

FACTORS AFFECTING PATIENT SATISFACTION IN PUBLIC HOSPITALS IN BANGKOK

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ABSTRACT

Customer satisfaction is an important parameter for assessing the quality of patient services. There is a need to assess public hospitals because they are important providers of services to patients, whose satisfaction is important. This study examined the relationship between service quality and the resultant customer satisfaction as experienced by patients. This led to an examination of the relationship between that satisfaction and patient loyalty. The research methodology consisted of a quantitative analysis where the SAS program was used for analyzing data from a questionnaire survey, using Multiple Regression Analysis, Independent Sample T-Test and One-Way Anova. The survey involved 484 respondents who were out-patients in six Bangkok hospitals. The result showed that service quality and its eight aspects did have a relationship which produced a significant effect on patient satisfaction. The research finding showed that the most important factors of customer satisfaction were perceived price fairness and waiting time. The analysis also revealed that seven demographic factors, such as gender and age, acted as moderating variables which had an effect on customer satisfaction. The majority of the patients were female between 26 – 35 years who emphasized perceived price fairness, waiting time, service personnel behavior (service quality) and personnel communication. The return to a hospital for treatment was dependent on the medical service quality, the cost of medical treatment, and the waiting time. The findings of this research recommended that public hospitals should enhance customer satisfaction, and could improve the service even further, especially in terms of communicating to staff the need for faster service to reduce waiting time.

Keywords: *Customer satisfaction, Customer loyalty, Public hospitals*

บทคัดย่อ

งานวิจัยนี้เป็นการศึกษาคุณภาพของการบริการ การสื่อสารของผู้ให้บริการ รวมถึงการรับรู้ความยุติธรรมด้านราคาและการรอคอย โดยมีวัตถุประสงค์เพื่อสำรวจความพึงพอใจของผู้รับบริการโรงพยาบาลรัฐบาลในกรุงเทพมหานคร วิธีการวิจัยได้ใช้เครื่องมือการวิเคราะห์ถดถอยมาวิเคราะห์แบบสอบถาม โดยการเก็บข้อมูลทั้งหมดรวม 484 ตัวอย่าง ซึ่งมาจากผู้ใช้บริการโรงพยาบาลรัฐบาล แผนกผู้ป่วยนอกช่วงวันธรรมดา ในเวลาราชการ งานวิจัยนี้ใช้สถิติเชิงพรรณนาวิเคราะห์ข้อมูล โดยค่าเฉลี่ยและการทดสอบสมมติฐานที่ใช้ในการศึกษากลุ่มตัวอย่างอยู่ในระดับที่มีนัยสำคัญที่ 0.05 ผลการวิจัยพบว่าคุณภาพการบริการ การสื่อสาร การรับรู้ความเป็นธรรมด้านราคา และ การรอคอยการรับบริการนั้นมี

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ความสัมพันธ์อย่างมีนัยสำคัญต่อความพึงพอใจของผู้ป่วย และผลการวิจัยยังพบว่าคะแนนสูงสุดในด้านความพึงพอใจของผู้ป่วยนั้นคือการรับรู้ความเป็นธรรมทางด้านราคา และการรอคอยตามลำดับ นอกจากนี้ยังพบว่าปัจจัยด้านตัวแปรควบคุม (เพศ อายุ สถานภาพ ระดับการศึกษา อาชีพ และ ระดับรายได้) นั้นมีผลต่อความพึงพอใจต่อการใช้บริการโรงพยาบาล จากผลที่ได้แสดงให้เห็นว่าผู้ป่วยที่ใช้บริการโรงพยาบาลนั้นมีนัยสำคัญต่อความพึงพอใจ ข้อเสนอแนะที่ได้จากการศึกษา ผู้ป่วยพึงพอใจมากที่สุดในด้านการรับรู้ความเป็นธรรมด้านราคา ระยะเวลาการรอคอย การปฏิบัติงานของพนักงานบริการ และการสื่อสารของบุคลากร นอกจากนี้การเพิ่มขีดความสามารถและคุณภาพของบุคลากรในโรงพยาบาลจะทำให้โรงพยาบาลประสบความสำเร็จในด้านคุณภาพการบริการเพื่อตอบสนองความต้องการและความคาดหวังของผู้ป่วยในอนาคต

INTRODUCTION

There have been many significant developments in society because of globalization which has caused economic, social, political and traditional changes. Technology is one factor that affects the development of business, including healthcare. That leads to material values and includes nutrition especially to people who give priority to health care and treatment. According to 'Foresee Base Objective No.4', the government of Thailand foresees that services of the public hospitals and health care need to reach a high standard response to patients, because of health problems and the relationship between the service provider and receiver (Ministry of Public health of Thailand, 2011).

Based on the idea that patients should be at the center or heart of the health service, the public hospitals have to improve their patient service quality so as to achieve high customer satisfaction. The services of these public hospitals are designed for those Thai people who need low prices. Thus, the government has tried to enhance public hospitals with new technology to attract patients for medical treatment and to achieve efficiency and effectiveness in terms of fighting disease and solving problems. In this research, the six hospitals surveyed are named A,B,C,D,E,F.

Most patients in Bangkok see a doctor or go to the hospital and return home in a single day. The Annual Report of public hospital A (2015) shows that the number of patients continues to rise, yet with limited resources in terms of bed numbers this hospital solves the problem by allocating more space for out-patients to wait their turn for attention and treatment, and in many cases they can spend more than a day waiting there. Hospitals know that they need to solve this problem. Therefore, the comments and recommendations from patients are very important to the improvement process. Patients decide to use public hospitals because of the expertise of the doctors, price of the treatment, and the reliability of the hospital, which facilitates an understanding between the service provider and patients' decisions to use the hospital (Hopkins, 2010). The problem is how to keep in touch with the patients and attain their loyalty. If the services are good, that will guarantee that the patients will choose the same hospital when the need arises. Many studies have found that customer satisfaction and service quality are the main factors affecting customer loyalty.

Many public hospitals in Bangkok have problems at each step in the process, which are being taken seriously by eliciting patients' comments as a basis to measure patient satisfaction. When the waiting time is long, it decreases the satisfaction level of the patient. Also, if an error occurs in the process, it means the service is less effective. However, many previous studies have seen the importance of the role of service in the hospital business. The key point is that good servicing can attract customers by providing services that satisfy them. So, this is the beginning of this research into the supply chain management of hospitals. Hospitals need to improve their human resources and improve the organization systems to achieve higher service performance. The service quality in hospitals is here studied from the patients' perspective: their perception. The research structure has focused on finding an effective way to satisfy the needs of the patients.

Therefore, this study aims to investigate deeply the factors which affect patient satisfaction in public hospitals in Bangkok. The results are to be used in improving the hospital services to be more effective. Many hospitals are facing competition because patients search for comparative information, i.e. service quality, service time, price, information availability, and health service safety (Delnoij, Rademakers, & Groenewegen, 2010). Theoretically, the study aims at providing empirical evidence of the effect of the service quality, communication, perceived price fairness, and waiting time on customer satisfaction and loyalty. Increasing patient satisfaction is achieved by improving the flow of processes and service efficiency.

REVIEW OF RELATED LITERATURE

Customer loyalty is a deep commitment to re-patronize and repurchase in the future the product or service (Oliver, 1997) It derives from the attitude towards a brand of product with its accompanying service, so that when a customer perceives the real value of the product it will affect repurchase and loyalty (Zeithaml, Berry, & Parasuraman, 1996). Loyalty comes from the good attitude of a customer that affects repurchase and will drive customer satisfaction (Assael, 1995). Consumer satisfaction is believed to mediate consumer learning due to prior experience, and to explain key post purchase behavior such as complaints, word of mouth, repurchase intention and product usage (Oliver & Richard, 1999). Dick and Basu (1994) investigated service quality aspects such as tangibles, empathy, and communication and how these positively affected loyalty towards a hospital. Loyal patients are important in terms of long term business for market segments because it that can increase sales and protect market share.

Customer Satisfaction

Satisfaction is the thing that happens to everyone when getting response to the basic needs of the mind and body. Satisfying behavior of human is the activities for eliminating stress because when stress is out of mind, satisfaction comes instead (Millet, 1954). Parasuraman, Berry, and Zeithaml (1991) gave the meaning of satisfaction as any activities that can eliminate stress coming from when a person needs something and cannot get it, so when human gets what he or she needs, it will satisfy him or her. Kotler and Armstrong (2005) said that patient satisfaction will

happen when the hospital has quality service, which could be tangible and intangible, greater than customer expectations (including after service). Millet (1954) provided a satisfactory service theory to measure whether service gets less or more satisfaction. Equitable service is fair reasonable service for all customers; timely service is a necessity to deal with patient need. Ample service is enough to provide a patient with medical staff, equipment; continuous treatment service until the illness is cured and wellness returns. Progressive service is to seek to continuously improve the service and its quality. Various studies locate customer satisfaction as the outcome of customer repurchase and loyalty (Oliver, 1989).

SERVQUAL

Parasuraman, Zeithaml, and Berry (1985) stated that service quality is consumer perceptions about the actual performance of the service provider. Many research authors have suggested that service quality is evaluated from consumer expectation (Cronin & Taylor, 1992). It seems like customer impression of the service provider (Bitner and Hubert, 1994). The quality of service can be measured from comparing the expectation and actual performance (Lewis and Mitchell, 1990). A hospital is a business that take cares of human health, and needs patients' trust in using the service, so customer satisfaction is the most important factor that a hospital has address. The affordability of each hospital that offers quality service is intangible, the same as for other industries (Ford, 1997). Patients can now access much information and can select the best way and place suitable for them (Feldstein, 2003). Thus, the key is the level of customer perception towards the service provider. It is the comparison between expectation and customer perception of actual performance (Parasuraman et al., 1985). The significant aspects of all this are now described below.

(1) **Tangibility**: includes physical facilities, equipment and appearance of personnel, the healthcare service, seen as a hospital with good equipment, infrastructure and neatness of service provided, which will attract lots of customer. The simple way is to create quality and a positive attitude to customer, which should encourage patients to revisit the hospital for treatment.

(2) **Reliability**: is the ability to perform the promised service at the right time and with accuracy. It is very significant to healthcare service in terms of overall service quality level that needs to be evaluated. It also includes when healthcare service schedule is reliable for solving problem in terms of time management, data recording, and customer trust in the hospital.

(3) **Responsiveness**: this includes willingness of personnel to help and provide prompt service to customers. Many customer patients are dissatisfied when they have to queue to meet the doctor or to have treatment. Service provider should pay attention to promptness and communicate with the customers about the time they have to wait, and the service provider personal should be trained to solve problem easily.

(4) **Assurance**: includes knowledge, skill and courtesy of employees, and ability to build customer trust and confidence. Healthcare service should convey trust because patients naturally feel at risk.

(5) **Empathy**: involves employee's care and attention to patient customers. This is the ability to provide care to the patient or customer, and a good relationship will be

regarded as valuable by the patient. When appropriate attention is given to the patient, it will build empathy, trust and perceived satisfaction.

Few service research studies are complete without involving the SERVQUAL theory; in this case by applying it to measure the service quality of the hospital. This theory is widely accepted by many industries. SERVQUAL is a standard to assess quality dimensions and can show the situation of each service. It is a reliable instrument for analyzing survey responses, and it is a systematic method to calculate and analyze results (Buttle, 1994). SERVQUAL will be applied in this present case study to the five aspects described above. However, more aspects are needed, another three aspects are needed for a fuller investigation into patient perceptions of quality service. These three are now described.

Communication

Communication involves medical staff refers to doctors and nurses who have professional certification, and other who are qualified to work in the hospital. These people need to provide information to customer patients and respond to questions with clear answers as they provide services and information to the recipient in the treatment and self-care (Osgood, Suci, & Tannerbaum, 1957). A person's interpersonal skills are proportionate to that person being capable of self-directed behaviors. It means the ability to communicate effectively, with skill to interpret patient expressions (Duggan, 2006). It includes different behavior while transmitting a message by the tone of voice and facial expression (Duggan, 2006). Specifically, communication skill for medical personnel with patients to create patient satisfaction is an important and valuable skill. Paulsel, Richmond, McCroskey, and Cayanus (2005) studied patient perceptions of the competence and caring dimension related to doctor, nurse, and service provider. The study found a strong relationship of nurse-patient caring perception, but only a moderate relationship between doctor-patient perception and the service provider-patient perception. These perceptions resulted in the success of the services. Hence, it can be concluded that there is a positive relationship between communication and customer satisfaction (Aday & Anderson, 1984).

Perceived Price Fairness

The foundation of price fairness is the principle that both parties that should not benefit by causing a loss to other parties, such as when a company experiences higher demand from consumers and raises the price, will mean that consumers perceive that is unfair to them (Kahneman, Knetsch, & Thaler, 1986). Previous research on price fairness can be divided into two categories: (1) exploration and identification of history of price fairness perception (Bolton & Alba, 2006; Campbell, 1999), and (2) examination of the impact on attitude and behavior of consumers (Lii & Sy, 2009). Perceived price fairness is defined by consumers as feeling it is reasonable (Xia, Monroe, & Cox, 2004). Fairness is less objective but more subjective judgment because consumers perceive it regardless of whether perception is correct or not. It may not be critical until consumers perceive it as unfair (Xia et al., 2004). The previous research found that price fairness perception is influenced by various dimensions. Price perceptions of the consumer can be defined as quality of product or service for which customers are willing to pay

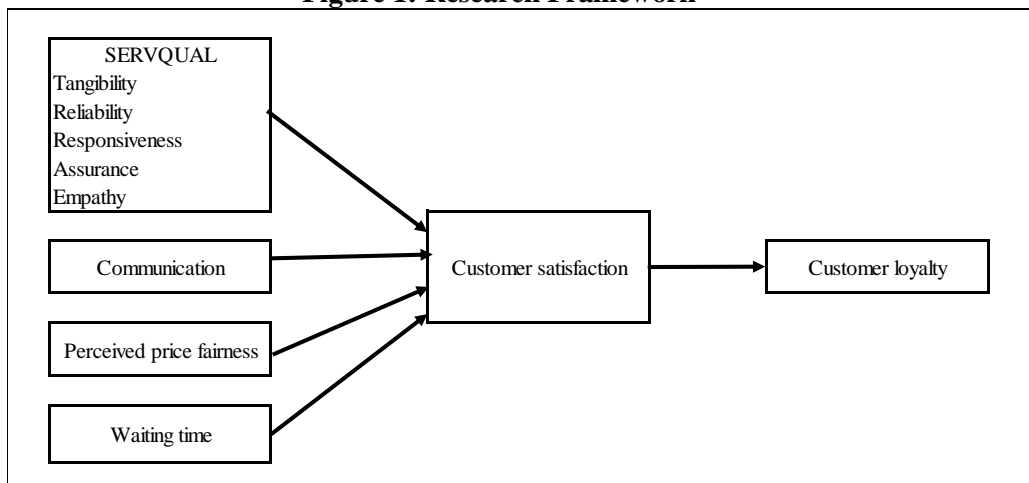
(Zeithaml, 1996). Customers can show positive intention by increasing their purchases, paying a premium, or recommending to others, and continuing the purchase when they feel they are satisfied (Zeithaml, 1996).

Waiting Time

Customer's perception of waiting time is based on individual experience and reaction (Maister, 1985). Many psychology theories attempt to suggest the ways in which people make decisions and judge other people (Dube, Schmitt, & Leeler, 1991). It can be applied to people's reaction to waiting time, such as how people perceive waiting time, how to solve waiting time situations, and how they judge the service being provided during waiting time (Hui & Tse, 1996). Taylor (1994) studied time delay that might affect customers' negative reaction as uncertainty and anger. The negative reactions had affected customer intention to return to use the service as the result showed that customers were more negative when they thought that the cause of waiting came from the service provider, and the negative reactions had impacted the evaluation of service. Queuing theory deals with the problems that include waiting or queuing such as the service business that has to queue for the services, waiting for the machine response, waiting for the situation of failure. Queuing is a common experience that everyone can face because of limited resources. So, the objective of queuing systems is to balance the service provided with customer needs. Queue system has an important function, which can be broken down to sub-activities. The sub-activities work to deal with customers who queue for the service (Hornik, 1984). Quick service time is at the heart of healthcare service because most customers who use the service are sick, and if they have to spend a long time waiting, it could harm the patient's physical and mental health.

CONCEPTUAL MODEL AND HYPOTHESES

Figure 1: Research Framework



Source: Author

This schema consists of the relationship among variables that service quality, communication, perceived price fairness and waiting time influence customer

satisfaction (Parasuraman et al., 1990; Roter & Hall, 1993; Hui & Tse, 1996; Xia et al., 2004). The model proposes that the variables positively influence customer satisfaction and loyalty. When customers are satisfied, that influences customer loyalty positively. The research framework posits a mediating relationship in customer satisfaction between service quality (tangibility, reliability, responsiveness, assurance and empathy), communication, perceived price fairness and waiting time and customer loyalty. This study aims to test 17 hypotheses, as follows:

Relationship between SERVQUAL, Communication, Perceived Price Fairness, Waiting Time and Customer Satisfaction.

The SERVQUAL concept has been widely used for service business and is used to measure customer experience. It was found that the quality of service had direct impact on customer satisfaction in terms of customer expectations, because customers will compare their expectations with what they actually get from the service, and this will happen when customers use the service many times (Parasuraman et al., 1988). Communication can respond to consumer satisfaction, and medical personnel communication has high impact. The way to communicate is either verbal or nonverbal, to make patients understand and feel confident to use the service (Aday & Andersen, 1984). The perceived price fairness concept is measured when customers perceive price unfairness, which leads to negative perceptions and engender self-protection or revenge action, but if customers perceive that the value of service is more than the price, they feel they are treated fairly and are satisfied with its price (Xia et al, 2004). Waiting time occurs when customers arrive at the service, willing to get the service, but with the limited resources of service provider and when the service has a long queue or long waiting time, they might not be satisfied (Hui & Tse, 1996). Based on this rationale, the following hypothesis is proposed:

Hypothesis 1: SERVQUAL, communication, perceived price fairness and waiting time affect customer satisfaction in public hospitals in Bangkok.

Relationship between Customer Satisfaction and Customer Loyalty.

Customer satisfaction has high expectation and tends to have a higher usage level of a service than customers who are not satisfied; it seems like they have strong intention to repurchase or recommend the service to other people (Zeithaml et al., 1996). Based on this rationale, the following hypothesis is proposed:

Hypothesis 2: Customer satisfaction affects customer loyalty to public hospitals in Bangkok.

Difference in Customer Satisfaction among customers who have different Demographic Profiles.

The different demographic profiles of people may lead to different perceptions. Similarly, this study aims to examine perception of customers towards customer satisfaction who are different in demographic profile.

Hypothesis 3: There is a difference in customer satisfaction between people who are different in gender.

Hypothesis 4: There is a difference in customer satisfaction among people who are different in age.

Hypothesis 5: There is a difference in customer satisfaction among people who are different in marital status.

Hypothesis 6: There is a difference in customer satisfaction among people who are different in education.

Hypothesis 7: There is a difference in customer satisfaction among people who are different in occupation.

Hypothesis 8: There is a difference in customer satisfaction among people who are different in income level.

Difference in Perceived Price Fairness among customers who have different Demographic Profile.

The different background of people may lead to different perceptions. The speed of global change that produces many changes for hospital in terms of the way patients behave will be satisfied with the service depending on the background and economic factor of the person (Palmer & Cole, 1995; Saowaluck, 2008).

Hypothesis 9: There is a difference in perceived price fairness between people who are different in gender.

Hypothesis 10: There is a difference in perceived price fairness among people who are different in age.

Hypothesis 11: There is a difference in perceived price fairness among people who are different in education.

Hypothesis 12: There is a difference in perceived price fairness among people who are different in occupation.

Hypothesis 13: There is a difference in perceived price fairness among people who are different in income level.

Difference in Customer Satisfaction between customers who have Gold-Card-30 Baht, or Social Security and do not have Gold Card 30 Baht or Social Security.

In Thailand, there are laws that protect the basic rights of people who are Thai nationals entitled to a special Gold Card limiting the cost of public hospital treatment to 30 baht (about one US dollar) pricing for medical treatment. Also, those who work in Thailand need to have social security insurance to help with medical fees of employees. This research aims to examine the relationship between customer satisfaction and demographic background, which includes the Thailand government policy of 30-baht Card and social security insurance.

Hypothesis 14: There is a difference in customer satisfaction between people who use gold card 30 baht and do not use gold-card-30 baht.

Hypothesis 15: There is a difference in customer satisfaction between people who use social security and do not use social security.

Difference in Customer Satisfaction between customers who experience different Service Time and Waiting Time.

Waiting time is a key factor representing the service quality of the process (Hui & Tse, 1996). Waiting time is important in terms of satisfaction, so the government pays high attention to the waiting time and the cycle time of each procedure. Thus, this research has examined the relationship between customer satisfaction and customers who get timely service or waiting time in each process.

Hypothesis 16: There is a difference in customer satisfaction among people who experience different service time duration.

Hypothesis 17: There is a difference in customer satisfaction among people who experience different waiting times at hospital.

METHODOLOGY

This research has chosen the elements for the sample, using the researcher's judgment. Purposive sampling is also known as judgment or selective. Subjective sampling is where the researcher has the power to select the participants and can provide the answer via a questionnaire (Saunders, Lewis & Thornhill, 2012). Based on the research, factors affecting patients who used the hospital services were the ones that the researcher used because they could participate in in-depth interviews based on the questionnaire. The Bangkok population in 2016 was around 5.6 million people. Based on the formula of Yamane (1967), the sample size for this research is 399.97 or 400. This research used a questionnaire survey to gather perceptions from Out-patient Departments of six public hospitals in Bangkok, Thailand that offering medical education. Data was personally collected by the researcher on 25 days in November/December 2017. The number of respondents were hospital A 80 sets, hospital B 81sets, hospital C 84 sets, hospital D 79 sets, hospital E 80, sets and hospital F 80 sets. In total, 484 respondents.

Questionnaire Design

The survey questions used numeric rating questions. A Likert scale was used for the measurement of the study variables. According to Saunders, Lewis, and Thornhill (2007), it is the most common scaling method. A 1-5 scale was constructed (from Strongly Disagree to Strongly Agree), to make the participants take a stand regarding the questions asked.

Data Analysis

After collecting the data from the questionnaires, the data was entered by the researcher into the SPSS program to analyze the information. The objective was to study and predict the future of the variable affecting other variables; it develops and deploys mathematical models and theory to solve natural phenomena, to measure the incidence of various views in chosen sample

Reliability of the Measurement Items

According to Hair, Money, Samuel and Page (2007), reliability analysis means the degree to which measures are free from error and therefore yield consistent result. Hair et al. (2006) have suggested that Cronbach's alpha can be used as a measurement. To perform the test of variables, results from the reliability analysis showed satisfactory results because all Cronbach's alpha coefficients were above 0.5. In order to be satisfactory for the early stages of research, over 0.70 was considered. It can be seen from the Tables in the next section that Cronbach's alphas of all constructs ranged from 0.758 to 0.987. From the result of reliability analysis on satisfaction, the assessment of construct validity is presented in the following section of this report. Since the results of the reliability analysis were satisfactory, the next process is the assessment of construct validity of the

measurement items. All the variables in the standardized definition were higher than 0.700.

FINDINGS

Table 1: Linear Regression Result of Hypothesis 1

Number of Observation Read and Used					484
Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	74.05562	9.25695	43.38	<.0001
Error	475	101.35003	0.21337		
Corrected Total	483	175.40565			
Root MSE		0.6192	R-Square	0.4222	
Dependent Mean		4.32438	Adj. R-Sq	0.4125	
Coeff Var		10.68172			

From the Table, analysis of variance P-value is <0.001 that is less than 0.05, and F-value is 43.38 for SERVQUAL (tangible, reliability, responsiveness, assurance, empathy, communication, perceived price fairness and waiting time affect customer satisfaction). The adjusted R square of the result is 0.4125 which means that SERVQUAL as aspects of, communication, perceived price fairness and waiting time, can explain customer satisfaction at 41.25%.

Table 2: Parameter Estimate for Independent Variables of Hypothesis 1

Parameter Estimates						
Variable	DF	Parameter Estimates	Standard Error	t Value	Pr tlt	Standard Estimation
Intercept	1	0.95788	0.24836	3.86	0.0001	0
Tangible	1	0.00074073	0.07225	0.01	0.9918	0.00067874
Reliability	1	-0.09919	0.10776	-0.92	0.3578	-0.06996
Responsiveness	1	0.0816	0.13725	0.59	0.5524	0.05781
Asurance	1	0.10562	0.10702	0.99	0.3242	0.08558
Empathy	1	-0.08769	0.07848	-1.12	0.2644	-0.08147
Communication	1	0.05239	0.10574	0.5	0.6205	0.03553
Perceived price fairness	1	0.78838	0.06629	11.89	<.0001	0.64805
Waiting time	1	-0.08724	0.03717	-2.35	0.0193	-0.11017

Table 2 parameter estimates of variance show that P-value is <0.001, less than 0.05, for perceived price fairness and waiting time. The negative result of waiting time shows that waiting time has a negative relationship with customer satisfaction. It shows that even though respondents perceive a long period of waiting time, nevertheless they still express satisfaction. So, the main factor that can influence their satisfaction is the price of treatment. Perceived price fairness is the factor that

has the most influence on customer satisfaction, with a standardized estimation of 0.64805.

Table 3: Linear Regression Result of Hypothesis 2

Number of Observation Read and Used					484
Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	96.03521	93.03521	756.40	<.0001
Error	482	59.28479	0.12300		
Corrected Total	483	152.32000			

Root MSE	0.35071	R-Square	0.6108
Dependent Mean	4.21818	Adj. R-Sq	0.6100
Coeff Var	8.31425		

Parameter Estimates						
Variable	DF	Parameter Estimates	Standard Error	t Value	Pr > t	Standard Estimation
Intercept	1	1.0688	0.11562	9.24	<.0001	0
Customer satisfaction	1	0.72829	0.02648	27.50	<.0001	0.78153

From the table analysis of variance, P-value is <0.001 which is less than 0.05, and F-value is 756.4 which means that customer satisfaction affects customer loyalty. R square of the result shows 0.6108, which means that customer satisfaction can explain customer loyalty at 61.08%. Therefore, customer satisfaction affects customer loyalty.

The findings from the quantitative analysis indicated the services that customers perceived and the hospital service quality. The summary of findings shown in the above Table, which were discussed in the previous part, and the result of hypotheses, were developed and tested according to all correlation coefficients which were significant ($Pr < 0.05$). Service quality consists of five dimensions; the research found the result of data analysis on the level of agreement. The research finding shows the highest score of customer satisfaction was reliability, and further showed that among SERVQUAL factors, communication, perceived price fairness and waiting time had a positive and significant effect on customer satisfaction at all six public hospitals in Bangkok. When included with the control variables (gender, age, education level, income level, occupation and marital status) the effect was greater on customer satisfaction in all six public hospitals. Perceived price fairness had a greater effect on customer satisfaction. A further result indicated that service time of the hospital and waiting time (queue) in the service process had a positive and significant effect on customer satisfaction in all six hospitals. The analysis of variance P-value < .0001 for all hypotheses, except hypothesis 9 P-value 0.1319, hypothesis 14 P-value 0.0003, hypothesis 15 P-value 0.0045, hypothesis 16 P-value 0.0007 and hypothesis 17 P-value 0.0065.

Table 4: Hypotheses Findings

No	Hypothesis	Result	P-value	F-value	Variance Pr > t	Adjusted R-square	R- square	Remark
1	SERVQUAL, communication, perceived price fairness and waiting time affect customer satisfaction on public hospital in Bangkok.	Support	<0.001	43.38		0.4125		Perceived price fairness is the most influence by standardized estimation of 0.64805
2	Customer satisfaction affects customer loyalty to public hospitals in Bangkok.	Support	<0.001	756.4			0.6108	
3	There is a difference in customer satisfaction between people who are different in gender.	Support	<0.001	2.05	0.0003			Mean score of female is 4.3862, Mean score of male is 4.1981
4	There is a difference in customer satisfaction between people who are different in age.	Support	<0.001	36.36				Duncan: people who ages between 16-25 years old perceived customer satisfaction higher than people who ages over 25 years old
5	There is a difference in customer satisfaction between people who are different in marital status.	Support	<0.001	14.33				Duncan: divorce/separate people perceived customer satisfaction higher than people who are single or married
6	There is a difference in customer satisfaction between people who are different in education.	Support	<0.001	28.89				Duncan: who are in diploma level perceived customer satisfaction higher than other education level
7	There is a difference in customer satisfaction between people who are different in occupation.	Support	<0.001	11.65				Duncan: who are in student level perceived customer satisfaction higher than other occupation
8	There is a difference in customer satisfaction between people who are different in income level.	Support	<0.001	32.49				Duncan: who are income less than 9000 Baht perceived customer satisfaction higher than people who have higher than 9000 Baht
9	There is a difference in perceived price fairness between people who are different in gender.	Support	0.1319	1.24	<0.001			Mean score of female is 4.4905, Mean score of male is 4.1421
10	There is a difference in perceived price fairness between people who are different in age.	Support	<0.001	26.74				Duncan: people who ages between 16-25 years old perceived price fairness higher than people who ages over 25 years old
11	There is difference in perceived price fairness between people who are different in education.	Support	<0.001	12.8				Duncan: who are in diploma level perceived price fairness higher than other education level
12	There is a difference in perceived price fairness between people who are different in occupation.	Support	<0.001	14.36				Duncan: who are in student level perceived price fairness higher than other occupation
13	There is a difference in perceived price fairness between people who are different in income level.	Support	<0.001	11.36				Duncan: who are income less than 9000 Baht perceived price fairness higher than people who have higher than 9000 Baht
14	There is a difference in customer satisfaction between people who use gold card 30 Baht and do not use gold card 30 Baht.	Not support	0.0003	1.67	0.8219			Who use or not use gold card they perceived customer satisfaction not differently
15	There is a difference in customer satisfaction between people who use social security and do not use social security.	Not support	0.0045	1.6	0.2289			Who use or not use social security they perceived customer satisfaction not differently
16	There is a difference in customer satisfaction among people who experience different service time.	Support	0.0007	4.36				Duncan: who spend time less than 60 minutes perceived customer satisfaction higher than who spend time more than 60 minutes
17	There is a difference in customer satisfaction among people who experience different waiting time at hospital.	Support	0.0065	3.61				Duncan: who waiting less than 15 minutes perceived customer satisfaction higher than who waiting more than 15 minutes

CONCLUSION

The result is that customer satisfaction affects customer loyalty toward public hospitals in Bangkok, mostly patient satisfaction and loyalty with B and C hospitals in the same rank. The reason might be due to the perception of patients who perceived price fairness because B and C hospital rated the highest satisfaction on that factor. In fact, public hospitals mostly have standard prices but the key is whether the customer perceives that the price is fair compared to other hospitals. The results of the test show that the waiting time for the service and the service personnel paying attention to patients have not warranted customer satisfaction. It can have another meaning because the prime time and patient numbers are increasing every single day and hospitals lack personnel resources: this might be the reason at the other four hospitals. The results of customer satisfaction show that the variables have influence on behavioral intention or loyalty. Customer satisfaction is regarded as a fundamental determinant of long term consumer behavior (Oliver, 1997) as hospitals also need patients in the long term. It is proposed that it is patient assessment of the service value that influences loyalty to a public hospital (Zeithaml et al, 1996). This behavior can be positive to the service, such as customer retention or loyalty intention, thus when patients use the public hospital services, they expect to get the best service. Moreover, patients will continue using the public hospitals, but it can be negative because of customer's defection or switching loyalty to other hospitals or private hospitals to get better service.

Theoretical Implications

This model was developed from previous published studies and has contributed to the literature in the sense that it provides knowledge about health care or hospital service. In addition, service quality is not enough for the present situation as communication can also create value to patients while they use the service. Another two main factors that can lead to customer satisfaction in public hospitals are perceived price fairness and waiting time. In this case study, a new model was developed on the basis of existing theories and empirical results. It contributes to future researchers, who could include more factor-combinations for hospital organizations. Service quality is one model that measures the quality of a service business. Many previous research studies used the SERVQUAL model and most of them found the gap between perceptions by customers of service personnel as having high impact on customer satisfaction (Choi et al., 2005). These attributes produced the results and can be linked to the contention that "A simple definition of quality in health care is the art of doing the right thing, at the right time, in the right way, for the right person and having the best possible result" (Zineldin, 2006, page 66).

Managerial Implications

The hospital or health care sector operates in a highly competitive environment, and the researcher believes that this study is therefore useful to hospital service providers. The results can be used to improve the quality of public hospitals and build patient's loyalty by gaining more satisfaction. Based on these findings, public hospitals should focus on how to ensure that patients experience good service with a reasonable price, and on how customers sacrifice time and effort in their

purchasing, for customers will feel justified in choosing public hospitals. Providing improved waiting time, price fairness and maintained service quality, a hospital can gain the reputation of a high patient satisfaction level. Also, this study can be inform decision-making, planning, and control of the working process to achieve the satisfaction goal. Public hospitals can develop in their competency, dependability, integrity and equity, which are core competencies needed for improvement; the information in this study can be a guide to quickly solve the root cause of hospital problems.

Limitations and Recommendations for Future Research

The research focus and data collection were concentrated on Bangkok on six hospital outpatient departments. The results, therefore, have only limited generalization and cannot necessarily apply to other hospitals or departments. The sampling group came from various backgrounds which may impact on the accuracy of the answers given. As the main topic is concern about factors that affect patient satisfaction and loyalty, collecting the data from real patients in real situation was most interesting.

Further research could be used in another form of data collection to avoid the waiting process of approval and include more public hospitals or compare with private hospitals to increase participants and provide widen generalization. Therefore, future research could focus on other provinces of Thailand, and patients can be either Thai or foreigners who live in Thailand. When foreigners travel to Thailand, some stay to work for several years and they use public hospital services. This research has focused only on some variables (SERVQUAL, communication, perceived price fairness and waiting time) relating to customer loyalty and satisfaction. Future researchers could investigate the sustainability of public hospitals in developing the service process in Bangkok.

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