purchase or use of products/services and is based on the customer's attitude towards the product/service [13]. Patient loyalty is influenced by age, education, profession, marital status, where the patient lives, the patient's condition, the number and frequency of visits and the reason for visiting the hospital [14]. Patient loyalty variables include 3 indicators, positive word of mouth, willingness to recommend to others and plans to reuse hospital services [6].

2.4. Doctor Performance

Doctor performance is a general term that describes how doctors carry out their work as doctors in daily practice, is multidimensional and is influenced by many factors [15]. Doctor performance variables include the dimensions of doctor-patient communication and sufficient time available for discussion with patients [16].

2.5. Accessibility

Accessibility is a concept that combines a geographical land use regulatory system with a transportation network system that connects it. Accessibility is a dimension of convenience or ease of reaching locations and land uses, which interact with each other and the 'ease' or 'difficulty' of these locations is reached through the transportation network system. [17]. The accessibility variable includes 3 indicators, patients can reach the hospital quickly, easily and without problems [18].

3. RESEARCH METHOD

The research model used in this study was causality quantitative research. This study was designed to examine the relationship between CRM, patient satisfaction and patient loyalty. This study also designed to examine doctor performance as a variable that moderates the relationship between CRM and patient satisfaction and accessibility factors moderate the relationship between patient satisfaction and patient loyalty. The hypothesis of the study was shown in the table I and the research model was shown in the fig. 1 below. The relationship between variables is proven by survey-based research using questionnaires. Likert scale was used to assess the questionnaire to measure the attitudes and opinions of respondents [19]. The Likert scale uses five rating points, (1) strongly disagree, (2) disagree, (3) undecided, (4) agree, (5) strongly agree.

The population in this study were all patients who were treated at a hospital that applied CRM. The sample required for this study amounted to 207 samples, that were obtained through a questionnaire taken from patients undergoing treatment at Dharmais Cancer Hospital Jakarta by purposive sampling with selecting criteria, able to answer the questionnaire and currently receiving treatment or visiting the hospital more than once in the last 6 months. Questionnaires content reflects the indicators of the variables of CRM, patient satisfaction, patient loyalty, doctor performance and accessibility that ca be seen at table II.

TABLE I. HYPOTHESIS OF THE STUDY

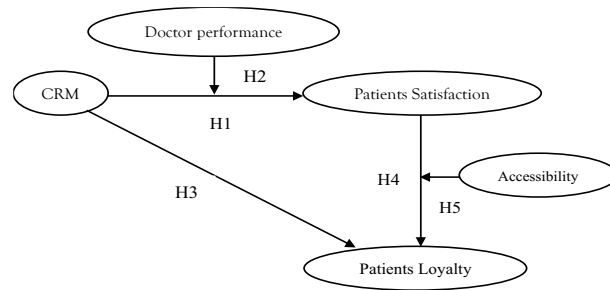| Hypothesis	Statement
H1	CRM is significantly related to patient satisfaction
H2	Doctor performance moderates the relationship between CRM and patient satisfaction
H3	CRM is significantly related to patient loyalty
H4	Patient satisfaction is significantly related to patient loyalty
H5	Accessibility moderates the relationship between patient satisfaction and patient loyalty

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Figure 1. Research Model

TABLE 2. STUDY VARIABEL INDICATOR

| Variables	Dimension	Indicators
Customer Relationship Mangement (CRM) (AVE=0.563, Cronbach's Alpha=0.947, Composite Reliability= 0.953)	Customer services (PP)	The hospital has reliable phone number that can be reached (PP1) Phone calls placed are promptly answered (PP2) Customer complaints are addressed (PP3) Prompt provision of non-medical services (e.g. cafeteria) (PP4) I get all the prescribed medications always at this health facility's dispensary (PP5) [6]
	Communi cation (K)	The hospital periodically contacts me (K1) The hospital keeps me updated on new services (K2) The hospital keeps me updated constantly during the health care process (K3) [6]
	Service quality (KP)	The hospital is prompt in terms of service delivery (KP1) The employees are consistently courteous (KP2) The employees deal with patients in a caring fashion (KP3) The hospital delivers according to their promise (KP4) The employees understand the needs of patients (KP5) This hospital has the up-to-date and appropriate equipment (KP6) The employees have patients best interest at heart (KP7) The hospital maintains error-free records (KP8) The employees instill confidence in patients (KP9) The employees have the knowledge to answer patient questions (KP10) The employees show readiness to respond to patients' requests (KP11) The hospital performs services right the first time (KP12) Patients are given individual attention (KP13) The employees have a neat, professional appearance (KP14) The hospital has convenient working hours (KP15) Patients feel safe in this hospital (KP16) Waiting time is reasonable (KP17) [6]
	Technology information (TI)	The hospital does not use a paper form of a patient folder (TI1) The doctors use computers and types what I tell him/her (TI2) My laboratory report was sent directly to the doctor through the computer (TI3) The prescription for medicines was sent directly to the pharmacy via computer (TI4) [6]
Patients Satisfaction (AVE=0.739, Cronbach's		I was satisfied with my treatment at the hospital/clinic (PS1) The services I received at the hospital/clinic met my expectations (PS2) [13]

Alpha=0.823, Composite Reliability= 0.895)	Patients get value for money (PS3)	[6]
Patients Loyalty (AVE=0.779, Cronbach's Alpha=0.857, Composite Reliability= 0.913)	I would give a positive word of mouth about this hospital (LP1) I would recommend this hospital to others (LP2) I am willing to reuse the services of this hospital (LP3)	[6]
Doctors Performance (AVE=0.827, Cronbach's Alpha=0.896, Composite Reliability= 0.935)	Doctor treats me in a very friendly and courteous manner (P1) Doctor is good about explaining the reason for medical tests (P2) Doctor spends plenty of time with me (P3)	[16]
Accessibility (AVE=0.879, Cronbach's Alpha=0.931, Composite Reliability= 0.956)	I can get to hospital quickly (A1) I can get to the hospital without problem (A2) I can get to hospital easily (A3)	[18]

Data were analyzed in two stages, related and sequential. The first stage is assessing the validity and reliability of indicators and variables. Then the second stage tested the model structure hypothesis. Both stages use the same test, Structural Equation Modeling (SEM) with Partial Least Square using SmartPLS software.

4. RESULT AND DISCUSSION

The research questionnaire was distributed to 237 respondents, but only 207 patients had filled out the questionnaire completely. The results of the study from the 207 respondents, there were 128 respondents who were female (62%) and 79 who were male. (38%). Most respondents (72%) were over 40 years old, and the highest level of education (31%) was high school/equivalent. The majority of respondents (64%) who filled out the questionnaire, had visited the hospital more than 5 times in the last 6 months. For the financing used by respondents for treatment, 202 patients (98%) admitted using Badan Penyelenggara Jaminan Sosial (BPJS) Kesehatan (Social Security Agency of Health) financing.

The data collected was tested for the validity and reliability of variables and indicators. The validity test of this study using convergent validity tests and discriminant validity tests. The convergent validity test was carried out by looking at the indicator value in the outer loading by ensuring the value was above 0.7 according to the valid value limit in the smartPLS application and the Average Variance Extracted (AVE) value of each variable above 0.5 [20]. After evaluating the loading factor values of the 41 indicators, there were 11 indicators whose values were below 0.7, so these indicators were removed. Also the loading factor value of the information technology dimension in the CRM variable was less than 0.7, so this variable was removed. The result was shown in fig. 2 below.
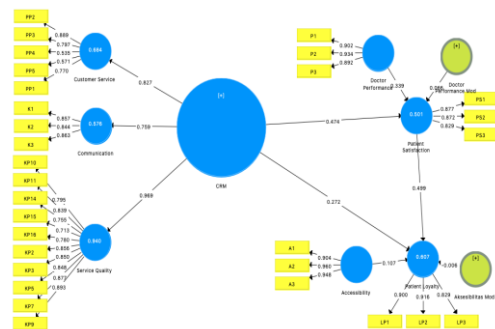
Figure 2. Smart PLS Outout Display.

For testing the discriminant validity, we evaluated the AVE root value of variables (square root AVE) in the Fornell-Larcker Criterion table, and the value was greater than the correlation between latent variables [20]. This was also supported by the results of the cross loading values which show that the value of the indicator studied in a variable exceeds the value of the indicator associated with other variables.

After the data had been proven valid, the next test was a reliability test using two indicators, the Cronbach's Alpha value which exceeds 0.6 and the Composite Reliability value which exceeds 0.7 [20]. In table II can be seen that the value of Cronbach's Alpha and composite reliability of all variables in this study, exceeded the minimum limit so that constructively, the research variables were reliable. Then, in more detail, the Cronbach's Alpha value for each variable was above 0.81, which means that the research construct was very reliable.

To evaluate the model's explanatory power, then it can be seen from the value of the coefficient of determination (R square) [20]. The R square value shows the relationship between variables, how strong the independent variable affects the dependent variable,

which is usually expressed as a percentage. The R square value of patient loyalty was 0.61, this means that patient loyalty as the dependent variable was influenced by the independent variables, CRM and patient satisfaction by 61%.

Then to test that the research model was fit, there was a criterion that the Standardized Root Mean Square Residual (SRMR) value must be below 0.1. SRMR value of the study was 0.087 and this value was less than 0.1 so that the research model was fit.

After testing the validity, reliability and model fit and all showing good results, the next step was to test the relationship between variables and testing the hypothesis by bootstrapping. The results of bootstrapping test was shown in table III. The table shows that H1 is accepted and it means that CRM have a significantly positive effect on patient satisfaction. H2 is not accepted and it means that doctor performance was not supported by research data as a moderator of the relationship between CRM and patient satisfaction. H3 is accepted and it means that CRM had a significant positive effect on patient loyalty. H4 is accepted and it means patient satisfaction had a significant positive effect on patient loyalty. H5 is not accepted and it means accessibility was not supported by research data as a moderator of the relationship between patient satisfaction and patient loyalty. However, there is finding from this study and beyond the proposed hypotheses, there is an effect of doctor performance on patient satisfaction directly.

TABLE 3. STUDY VARIABEL INDICATOR

Hypothesis	T statistics	P values	Conclusion
H1	6.749	0.000	the data support the hypothesis
H2	0.835	0.404	the data did not support the hypothesis
H3	3.512	0.000	the data support the hypothesis
H4	5.613	0.000	the data support the hypothesis
H5	0.126	0.900	the data did not support the hypothesis

As a discussion, the existence of CRM in the hospital is positively related to patient satisfaction. CRM which consists of 3 components, customer service, service quality and communication significantly affect patient satisfaction. This can be seen from the findings in this study that patients are satisfied mainly because of the good quality of hospital services, then because of excellent customer service and finally because of good communication from the hospital as health provider. Effective communication will have an effect on improving the quality of excellent service and will ultimately increase patient satisfaction at the hospital [21]. The results of this study are similar to [22] that have researched in several hospitals owned by the Indonesian National Armed Forces (Tentara Nasional Indonesia, TNI) in Indonesia and also [6] that have researched in hospitals in Ghana. In their research, they found a positive relationship between CRM and patient satisfaction. Separately, studies from [23] and [24] also stated that service quality has a positive effect on patient satisfaction.

Doctor performance in this study was found not to moderate the relationship between CRM and patient satisfaction. The author feels that this is common situation because the hospital where the sample was taken is a national referral hospital specifically for cancer, where the performance of the doctors working at the hospital has high qualifications and is almost evenly distributed among all the doctors working there. So the performance of doctors at the hospital does not affect the relationship between CRM and patient satisfaction. However, there are findings in this study, that doctor performance is directly positively related to patient satisfaction. This means that both CRM and doctor performance both directly influence patient satisfaction.

Doctor's good treatment for patients, for example good communication, sufficient time for discussion about the disease and doctor friendliness also influence the satisfaction of patients who go to the hospital. This is similar to research [25] that concluded in their research that to increase patient satisfaction, doctors need to have sufficient time to discuss with patients, be friendly and perform good communication techniques with patients at the hospital.

In this study, the presence of CRM in the hospital is associated with patient loyalty. These results are the same as the research [26] that there is a significant relationship between CRM and patient loyalty. Furthermore, in this study, CRM has a positive influence on patient loyalty. These results are the same as the researches in [6] and [24] which shows a positive relationship between CRM and patient loyalty. This means that with the proper implementation of CRM in hospitals, including quality of service, customer service and good communication, it will make the hospital services become easier and can attract patients to come back to the hospital for routine control, and patients are also willing to recommend the hospital to their friends.

In this study it was found that patient satisfaction has an effect on patient loyalty. These results are the same as the research in [22] which in one of its conclusions states that patient satisfaction affects patient loyalty. Patients who are satisfied with the service and quality of the hospital will immediately be willing to come back to the hospital for control and provide recommendations to those closest to them for treatment at the hospital. So the relationship between patient satisfaction with patient loyalty is positive. This result is the same as found in

[13], [27] and [6], that patient satisfaction is positively and significantly related to patient loyalty.

Patient accessibility to reach the hospital in this study was not proven to moderate the relationship between patient satisfaction and patient loyalty to the hospital. This means that even though access to reach the hospital is quite difficult and takes a long time, it does not affect the patient's attitude towards the hospital. Patients keep coming back to treat their illnesses at the hospital because patients really trust them. The quality of service, customer service and good communication from the hospital as referral hospital in specific disease (cancer) has made a good impression on patients. Even patients are willing to recommend hospitals, even though access to the hospital is quite difficult or far away. In addition, the location of the hospital which is on the edge of the toll road makes it easier for patients to visit the hospital. Even though the patient's place of residence is far outside the city, because the position of the hospital can be accessed easily via the toll road, patients feel that access to this hospital is still relatively easy and not difficult. In this study it also appears that patient accessibility does not directly affect patient loyalty. This means that even though it is difficult or the distance between the patient's residence and the hospital does not make the patient miss the control schedule to go to the hospital. These results are different from research [14] which stated that patient characteristics are closely related to patient loyalty. The characteristics of this patient include the distance from the patient's house to the hospital. In research [14] stated that if the patient's house is closer to a high-reputation hospital, more loyal the patient is to the hospital. The different results of this study are probably due to the fact that the hospital where the study was conducted is the only national referral site for cancer-specific diseases, so that patients see no other hospital that is similar to it and really trust its services.

In this study, the information technology dimension did not support the CRM variable, because researchers saw that respondents still encountered hospitals using paper forms to help with patient services. The hospital has indeed changed the patient's medical record book to be electronic, but has not completely changed the paper forms for inpatient admission and several forms for scheduled examinations to be electronic. Hospitals that maximize information technology in providing services to patients will increase patient satisfaction. According to the study [28] that evaluated the level of satisfaction of patients and health workers regarding the application of electronic or paperless registration found that patient satisfaction increased after the application of electronic or paperless registration compared to registration with paper forms. Likewise for laboratory results and patient x-rays, with CRM these results can be seen immediately on the doctor's computer so that the doctor can act quickly if there is action that must be taken. Thus this will increase patient satisfaction, as in reference [29]. Electronic placement of laboratory and x-ray results on the website will provide paperless and timeless advantages. However, sometimes the patient is still not informed about this so that the patient is still used to receiving the printed results, which in turn will prolong the response to the examination results. In addition, the age of the majority of respondents over 40 years also contributed to why information technology did not support the implementation of CRM, respondents were still used to asking for paper forms for supporting examinations and prescriptions.

In this study it can be concluded that the implementation of good CRM in hospitals will increase patient satisfaction. Patients who are satisfied with hospital services will cause patients to become loyal. Implementation of good CRM in the hospital also will increase patient loyalty to the hospital. Doctor performance does not moderate the relationship between CRM and patient satisfaction, but the doctor performance directly affects patient satisfaction. This means that patient satisfaction is influenced by CRM and doctor performance. The final conclusion is that accessibility does not moderate the relationship between patient satisfaction and patient loyalty. With these results, it will provide input for future research regarding the relationship between CRM, patient satisfaction and patient loyalty regardless of doctor performance factors, so as to create a more comprehensive research model. In clinical practise, the finding that doctor performance has a positive effect on patient satisfaction will be input for hospitals to improve CRM implementation in hospitals to increase patient satisfaction and patient loyalty.

In this era of increasingly fierce competition between health facility centers, it is important for health centers to maintain patient satisfaction and patient loyalty so that these health centers can survive and even lead the competition. Maximizing CRM is one way to maintain patient satisfaction and loyalty as well as to gain new market share. With CRM, a hospital's services become faster, more efficient, safer and able to meet each patient's needs effectively. Apart from CRM, another factor that can increase patient satisfaction is the performance of the doctor, how the doctor communicates with the patient, sufficient time to discuss the patient's illness and the friendliness that makes a hospital sought after by patients.

The sample collection for this study was carried out in hospitals that had not fully implemented CRM for a long time, therefore there were still many laxity and more adaptations both on the side of health care providers and on the patient side. This makes one of the CRM components, information technology, still not acceptable and not well applied. Both service providers and patients are not used to being paperless which of course makes lack CRM optimization. To assess the actual effect of CRM on patient satisfaction and patient loyalty, it would be better if the research is carried out in hospitals that have fully and comprehensively applied CRM.

To assess the reliability of CRM in influencing customer satisfaction and loyalty, research with a similar model is needed in other fields. This will demonstrate the universality of CRM in increasing the productivity, effectiveness and efficiency of a customer-based service center.

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