



**FACTORS AFFECTING PATIENT SATISFACTION IN PUBLIC  
HOSPITALS IN BANGKOK**

By  
**AUNTHIKARN SUDJAI**

**Submitted in Partial Fulfillment of the Requirements for the Degree of  
MASTER OF SCIENCE IN SUPPLY CHAIN MANAGEMENT**

**Martin de Tours School of Management and Economics  
Assumption University  
Bangkok, Thailand**

**April, 2018**

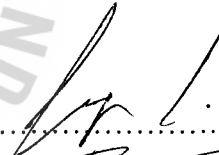
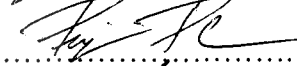

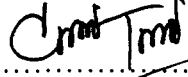
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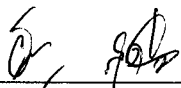
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I, Aunthikarn Sudjai declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

Factors affecting patient satisfaction in public hospitals in Bangkok

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Aunthikarn Sudjai  
Assumption University  
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## ABSTRACT

This study examines the service quality, communication of service provider include with the perceived price fairness and waiting time based on the objective of this study the theoretical link to patient who use the public hospital in Bangkok, Thailand toward patient satisfaction was explored.

The research methodology consisted of using a quantitative analysis where Multiple regression Analysis (MRA) was used for analyze the questionnaire. The primary data collecting the data from 484 sample size; which include 80 respondents from A hospital, 81 respondents from B hospital, 84 respondents from C hospital, 80 respondents from D hospital, 80 respondents from E hospital, 79 respondents from F hospital from department of out-patient (OPD). The data was analyzed in descriptive statistics; percentage, mean and hypothesis testing used to investigate a differential of the study among the sample size at 0.05 significant levels.

Thus the result showed that service quality; tangibility, responsiveness, reliability, assurance, empathy, communication, perceived price fairness and waiting time had a positive relationship and significant effect on patient satisfaction. The research finding show that the highest score on patient satisfaction was perceived price fairness meanwhile waiting time was the second highest score for perceived patient satisfaction. Further result show that among the service hospital factor when including the control variables (gender, age, marital status, education level, occupation and income level) had greater effect on patient satisfaction for public hospital in Bangkok. The result further showed that patient who use government benefit paid had a positive and significant effect on customer satisfaction.

In summary based on the research finding patient satisfaction almost emphasized on perceived price fairness, waiting time, service personnel behavior (service quality) and the personnel communication. In addition improving the capacity and quality of

hospital workforce in order to achieve the service quality to fulfill need and expectation of patient in the future.



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**Assumption University**  
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Form signed by Proofreader of the Thesis

I, Mrs. Mary Bien Catalan, have proofread this thesis entitled  
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and hereby certify that the verbiage, spelling and format is commensurate with the  
quality of internationally acceptable writing standards for a master degree in supply  
chain management.

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## **CHAPTER I**

### **GENERALITIES OF THE STUDY**

There have been many dimensions developed in a society because of globalization. The development comes from the economic, social, political and traditional changes. Technology is one factor that affects the development of the business including healthcare. It leads to material values and includes nutrition especially to people who give priority on health care and treatment. According to Foresee Base objective no.4, the government of Thailand foresees the services of the public hospitals and health care that need to reach the standard and the response to patient following the problems on health and the relationship between the service provider and receiver (Ministry of Public health of Thailand, 2011).

Based on the new idea that patients are the center or heart of the service, the public hospitals have to develop the service quality for their patients to get the highest satisfaction. The services of the public hospitals are standard for Thai people to use with low price. Thus, the government has tried to develop the public hospitals with new technology to attract patients for medical treatment and for the efficiency and effectiveness in terms of protecting diseases and solving problems. Hospitals aim to get the effectiveness and solution of the inside problems. So, the comments and recommendations from the patients are the important factors to improve the process. The overall process for patients when they access to the hospital can be divided into three parts, which are before meeting the doctor, during the meeting with the doctor, and after getting medical consultation. The servicing process involves many factors such as the waiting time of patient by queuing to access the process. The service quality includes doctor, nurse, pharmacist, and staff who can create value directly.

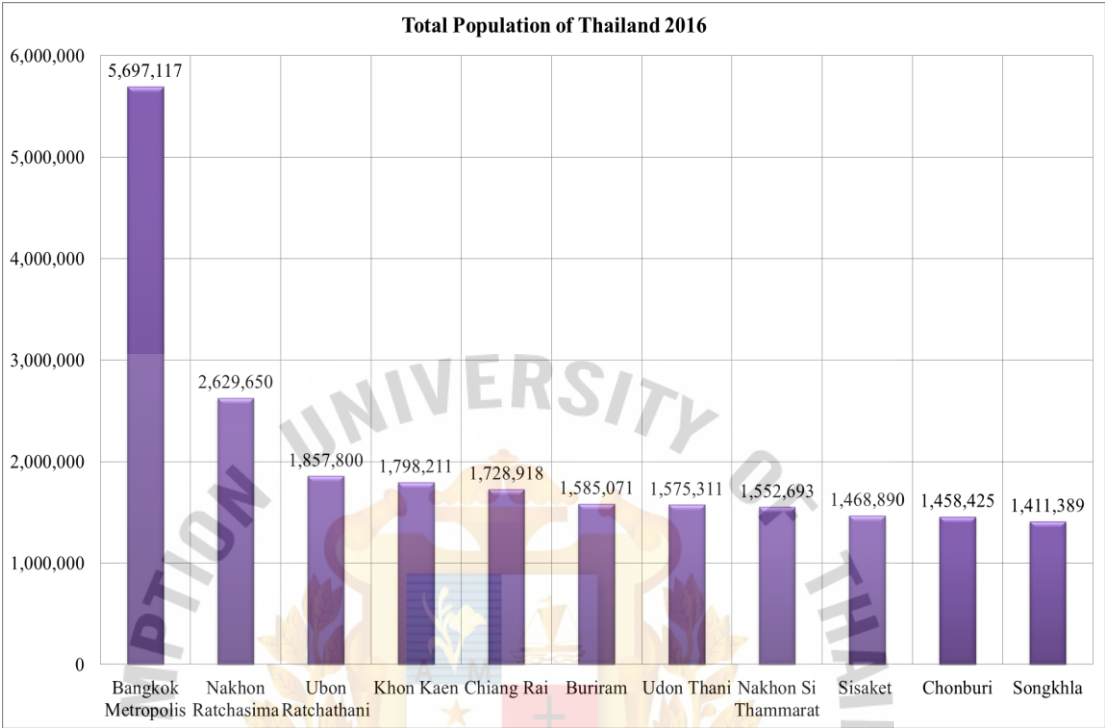
The other component is innovation that can attract patients who are willing to be treated in the hospital, too. It is important to understand the process that involves the

experience of patient, which most of it comes from doctor's skill, communication with patient, behavior of staff, cleanliness, ambience of the hospital, and also the patient's time spent in the hospital (Angelopoulou, 1998; Muncy, 2004; Suraphan, 2002). So, all factors are important in the servicing process of the hospital to create or increase patient satisfaction leading to the patient's loyalty to the hospital. According to Kotler (1998), customer retention and loyalty are the measurement tools for business competitive advantage because the service needs to look beyond the patient satisfaction by building effective organization to cope with customer loyalty and relationship management.

### **1.1 Background of the Research**

From the present situation, many institutions have been evaluated for the development of hospitals based on the Standard of Care and Satisfaction of Services for the patients to get quality services and use less time for the services (Kusol & Thongthai, 1996). Thus, hospital is a place where millions of people access, and it is the one of the largest businesses in existence, impacting millions worldwide (Toughnickel, 2016). The World Health Organization (1948) had given the meaning of health as "Health is the state of complete physical, mental and social well-being and merely the absence of disease infirmity." Thailand National Health (2007) also defined health as the state of human that is complete in body, mental, intelligence and social that link each other to be balanced. Also, the factors are grouped by risk and protection from the surrounding environment; health status, such as birth, mortality, morbidity or life expectancy; and health system. In Thailand, patients have the right to choose their hospital with varied services, such as autonomy, dental, cancer, etc. It depends on the patient's need.

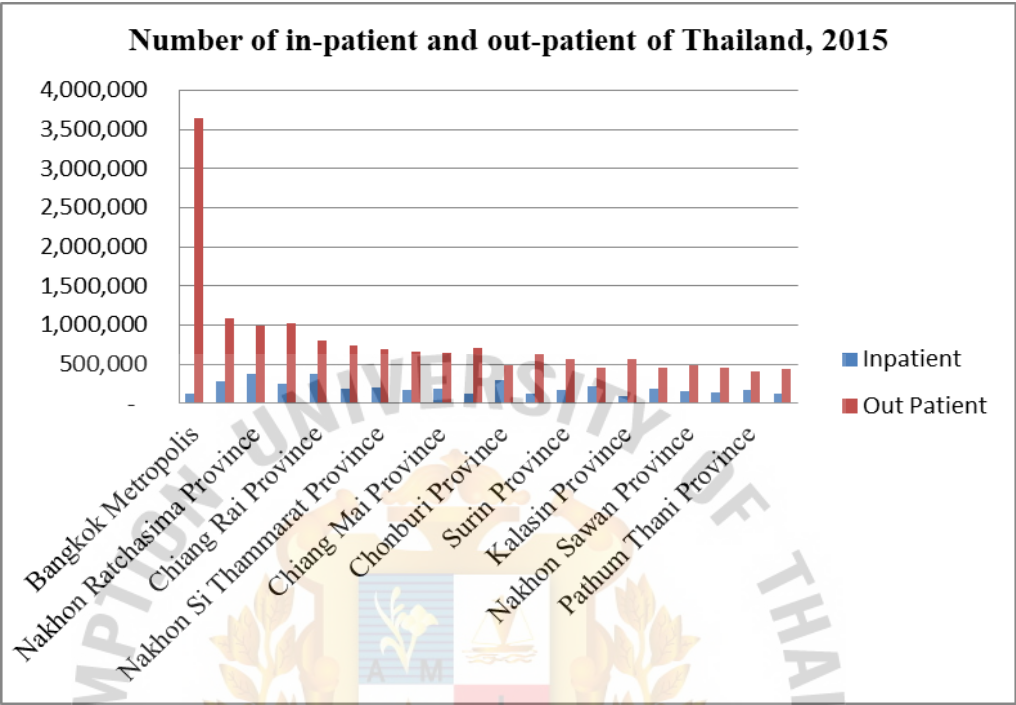
**Figure: 1.1: Statistics of Thailand’s Population (2016)**



Source: National Statistical Office of Thailand (2016)

Figure 1.1 shows that in the year 2016, Bangkok Metropolis had the highest population. Bangkok is the capital city that has good work places, high technology, many places of education and hospitals that have many levels to serve people. At the same time the area that combines with different background of people will reflect the level of social engagement and economic success can happen easily (Taylor, 1986).

**Figure: 1.2: Number of Inpatient and Outpatient of Thailand (2015)**



Source: Ministry of Public Health (2015)

Figure 1.2 shows that in 2015, most patients in Bangkok see a doctor or go to the hospital and went back home like a single day treatment. Annual report of A public hospital (2015) the number of patient continue increasing with the limited resource of public hospital to provide, many patient have effect of symptom but the patient's bed have not enough to provide all so the public hospital solve the problem by set more space for out-patient to wait and treat as it possible and in many case spend more than a day for waiting in this area. It came from the waiting time factor that nowadays, it has more effect to them because for people who live in Bangkok, they regard time as important as spending money (Annual report of A public hospital, 2015). For someone, time is an opportunity to do something, and it is difficult to deny that time is not important to them. Most public hospitals have limited resources and the availability of rooms is difficult to find as the rooms are reserved for those who are in critical condition (Annual report of A public hospital, 2015). However, public hospitals have quickly expanded and developed rapidly. The expansion and the

development affect the growth of the economy with high competition in terms of services. Servicing process of the hospital has to be of quality to attract patients. The number of hospitals that are facing competition to increase patient's specific needs is increasing. It comes from the trend of people in Bangkok who are more concerned with their health. In their daily life, they know that good food and exercise are choices that they can do, but they also go for medical check-ups and do more treatment to protect or to increase their health condition. On top of that, many public hospitals also have special services for people who are interested in, such as eye laser, leg and knees that are provided to people in non-regular time.

Customers who use business services like restaurant, hospital or bank may feel that spending time for waiting is a waste (Schwartz, 1975). According to Hui and Tse (1996), for the service time, it does not depend only on some parts or some steps, but it also involves many parties, i.e. doctor, nurse and staff. When customers use a service that has long queue or waiting time, they might not be satisfied on that. (Lee & Lambert, 2000). Patients decide to use public hospitals because of the expertise of the doctors, price of the treatment, and the reliability of the hospital. It facilitates the understanding between service provider and patient's decision making for using the service (Hopkins, 2010). The problem is the way on how to keep in touch with the patients or get their loyalty. If the services are good, it will guarantee that the patients will keep on coming back to the same hospital. Many studies found that customer satisfaction and service quality are the main factors for customer loyalty (Parasuraman, 1985).

## **1.2 Statement of the Problems**

Nowadays many people in different countries in the world have changed in their behavior and lifestyle. The effect from globalization that makes people spend their behavior as capitalism drives their lifestyle to change in terms of intention for the material, regression of family institution, social institution, lack of responsibility of



the business, and it will be new values of the culture that affect Thai lifestyle. Based on the real experience that people are facing in the public hospitals, many people who are in Bangkok and those not in Bangkok are always seeking for the best hospital. It means best doctor and best technology but limited spending (National Statistical office Thailand, 2016). From that situation, it has become a big issue for the public hospitals in terms of the government funding with limited payment for public hospitals and while many people use the service, it means the processes are struggling (National Health Security office, 2016). It begins with the entrance process when people get in the hospital and the patients need to do the process by themselves. On top of that, the waiting time and the area give the patients negative feeling or depression in their symptoms.

**Figure: 1.3: Process Flow of Clinical Services of OPD A hospital**

Information Center	Wheel chair service	Yes ( Register 30 – 60 mins )	Member of hospital	Yes ( 1 – 5 mins )						
		No ( No waiting )		No ( Register 10 – 30 mins )						
Administrative Department				Appointment card	Yes ( Take queue card 1 min )	Portfolio file services (10 – 30 mins)  (*no appointment card, will be the next person of who have appointment)			Issue Appointment card	
					No ( Booking or wait queue 5-10 minutes )					
Clinical services (Nurse)				Queue for medical check-up (5 mins)	Waiting for Medical check (5 – 60 mins)	Information sheet with file and get queue card ( 1 min )				
Special Clinical services (Doctor)					Waiting to meet doctor ( 5 – 90 mins )	Doctor analytical ( 5-60 mins )				
Finance Department								Payment ( 10 – 60 mins )		
Medicine Department									Replace receipt (5 – 45 mins)	Receive Medicine
										Finish

Source: Siriraj Hospital Clinical Department (2016)

Figure 1.3 shows the process flow of the clinical services of the out-patient (OPD). Customers who visit the public hospital have to register the member before receiving medical treatment, in case of patients who need wheel chair, they can contact with the

information service. Out-patient can categorize into two types; patients who have appointment and new patients with first-time visit. Therefore, the different types of patients will have different types of process. Many public hospitals in Bangkok have problems in each step in the process leading to various comments and the basis to measure patient satisfaction. When the waiting time is high, it decreases the satisfaction level of the patient. Also, if an error occurs in the process, it means the service is less effective, too. However, many previous studies have seen the importance of the role of servicing business. The key point is that servicing business can attract customers by providing services that satisfy them. So, this is the beginning part that is interesting for supply chain management. It can develop human resources and improve the organization to get higher service performance. Furthermore, the service quality in hospitals has been studied from the patient's perspective and perception. The structure has focused on finding the effective way to satisfy the needs of the patients. Therefore, this study aims to investigate deeply the factors that affect patient's satisfaction in public hospitals in Bangkok. The results are to be used in improving the hospital services to be more effective. In Thailand, public hospitals provide health care services and they are intended for all Thai citizens. 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). Donabedian (1980) said that quality assurance in healthcare and patient satisfaction are important. All dimensions have direct impact on patient satisfaction, more or less. So, to increase the level of patient satisfaction for loyalty, it needs to identify the root cause of the servicing process problem as a major concern.

The research question of this study is "What are the factors that affect patient's satisfaction and loyalty to public hospitals in Bangkok?"

### **1.3 Research Objectives**

Theoretically, the study aims at providing empirical evidences of the effect of the service quality, communication, perceived price fairness, and waiting time on customer satisfaction and loyalty. Increasing patient satisfaction is by improving the flow of pathway and service efficiency in the public hospitals. The objectives of this study are as follows:

1. To investigate the factors that affect patient satisfaction and patient loyalty;
2. To examine patient satisfaction on public hospital services that enhance loyalty;
3. To investigate patients coming from different demographics about their satisfaction on public hospital services;
4. To investigate how patients from different demographics perceive price fairness in public hospital services;
5. To investigate the government policy on 30 baht and those who use social security insurance for public hospital services in Bangkok; and
6. To examine the service time and waiting time of patients in the public hospitals in Bangkok.

### **1.4 Scope of the Research**

In this study, to address the research questions, the participants of the study were the patients who have used the services of the public hospitals in Bangkok within a six-month period. The analysis was focused on public hospitals offering medical education and purely public hospitals in Bangkok, Thailand. The study has included Hospital A, Hospital B, Hospital C, Hospital D, Hospital E, and Hospital F. The questionnaires were answered by the patients in the Out-patient Department (OPD), which has the greatest number of patients and the busiest and in the available hospitals particularly in the medicine and surgery clinics. The researcher collected the data from 20<sup>th</sup> November – 15<sup>th</sup> December 2017. The sampling technique for the collection of data was purposive technique, sending the questionnaires to patients who use the public hospital services. Public hospitals in normal program are open on

weekdays from 6:30 am. to 2:30 pm. So, the time used in administering the questionnaires was between 7:30 am. and 2:00 pm. The patients who answered the questionnaires were queuing to see the doctor and queuing to pay the fees. The relationship between customer satisfaction and service provider performance has been demonstrated and related factors on customer satisfaction were emphasized.

### **1.5 Significance of the Research**

The result of this research can be useful to supply chain management for hospital business in Bangkok, Thailand. It can help the public hospitals or related organizations in the improvement of their services. This leads to develop efficient management in the supply chain and generate consistent results on the services and assurance of the hospitals. Public hospitals offer medical services as one of their products, so they need to find out how to provide the services as to have competitive advantage. This research will therefore provide information and effects on patient satisfaction and loyalty to the public hospitals as follows. Firstly, public hospitals can use the findings of the research to help enhance patient satisfaction and to improve their services. Secondly, public hospitals can use the information to improve their service process, such as service quality, waiting time, price fairness, and communication skill. Lastly, this research will benefit the other servicing businesses in making decisions as far as services are concerned. To serve as the medical hub of Asia in accordance with the government policy and the result from this research will help managers, administrators, and business owners (stakeholder) to develop more adaptable and suitable policies to easily achieve quality services. In addition, this research will be advantageous to those who want to study or to continue their study in medical field. Moreover, it can make some significant difference towards improving the quality of healthcare industry, customer satisfaction, customer loyalty and develop health tourism to welcome future health situation in Thailand.

## 1.6 Limitations of the Research

This research studied the satisfaction of patients and their loyalty to public hospitals in Bangkok. There are many public hospitals in Bangkok, but the researcher focused only on the hospital institutions providing medical education and hospitals providing medical services. The research was limited to those areas for several reasons. First, it was so hard and long time to get permission from all hospital directors and the researcher had no assurance of approval. Second, the hospital policy is concerned with patients and disturbance is not allowed while patients are in queue. Third, the selected hospital for this study is too busy and it was difficult to get the patient's information using paper questionnaire during prime time as the patients were not interested to read, thus ignoring the questionnaires. Fourth, to decrease the paper work and avoid patients to feel uncomfortable, the researcher used the online survey while sitting beside the patient and reading the questions to clearly understand and feel more comfortable. Last, in terms of all public hospitals policy, patient's information cannot be taken from other departments, so the participants in this research were not from various medical departments.

## 1.7 Definition of Terms

Communication

Communication with the medical staff includes doctor, nurse, and others who have qualifications to work in the hospital, represent for sender to provide information to patient (recipient) and give clear answers in the treatment and self-care (Osgood, Suci, & Tannerbaum, 1957).

Customer loyalty

Loyalty is a deep commitment to re-patronize and repurchase the product or service in the future (Oliver, 1997).



Customer satisfaction	Satisfaction is the patient's evaluation on the service quality of the public hospital. It depends on the individual who gets the service and can be different from other people (Fitzgerald & Durant , 1980).
Perceived price fairness	The principle of both parties that should not benefit by causing a loss to other parties like when the company gets higher demand from consumer and raise the price up, it will let consumer perceived that it is unfair to them (Kahneman, Knetsch, & Thaler, 1986).
Service quality	Service quality is the customer perception that the service exceeds expectation and it is judged by customer not organization (Parasuraman, Zeithamal & Berry, 1988).
Waiting time	Service businesses have many levels for waiting and three basic stages of waiting that occur in multi-stages services: Service entry, In- service and Service exit (Dube et al., 1991). Customer's perception of waiting time is based on individual experience and reaction (Maister, 1985).

## 1.8 Chapter Summary

In the notion of hospital and customer satisfaction, it drives the public hospitals to be more effective in their services for competitive advantage. Chapter 1 presents the foundation of the study that the countries in the globe have changed and Thailand is

one them moving forward. The research background and research problem were based on the real situation that many people are facing and the public hospitals bear all the problems. To investigate the objective of the research and the limitation of the research while studying were presented in this chapter.



## **CHAPTER II**

### **REVIEW OF RELATED LITERATURE AND CONCEPTUAL FRAMEWORK**

The study attempts to know the dimensions of service quality (tangibility, reliability, responsiveness, assurance, empathy), communication, perceived price fairness, waiting time, and customer satisfaction towards loyalty. That means the service quality dimension, empathy of nurse and staff, and assurance of doctor have also positive impact on satisfaction and loyalty. Based on the theoretical literature on SERVQUAL, as it pertains to (Tangible, Reliability, Responsiveness, Assurance, Empathy) and communication, waiting time, and price fairness develop customer satisfaction and loyalty. This chapter presents the outline of the theory of framework based on literature review and explanation of the research.

#### **2.1 SERVQUAL**

In the world of business, the greatest part is service, for example the government provides services through court, police department, postal office, school, and hospital (Kotler, 2005). Nowadays, the competition in terms of service business is quite high and judged by customer who gets the service (Mackoy, 2011). Bowen and Chen (2001) said that service is the performance of activities that business creates for customer and the activities will communicate from the customer and back to the business purpose.

##### **2.1.1 Service Quality**

Quality in service is caused by the experience evaluated by the customer, and it is different from the product quality because it cannot be controlled (Brown, 1989). The relationship between customer and service provider is directly affecting the service

quality, so service industry has to pay more attention on price and the difference (Van, Prybutok & Kappelman, 1999). The way to win the competition does not depend on the price leadership but on the different positioning of service and the process to make customer more convenient is one of the major needs to consider (Crosby, 1979). Crosby (1979) also gave the meaning of service quality. He defined service quality as a reduced waste with zero defects, and Garvin (1983) evaluated on zero defects from inside and outside, but the meanings are mostly used for the production process and difficult to use for hospital industry. Service industry that links to service quality was mentioned as customer wants and the way to respond to customer needs (Lewi, 1983).

According to Parasuraman et al. (1988), service quality is the decision in the perception of customer and disconfirmation model is one way to evaluate the gap of quality and expectation (Cronin & Taylor, 1992; Parasuraman et al., 1991). Lewis (1983) gave the meaning of service quality as the level of the service that is provided to customer as customer expectation. Gronroos (1982) also gave the meaning that service quality is a technical quality as customer can perceive the functional quality. It is about the service provider or employee that seems like an empathy of employee. Rust and Oliver (1994) said that service quality has three types, which are service product, service delivery, and service environment. But, David Garvin (1998) argued that the quality cannot be compromised from the agreement and cannot be changed later. It is a stable variable and can be measured by customer as one of the variables. It focuses on the expectation of the customer whether the price is appropriate or not. So, service quality is the key for business growth (Martin, 1995). The business that has high competition in terms of service business has to build the service that can deal with customer expectation (Ghobadian, 1994). The service can have the qualities of intangibility, heterogeneity, perishability and inseparability (Bitner, 1998).

- (1) Intangibility: it cannot be felt, tasted or seen such as hospital service which cannot be touched by the patient. It cannot be counted as inventory or managed and difficult to communicate (Zeithaml & Dwanye, 2006).
- (2) Inseparability: it can be distinguished as Lovelock and Christopher (1991) said the concept involves the individual as a part of product by stimulating

interaction and performing services to the customer such as a doctor will perform a treatment procedure when fees are paid. Service quality and customer satisfaction are high in the healing process (Lovelock and Christopher, 1991).

- (3) Heterogeneity: it is a characteristic of service that supports the assumption that the customer demand will be highly effective from the service provider. (Zeithaml & Dwayne, 2006).
- (4) Perishability: it cannot be stored in the warehouse as goods or cannot be returned when it is destroyed. The nurse or medical staff cannot take back the services after they are performed to the patient, so it is different and challenging from the other industries (Zeithaml & Dwayne, 2006).

### **2.1.2 Concept of Service Quality for Hospital**

Milosevic (1999) pointed out the importance of measurement for customer satisfaction in hospital. He further emphasized that hospital needs to respond to customer expectation because it is a business that has to provide services to customer. So, it has to be concerned most on the need and expectation of the customer. Hospital is a business that take cares of human health and patients trust in using the service, so customer satisfaction is the most important factor that hospital has to pay attention to. The affordability of each hospital that offers quality service is intangible same as the other industries (Ford, 1997). Another challenge is like the traditional way wherein the patients do not know the deep information about the diagnosis of their health, but they believe in the physician and think that it is the best way to treat them (Feldstein, 2003). If doctors do not pay more attention to their patients, it might be due to the resources of the doctor (Feldstein, 2003). Anyway, patients can access more information and can select the best way and place suitable to them (Feldstein, 2003). From that statement, hospitals have to pay more attention to it, solve the problem on customer satisfaction, and try to improve the organization to build customer trust. Zineldin (2006) said that hospital service improvement is the key role by indebt understanding. In addition, Ovretveit (2004) clarified about quality adjustment in

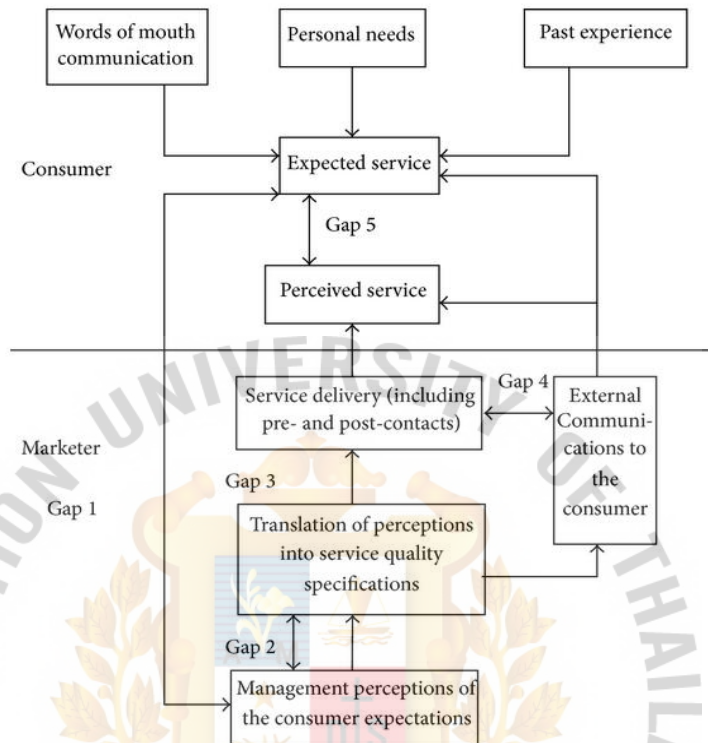


developing country: Patient dissatisfaction in terms of reliability of employee, over use of treatments that waste the limited resources, and humanitarian principles as patient protection and equity. So, customer perception and satisfaction will happen when customer purchases at the first time and continues to purchase based on the experience. To serve the right point, it needs to evaluate the service provided to the customer whether it exceeds customer expectation or not (Tang, 2000). So, SERVQUAL model refers to the level of customer perception on the service provider. It is the comparison between expectation and customer perception (Parasuraman et al., 1988).

### **2.1.3 SERVQUAL Theory**

Services are performed while goods are tangible (Berry 1980; Lovelock 1981). Services need more consistency from the service provider (Booms & Bitner, 1981) because customers are involved in the process, so they will see the quality of all things (Gronroos, 1978). Parasuraman, Zeithaml, and Berry (1983) studied about service quality and quality management in 1983. When Parasuraman et al. (1983) reviewed the past literature; they found that not many researchers had studied about service quality. However, a lot of researchers studied on product quality that made many people understand its meaning and about products. Not much information was given to understand service quality. Services are different based on three types, which are produce, consume, and evaluate. The main questions about service quality are (1) What is service quality? ; (2) What is the real problem of service quality? ; (3) How can the organization solve that problem? (Parasuraman et al., 1983).

**Figure: 2.1: Service Quality Model**



Source: A. Parasuraman, Zeithaml, and Berry (1985)

Gap 1: Customer expectation and management perception by the result is lack of marketing research and there is misunderstanding in communication.

Gap 2: Management perceptions and service specification by lack of commitment to service quality.

Gap 3: Service specification and service delivery by lack of ambiguity and conflict and may force to poor employee and other technology equipment.

Gap 4: Service delivery and external communication by lack of communication.

Gap 5: Perceived service and expected service by customer are influenced by word of mouth and experience.

Based on the service quality model on Gap 5, it is important to measure the ability of service of the hospital that hits the point of customer or not by SERVQUAL present as five dimensions to hit it. The research was investigated based on three questions

using exploratory research about service quality and it took seven years (1983 – 1990) into four periods. The first started with qualitative research from the service provider and customer. The second started with empirical research from customer by SERVQUAL instrument and developed based on the expectation of the customer. The third was the same solution with the second, but it has included the entire organization. The last period was the total of all the previous periods by interviewing both the service provider and the customer as seminar and research to many service industries. The aim of the study was to get the response on customer needs and wants, to make customer satisfied and effective than competitors. So, Parasuraman et al. (1985) gave the meaning of service quality as consumer perceptions about the actual performance of the service provider. Many literatures have suggested that service quality is evaluated from consumer expectation (Cronin & Taylor, 1992). It seems like customer impression on the service provider (Bitner and Hubert, 1994). The quality of service can be measured from the expectation and performance (Lewis and Mitchell, 1990).

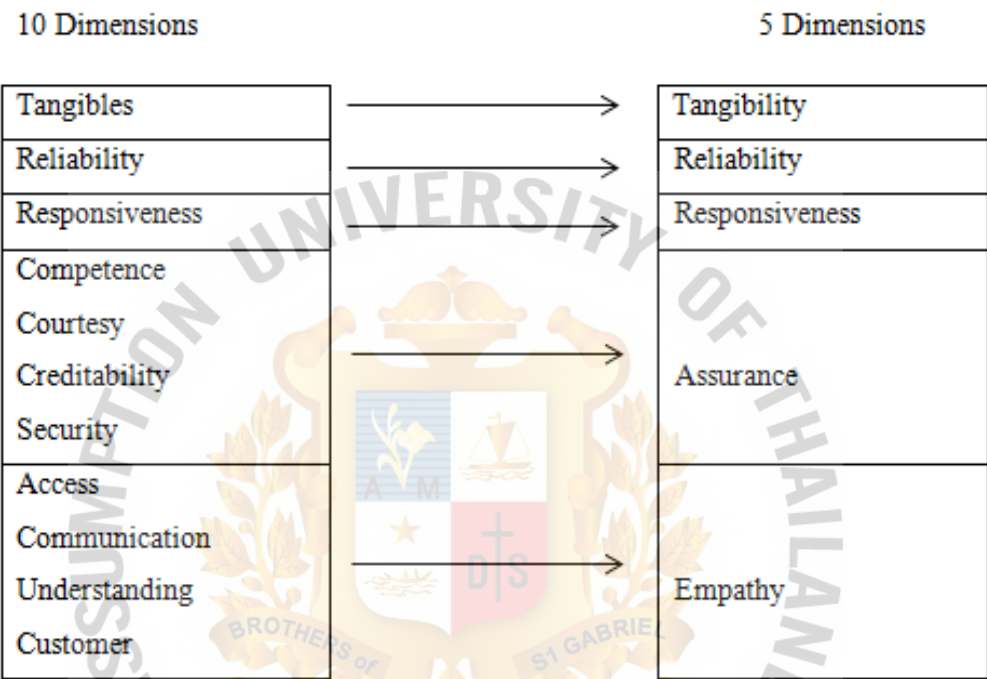
**Table: 2.1: Determinants of Service Quality**

Tangibles	Includes physical evidence of service	Physical facilities; appearance of personnel; Equipment for the service
Reliability	Involves consistency of performance and dependability	Performs the service right at the first time; accuracy in billing; keep correct record
Responsiveness	Concerns willingness or readiness, involves timeliness of service	Giving prompt service; do it immediately; do it quickly
Competence	Means possession of the required skills and knowledge to perform the service	Knowledge and skill of the contact person and operations personnel
Access	Involves approachability and ease of contact	Easily accessible by telephone; waiting time for service; convenient hours of operation.
Courtesy	Involves politeness, respect, consideration and friendliness of contact person	Clean and neat appearance
Communication	Keeps customer informed in language they understand	Explaining service itself; explaining trade-offs between service and cost
Credibility	Involves trustworthiness, believability, honesty	Company name and reputation; personnel characteristic
Security	Freedom from danger or risk involved	Physicals safety; financial security; confidentiality
Understanding customer	Involves making an effort to understand customer's need	Learning customer requirement; providing individualized attention; recognizing regular customer

Source: Parasuraman, Zeithamal and Berry (1990)

The first SERVQUAL model has ten dimensions and after refinement, it has reduced to five dimensions as shown in Figure 2.2

**Figure: 2.2: SERVQUAL Dimensions**



Source : Parasuraman, Zeithamal and Berry (1990).

- (1) Tangibility: Includes physical facilities, equipment and appearance of personnel. Healthcare service or hospital with good equipment, infrastructure and neatness of service provider will attract lots of customer and the simple way is to create a quality and positive attitude to customer. So, encourage customer to revisit the hospital for treatment.
- (2) Reliability: It 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: Includes willingness of personnel to help and provide prompt service to customer. Many customers or patients are dissatisfied when they have to



queue to meet the doctor or for treatment. Service provider should pay attention to promptness and communicate with the customers about the time they have to wait to make them satisfied, and the service provider should be trained to solve the 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 customers cannot afford the risk of it.

(5) Empathy: Involves employee's care and attention to customers. This is the ability to provide care to patient or customer and good relationship will create values to patient. When the attention is given to the patient, it will build empathy, trust and satisfaction on customer perception.

So, the researcher studied SERVQUAL theory and applied it to measure the service quality of the hospital because this theory is accepted and widespread to many industries. SERVQUAL is standard to access quality dimensions and can show the situation of each service. It is a reliable instrument from the respondent and SERVQUAL has the systematic thinking to calculate and analyze the result (Buttle, 1994). SERVQUAL model is widely used in many service industries with the objective to measure the satisfaction and expectation of each service. Nitecki (1996) used SERVQUAL model to evaluate the library service, to know the real expectation and improve the library system. The factor that had the most impact to customer was reliability while the least impact factor was tangibility. Wah (1998) used SERVQUAL model to assess customer satisfaction in sports center in Hong Kong and found that the factor that had the most influence on customer satisfaction was tangibles while the least influence factor was empathy. So, SERVQUAL model is famous to various service industries and the studies about the model can analyze patient's need by studying other departments of the hospital, such as Out-patient department, Emergency department, and In-patient department. All questions mentioned were about customer satisfaction and hospital reference (Reldenbach & Sandifer, 1990). Lim and Tan (2000) also evaluated the expectation and acceptance of patients in Singapore hospital. It has included 25 questions to 252 patients, and the result showed

the gap that hospital had to improve with all factors. Anderson (1995) evaluated the service quality of public hospital by asking 15 questions of SERVQUAL and using the five dimensions of service quality of Parasuraman et al. (1988) to measure the quality of the hospital. The result was dissatisfaction for tangible and the least dissatisfaction was empathy, based on the result that Anderson suggested about financial management to improve service quality. Also, Angelopoulou (1998) compared the hospital service between public and private hospitals in Greece and found that patients of public hospital were more satisfied with the assurance of the doctor and nurse, but private hospital patients were satisfied on physical facility and less waiting time.

Hospital industry mostly uses SERVQUAL to measure the difference between expectation and perception of customers who use the hospital service. Iyer and Muncy (2004) used SERVQUAL model to compare customer perception and expectation based on trust experience, and the result showed that customer who had high reliability rapidly responded, but those who had less reliability were concerned more on empathy and intangibles. In addition, Rohini and Mahadevappa (2006) applied SERVQUAL framework in the research conducted in Bangalore hospital, India. By the management of the hospital, there was a gap between perception and service provider. Fick and Brent Ritchie (1991) also found that the continuous treatment for different ages had different outcomes when continuously treated by the same doctor. Treatment by the same doctor was important to older sufferers, but it was not specified if the younger patients were treated by the same doctor. Same as Laohasirichaikulet (2010) who reviewed on perceive support quality to evaluate the impression of support quality in patient satisfaction and the impact of perceive support quality was extended to customer loyalty and management and business image. Choi, Lee, and Park (2005) investigated the connection between outpatient and quality dimension and found that around 50% of the customers were happy because of the problem on staff sizing, not enough doctors and nurses to provide the service. Also, the problem on sizing tangibles as amenities and medical equipment and that had an impact on customer perceive satisfaction on quality. However, SERVQUAL

model has the framework of service quality, that attitude came from the result when expectation of customer and service provider were compared (Parasuraman et al., 1985, 1988; Cronin & Taylor, 1992). Hence, it can be concluded that there is a positive relationship between service quality and customer satisfaction. The relationship of SERVQUAL dimensions is for satisfaction (Parasuraman et al., 1988).

## **2.2 Communication**

The environment of the communication in hospital encompasses interpersonal skills. Communication of medical staff refers to a doctor who has professional certification, nurse who has professional certification, and other who have qualification to work in the hospital. In terms of sender providing information to customer or patient and the response clearly answers to provide services and information to the recipient in the treatment and self-care (Osgood, Sucim, & Tannerbaum, 1957). Interpersonal skills include the important factor which is self-directed behaviors. It means the ability to communicate effectively and skills to interpret the expression (Duggan, 2006). It includes different behavior while transmitting a message by the tone of voice and facial expression (Duggan, 2006).

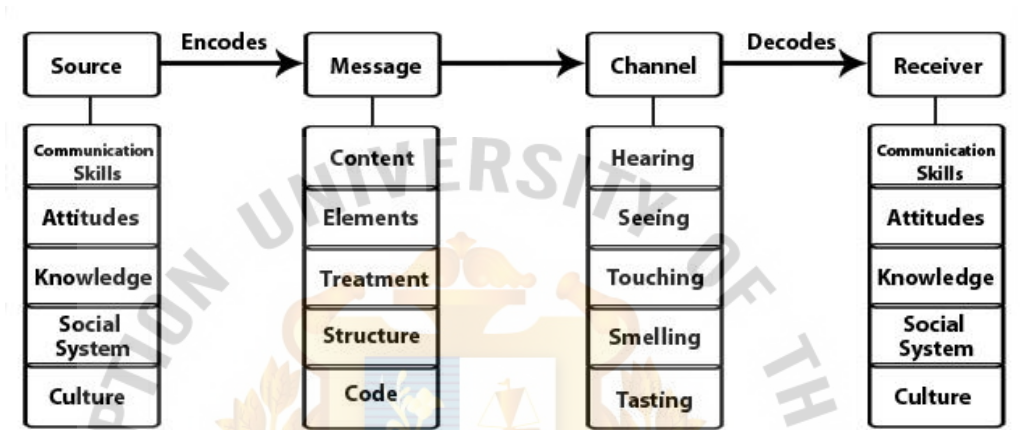
### **2.2.1 Person to Person Communication Theory**

Communication is a basic need for people as they communicate to live, learn, and understand life. It is a give and take communication, including thought and response (McQuail, 2005). Interpersonal communication is meeting, sharing, talking between person to person of both parties to understand each other and can respond immediately (Porama, 1996). Communication between people has intermediary in the communication, such as communicating by telephone, writing email, etc. This research has focused on the communication between two persons in medical or hospital to customer or patient and can expand meaning as Kitima (1999) said that person to person communication has important characteristic in terms of sender and

receiver, which is coactive to exchange information and feeling. Person to person communication is private because only two are involved and the topic is mostly about psychological data more than reason information. Both sender and receiver for person to person communication always know well each other as form of intimacy. So, person to person communication is the best way to convey feelings and wants of the sender to the receiver and get the reaction as a two-way communication, which is return information by verbal and nonverbal communication. According to Paul and Herbert (1963), communication between persons is more effective than mass media because talking privately builds familiarity to both parties, and the sender can adjust the information anytime while they are talking to get the feedback of the receiver. Face to face communication is a good way to communicate because in terms of psychological aspect, the listener can react if the talker talks something that is good to hear. So, effective communication means that both sender and receiver understand each other. Core and encounter of the service communication is the cause of consumer switching by their need to correct on typing, billing, politeness, responsiveness and knowledge (Keaveney, 1995). According to Chitapa (2005), Interpersonal communication is a unique communication. It is a communication that the sender and receiver are close together more than in any other communication. At the same time, communication is constantly changing that the sender can be the receiver and the receiver can be the sender. In terms of intimacy in the communication of the messenger, the communication will be released as verbal and nonverbal because the listener does not only listen, but also reacts as the talker (sender). All the reactions can be translated to meaning with speech immediately. Trenholm and Jensen (1991) said that interpersonal communication is communicated between two parties, and there is a change role between the sender and the receiver. Myers and Myers (1982) said that communication is continuous; predictions are staggering and non-stop to exchange the meaning to achieve the purpose for effectiveness in daily life. From the above information about interpersonal communication, it is the process of person that has complete major factors as sender, message, channel, and receiver. Figure 2.3 shows the model of communication of Berlo, which is called S-M-C-R Model. It is a model that shows the factors of

communication, which are sender, message, channel, and receiver. This model is very useful to explain the influential factors that affect the effectiveness of the communication.

**Figure: 2.3: Berlo’s SMCR Model of Communication**



Source : Berlo’s (1960)

So, sender and receiver have factors affecting their communication, which include communication skills, attitudes, knowledge, social system, and culture. For the message, communication includes content, elements, treatment, structure, and code. Berlo gave five channels of communication, which are hearing, seeing, touching, smelling, and tasting. In terms of healthcare provider or medical staff, the principle of S-M-C-R Model of Berlo’s. Boonsri and Siriporn (1993) must be used because the service job of a nurse in the hospital is a direct service to patient based on the researcher who studied the elements of interpersonal communication. Sender, source of message, communicator, information source, and encoder mean as person or group of people act as sender through channel to receiver to reach the objective of information, education, persuasion, and entertainment (Raweewan, 1991). Communication will be successful depending on the reliability and credibility of the source or sender. The sender has to express intention and build confidence to respond to the needs of the receiver. Especially interpersonal communication that needs interaction to react to the sender, so reliability of the sender is an important factor



(Wuthichat, 1991). In the process of human communication, message is not only word to speak or write, but it can be a symbol to communicate, so it is divided into two types of communication, which are verbal and nonverbal communication (Harrison, 1965).

Verbal communication includes oral. Oral communication is a face to face communication influenced by pitch, volume, speed, and clarity of speaking. Written communication is sign or symbols used to communicate. When the sender communicates and receiver has clear understanding, it means successful communication. Word of mouth is one of the verbal communication styles that is able to link the message with the consumer's mind, and it leads to more understanding and impression (Harrison, 1965).

Nonverbal communication is sending or receiving of wordless messages, such as appearance, body language, and sound. Approximately 60% of communication is used by people in their daily life that makes difficult to understand the behavior and meaning. So, effective communication means that both sender and receiver understand each other (Harrison, 1965). Teri and Michael (2013) also said that people use verbal communication to explain something, but they use nonverbal communication more to show their emotion that is hard to explain, and to get deep understanding, they most likely to show the posture and eye contact in their face. So, message or language that is use to communicate between customers or patients and healthcare providers is necessary by using tone of voice, reaction, and facial expression for the receiver to understand and cooperation for the treatment, such as counseling for patient, advice, give place information to contact, and continuous treatment. For the healthcare provider, it is useful to communicate with patients to encourage and motivate them for some treatment or diagnosis to make them comfortable and satisfied (Boonsri & Siriporn, 1993).

Interpersonal communication or communication between service provider and customer is very important. The message that healthcare provider needs to send to the

patient has to be encoded in the right way, which is appropriate for the medical profession. Roter and Hall (1993) conceptualized communication as task-oriented such as communicating while giving the medicine in an affective behavior. The relationship among nurse, doctor, and service provider requires functions for patient satisfaction. It is significant as the emotional aspect of communication in healthcare so that the patient will understand and is confident to cooperate for medical treatment. Medical communication is an important skill that links between understanding and knowledge and adjust the thought process. The result is people become close to one another other, sympathize for one another, and the relationship is built between two people, the medical personnel and the patient. It is the concept of diagnosing healthcare. Medical personnel's career has nature like monk, teacher, detective, and explorer because they have to analyze and help other people even beyond sickness. On top of that, medical personnel have to teach and explain to the patients for them to understand the problem and the way to treat them, so when the patients want to know the diagnosis, the medical personnel have to spend more than 60% for communication and only 15-20% for medical check up to explain the real problem (Suraphan, 2002).

Suraphan (2002) also said that the way to communicate and time to spend with the patient are different to get the result for the right diagnosis. However, if poor communication happens, it will lead to wrong diagnosis and the result will be negative to the patient. The patient's history can be taken in four steps as follows:

1. The approach used to patients who come to see a doctor mostly has abnormality in health and they feel not well, so healthcare providers have to use communication to make them feel more comfortable. It can start from introducing themselves and make relationship to make the patients familiar with the conversation.
2. The patient's account of the current illness by healthcare provider can be taken from the answers of the patient and can be seen from the reaction by asking questions about their health or symptoms. Healthcare provider knows the follow-up questions to get the right information to analyze the symptoms.

3. The interrogation by the doctor is after knowing the history of the patient's health. The doctor has to analyze the illness and if the information is not enough to analyze, the doctor can ask more questions to get through the symptoms by not asking the same questions, such as the patient's basic information, chief complaint, present illness, personal medical history, family history, and review of systems.
4. The taking of notes is done while asking the patient. The doctor has to take notes to review and rewrite in the summary. But, while taking down notes, the doctor has to do it carefully without disturbance in the conversation.

So, the way to communicate with patient is the beginning of communication for treatments and know the expectations or needs of the patient, and it builds patient's trust in the doctor, too (The Royal College of Pediatricians of Thailand, 2011). Chisanu (2005) said that at present, family and patient expect to get the best treatment and the best services. Doctor, nurse, and service providers have to pay more attention to services and communication as other ways to achieve the goal of the treatment. Communication in terms of healthcare is valuable and should be done. It will be successful in achieving patient and family satisfaction. Pravet (2006) also said that good communication is beneficial in terms of treatment and analysis. So, all doctors, nurses, and staff should have good communication skill. The important skills for communication to achieve the goal are as follows (The Royal College of Pediatricians of Thailand, 2011):

1. Relationship skills mean sharing of feeling by acknowledging or reflecting the feeling of patient to get the same understanding. It reflects the thought to share to share with thinking and support. Empathizing with patient, being neutral or nonjudgmental, and understanding them unconditionally have positive regard.
2. Facilitation skills by eye contact and posture, facial expression, and appropriate touch
3. Two- way communication makes patient easy to understand. The words of encouragement, silence to think more, mutual participation, and use of questioning to get more information, but avoid using "why" to get the answer.
4. Listening actively and understanding their situation

So, the concept of medical counseling communication for medical personnel can be used as a guideline for research. 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's perception on 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. This resulted in the success of the services. Patients and service recipients also felt satisfied with the services due to good communication skill of the medical personnel. On patient satisfaction or satisfaction expected by the patient, Aday and Andersen (1984) said that satisfaction is emotional or perceptive while customer is using the service as it as the expectation of the customer. So, Katz, Blumler and Gurevitch (1974) explained that the different social and mental conditions have an impact to different human needs and expectations. Hence, it can be concluded that there is a positive relationship between communication and customer satisfaction (Aday & Anderson, 1984).

### **2.3 Perceive Price Fairness**

The foundation of price fairness is the principle of both parties that should not benefit by causing a loss to other parties like when the company gets higher demand from consumer and raises the price up, it will let consumer perceive that is unfair to them (Kahneman, Knetsch, & Thaler, 1986). When compare to the service business as the sufficient of hospital in terms of marketing is concerned on fair judgments that the process based on prevailing norms and behavior (Thibaut & Walker, 1975). From that relationship will be frequency of patronage in the context of full service restaurant. Palmer and Cole (1995) said that the quick of global that makes a lot of change for health care so the way of patient behavior will be satisfied with the service will be changed, too. Ayas, Eklund and Ishihara (2008) studied affective qualities of health scope in primary healthcare in waiting area. It showed that lighting, sound level, and

seating arrangement can create customer or patient feeling. They are important for the feeling because they affect patient's physical problems. Debajani and Tathagata (2016) made a study on private Indian hospital and nursing home services, which are very popular because the environment of the place and facilities make the patient feel like home. It have staff to take care with diagnosis good enough to get satisfied from them, but they cannot confirm for service personnel's conduct and cleanliness and upgrade safety services on patient satisfaction so that not reflect in creating satisfaction among patients.

The previous research on price fairness can be divided into two categories: (1) exploration and identification of history to price fairness perception (Bolton & Alba, 2006; Campbell, 1999), and (2) examination of the impact on attitude and behavior of consumer (Lii & Sy, 2009). Perceive price fairness is defined by consumers that they feel is reasonable (Xia, Monroe, & Cox, 2004). Fairness is less objective but more on subjective judgment because consumers perceive it regardless a perception is correct or not. It may not critical until consumers perceive it as unfair (Xia et al., 2004). The previous research found that price fairness perception is influenced by various dimensions. To be specific, Xia et al. (2004) presented that price difference is only when consumers do a comparison and consumers based it on their experience, cost of goods sold and competitive pricing to make comparison. According to the social comparison theory, customers always choose similar to other after they evaluate in their own opinion (Festinger, 1954). So, customers will see the other customers who pay for the product or service as comparative reference, and if they pay higher than the others, they may feel the unfairness (Xia et al, 2004). The factor that makes customers feels when they compare and its fairness. They will feel the proper price when they compare with the product and price. Price perceptions of the consumer can be defined as quality of product or service that customers are willing to pay (Zeithaml, 1996). Customers can show positive intention by increasing the purchase, paying premium or recommending to others, and continuing the purchase when they feel they are satisfied on that (Zeithaml, 1996). Another foundation of price fairness awareness is the price qualification principle, which implies that one party should not



make a profit for another party. If a company uses higher consumer demand for consumer benefit through price increases, consumers will feel that they are exploited; therefore, they will perceive the price as unfair (Zeithaml & Bitner, 2000).

As price tolerance also provides an important indicator of loyalty, firms interested in assessing the long term benefits of customer satisfaction should consider using price tolerance measures along with more traditional measures of loyalty, such as repurchase intentions and willingness to recommend (Anderson, 1996). Price in terms of service can influence customer perception. The principle of fairness is distribute outcomes, means that individuals judge the fairness of relationships based on compensation from outcome to relationships (Homans, 1961). Customers rely on price to judge the service that meets their needs or expectations. Customers will expect more service when the price is higher than normal price, and in the opposite way, if the price is lower than the normal price, customers will doubt the ability of the company to deliver appropriate services. So, for any situations, it influences and impacts on customer perception (Zeithaml & Bitner, 1996). On top of that, when customers perceive price unfairness, it leads to negative perception and will lead to self-protection or revenge action (Xia et al., 2004).

Price fairness is positively related to customer satisfaction (Campbell, 1999). According from Adams (1963), the theory of Equity is a concept of fairness. The theory focuses on the person motivation and consider being fair when comparing to others (Redmond, 2010). The theory was developed in 1963 and recognizes that motivation can be affected by individual perception. It depends on when compared to other people who want fair compensation for the contribution. Either fair or unfair, it can affect their motivation, attitudes, and behavior. In the same way, this theory shows that one's perception is relative to their own reality. Normally, equity theory focuses on employee compensation relationship, but the concept is nearly to price fairness in terms of relationship for comparing inputs and outcomes with internal drive and perception of customer. Inputs can be defined as anything of value that a

person brings for service, for example expense, experience, education, skills, characteristics, motivation, time, etc. (Redmond, 2010).

Outputs can be defined as the benefits that a person is awarded for service, for example satisfaction, empathy, etc. (Redmond, 2010).

Scenario of equity

$$\frac{\text{Outputs}}{\text{Inputs}} = \frac{\text{Outputs}}{\text{Inputs}}$$

Scenario of no equity

$$\frac{\text{Outputs}}{\text{Inputs}} > \frac{\text{Outputs}}{\text{Inputs}} < \frac{\text{Outputs}}{\text{Inputs}}$$

So, the theory of equity shows that if a person perceives unfairness, she or he will stop doing it. Same as satisfaction in service, if customers perceive that the quality of service is lower than they pay, they will be dissatisfied. Millet (1954) wrote about satisfaction in service or ability to create satisfaction in service business by the following ways:

- 1). Ability to create equitable service as everyone gets fairness in the service, no level or status to separate and should take the same service level
- 2). Ability to manage timely service, means that the service should be on time and quick. If it is not on time, it will not be effective for that process and will affect satisfaction.
- 3). Ample service means to have enough resources to provide to the customers
- 4). Continuous service means providing regular service and thinking of public purpose before self-advantage
- 5). Progressive service means that the service is always adjusted and evaluated to increase the service provider's effectiveness.

Service business industry is different from the other industries because it has intangible products to be provided to the customers. Kotler and Armstrong (2001) said that service business is activities from one to the other, and it cannot be seen and

touch by linking with the product of the business. Before, marketing mix had only 4P's (McCarthy, 1964).

**Product:** Goods being provided to be sold for business purpose. To respond to the customer needs and the product can be tangible or intangible, so there is a combination of product service, idea, place, and organization and should be utilized and valued by the customers. And things that present to customer to responds to customer expectation and consider to limitation of service, level of service, and after sales service.

**Price:** Value of the product in terms of money. Customers will compare between cost of product and value that they perceive for the price they pay, if the product is of high value, customers may purchase it.

**Place:** Channel to move the products or goods to the market will be distributed as goods to the customers. The location of the place is either easy to access or not. It is not only in physical facility, but also includes communication.

**Promotion:** communication between the seller and the buyer to build customer perception and consumer behavior. It can be advertising, sales promotion, direct marketing, online marketing or public relations depending on the strategy.

Booms and Bitner (1980) added three more Ps (People, Physical evidence, and Process) as factors.

**People:** It can be staff who provide services to establish good relationship and need to be trained on how to achieve customer satisfaction. For the customers, after using the services, they can suggest to others by word of mouth.

**Physical evidence:** In terms of atmosphere, it comes from the surrounding environment. It can be captured through five basic human senses, namely sight, smell, touch, and taste and tangible elements, such as physical setting, ambience, layout, facility and infrastructure.

**Process:** In the group of service business, the process is to provide service. Even though the staff can provide great service to customers, but some steps in the process cannot be managed such as waiting time for queuing, so it has to be paid more attention on the process of the service and deliver of service to the customers.

Chaowarit (2003) studied out-patient's satisfaction in the public hospital of Ayudhaya province and found that medical equipment and medicine had impact to customer satisfaction because they were not enough not up to date. However, patients had high satisfaction on price of the medical fees as it was consistent with Saowaluck (2008) who studied on price factor affecting customer satisfaction in private hospitals charging higher fees than public hospitals, so customers had average satisfaction on the price. Same as Juthamas (2005) who studied the government project of gold card (30 baht can treat all diseases) and found customer dissatisfaction on the service because when they used that quota, the medicine and medical equipment were not enough and lack of proper use of products. Staff personality was one of the factors that affected customer satisfaction because patients needed nurse to take care of their health. Patients were dissatisfied, but they were satisfied on the fees they paid in the hospital.

Pakorn (2007) researched on customer satisfaction in Danmakamtia hospital at Karnchanaburi and found that the location of the hospital was easily accessible that raised customer satisfaction. It was consistent with Salari (2011) who studied consumer behavior of OPD who used the public hospital in Samuthsakorn. The result revealed that consumers were happy and willing to go there because the hospital can easily accessible by public transportation. Palmer (1991), the quick of global that made a lot of changes for health care, so the way of patient behavior is satisfied with the service was changed, too. Ayas et al., (2008) studied affective qualities of health scape in primary health care in waiting area. It showed that lighting, sound level, and seating arrangement could create customer's or patient's feeling. It is important on feeling because it affects the patient's physical problems. Same as Holder and Berndt (2011), they examined the extent of patients' perception on mother's pregnancy and found that the dimension of service quality are reliability, responsiveness, and tangibles in maternity clinic.

Liu (2006) studied the variables that drive patient satisfaction, which are competent or convenient physiological care, empathy, respect, communication and attention, and

spiritual care's connectedness with self, others, and god. Debajani and Tathagata (2016) studied a private Indian hospital and nursing home where services were very popular because the environment of the place and facilities could make patients feel like home. It has staff to take care with diagnosis good enough to get satisfied from them. But they cannot confirm for the service personnel conduct and cleanliness and upgrade safety services on patient satisfaction. So, it did not reflect in creating satisfaction among the patients. Environment surrounding customers has high impact when they are waiting, such as noise, crowded area or bad weather (Davis & Heineke, 1994). Silvestro (2005) studied patient perceptions in one NHS breast cancer screening unit and found that diagnosed patient perceptions are different from another factor emerging as important for patients, the four most important service quality factors were: reliability; integrity; functionality, and comfort. The location and look, appealing decoration, ambience and facilities, and service delivery had positive effect on customer satisfaction. From the recent study, it was found that no promotion factor is related to hospital service. Hence, it can be concluded that there is a positive relationship between product, price, place, physical environment, people, process and customer satisfaction. The location and look, appealing decoration, ambience and facilities, and service delivery have positive relationship with customer satisfaction. From the recent study, it was found that no promotion factor is related to hospital service.

Weber (1966) provided the concept of service, that effectiveness service is the most beneficial to customers. It means that as a service provider giving service to customers, more attention is given to the customers first and service without self-motivation, unfair and everyone get the same standard. After using the service, when customers are satisfied, it means the service provider can manage the situation. So, the purchase expectations and experience both influence customer satisfaction, meaning if you deliver high customer satisfaction, you can charge more (Cardozo, 1965). Price is the charge that hospitals claim to be sufficient for customers to make decision if it is valuable (Zeithaml & Bitner, 2000). Anderson (1996) also investigated between satisfaction and price acceptance, whether good or not, it depends on two constructs



and his study found the positive association between change in customer satisfaction and change in price acceptance. Thus, Keaveney (1995) proposed that pricing is a main cause of customer switching in the service industry. Pricing has four subcategories, which are high price, price increase, unfair price, and deceptive price and all have implication that if consumers accept these situations of pricing. It will decrease on switching for service. Pat (1980) also studied about healthcare in Thailand that many people use the public healthcare because of the price fairness, but Jerapatra (2003) argued that it depends on consumer accountability and situation of economics. Price fairness perception is also price procedure fairness that is positively correlated in order of influence the sequence of consumers who receive the price offer and the price information (Van, Vermunt, & Wilke, 1997). Hence, it can be concluded that perceived price fairness has positive relationship with customer satisfaction and positive relationship between service marketing and customer satisfaction (Parasuraman et al., 1988; Zeithaml & Bitner, 1996).

## **2.4 Waiting Time**

Customer's perception of waiting time is based on individual experience and reaction (Maister, 1985). Many psychology theories attempt to suggest the way of people to make decisions and judge other people (Dube, Schmitt, & Leeler, 1991). And it can be applied for people reaction to waiting time, such as how people perceive waiting time, how to solve waiting time situation, and how they judge the service being provided during waiting time (Hui & Tse, 1996). Dissonance theory and waiting time information can reduce customer dissatisfaction while waiting (Clemmer & Schneider, 1993). The basic of this theory is the experience of dissonant cognition that may make people feel uncomfortable (Festinger, 1957). Clemmer and Schneider (1993) studied to support the theory of dissonance that notice on waiting time affected customer satisfaction of waiting line in bank and the result showed that when the service provider gives prior information or inform about waiting time for customers, it influences customer satisfaction. When people judge another behavior, it means that

people have the tendency to evaluate the intention of those people such as if customers need the service provider to make something to reduce the waiting time, they will blame it to the service provider (Bitter, 1990).

Taylor (1994) studied about time delay that might affect customer 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. Customers who use services of business like restaurant, hospital or bank may feel that the time they spend for waiting is wasted (Dube, Schmitt, & Leclerc, 1991). People are less tolerant when they need to wait in whatever situation, and for their lifestyle, they spend their free time less than before even the step they walk they increase the speed to show that time pass you need to walk more quickly than others, so when customers use the service that has long queue or waiting time, they might not be satisfied (Dube et al., 1991). When they are faced with problem, they may complain about it (Taylor, 1994).

Many service businesses have many levels for waiting and the three basic stages of waiting occur in multi-stages services, which are service entry, in service, and service exit (Dube et al., 1991). Also, employees have high impact when customers are waiting and they feel being ignored or treated rudely by employees, which lead to frustration (Bitner, 1990). Some customers have negative feeling about waiting time (Taylor, 1994). And the reaction of customer can be negative and positive about waiting but waiting time can attract people or consumer by environment area because when people or customers perceive that positive feeling while waiting, they will feel that waiting time is shorter than the actual (Dube et al., 1991). So, the way to increase customer feeling for waiting time should be improved, waiting area environment is to be clean and provided with beverage (Hui & Tse, 1996). The best way is do the right thing at the first time, it means that service feature and service problem have major impact on customer satisfaction and their intention (Swart & Donno, 1981). The

queue number from input the service area to output the service is also the thing that staff needs to manage well (Parasuraman, Zeithaml, & Berry, 1994).

Parasuraman et al. (1994) said that if suppliers have enough capacity, waiting is unnecessary because service providers are the suppliers and service demanders are the customers. Swart and Donno (1981) studied about Burger King, full service restaurant located in USA. The result was on the waiting time when customer entry to the service was more important than exit. Aleisa and Alhemoud (2009) found that the speed of service is the most crucial attribute from bank in Kuwait, so the level of service quality in terms of easiness to open account, transparency, and time taken had positive effects to customers. Taylor (1994) studied that delay will decrease customer satisfaction and get the result customer no need to get the queue, it means as wasting time. Same as Oakes (2003) who studied the relationship of perception on music and waiting time. He suggested that music like classic music or slow music can be used to reduce the emotion of customer to perceive about waiting time and improve the positive reaction when the waiting time of customer is short. Thus, Katz, Larson, and Larson (1991) also studied the bank teller line that has influence on customer satisfaction in short waiting time and the private sector bank of India determined that knowledge of products, response to need solving question, fast service connected to the right person and effort to reduce queuing time have positive impact on customer satisfaction (Katz et al., 1991). Baker and Cameron (1996) investigated the importance of the physical environment that can affect the service business, such as lighting, temperature, music and color can manage the perceive of waiting time of customer because of the higher lighting, greater temperature to be comfortable, music can lessen boredom.

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 like failure. Queuing is a common experience that everyone can face because of the limited of resources. So, the objective of queuing systems is to balance the service and customer. 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). So, queuing or waiting time is one factor that patient pays more attention in terms of service business. Quick service time is the heart of healthcare service because of most customers who use the service are sick then if they spend long time for waiting, it will drive patient health and mental (NHS Scotland, 2003). So it will drive patient and their family have negative feeling to that hospital (NHS Scotland, 2003).

Thus, service business is intended to manage service time because waiting time can give customers negative perception and it will affect customer satisfaction. Waiting time is the key factor showing service quality of the process of staff (Hui & Tse, 1996). In Thailand, waiting time is really important in terms of satisfaction, so the government pays high attention to waiting time and cycle time of each procedure (Committee of Development of Government Thailand, 2005). So, waiting time starts from getting in service at the beginning until meeting the doctor. Customer satisfaction is expressed through comment, feeling, perception, and attitude of customer affected by the service from the beginning until the doctor checks the patient up. However, fast and efficient services are valued by the customers. Both doctor and nurse are important to healthcare industry as they provide diagnosis and physical treatment, so doctor spends more time on specialized treatment in order to assess the root of the patient's symptoms and for making decision to do something with the patient (nursing degree guide USA, 2016). The activities of the nurse are changing bed sheets, drawing blood, and handling medical equipment, but nurses are not authorized to do anything without the doctor's approval. So the time that nurse spends, it comes from an experience between them and patient (nursing degree guide USA, 2016). Service time of staff can be responsive from the service provider such as they have knowledge and expertise on that work, they can solve problems quickly and can give patient information in short time.

Dobre (2013) studied the impact of waiting time and service scape at a dental clinic. So, the good quality of the core product or service is the aim that customer pays attention to. While customers are waiting in line, they need good area with good environment, not noisy, not too hot weather, and with enough space of line area. Kornnipa (2011) studied the patients in Karnchana medical center, Mahidol

University. The patients had appointment, waiting for 13 minutes and waiting for the doctor for 24 minutes. But, in the past, patients needed to wait for the doctor for more than 30 minutes and those patients who did not make prior appointment waited for more than 60 minutes. The result from 50 patients, they were 100% satisfied with queue card, and it increased customer satisfaction level to 100%. Like and Zyanski (1987) studied the determinant of patient satisfaction in Cleveland and found that patients who spent more time with the doctor made them less satisfied. Morrell, Roland, Bartholomew, Courtenay and Morris (1986) also studied on time the effect to patient satisfaction and they found that patients felt they had inadequate time with the doctor when they visited for only five minutes but waited for 15 minutes or delay from the appointment card. Time service is the time of each process being spent and it means professional server serves the customer. From previous study, it was found that waiting time is related to the satisfaction of customer. For healthcare industry, most of the patients have high impact on their perception and satisfaction because they need to get short waiting time and proper time for each treatment process. To gain satisfaction from clients, service providers need to have efficient time and quality service. Hence, it can be concluded that there is positive relationship between service time and customer satisfaction (Hui & Tse, 1996).

## **2.5 Customer Satisfaction**

Satisfaction is the thing that happens to everyone when getting response from 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 human needs something and cannot get it, so when human gets what he or she needs, it will satisfy him or her. Reichheld (1996) gave the meaning of satisfaction in feeling theory, positive and negative feelings combined together. The feelings have complex relationship. It is called satisfaction when the positive feeling is more than the



negative feeling or the stimuli can respond to the needs, human behavior will happen when something motivates or drives to pressure their need. Human needs are different from each person in terms of biological and psychological aspects, stress, recognition, esteem or belongingness. Most of the needs are not enough, so if they have more needs, it will transform to stress (Kotler & Armstrong, 2005). So, when people need to succeed in their feeling, they need to achieve the goal and satisfaction is the psychology that cannot be seen but it can be measured by surveying people's behavior (Anderson, 1973). From behavioral dictionary, it says that satisfaction is the environment of people's feeling combined with happiness when the need or motive happens (Wolman, 1973). Level of satisfaction comes from intention and attitude of people (Oliver & Swan, 1989). The state of mind without stress is when human needs something and gets response by something it will decrease some stress. In the same way if their need cannot get response the stress will happen and drive their mind (Oliver & Swan, 1989). So good feeling or positive attitudes of people happen when they get what they want. Customer satisfaction means customer needs and ability of service provider to fulfill their needs (Oliver, 1997). The way to fulfill customer can understand what customer wants or expects (Oliver, 1997). The business can use rate of customer satisfaction to be customer retention to increase their profit (Reichheld, 1996). So, the quality of the service is the key point to get that satisfaction. Server needs to build the service more or equal to customer expectation and the expectation comes from the experience of customer (Kotler & Armstrong, 2005). Customers always compare the experience they receive when they feel lower than they expect it will be dissatisfaction but when it is higher than their expectation it will be satisfaction (Kotler & Armstrong, 2005).

Since the early 1990s have many researches on customer satisfaction the main idea to investigate the satisfaction related to the size and direction of disconfirmation experiences, where disconfirmation experience related with the person's initial expectation (Parasuraman et al., 1991). And satisfaction of customer who uses the service is the one of evaluation tools for hospital service (Loeken, Steine, & Sandvik, 1997). Loeken, Steine, and Sandvik (1997) offered an idea for evaluation to patient

satisfaction by four steps, which are structure as physical environment that convenience and easy to access; process as the skill of service provider communication or skill to service; discomfort as discomfort body and mental and General satisfaction in the present; and effect to the future. Wanlapa (1989) also proposed an idea for patient satisfaction that should have physical environment as cleanliness of the place and equipment, surrounding control and appropriate temperature, availability of the service as ability of service provider to respond to patient, technical skills to respond to the basic patient's needs, such as the building, clean toilet, take care process, treatment process, the skill for any medical equipment, the art of care as empathy of staff, attention to patient and prompt service in terms of timely service, on time and no waiting time, the explanation of care as introduced to the place, the treatment and the result in the nearest future and continuity of care as the same person who treats as previous and need more understanding to patient. Thus the factors that influence patient satisfaction from Jittinan (1995) relative to service marketing mix theory are products of hospital services, the quality of products has to equal or over the expectation of customer, price of the service depends on consumer perception that they willing to pay or not and it is different from person to another person, place of the service as convenient to access and the location in good area, communication of the service provider as customer satisfaction will hear news or from other customer about hospital information and if it is positive it will drive customer satisfaction to use the service, the service providers or medical personnel have important role to the service sector and it creates customer satisfaction. Manager can use the policy to service provider to create value to customer and physical evidence has high impact on customer satisfaction. So customer or patient satisfaction means, the service that is provided to patient can eliminate the stress of patient and over the expectation of patient. In fact, customer can perceive that the service provided has real value and customer satisfaction is the key to retaining a customer, too (Cronin, Brady, & Hult, 2000).

So, satisfaction is the customer's feeling about the gap between customer's expectations towards a company (Cronin et al., 2000). However, customer satisfaction

is considered as the customer's response to evaluate the discrepancy between the expectation and performance of the service (Tse & Wilton, 1988). Hospital or health care have specific traits by attitude of customer that is different from other industries. Morrell et al., (1986) also studied on time that the effect of patient satisfaction is same as Like and Zyanski (1987) who studied the determinant of patient satisfaction in Cleveland and found that patient who spent more time with the doctor will make them less satisfied. The elements comprising that patient satisfaction are included in the expectation of patients that need to tell their story and have their physician to listen, the communication that the physician is taking the problem seriously and explain clearly with understanding and time spending that not too long or improve the length of the healthcare visit. When the hospitals have zero defect, response to customer's need and expectation and have professional standard they will reach the patient satisfaction to get the quality of life (Anuwat, 1999).

Kotler and Armstrong (2005) said that patient satisfaction on the hospital will happen when the hospital has quality of the service, it could be tangible and intangible more than customer expectations, including after service. Millet (1954) also provided satisfactory service theory to measure that service gets less or more satisfaction. Equitable service is equity service for all customers; timely service is by necessity and rapidly under need of patient; ample service is enough to provide customer with medical staff, equipment; continuous service is to continue the treatment until the illness is cured or get well; and progressive service is to improve the service and increase the quality. Aday and Anderson (1971) also specified the six basics for customer satisfaction in hospital service to evaluate customer access. One, satisfaction to service provider (waiting time, prompt service, convenience service). Two, satisfaction to co-ordination (customer gets all the services needed, service provider pays attention as holistic view, continue and follow up). Three, satisfaction to courtesy. Four, satisfaction to medical information. Five, satisfaction to quality of care. Six, satisfaction to out of pocket cost. Penchansky and Thomas (1981) also provided the general characteristic of healthcare service between service provider and customer, which are availability, means sufficient of the service to the needs of

customers; accessibility, means ability to access the service; accommodation, mean convenience and full of facilities; affordability, means ability to pay the cost of use or the insurance to cover; and acceptability, means acceptance of the service. So, Parasuraman et al. (1988) said that the success of service business needs to have these factors to build satisfaction on customer, which are reliability including consistency and dependability; responsiveness including willingness to service, prompt service, continuous service and treat customer well; competence including service, ability to communicate and skill and expert in service field; accessibility including access, less waiting time, service time is convenient time to get the service and easy to contact; courtesy including gentleness and courtesy, appropriate welcome and good personality; communication including communicate the service description and explain the process to get the service, credibility, security; understanding including customer, advice and pay attention to customer; and tangibility including prompt equipment for the service, equipment for service convenience and monitor the place and location to be clean.

Oliver (1989) tested the relationship between relationship and satisfaction and the result is service quality leads to satisfaction. Lovdal and Peerson (1989) found that physician behavior will affect patient's attitude about the hospital as a whole. Also, they confirmed that patient give more importance on physician than instrument. Hence, it can be concluded that there is a positive relationship between customer satisfaction and customer loyalty.

## **2.6 Customer Loyalty**

The meaning of Loyalty as is deep commitment to re-patronize and repurchase in the future for the product or service (Oliver, 1997) It comes from the attitude for brand of product with service so when customer perceives the real value of the product it will affect repurchase and loyalty (Zeithaml, Berry, & Parasuraman, 1996). Customer's value for the business is the customer loyalty in brand of product or service. So, marketing strategy should build customer loyalty and needs to specific customer.



High intention and purchase in big lots of product will be the company's profit and long term profit coming from loyalty strategy. Loyalty is the tool to increase sales and protect market share that is difficult to handle. Anyway loyalty is much more difficult to happen than repurchase behavior (Kotler, 1997). Long term success of business is not measured by amount of customer that one purchases but is measured by customer who repurchases the same brand and continues to purchase, so loyalty can well explain the success of the organization (Zeithaml et al., 1996). Repurchase for the brand from now to future (Oliver & Richard, 1999). Individual relative attitude and repeat patronage (Dick & Basu, 1994).

Loyalty came from the good attitude of customer that affects repurchase and will drive customer satisfaction, too (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, 1999). Anderson and Sullivan (1993) suggested that the customer who is dissatisfied will search more information to be the choice than satisfied customer. In addition, the previous research shows that satisfaction is a reliable predictor of repurchase intentions (Wang, 2002). When businesses get customer loyalty, they are the most profitable and this is free marketing channels as they will get more customers by word of mouth (Lejeune, 2001). Customer loyalty is defined and measured by customer behavior and the degree of customer to engage in repeat purchase (Day, 1969). However, customer behavior is not accurate to be an indicator for customer loyalty, but it depends on certain situation and attitude toward the brand (Oliver & Richard, 1999). In the recent research, Bloemer and Josee (1998) researched about customer loyalty and separated in two sections. One section is behavior of customer that is repetitive of the same brand and also recommends to others. The second section is customer attitude that may repurchase up to the limited choice available. Dick and Basu (1994) investigated that service quality such as tangibles, empathy include with communication affected loyalty positively and hospital business, loyalty's patients are important to them in terms of long term business for marketer segment the customer by customer loyalty because it is the

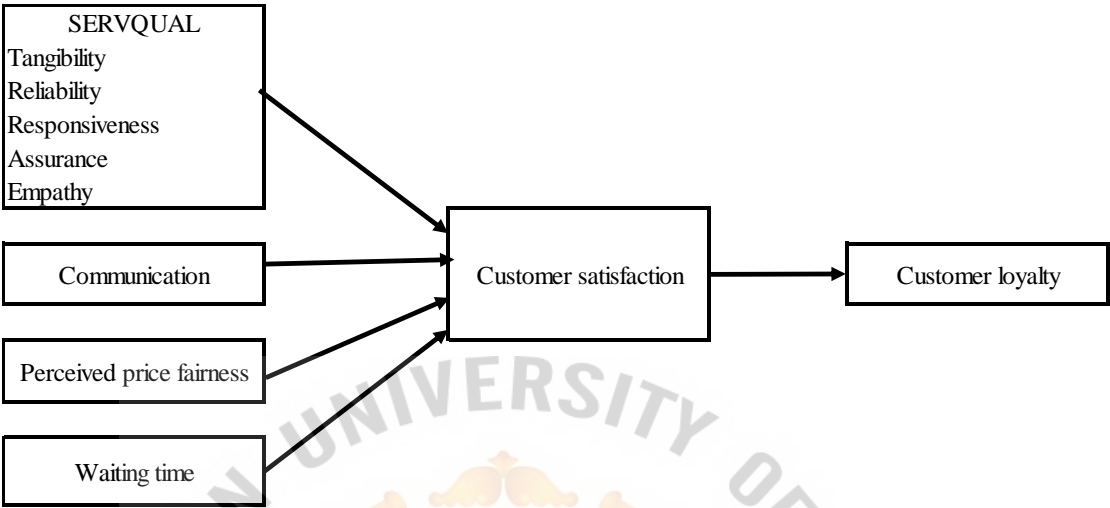


thing that can increase sales and protect market share. And Boshoff and Gray (2004) also said that when customers are satisfied with meals, fees and the service will find as positively loyal. Moreover Getty and Thompson (1994) studied the relationship between customer satisfaction and loyalty, then they found that when customer is willing, they will recommend to other customers. Hence it can be concluded that there is a positive relationship between customer satisfaction and customer loyalty. Orathai and Nak (2011) studied on service quality and loyalty for customer behavior of medical tourism foreigners in Bangkok hospital and the objective was to develop the standard of service quality measurement. And investigate to relationship and ability to predict the factor. Lakkana (2011) studied on customer satisfaction to healthcare clinic and the objective was to study the factor that affects satisfaction and the result was customer was satisfied on the service of doctor, nurse and staff and more than 80% have strong intention to use this hospital.

### **2.6.1 Customer Loyalty Affects to Customer Satisfaction**

Customer satisfaction is the purpose of all organizations (Zairi, 2000). Satisfaction of customer also means as feeling and emotion of happiness or disappointment from comparing the product that link to customer expectation so customer can regard as mental state that compare with expectation, price and service performance (Kotler, 1997). Characteristics of service provider, environment and communication may affect satisfaction level. Customer loyalty in another meaning can be defined as commitment to repurchase (Oliver, 1996). Satisfaction gets accepted as a condition for patient loyalty. As confirmed by many literature reviews that customer satisfaction happens on consumer perception from the experience and when they perceive that it satisfies their need they will not seek another option to use other service (Oliver & Richard, 1999). The satisfaction loyalty can be explained by the increase in the number of customer satisfaction and the decrease in the number of customer complaint so it means customer loyalty (Fornell, 1992). Thus many previous studies have studied on satisfaction of consumer affecting consumer loyalty and it ensures that satisfaction is influenced and have positive relationship with loyalty.

**Figure: 2.4: Conceptual Framework**



Source: Author

### 2.7 Chapter Summary

In the era of healthcare system, there have been rapid changes in healthcare market. It has more competitors, various kind of patients so the quality of healthcare or hospital service is defined as the competency and ability of staff that provide services and should be emphasized on service. SERVQUAL model is a famous model used for service business and it measures the actual satisfaction numbers of customer. It reviews many literatures and reveals that there is a positive relationship between satisfaction with service time and communication. The researcher has identified other factors that may result in patient satisfaction with price fairness of the medical instruments. Boonshoof and Gray (2004) have conducted the relationship between service quality and buying retention.

## CHAPTER III

### RESEARCH METHODOLOGY

In this chapter, the research would examine the relationship between SERVQUAL, communication, perceived price fairness, waiting time and customer satisfaction, customer loyalty and demographic data as shown in research framework. The researcher described the research design, sample and data collection, data analysis, reliability test and factor analysis of pilot test to get the result based on quantitative method. The purpose of this research, as previously discussed in Chapter 1, is to identify the factors that affect customer satisfaction in public hospitals in Bangkok.

#### 3.1 Research Framework

It 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 purpose that the variables positively influence customer satisfaction and loyalty. When customers are satisfied, it influences customers loyalty positively.

#### 3.2 Research Hypothesis

The conceptual framework posits mediates relationship on customer satisfaction between service quality (tangibility, reliability, responsiveness, assurance and empathy), and communication, perceived price fairness waiting time and customer loyalty. It is developed to test 17 hypotheses as follows:

### **3.2.1 Relationship between SERVQUAL, Communication, Perceived Price Fairness, Waiting Time and Customer Satisfaction**

SERVQUAL concept has been widely used for service business and it is used to measure customer experience. From many previous studies, it was found that the quality of service have direct impact on customer satisfaction in terms of customer needs or expectations that feel satisfy and a positive perception because customer will compare between their expectations and what they get from the service and it will happen when customers use the service many times (Parasuraman et al., 1988).

Communication concept has six basics that relate to feeling and perception of customer for healthcare (1) satisfaction to convenience service; (2) satisfaction to medical personnel collaboration; (3) satisfaction to empathy of staff; (4) satisfaction to information from the service; (5) satisfaction to quality of the service; and (6) satisfaction to expense of service (Aday & Andersen, 1984). So, any media can respond to consumer satisfaction and satisfaction to communication of medical personnel has high impact. The way to communicate is either verbal or nonverbal to make patient understand and feel confident to use the service.

Perceived price fairness concept is measured when customers perceive price unfairness, it leads to negative perception and will be self-protection or revenge action (Xia et al, 2004). But, if customers perceive that the value of service is more than the price, they feel they are treated fairly and are satisfied on that price (Xia et al, 2004).

Waiting time occurs when customers arrive at the service and willing to get the service with the limited resources of service provider and when the service has long queue or long waiting time, they might not be satisfied on that (Hui & Tse, 1988).

Thus, this research has examined the relationship between SERVQUAL, communication, perceived price fairness and waiting time to get the result.

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

### 3.2.2 Relationship between Customer Satisfaction and Customer Loyalty

Customer satisfaction has higher 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 with recommended service to other people (Zeithaml et al., 1996).

Thus, this research has examined the relationship between customer satisfaction and customer loyalty to get the result.

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

### 3.2.3 Relationship between Demographic Profiles and Customer Satisfaction

The different demographic profiles of people may lead to different perceptions. The basic information of the background are in the questionnaire, such as gender, age, marital status, education level, occupation and income level.

**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 between people who are different in age.

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

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

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

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



### **3.2.4 Relationship between Demographic Profiles and Perceived Price Fairness**

The different background of people may lead to different perceptions. The basic information of background are in the questionnaire, such as gender, age, education level, occupation and income level. The quick of global changed that makes a lot of changes for hospital in terms of the way the patients behave will be satisfied on something 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 between people who are different in age.

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

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

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

### **3.2.5 Relationship between Government Benefit Paid and Customer Satisfaction.**

The adding gap is paying respondent means as whom responsible for the payment. In Thailand, there are laws that protect the basic rights of people who are Thai nationality or 30 baht treatment for the disease (National Health Security office Thailand, 2016). Also, for those who work in Thailand need to have social security to help the payment of employees (Social Security office, Thailand).

This research has examined the relationship between customer satisfaction and demographic background, which includes Thailand government policy of 30 baht and social security insurance to get the result.

**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.

### **3.2.6 Relationship between Service and Waiting Time and Customer Satisfaction.**

Waiting time is a key factor to represent the service quality of the process (Hui & Tse, 1996). Waiting time is important in terms of satisfaction, so the government pays high attention to waiting time and cycle time of each procedure (Committee of Development of Government Thailand, 2005). Thus, this research has examined the relationship between customer satisfaction and customers who get the service time and waiting time in each process for treatment to get the result.

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

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

### **3.3 Population and Data Collection**

The research has focused on respondents who use the public hospitals within a six-month time, during June – December 2017. The main department of public hospital is out-patient for general medical and surgery medical function. Population was divided into six groups depending on the hospital. For medical institution, A hospital, B hospital, C hospital, D hospital, E hospital and F hospital located in Bangkok, Thailand. Estimated population in Bangkok is 5.6 million (Official Statistics Registration System Thailand, 2016). The survey was conducted during 7:30 am. – 2:00 pm. when it was assumed that the response rate would be high.

**Table: 3.1: List of Hospitals with Number of Respondents**

Hospital	Number of respondents
A hospital	80
B hospital	81
C hospital	84
D hospital	79
E hospital	80
F hospital	80

**3.4 Sampling Technique**

Nonprobability sampling is the subset of population that is not achieved by chance, where the population does not have equal chance to take sample and the selection criteria of the sample are totally bias. So, this research has chosen the elements for the sample by judgment of the researcher. Purposive sampling, known as judgment or selective, subjective sampling where the research can power to pick the participant and can provide the answer for the questionnaire (Saunders, Lewis & Thornhill, 2012). Based on the research, factors affecting patients, patients who used the hospital services were the ones that the researcher used because they could participate in-depth for interview on questionnaire. This technique is appropriate when go to small population or small group as this study selected by purposive sampling from patients or customers who used public hospitals in Bangkok, Thailand during a six-month period. The researcher went to the public hospitals and selected one by one to answer the questionnaire. This type of non-probability sampling was applied to collect data for this research.

The population in Bangkok, Thailand as of 2016 was around 5.6 million people, and based on the formula of Yamane (1967)

$$n = \frac{N}{1 + (N \times e^2)}$$

Where  $n$  is Corrected Sample Size,  
 $N$  is Population Size, and  
 $e$  is the allowable error

Replacing formula with the actual number, the equation would be;

$$n = \frac{5,686,646}{1 + 5,686,646 (0.05)^2}$$

So, the sample size for this research is 399.97 or 400 samples. To support and further analyze the findings from quantitative analysis, collecting data from randomly-selected respondents for questionnaire. The study focused on explaining what factors affect customer satisfaction and personality and choice behavior. The research was concerned with better predictor variable. Perry (2002) said that research in which existing theories are tested, as this one, are explanatory designs in that such research “explains the precise relationships between variables”. It is organized by Quantitative part; in a survey, a questionnaire was distributed among regular public hospitals to identify the link between customer satisfaction and loyalty. For the validation part, the results of the questionnaire were checked with the actual behavior through the collection of public hospitals. After combining the results, it resulted to be about loyalty. Survey before pretesting and distributing the questionnaire, the questions were translated into the language people are familiar with. The respondents were Thai nationality and the original questionnaire was written in English. For the pretest, the questionnaire that operate when a respondent answers a questionnaire. They have to understand or encode the question by using the memory to get information and write the information to a form. When the response faces with the problem of those questions, it may contain some elements of error (Bolton, 1993). A pilot study is used to determine how a questionnaire can be used or needed to improve (Converse & Presser, 1986). And it can be beneficial because errors are one of the biggest contributors to errors in the questionnaire (Assael & Keon, 1982). The questionnaire, corresponding to this research, was pretested with 30 respondents. After they completed, the advisor gave some advice about the different approaches and the point

of view of the research. So, these pieces advice were redone and the questionnaire was improved.

3.5 Questionnaire Design

A questionnaire is means to motivate the feeling, belief, experience, perception or attitude of sample. This way is the best way for the study because it allows to collection information from greater number of people and the findings can be demonstrated in numerical terms (Veal, 1997). To prevent misunderstanding, the researcher informed the participants about the purpose of the survey. The survey questions used numeric rating questions. Likert scale was used for the measurement of the study variable. According to Saunders, Lewis, and Thornhill (2007), it the most common scaling method. The scale was constructed in a way that number. The scale from 1 to 5 was used in order to make the participants take a stand regarding the questions asked (Table 3.2).

Table: 3.2: Classification of Weight of Scale

Average	Meaning
Opinion level of Service Obtained	
1	Strongly Disagree
2	Disagree
3	Normal
4	Agree
5	Strongly Agree



**Table: 3.3: Concept of Questionnaire**

Concept	Number of question	Authors
SERVQUAL	23	Parasuraman et al. (1993).
- Tangibility	5	Parasuraman et al. (1993).
- Reliability	6	Parasuraman et al. (1993).
- Responsiveness	6	Parasuraman et al. (1993).
- Assurance	8	Parasuraman et al. (1993).
- Empathy	4	Parasuraman et al. (1993).
Communication	10	Theppipop (2014)
Perceive price fairness	5	Darke and Dahl (2003)
Waiting time	9	John and Sirikit (2002)
Customer satisfaction	6	Oliver (1997)
Customer loyalty	5	Zeithaml et al. (1996)
Personal information	5	John and Sirikit (2002)
Demographic	6	Adapted from Theppiipop (2014)

This study was conducted using a structured questionnaire from the model of Parasuraman et al. (1993). SERVQUAL for healthcare model has been applied in many studies such as Zineldin (2006), Hall et al. (2002), and Chun (1997). The question was put in the questionnaire as shown in table 3.3 separating the types of variables to measure the agreement of sample using the hospital. The sample questionnaire and code to prepare for pretest 30 sets in the system (table 3.4)

**Table: 3.4: Variable and Questionnaire**

Variable	Code	Question
Tangibility	TAN1	Hospital be furnished with modern equipment and always be standard.
Tangibility	TAN 2	An effective hospital be beautiful and stable in the physical structure.
Tangibility	TAN 3	Hospitals be equipped with effective and gentle employees.
Tangibility	TAN 4	Waiting areas have enough and good environment.
Tangibility	TAN 5	An excellent hospital provide utensils and equipment, i.e. leaflets with clear and accurate information about the hospital.
Reliability	REL 1	Hospital inform the services prior to service at every time.
Reliability	REL 2	Hospital manifest readiness to serve and ready to solve the problem to the clients immediately.
Reliability	REL 3	Hospital provide the standard service from the point where service begins.
Reliability	REL 4	Hospital provide a service on the exact schedule time.
Reliability	REL 5	Hospitals provide the record of patient's information correctly.
Reliability	REL 6	Hospital not provide services, i.e. provide repeated information on the same topics.
Responsiveness	RES 1	Staff provide excellent service to patients as soon as patients arrive at the hospital.
Responsiveness	RES 2	Staff show willingness to serve and care.
Responsiveness	RES 3	Staff be ready to serve upon a patient's request.
Responsiveness	RES 4	Nurse provide excellent service to patients as soon as patients arrive at the hospital.
Responsiveness	RES 5	Nurse show willingness to serve and care.
Responsiveness	RES 6	Nurse be ready to serve upon a patient's request.
Assurance	ASS 1	Staff ensure the client confidence in the service.
Assurance	ASS 2	Staff ensure the patient sense of security with the service provided by the hospital.
Assurance	ASS 3	Staff be polite, well-mannered and courteous to patients.

Variable	Code	Question
Assurance	ASS 4	Staff be knowledgeable in answering the patient's questions.
Assurance	ASS 5	Nurse ensure the client of confidence in the service.
Assurance	ASS 6	Nurse ensure the patient of a sense of security with the service provided by the hospital.
Assurance	ASS 7	Nurse be polite, well-mannered and courteous to patients.
Assurance	ASS 8	Nurse be knowledgeable in answering the patient's questions.
Empathy	EMP 1	Hospital pay attention to the patient individually.
Empathy	EMP 2	Hospital provide adequate staff to take care of the patients.
Empathy	EMP 3	Hospital access to the patient's feeling.
Empathy	EMP 4	Hospital have an understanding of the specific needs of the patients.
Communication	COM 1	Doctor has to talk, ask information about the patient before treatment.
Communication	COM 2	Doctor uses easy vocabulary for the patient to understand better.
Communication	COM 3	Doctor has ability to communicate about medical treatment with the patient.
Communication	COM 4	Doctor has ability to communicate with understanding to the patient.
Communication	COM 5	Nurse is able to give information to patient immediately.
Communication	COM 6	Nurse has ability to communicate with understanding to the patient.
Communication	COM 7	Nurse is able to use body language to explain to the patient.
Communication	COM 8	Staff asks the name and surname of patient before payment.
Communication	COM 9	Staff asks the name and surname of patient before giving the medicine.
Communication	COM 10	Staff is able to explain the medicine and payment information to patient immediately.

Variable	Code	Question
Perceived price fairness	PPF 1	Perceive price fairness when compared to other hospital and healthcare
Perceived price fairness	PPF 2	Reasonable price for medical bill
Perceived price fairness	PPF 3	Reasonable price for medical bill when compared to the economic situation
Perceived price fairness	PPF 4	Affordable fees for treatment and service of the hospital
Perceived price fairness	PPF 5	The service quality of hospital is worthwhile to be paid
Waiting Time	WTT 1	Doctor provides services at the appointed time.
Waiting Time	WTT 2	Nurse provides services at the appointed time.
Waiting Time	WTT 3	Staff provides services at the appointed time.
Waiting Time	WTT 4	Doctor provides service at the promised time.
Waiting Time	WTT 5	Nurse provides service without delay.
Waiting Time	WTT 6	The staff provides service without delay.
Waiting Time	WTT 7	The waiting time for physician and receiving the treatment is appropriate.
Waiting Time	WTT 8	The waiting time for receiving nurse service is appropriate.
Waiting Time	WTT 9	The waiting time for paying to staff is appropriate.

Variable	Code	Question
Customer satisfaction	CS 1	If you have to decide again, will you still use the service from this hospital?
Customer satisfaction	CS 2	You are happy with the purchase made from this hospital.
Customer satisfaction	CS 3	You think you did the right thing in using this service of the hospital.
Customer satisfaction	CS 4	You feel good about your decision to use this hospital.
Customer satisfaction	CS 5	You are satisfied with your decision to use this hospital
Customer satisfaction	CS 6	Your decision to use this hospital is a wise one
Customer loyalty	CL 1	In the coming years, I will still choose this hospital
Customer loyalty	CL 2	I am certain that I will continue coming to this hospital
Customer loyalty	CL 3	This hospital will be my first choice in the treatment decision process
Customer loyalty	CL 4	The overall service quality is higher than the other hospitals
Customer loyalty	CL 5	My feeling towards the hospital's service can be positively described as the best.

### 3.6 Data Analysis

After collecting the data from the questionnaires, researcher input the data into SPSS program to analyze the information. Quantitative research explains phenomena by collecting the data and analyzing them by using mathematics particularly statistics (Aliga & Gunderson, 2000). The objective was to study and predict the future of the variable affecting other variables and it develops and deploys mathematical models and theory to solve the natural phenomena, to measure the incidence of various views in chosen sample (Aliga & Gunderson, 2000). It has also included and questionnaire, asking people for the opinion and statistics will guide it.



### **3.6.1 Descriptive Statistics**

Provide the overall of individual that in the sample and it includes appropriate descriptive statistics according to the variables such as the general demographic information that use the hospital service. It explores the relationship and the strength of relationship among variables. To use the technique based on multiple regression method, a certain set of basic assumptions were tested and applied as appropriate.

### **3.6.2 Inferential Statistics**

To test the correlation of dependent variable and independent variable that have significant relationship or not and use the statistics method as following.

### **3.7 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 not suggested that Cronbach's alpha can be used as a measurement. To perform the test of variable questionnaire, results from the reliability analysis showed satisfactory results because all Cronbach's alpha coefficients were above 0.5 in order to satisfy for the early stages of research and over 0.70 was considered. The Cronbach's alphas of all constructs ranged from 0.776 to 0.867. This measurement explains the same situation (Hair et al., 2006). The researcher conducted a pretest to test the reliability of the questionnaire using one of public hospitals (A hospital). Consequently, the data were used only for testing the reliability of the pretest. From the results of reliability analysis on satisfaction, the assessment of construct validity is presented in the following part.

**Table: 3.5: Result of Reliability Test**

Construct	Measurement Items	Cronbach's alpha
<b>SERVQUAL</b>	<b>29</b>	
- Tangibility	<b>5</b>	<b>0.819</b>
- Reliability	<b>6</b>	<b>0.758</b>
- Responsiveness	<b>6</b>	<b>0.843</b>
- Assurance	<b>8</b>	<b>0.987</b>
- Empathy	<b>4</b>	<b>0.814</b>
<b>Communication</b>	<b>10</b>	<b>0.907</b>
<b>Perceived price fairness</b>	<b>5</b>	<b>0.805</b>
<b>Waiting time</b>	<b>9</b>	<b>0.960</b>
<b>Customer Satisfaction</b>	<b>6</b>	<b>0.917</b>
<b>Loyalty</b>	<b>5</b>	<b>0.862</b>

It can be referred from the table that Cronbach's alphas of all constructs ranged from 0.758 to 0.987. These measurements explain the same situation. From the result of reliability analysis on satisfaction, the assessment of construct validity is presented in the following part. 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 got the standardized definition higher than 0.700.

### **3.8 Factor Analysis Result**

The result was consistent with the result obtained from the pretest. All measurement items yield an acceptable correlation coefficient, which were all greater than 0.4 and meet the minimal level or interpretation of the structure (Hair et al., 2006). The factor analysis known as latent variable identification used to simplify data and reduce the size of observation.

**Table: 3.6: Exploratory Factor Analysis of Tangibility**

Measurement Items	Tangibility
TAN1	.671
TAN2	.534
TAN3	.762
TAN4	.449
TAN5	.701

The factor loadings of the tangibility, which tangibility ranged from 0.449 to 0.762. All measurement items yield an acceptable correlation coefficient, which were all greater than 0.4 and meet the minimal level of the structure.

**Table: 3.7: Exploratory Factor Analysis of Reliability**

Measurement Items	Reliability
REL1	.884
REL2	.828
REL3	.832
REL4	.836
REL5	.880
REL6	.223

The factor loadings of the reliability, which reliability ranged from 0.423 to 0.880. All measurement items yield an acceptable correlation coefficient, which were all greater than 0.4 and meet the minimal level of the structure.

**Table: 3.8: Exploratory Factor Analysis of Responsiveness**

Measurement Items	Responsiveness
RES1	.676
RES2	.671
RES3	.636
RES4	.687
RES5	.772
RES6	.685

The factor loadings of the responsiveness, which responsiveness ranged from 0.636 to 0.772. All measurement items yield an acceptable correlation coefficient, which were all greater than 0.4 and meet the minimal level of the structure.

**Table: 3.9: Exploratory Factor Analysis of Assurance**

Measurement Items	Assurance
ASS1	.877
ASS2	.831
ASS3	.892
ASS4	.741
ASS5	.800
ASS6	.821
ASS7	.845
ASS8	.790

The factor loadings of the assurance, which assurance ranged from 0.741 to 0.892. All measurement items yield an acceptable correlation coefficient, which were all greater than 0.4 and meet the minimal level of the structure.

**Table: 3.10: Exploratory Factor Analysis of Empathy**

Measurement Items	Empathy
EMP1	.506
EMP2	.737
EMP3	.572
EMP4	.674

The factor loadings of the empathy, which empathy ranged from 0.506 to 0.737. All measurement items yield an acceptable correlation coefficient, which were all greater than 0.4 and meet the minimal level of the structure.

**Table: 3.11: Exploratory Factor Analysis of Communication**

Measurement Items	Communication
COM1	.546
COM2	.616
COM3	.559
COM4	.690
COM5	.370
COM6	.650
COM7	.591
COM8	.538
COM9	.626
COM10	.478

The factor loadings of the communication, which communication ranged from 0.370 to 0.690. All measurement items yield an acceptable correlation coefficient, which were all greater than 0.4 and meet the minimal level of the structure.



**Table: 3.12: Exploratory Factor Analysis of Perceived Price Fairness**

Measurement Items	Perceived price fairness
PPF1	.702
PPF2	.721
PPF3	.400
PPF4	.318
PPF5	.542

The factor loadings of the perceived price fairness, which perceived price fairness ranged from 0.318 to 0.721. All measurement items yield an acceptable correlation coefficient, which were all greater than 0.4 and meet the minimal level of the structure.

**Table: 3.13: Exploratory Factor Analysis of Waiting Time**

Measurement Items	Waiting time
WTT1	.809
WTT2	.803
WTT3	.803
WTT4	.771
WTT5	.804
WTT6	.783
WTT7	.738
WTT8	.755
WTT9	.618

The factor loadings of the waiting time, which waiting time ranged from 0.618 to 0.809. All measurement items yield an acceptable correlation coefficient, which were all greater than 0.4 and meet the minimal level of the structure.

**Table: 3.14: Exploratory Factor Analysis of Customer Satisfaction**

Measurement Items	Customer satisfaction
CS1	.516
CS2	.901
CS3	.884
CS4	.843
CS5	.822
CS6	.905

The factor loadings of the customer satisfaction, which customer satisfaction ranged from 0.516 to 0.905. All measurement items yield an acceptable correlation coefficient, which were all greater than 0.4 and meet the minimal level of the structure.

**Table: 3.15: Exploratory Factor Analysis of Customer Loyalty**

Measurement Items	Customer loyalty
CL1	.913
CL2	.902
CL3	.801
CL4	.491
CL5	.631

The factor loadings of the customer loyalty, which customer loyalty ranged from 0.491 to 0.913. All measurement items yield an acceptable correlation coefficient, which were all greater than 0.4 and meet the minimal level of the structure.

### 3.9 Chapter Summary

This chapter summarizes the research methodology by focusing on quantitative approach. The questionnaire was conducted as a sample test for 30 sets and went directly to the public hospitals. Data were analyzed by descriptive statistic and measurement reliability and validity to test the questionnaire. The operational definition and measurement of the variable were conceptualized from the research framework and correlation to hypothesis. The enquiries were classified into three categories. It depends on the purposes as well as the research strategy (Robson, 1993). It can be exploratory study, it is the best way when researcher is not sure of the theories to use that is find out what is happening and deep insight to ask question (Robson, 1993). Descriptive study is used in “descriptive studies portray accurate profile of situations” (Robson, 1993). Explanatory study is looking at the relationship between variables that can explain the relationship. In this particular research, the researcher used descriptive study for accurate profile and explanation to explain the variable relationship between service quality and customer satisfaction and customer loyalty.

CHAPTER IV

PRESENTATION AND CRITICAL DISCUSSION OF RESULTS

This chapter provides the results of the questionnaire (descriptive statistics) that report the observation number in percentage (%), mean of the variable and standard deviation for describing demographics (gender, age, education, occupation, and income level). Then, correlation was used to test the relationship of independent variable by using multiple regression analysis for analysis and report. For demographic variables, the researcher used ANOVA to test the differences and simple linear regression analysis.

4.1 Sample Presentation for Public Hospitals in Bangkok

4.1.1 General Information on Customer Respondents

Table 4.1 – 4.11 Reports on the reporting general information about customers perception that have come to use the services of public hospitals in Bangkok (Hospital A,B,C,D,E,F) in the SERVQUAL questionnaire as indicated in the following table.

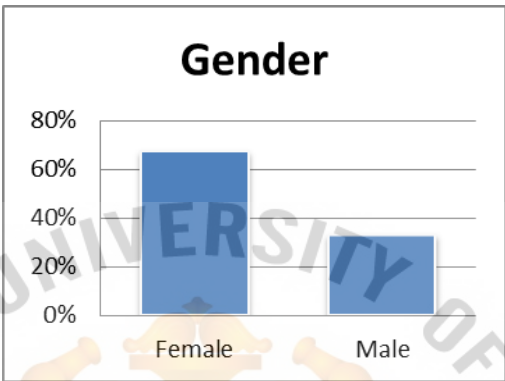
Table: 4.1: Gender

General Data		A Hospital		B Hospital		C Hospital		D Hospital		E Hospital		F Hospital	
		N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Sex	Male	28	35.00	15	18.52	30	35.71	35	44.30	38	47.50	13	16.25
	Female	52	65.00	66	81.48	54	64.29	44	55.70	42	52.50	67	83.75
	Total	80	100.00	81	100.00	84	100.00	79	100.00	80	100.00	80	100.00

From table 4.1 show that A hospital, the majority of respondents were 52 of female (65%), B hospital were 66 of female (81.48%), C hospital were 54 of female

(64.29%), D hospital were 44 of female (55.70%), E hospital were 42 of female (52.50%), F hospital were 67 of female (83.75%).

Figure: 4.1: Gender



Gender of out-patient who get the treatment of public hospital in Bangkok, the most of the respondents are female equal to 325 or 67% that higher than male equal to 159 respondents or 33%.

Table: 4.2: Ages

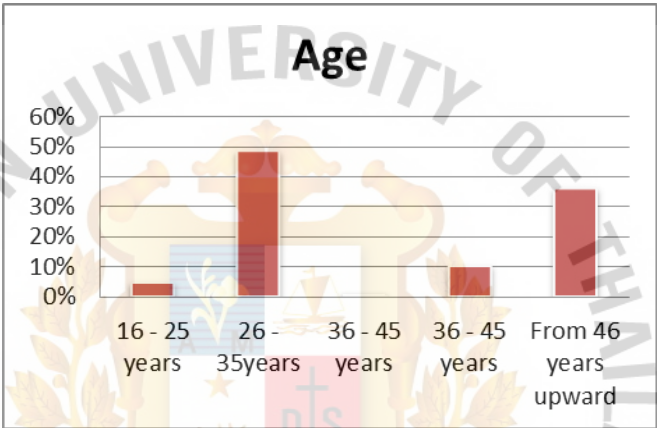
General Data		A Hospital		B Hospital		C Hospital		D Hospital		E Hospital		F Hospital	
		N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Age	16 - 25 Yrs.	5	6.25	4	4.94	3	3.57	5	6.33	1	1.25	5	6.25
	26 - 35 Yrs.	42	52.50	23	28.40	30	35.71	50	63.29	54	67.50	35	43.75
	36 - 45 Yrs.	5	6.25	6	7.41	16	19.05	13	16.46	10	12.50	5	6.25
	46 > Yrs.	28	35.00	48	59.26	35	41.67	11	13.92	15	18.75	35	43.75
Total		80	100.00	81	100.00	84	100.00	79	100.00	80	100.00	80	100.00

From table 4.2 show that A hospital, the majority of respondents were 42 respondents were between 26-35 years (52.50%), B hospital were 48 respondents were above 46



years old (59.26%), C hospital were 35 respondents were above 46 years old (41.67%), D hospital were 50 respondents were between 26 – 35 years old (63.29%), E hospital were 54 respondents were between 26 – 35 years old (67.50%) and F hospital were 35 respondents were between 26 – 35 years old and 35 respondents were above 46 years old (43.75).

Figure: 4.2: Age



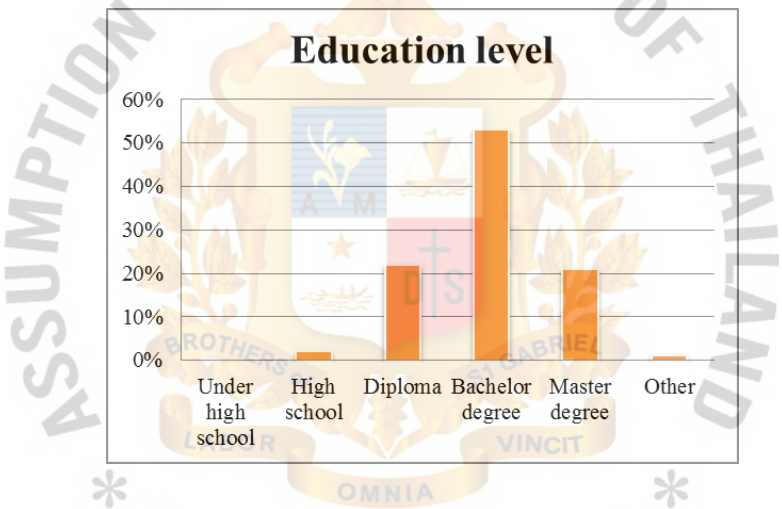
Age of out-patient who get the treatment of public hospital in Bangkok, the most of the respondents are between 26 – 35 years old equal to 234 respondents or 48%.

Table: 4.3: Education Level

General Data		A Hospital		B Hospital		C Hospital		D Hospital		E Hospital		F Hospital	
		N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Education	Under high school	0	0.00	0	0.00	2	2.38	0	0.00	0	0.00	0	0
	High school	6	7.50	0	0.00	1	1.19	1	1.27	1	1.25	0	0
	Diploma	6	7.50	41	50.62	32	38.10	9	11.39	11	13.75	8	10.13
	Bachelor degree	49	61.25	33	40.74	36	42.86	50	63.29	49	61.25	40	50.63
	Master degree	17	21.25	7	8.64	9	10.71	19	24.05	19	23.75	31	39.24
	Other	2	2.50	0	0	4	4.76	0	0	0	0	0	0
Total		80	100.00	81	100.00	84	100.00	79	100.00	80	100.00	79	100.00

From table 4.3 show that A hospital, the majority of respondents had Bachelor's degree education were 49 of respondents (61.25%), B hospital had diploma education were 41 of respondents (50.62%), C hospital had Bachelor's degree education were 36 of respondents (42.86%), D hospital had Bachelor's degree education were 50 of respondents (63.29%), E hospital had Bachelor's degree education were 49 of respondents (61.25%) and F hospital had Bachelor's degree education were 40 of respondents (50.63%).

**Figure: 4.3: Education Level**



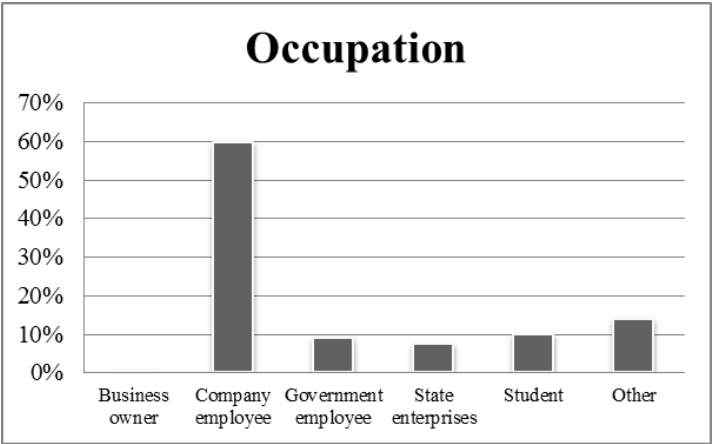
Education level of out-patient who get the treatment of public hospital in Bangkok, the most of the respondents are Bachelor's degree in education level equal to 257 respondents or 53%.

Table: 4.4: Occupation

General Data		A Hospital		B Hospital		C Hospital		D Hospital		E Hospital		F Hospital	
		N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Occupation	Student	12	15.00	8	9.88	2	2.38	2	2.53	2	2.50	22	27.5
	Government employee	11	13.75	5	6.17	13	15.48	5	6.33	4	5.00	5	6.25
	State enterprises	0	0.00	0	0.00	6	7.14	7	8.86	11	13.75	11	13.75
	Company employee	40	50.00	64	79.01	47	55.95	47	59.49	50	62.50	41	51.25
	Business owner	0	0	0	0.00	0	0.00	2	2.53	0	0	0	0.00
	Other	17	21.25	4	4.938	16	19.05	16	20.25	13	16.25	1	1.25
	Total	80	100.00	81	100.00	84	100.00	79	100.00	80	100.00	80	100.00

From table 4.4 show that A hospital, the majority of respondents were 40 of company employees (50.00%), B hospital were 64 of company employees (79.01%), C hospital were 47 of company employees (55.95%), D hospital were 47 of company employees (59.49%), E hospital were 50 of company employees (62.50%) and F hospital were 41 of company employees (51.25%).

Figure: 4.4: Occupation



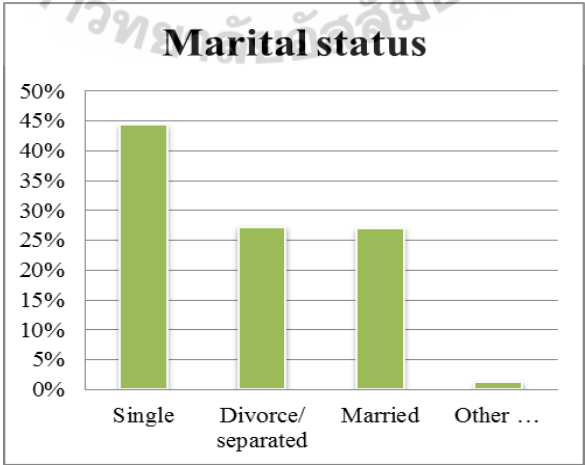
Occupation of out-patient who get the treatment of public hospital in Bangkok, the most of the respondents are company employees equal to 289 respondents or 60%.

**Table: 4.5: Marital Status**

General Data		A Hospital		B Hospital		C Hospital		D Hospital		E Hospital		F Hospital	
		N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Marital status	Single	48	60.00	24	29.63	25	29.76	31	38.75	31	38.75	54	67.5
	Married	22	27.50	13	16.05	28	33.33	23	28.75	23	28.75	13	16.25
	Divorce	7	8.75	44	54.32	28	33.33	26	32.50	26	32.50	13	16.25
	Other	3	3.75	0	0.00	3	3.57	0	0.00	0	0.00	0	0.00
	Total	80	100.00	81	100.00	84	100.00	80	100.00	80	100.00	80	100.00

From table 4.5 show that A hospital, the majority of respondents were 48 of single in status (60%), B hospital were 44 of divorce in status (54.32%), C hospital were 25 of married and 28 of divorce the same (33.33%), D hospital were 31 of single in status (38.75%), E hospital were 31 of single in status (38.75%) and F hospital were 54 of single in status (67.50%).

**Figure: 4.5: Marital Status**



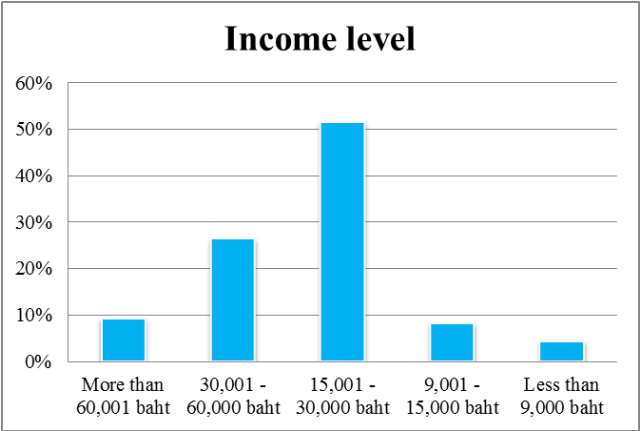
Marital status of out-patient who get the treatment of public hospital in Bangkok, the most of the respondents are single equal to 215 respondents or 44%.

Table: 4.6: Income Level

General Data		A Hospital		B Hospital		C Hospital		D Hospital		E Hospital		F Hospital	
		N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Income level	<9,000 baht	7	8.75	4	4.94	1	1.19	3	3.80	1	1.25	5	6.25
	9,001 - 15,000 baht	7	8.75	0	0.00	7	8.33	7	8.86	6	7.50	13	16.25
	15,001 - 30,000 baht	35	43.75	62	76.54	63	75.00	36	45.57	26	32.50	28	35.00
	30,001 - 60,000 baht	25	31.25	11	13.58	12	14.29	25	31.65	36	45.00	19	23.75
	> 60,001 baht	6	7.50	4	4.94	1	1.19	8	10.13	11	13.75	15	18.75
	Total	80	100.00	81	100.00	84	100.00	79	100.00	80	100.00	80	100.00

From table 4.6 show that A hospital, the majority of respondents were 35 of the income level ranging between 15,001 – 30,000 baht (43.75%), B hospital were 62 of the income level ranging between 15,001 – 30,000 baht (76.54%), C hospital were 63 of the income level ranging between 15,001 – 30,000 baht (75%), D hospital were 36 of the income level ranging between 15,001 – 30,000 baht (57.57%), E hospital were 36 of the income level ranging between 30,001 – 60,000 baht (45%) and F hospital were 28 of the income level ranging between 15,001 – 30,000 baht (35%).

Figure: 4.6: Income Level





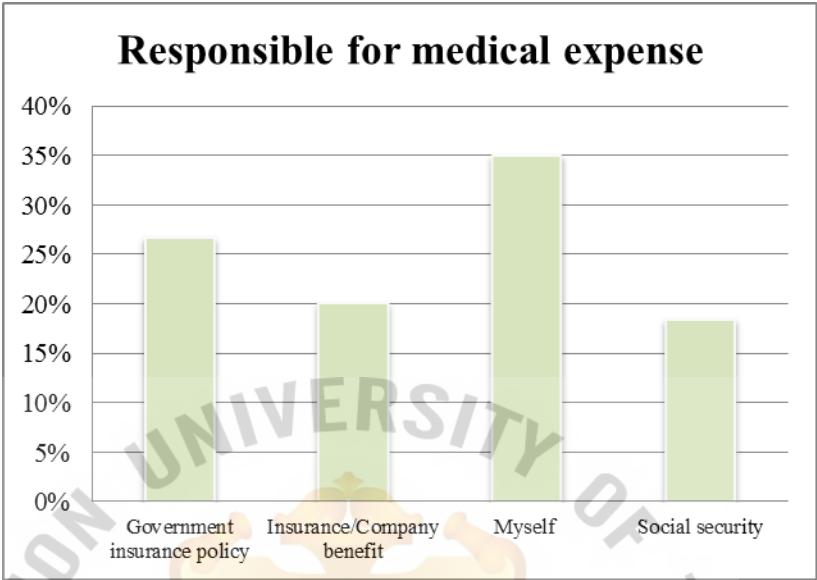
Income level of out-patient who get the treatment of public hospital in Bangkok, the most of the respondents are in the income level between 15,001 – 30,000 baht equal to 250 respondents or 52%.

**Table: 4.7: Responsible for Medical Expense**

General Data		A Hospital		B Hospital		C Hospital		D Hospital		E Hospital		F Hospital	
		N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Medical Expense	Myself	29	36.25	30	37.04	25	29.76	28	35.44	30	37.50	27	33.75
	Insurance/												
	Company	26	32.50	5	6.17	21	25.00	12	15.19	18	22.50	15	18.75
	benefit												
	Government												
	insurance	19	23.75	34	41.98	26	30.95	20	25.32	10	12.50	20	25.00
	Social												
	security	6	7.50	12	14.81	12	14.29	19	24.05	22	27.50	18	22.50
	Total	80	100.00	81	100.00	84	100.00	79	100.00	80	100.00	80	100.00

From table 4.7 show that A hospital, the majority of respondents were 29 of paid by themselves (36.25%), B hospital were 34 of paid by government insurance (41.91%), C hospital were 26 of paid by government insurance (30.95%), D hospital were 28 of paid by themselves (35.44%), E hospital were 30 of paid by themselves (37.50%) and F hospital were 27 of paid by themselves (33.75).

**Figure: 4.7: Responsible for Medical Expense**



Responsible for medical expense of out-patient who get the treatment of public hospital in Bangkok, the most of the respondents are paid by themselves equal to 169 respondents or 35%.

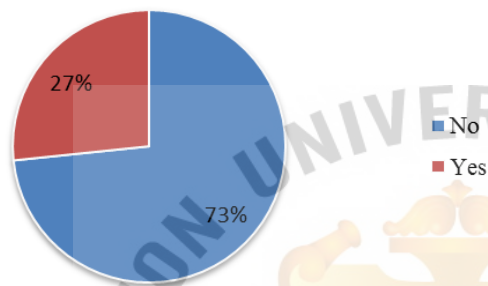
**Table: 4.8: Government Benefit Paid (30 Baht gold card)**

General Data		A Hospital		B Hospital		C Hospital		D Hospital		E Hospital		F Hospital	
		N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Gold card	Yes	19	23.75	34	41.98	26	30.95	20	25.32	10	12.50	20	25.00
	No	61	76.25	47	58.02	58	69.05	59	74.68	70	87.50	60	75.00
Total		80	100.00	81	100.00	84	100.00	79	100.00	80	100.00	80	100.00

From table 4.8 show that A hospital, the majority of respondents were 61 of who did not use government benefit ( gold card 30 Baht) paid (76.25%), B hospital respondents were 47 of who did not use government benefit ( gold card 30 Baht) paid (58.02%), C hospital respondents were 58 of who did not use government benefit ( gold card 30 Baht) paid (69.05%), D hospital respondents were 59 of who did not use

government benefit ( gold card 30 Baht) paid (74.68%),E hospital respondents were 70 of who did not use government benefit ( gold card 30 Baht) paid (87.50%) and F hospital respondents were 60 of who did not use government benefit ( gold card 30 Baht) paid (75%).

Figure: 4.8: Government Benefit Paid



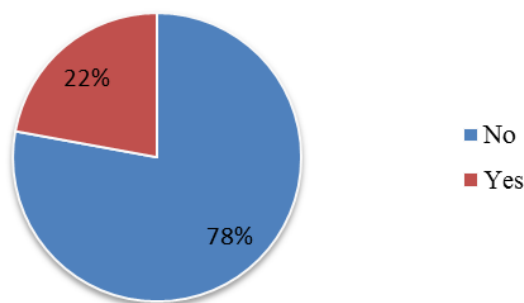
Government benefit paid ( Gold card 30 Baht) of out-patient who get the treatment of public hospital in Bangkok, the most of the respondents are not use gold card 30 Baht equal to 355 respondents or 73%.

Table: 4.9: Social Security Paid

General Data		A Hospital		B Hospital		C Hospital		D Hospital		E Hospital		F Hospital	
		N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Social security	Yes	14	23.75	12	41.98	16	30.95	22	25.32	22	12.50	21	25.00
	No	66	76.25	69	58.02	68	69.05	57	74.68	58	87.50	59	75.00
Total		80	100.00	81	100.00	84	100.00	79	100.00	80	100.00	80	100.00

From table 4.9 show that A hospital, the majority of respondents were 66 of who did not use social security paid (76.25%), B hospital were 69 of who did not use social security paid (58.02%), C hospital were 68 of who did not use social security paid (69.05%), D hospital were 57 of who did not use social security paid (74.68%), E hospital were 58 of who did not use social security paid (87.50%) and F hospital were 59 of who did not use social security paid (75%).

Figure: 4.9: Social Security Paid



Social security paid of out-patient who get the treatment of public hospital in Bangkok, the most of the respondents are not use social security paid equal to 377 respondents or 78%.

Table 4.10: Service Time of Treatment

General Data		A Hospital		B Hospital		C Hospital		D Hospital		E Hospital		F Hospital	
		N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Service time	< 60 mins.	12	15.00	0	0.00	0	0.00	0	0.00	0	0.00	4	5.00
	61 mins. - 2 hrs.	35	43.75	8	9.88	8	9.52	24	30.38	34	42.50	32	40.00
	2 - 3 hrs.	4	5.00	1	1.23	18	21.43	4	5.06	7	8.75	0	0.00
	3 - 4 hrs.	4	5.00	24	29.63	24	28.57	27	34.18	27	33.75	13	16.25
	4 - 5 hrs.	16	20.00	10	12.35	13	15.48	4	5.06	2	2.50	11	13.75
	5 hrs. >	9	11.25	38	46.91	21	25.00	20	25.32	10	12.50	20	25.00
	Total	80	100.00	81	100.00	84	100.00	79	100.00	80	100.00	80	100.00

From table 4.10 show that A hospital, majority of respondents were 35 of who faced with the service time between 61 minutes – 2 hours (43.75%), B hospital were 38 of who faced with the service time above 5 hours (46.91%), C hospital were 24 of who faced with the service time between 3 – 4 hours (28.57%), D hospital were 27 of who faced with the service time between 3 – 4 hours (34.18%), E hospital were 27 of who

faced with the service time between 61 minutes – 2 hours (42.50%) and F hospital were 32 of who faced with the service time between 61 minutes – 2 hours (40%). So, most of the respondents are faced with the service time of treatment from 61 minutes – 2 hours equal to 141of respondents or 29.13%.

**Table: 4.11: Waiting Time of Each Process**

General Data		A Hospital		B Hospital		C Hospital		D Hospital		E Hospital		F Hospital	
		N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Waiting time	< 15 mins.	6	7.50	0	0.00	0	0.00	0	0.00	0	0.00	2	2.50
	16 - 30 mins.	17	21.25	4	4.94	8	9.52	26	32.91	25	31.25	19	23.75
	31 - 45 mins.	7	8.75	17	20.99	29	34.52	33	41.77	40	50.00	10	12.50
	46 mins. - 1hr.	35	43.75	22	27.16	23	27.38	10	12.66	5	6.25	28	35.00
	1 hr. >	15	18.75	38	46.91	24	28.57	10	12.66	10	12.50	21	26.25
	Total	80	100.00	81	100.00	84	100.00	79	100.00	80	100.00	80	100.00

From table 4.11 show that A hospital, majority of respondents were 35 of who waiting between 46 minutes – 1 hour (43.75%), B hospital were 38 of who waiting more than 1 hour (46.91%), C hospital were 29 of who waiting between 31- 45 minutes (34.52%), D hospital were 33 of who waiting between 31 – 45 minutes (41.77%), E hospital were 40 of who waiting between 31 - 45 minutes (50%) and F hospital were 28 of who waiting between 46 minutes – 1 hour (35%). So, most of the respondents are waiting from 31 – 45 minutes for each process equal to 136 of respondents or 28.10%.



4.2 Regression Analysis Result

4.2.1 Hypothesis 1: SERVQUAL, communication, perceived price fairness, waiting time affect customer satisfaction of public hospital in Bangkok.

Table 4.12: 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 less than 0.05 and F-value is 43.38 which means SERVQUAL which are tangible, reliability, responsiveness, assurance, empathy, communication, perceived price fairness and waiting time affect customer satisfaction. Adjusted R square of the result shows 0.4125 it means that SERVQUAL, communication, perceived price fairness and waiting time can explain customer satisfaction at 41.25%.

**Table: 4.13: Parameter Estimate for Independent Variables of Hypothesis 1**

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr >  t	Standardized Estimate
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
Assurance	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

From table 4.13 show parameter estimates table of variance P-value is <0.001 that less than 0.05 are perceived price fairness and waiting time. The negative result of waiting time show that waiting time have negative relationship with customer satisfaction. Base on the scale of this question part show that respondent provide rate 1 -5 it means their perceived long period of waiting time but they still satisfy. So the main factor that can influence their satisfy is price of treatment. Perceived price fairness is the factor that has the most influence on customer satisfaction by standardized estimation of 0.64805.

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

**Table: 4.14: 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 that less than 0.05 and F-value is 756.4 which means customer satisfaction affects customer loyalty. R square of the result shows 0.6108 it means that customer satisfaction can explain customer loyalty at 61.08%.

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

**Table: 4.15: T Test Result of Gender for Hypothesis 3**

The TTEST Procedure						
Gender	N	Mean	Std Dev	Std Err	Minimum	Maximum
Female	325	4.3862	0.6542	0.0363	3.0000	5.0000
Male	159	4.1981	0.4567	0.0362	3.0000	5.0000
Diff (1-2)		0.1880	0.5967	0.0578		

Gender	Method	Mean	95% CL	Mean	Std Dev	95% CL	Std Dev
Female		4.3862	4.3148	4.4575	0.6542	0.6075	0.7088
Male		4.1981	4.1266	4.2696	0.4567	0.4114	0.5133
Diff (1-2)	Pooled	0.1880	0.0746	0.3015	0.5967	0.5613	0.6369
Diff (1-2)	Satterthwaite	0.1880	0.0873	0.2888			

Method	Variances	DF	t Value	Pr >  t
Pooled	Equal	482	3.26	0.0012
Satterthwaite	Unequal	425.41	3.67	0.0003

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folderd F	324	158	2.05	< .0001

From the equality of variance table P-value is <0.001 that less than 0.05, variances are unequal at 0.0003 and F-value is 2.05. Hypothesis is support. It means different in gender, different in customer satisfaction. Customers who are different in genders perceived customer satisfaction differently. Mean score of female is 4.3862 and mean score of male is 4.1981. Regarding the result of mean score, female customers perceive customer satisfaction higher than male customers.

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

**Table: 4.16: ANOVA Result of Age for Hypothesis 4**

The ANOVA Procedure

Class Level Information

Class	Levels	Values
Age	4	16 - 25 years of age, 26 - 35 years of age, 36 - 45 years of age, From 46 years of age upward

Number of Observations Read and Used484

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	32.4781372	10.8260457	36.36	< .0001
Error	480	142.9275102	0.29777		
Corrected Total	483	175.40565			

R-Square0.18516

Coeff Var12.61867

Root MSE0.545679

Customer satisfaction Mean4.324380

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Age	3	32.47813715	10.82604572	36.36	< .0001

Alpha0.05

Error Degrees of Freedom480

Error Mean Square0.297766

Harmonic Mean of Cell Size55.75104

Number of Means234

Critical Range0.20310.21380.221

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	Age
A	4.8116	23	16 - 25 years of age
B	4.5087	172	From 46 years of age upward
C	4.2856	234	26 - 35 years of age
D	3.7091	55	36 - 45 years of age

From the table analysis of variance P-value is <0.001 that less than 0.05 and F-value is 36.36. Hypothesis is support and it means at least one group perceived customer satisfaction differently. Therefore, the Duncan Multiple range test was performed.



The result shows that there are four groups with different in perception of customer satisfaction, which are group A: people age between 16 – 25 years old; B: people age from 26 years old up; C: people age between 26 – 35 years old ; and D: people age between 36 – 45 years old. Mean score of people age between 16 – 25 years old is 4.8116, Mean score of people age between 26-35 years old is 4.2856, Mean score of people age between 36-45 years old is 3.7091, and mean score of people age over 46 years old up is 4.5087.

According to the mean score, customers who are age between 16 – 25 years old perceive customer satisfaction higher than customers who are age older 25 years old. So, people who ages between 16 -25 years old perceived customer satisfaction higher than people who ages over 25 years old. Customers who are different in age perceive customer satisfaction differently.



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

**Table: 4.17: ANOVA Result of Marital Status for Hypothesis 5**

The ANOVA Procedure

Class Level Information

Class	Levels	Values
Marital status	4	Divorce/ separated, Married, Other, Single

Number of Observations Read and Used484

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	14.4221868	4.8073956	14.33	< .0001
Error	480	160.9834606	0.3353822		
Corrected Total	483	175.4056474			

R-Square0.082222

Coeff Var13.39202

Root MSE0.579122

Customer satisfaction Mean4.324380

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Marital status	3	14.42218676	4.80739559	14.33	< .0001

Alpha0.05

Error Degrees of Freedom480

Error Mean Square0.335382

Harmonic Mean of Cell Size21.4446

Number of Means234

Critical Range0.34750.36590.3781

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	Age
A	4.6061	132	Divorce/ seperated
A			
B	4.2778	6	Other
B			
B	4.2178	215	Single
B			
B	4.2176	131	Married

From the table analysis of variance P-value is  $<0.001$  that less than 0.05 and F-value is 14.33. Hypothesis is support and it means at least one group perceived customer satisfaction differently. Therefore, the Duncan Multiple range test was performed. The result shows that there are three groups that are different in perception of customer satisfaction which are group A: divorce/separated; BA: other; B: Single and Married. Mean score of divorce or separated is 4.6061, Mean score of other is 4.2778, Mean score of single is 4.2178 and mean score of married is 4.2176.

According to the mean score, customers who are divorce/separated perceive customer satisfaction higher than customers who are other group of marital status. So, divorce/separate people perceived customer satisfaction higher than people who are single or married. Customers who are different in marital status perceive customer satisfaction differently.



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

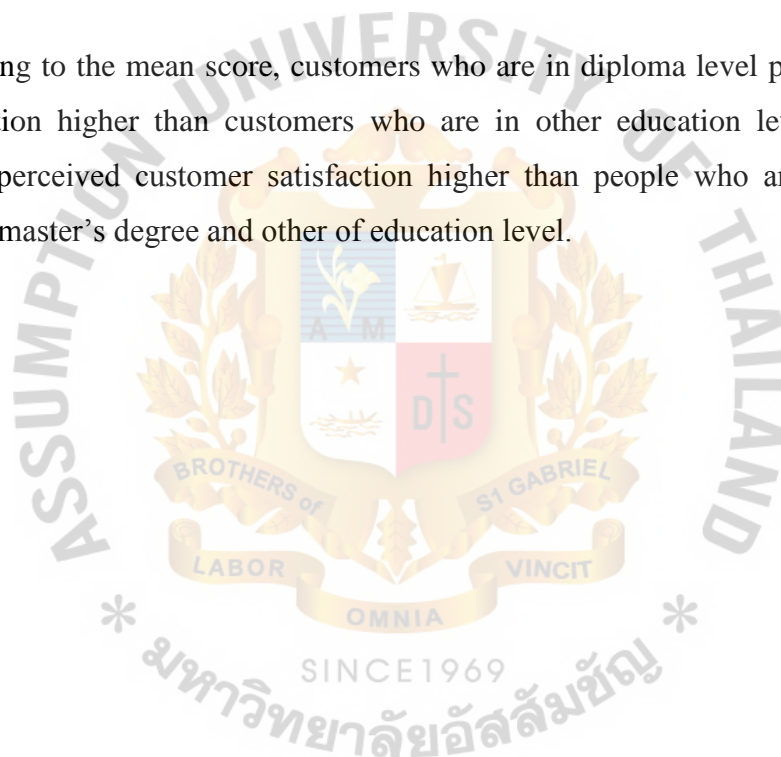
**Table: 4.18: ANOVA Result of Education Level for Hypothesis 6**

The ANOVA Procedure						
Class Level Information						
Class	Levels	Values				
Education level	4	Bachelor degree, Diploma, Master degree, Other				
Number of Observations Read and Used			484			
Analysis of Variance						
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F	
Model	3	26.8279853	8.9426618	28.89	< .0001	
Error	480	148.5776621	0.3095368			
Corrected Total	483	175.4056474				
R-Square	Coeff Var	Root MSE	Customer satisfaction Mean			
0.152948	12.86567	0.55636	4.324380			
Source		DF	Anova SS	Mean Square	F Value	Pr > F
Education level		3	26.82798529	8.94266176	28.89	< .0001
Alpha		0.05				
Error Degrees of Freedom		480				
Error Mean Square		0.309537				
Harmonic Mean of Cell Size		50.89297				
Number of Means		2	3	4		
Critical Range		0.2167	0.2282	0.2358		
Means with the same letter are not significantly different.						
Duncan Grouping		Mean	N	Education level		
A		4.7445	107	Diploma		
B		4.2516	257	Bachelor degree		
B						
B		4.1405	102	Master degree		
C		3.9074	18	Other		

From the table analysis of variance P-value is <0.001 that less than 0.05 and F-value is 28.89. Hypothesis is support and it means at least one group perceived customer

satisfaction differently. Therefore, the Duncan Multiple range test was performed. The result shows that there are three groups that are different in perception of customer satisfaction which are group A: people who get education in diploma; B: people who get education in Bachelor's degree and Master's degree; C: people who get other education. Mean score of people who get education in diploma is 4.7445, Mean score of people who get education in Bachelor's degree is 4.2516, Mean score of people who get education in Master's degree is 4.1405 and mean score of people who get other education is 3.6111.

According to the mean score, customers who are in diploma level perceive customer satisfaction higher than customers who are in other education level. So, diploma people perceived customer satisfaction higher than people who are the bachelor's degree, master's degree and other of education level.





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

**Table: 4.19: ANOVA Result of Occupation for Hypothesis 7**

The ANOVA Procedure

Class Level Information

Class	Levels	Values
Occupation	5	Company employee, Government employee, Other, State enterprises, Student

Number of Observations Read and Used484

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	15.5477343	3.8869336	11.65	< .0001
Error	479	159.8579131	0.3337326		
Corrected Total	483	175.4056474			

R-Square	Coeff Var	Root MSE	Customer satisfaction Mean
0.088639	13.35905	0.577696	4.324380

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Occupation	4	15.54773427	3.88693357	11.65	< .0001

Alpha	0.05
Error Degrees of Freedom	479
Error Mean Square	0.333733
Harmonic Mean of Cell Size	55.17939

Number of Means	2	3	4	5
Critical Range	0.2161	0.2275	0.2351	0.2408

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	Occupation
A	4.5903	48	Student
A			
A	4.5426	43	Government employee
A			
B	4.5095	35	State enterprises
B			
B	4.3108	289	Company employee
C	3.9662	69	Other

There is difference in customer satisfaction among people who are different in occupation. From the table analysis of variance P-value is  $<0.001$  that less than 0.05 and F-value is 11.65. Hypothesis is support and it means at least one group perceived customer satisfaction differently. Therefore, the Duncan Multiple range test was performed. The result shows that there are four groups that are different in perception of customer satisfaction which are group A: student, government employee; BA: state enterprises; B: Company employee; C: other. Mean score of student is 4.5903, Mean score of government employee is 4.5426, Mean score of state enterprises is 4.5095, Mean score of company employee is 4.3108, and mean score of other is 3.9662.

According to the mean score, customers who are students perceive customer satisfaction higher than customers who are in the other group of occupation. So, customers who are still students perceived customer satisfaction higher than people who are working as government employee, state enterprises employee, company employee and other of occupation.

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

**Table: 4.20: ANOVA Result of Monthly Income for Hypothesis 8**

The ANOVA Procedure

Class Level Information					
Class	Levels	Values			
Monthly income	5	15,001 - 30,000 Baht, 30,001 - 60,000 Baht, 9,001 - 15,000 Baht, Less than 9,000 Baht, More than 60,001 Baht			

Number of Observations Read and Used		484			
Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	37.4347782	9.3586946	32.49	< .0001
Error	479	137.9708692	0.2880394		
Corrected Total	483	175.4056470			

R-Square	Coeff Var	Root MSE	Customer satisfaction Mean
0.213418	12.41087	0.536693	4.324380

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Monthly income	4	37.43477823	9.35869456	32.49	< .0001

Alpha	0.05
Error Degrees of Freedom	479
Error Mean Square	0.288039
Harmonic Mean of Cell Size	46.88067

Number of Means	2	3	4	5
Critical Range	0.2178	0.2293	0.237	0.2427

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	Monthly income
A	4.9683	21	Less than 9,000 Baht
B	4.5067	250	15,001 - 30,000 Baht
C	4.2167	40	9,001 - 15,000 Baht
C			
C	4.2148	45	More than 60,001 Baht
D	3.9349	128	30,001 - 60,000 Baht

From the table analysis of variance P-value is  $<0.001$  that less than 0.05 and F-value is 32.49. Hypothesis is support and it means at least one group perceived customer satisfaction differently. Therefore, the Duncan Multiple range test was performed. The result shows that there are four groups that are different in perception of customer satisfaction which are group A: people who have income less than 9,000 Baht; B: people who have income 15,001 – 30,000 Baht; C: people who have income 9,001 – 15,000 Baht and people who have income more than 60,001 Baht; D: people who have income 30,001 – 60,000 Baht. Mean score of people who have income less than 9,000 Baht is 4.9683, Mean score of people who have income level between 9,001 – 15,000 Baht is 4.2167, Mean score of people who have income level between 15,001 – 30,000 Baht is 4.5067, Mean score of people who have income level between 30,001 – 60,000 Baht is 3.9349 and mean score of people who have income level higher than 60,000 Baht is 3.9349.

According to the mean score, customers who have income level less than 9,000 Baht, their customer satisfaction is higher than customers whose income level is more than 9,000 Baht. So, people who have income less than 9,000 Baht perceived customer satisfaction higher than people who have higher than 9,000 Baht of income level. Customers who are different in income level perceive customer satisfaction differently.

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

**Table: 4.21: T Test Result of Gender for Hypothesis 9**

The TTEST Procedure						
Gender	N	Mean	Std Dev	Std Err	Minimum	Maximum
Female	325	4.4905	0.4834	0.0268	3.0000	5.0000
Male	159	4.1421	0.4348	0.0345	3.0000	5.0000
Diff (1-2)		0.3483	0.468	0.0453		

Gender	Method	Mean	95% CL	Mean	Std Dev	95% CL	Std Dev
Female		4.4905	4.4377	4.5432	0.4834	0.4488	0.5237
Male		4.1421	4.074	4.2102	0.4348	0.3917	0.4886
Diff (1-2)	Pooled	0.3483	0.2593	0.4373	0.468	0.4402	0.4995
Diff (1-2)	Satterthwaite	0.3483	0.2624	0.4342			

Method	Variances	DF	t Value	Pr >  t
Pooled	Equal	482	7.69	<.0001
Satterthwaite	Unequal	345.28	7.97	<.0001

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folderd F	324	158	1.24	0.1319

From the equality of variance table P-value is 0.1319 that is greater than 0.05, variances are equal at <.0001. And P-value at equal variances is less than 0.05, thus, Hypothesis is support. It means different in gender; male and female, different in price fairness perception. Customers who are different in genders perceived price fairness differently. Mean score of female is 4.4905 and mean score of male is 4.1421. Regarding the result of mean score, female customers perceive price fairness higher than male customers.



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

**Table: 4.22: ANOVA Result of Age for Hypothesis 10**

The ANOVA Procedure					
Class Level Information					
Class	Levels	Values			
Age	4	16 - 25 years of age, 26 - 35 years of age, 36 - 45 years of age, From 46 years of age upward			

Number of Observations Read and Used			484		
Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	16.9707831	5.6569277	26.74	< .0001
Error	480	101.5512004	0.21157		
Corrected Total	483	118.52198			

R-Square	Coeff Var	Root MSE	Perceived price fairness Mean
0.143187	10.51093	0.459962	4.376033

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Age	3	16.97078309	5.6569277	26.74	< .0001

Alpha	0.05				
Error Degrees of Freedom	480				
Error Mean Square	0.211565				
Harmonic Mean of Cell Size	55.75104				

Number of Means	2	3	4
Critical Range	0.1712	0.1802	0.1863

Means with the same letter are not significantly different.			
Duncan Grouping	Mean	N	Age
A	4.65217	23	16 - 25 years of age
A			
A	4.55349	172	From 46 years of age upward
B	4.31282	234	26 - 35 years of age
C	3.97455	55	36 - 45 years of age

From the table analysis of variance P-value is <.0001 that less than 0.05 and F-value is 26.74. Hypothesis is support and it means at least one group perceived price fairness differently. Therefore, the Duncan Multiple range test was performed. The

result shows that there are three groups that are different in perception of perceived price fairness which are group A: people who ages between 16 – 25 years old and people who ages from 46 years old up; B: people who ages between 26 – 35 years old; and C: people who ages between 36 – 45 years old. Mean score of people who ages between 16 – 25 years old is 4.65217, Mean score of people who ages between 26-35 years old is 4.31282, Mean score of people who ages between 36-45 years old is 3.97455 and mean score of people who ages over 46 years is 4.55349.

According to the mean score, customers who are ages between 16 – 25 years old perceive price fairness higher than customers who are older than 25 years old. So, people who ages between 16 -25 years old perceived price fairness higher than people who ages more than 25 years old.



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

**Table: 4.23: ANOVA Result of Education Level for Hypothesis 11**

The ANOVA Procedure

Class Level Information

Class	Levels	Values
Education level	4	Bachelor degree, Diploma, Master degree, Other

Number of Observations Read and Used484

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	8.7805264	2.9268421	12.80	< .0001
Error	480	109.7414571	0.2286280		
Corrected Total	483	118.5219835			

R-Square0.074084

Coeff Var10.92658

Root MSE0.478151

Perceived price fairness Mean4.376033

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Education level	3	8.78052639	2.92684213	12.8	< .0001

Alpha0.05

Error Degrees of Freedom480

Error Mean Square0.228628

Harmonic Mean of Cell Size50.89297

Number of Means234

Critical Range0.18620.19610.2027

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	Education level
A	4.59065	107	Diploma
B	4.34118	102	Master degree
B			
B	4.32996	257	Bachelor degree
C	3.95556	18	Other

From the table analysis of variance P-value is <0.001 that less than 0.05 and F-value is 12.8. Hypothesis is support and it means at least one group perceived price fairness

differently. Therefore, the Duncan Multiple range test was performed. The result shows that there are three groups that are different in perception of perceived price fairness which are group A: people who get education in diploma; B: people who get Master's degree, Bachelor's degree; C: people who get other education. Mean score of diploma is 4.59065, Mean score of Master's degree is 4.34118, Mean score of Bachelor's degree is 4.32996 and mean score of other is 3.95556.

According to the mean score, customers who are in diploma level perceive price fairness higher than customers who are in other education level. So, diploma people perceived price fairness higher than people who are at the bachelor's degree, master's degree and other education level.



**4.2.12 Hypothesis 12:** There is difference in perceived price fairness between people who are different in occupation.

**Table: 4.24: ANOVA Result of Occupation for Hypothesis 12**

The ANOVA Procedure

Class Level Information

Class	Levels	Values
Occupation	5	Company employee, Government employee, Other, State enterprises, Student

Number of Observations Read and Used484

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	12.6910094	3.1727524	14.36	< .0001
Error	479	105.830974	0.2209415		
Corrected Total	483	118.5219835			

R-Square	Coeff Var	Root MSE	Perceived price fairness Mean
0.107077	10.74133	0.470044	4.376033

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Occupation	4	12.69100942	3.17275236	14.36	< .0001

Alpha	0.05
Error Degrees of Freedom	479
Error Mean Square	0.220941
Harmonic Mean of Cell Size	55.17939

Number of Means	2	3	4	5
Critical Range	0.1758	0.1851	0.1913	0.1959

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	Occupation
A	4.60000	48	Student
A			
B	4.43253	289	Company employee
B			
B	4.39070	43	Government employee
B			
B	4.30286	35	State enterprises
C	4.01159	69	Other

There is difference in customer satisfaction among people who are different in occupation. From the table analysis of variance P-value is  $<0.001$  that less than 0.05 and F-value is 14.36. Hypothesis is support and it means at least one group perceived price fairness differently. Therefore, the Duncan Multiple range test was performed. The result shows that there are four groups that are different in perception of perceived price fairness which are group A: student; BA: company employee; B: government employee, state enterprises; C: other. Mean score of student is 4.6000, Mean score of company employee is 4.43253, Mean score of government employee is 4.39070, Mean score of state enterprises is 4.30286 and mean score of other is 4.01159.

According to the mean score, customers who are students perceive price fairness higher than customers who are in the other group of occupation. So, customers who are students perceived price fairness higher than people who are working as the government employee, state enterprises employee, company employee and other occupations.



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

**Table: 4.25: ANOVA Result of Monthly Income for Hypothesis 13**

The ANOVA Procedure

Class Level Information

Class	Levels	Values
Monthly income	5	15,001 - 30,000 Baht, 30,001 - 60,000 Baht, 9,001 - 15,000 Baht, Less than 9,000 Baht, More than 60,001 Baht

Number of Observations Read and Used484

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	10.270263	2.5675657	11.36	< .0001
Error	479	108.2517205	0.2259952		
Corrected Total	483	118.5219835			

R-Square	Coeff Var	Root MSE	Perceived price fairness Mean
0.086653	10.86348	0.47539	4.376033

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Monthly income	4	10.27026296	2.56756574	11.36	< .0001

Alpha	0.05
Error Degrees of Freedom	479
Error Mean Square	0.225995
Harmonic Mean of Cell Size	46.88067

Number of Means	2	3	4	5
Critical Range	0.1929	0.2031	0.2099	0.215

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	Monthly income
A	4.80952	21	Less than 9,000 Baht
B	4.58222	45	More than 60,001 Baht
B			
C	4.40560	250	15,001 - 30,000 Baht
C			
C	4.29000	40	9,001 - 15,000 Baht
D			
D	4.20156	128	30,001 - 60,000 Baht

There is difference in perceived price fairness among people who are different in income level. From the table analysis of variance P-value is  $<0.001$  that less than 0.05 and F-value is 11.36. Hypothesis is support and it means at least one group perceived price fairness differently. Therefore, the Duncan Multiple range test was performed. The result shows that there are five groups that are different in perception of perceive price fairness which are group A: people who have income less than 9,000 Baht; B: people who have income more than 60,001 Baht; CB: people who have income 15,001 – 30,000 Baht; CD: people who have income 9,001 – 15,000 Baht; D: people who have income 30,001 – 60,000 Baht. Mean score of people who have income less than 9,000 Baht is 4.80952, Mean score of people who have income level between 9,001 – 15,000 Baht is 4.29000, Mean score of people who have income level between 15,001 – 30,000 Baht is 4.40560, Mean score of people who have income level between 30,0001 – 60,000 Baht is 4.20156 and mean score of people who have income level higher than 60,000 Baht is 4.58222.

According to the mean score, customers who have income level less than 9,000 Baht perceived price fairness higher than customers whose income level is more than 9,000 Baht. So, people who have income less than 9,000 Baht perceived price fairness higher than people who have income higher than 9,000 Baht.

**4.2.14 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.

**Table: 4.26: T Test Result of Gold Card for Hypothesis 14**

The TTEST Procedure						
Gold card	N	Mean	Std Dev	Std Err	Minimum	Maximum
No	355	4.3207	0.556	0.0295	3.0000	5.0000
Yes	129	4.3346	0.7179	0.0632	3.0000	5.0000
Diff (1-2)		-0.0140	0.6032	0.0620		

Gold card	Method	Mean	95% CL	Mean	Std Dev	95% CL	Std Dev
No		4.3207	4.2626	4.3787	0.556	0.5178	0.6002
Yes		4.3346	4.2096	4.4597	0.7179	0.6397	0.8181
Diff (1-2)	Pooled	-0.0140	-0.1358	0.1079	0.6032	0.5674	0.6439
Diff (1-2)	Satterthwaite	-0.0140	-0.1516	0.1236			

Method	Variances	DF	t Value	Pr >  t
Pooled	Equal	482	-0.23	0.8219
Satterthwaite	Unequal	186.66	-0.20	0.8415

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folderd F	128	354	1.67	0.0003

From the equality of variance table P-value is 0.0003 that less than 0.05, variance are unequal at 0.8415 and F value is 1.67. Accordingly, P-value of unequal variances is higher than 0.05, therefore, Hypothesis is not support and it means customers who use and do not use gold card 30 Baht, they perceived customer satisfaction the same.

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

**Table: 4.27: T Test Result of Social Security for Hypothesis 15**

The TTEST Procedure						
Social security	N	Mean	Std Dev	Std Err	Minimum	Maximum
No	377	4.3068	0.6287	0.0324	3.0000	5.0000
Yes	107	4.3863	0.4977	0.0481	3.0000	5.0000
Diff (1-2)		-0.0795	0.6023	0.0660		

Social security	Method	Mean	95% CL	Mean	Std Dev	95% CL	Std Dev
No		4.3068	4.2431	4.3705	0.6287	0.5868	0.6771
Yes		4.3863	4.2909	4.4817	0.4977	0.4388	0.575
Diff (1-2)	Pooled	-0.0795	-0.2091	0.0502	0.6023	0.5666	0.6429
Diff (1-2)	Satterthwaite	-0.0795	-0.1938	0.0348			

Method	Variances	DF	t Value	Pr >  t
Pooled	Equal	482	-1.20	0.2289
Satterthwaite	Unequal	211.53	-1.37	0.1720

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folderd F	376	106	1.60	0.0045

From the equality of variance table P-value is 0.0045 that less than 0.05, variance are unequal at 0.1720 and F value is 1.60. Accordingly, P-value of unequal variances is higher than 0.05, therefore, Hypothesis is not support and it means that customers who use and do not use social security perceived customer satisfaction the same.

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

**Table: 4.28: ANOVA Result of Service Time for Hypothesis 16**

The ANOVA Procedure

Class Level Information

Class	Levels	Values
Service time	6	From 2 - 3 hours, From 3 - 4 hours, From 4 - 5 hours, From 5 hours above, From 61 minutes - 2 hours, Less than 60 minutes

Number of Observations Read and Used484

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	7.6518082	1.5303616	4.36	0.0007
Error	478	167.7538392	0.3509495		
Corrected Total	483	175.4056474			

R-Square	Coeff Var	Root MSE	Customer satisfaction Mean
0.043623	13.6993	0.59241	4.324380

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Service time	5	7.65180822	1.53036164	4.36	0.0007

Alpha	0.05
Error Degrees of Freedom	478
Error Mean Square	0.350949
Harmonic Mean of Cell Size	44.86349

Number of Means	2	3	4	5	6
Critical Range	0.2458	0.2588	0.2674	0.2738	0.2788

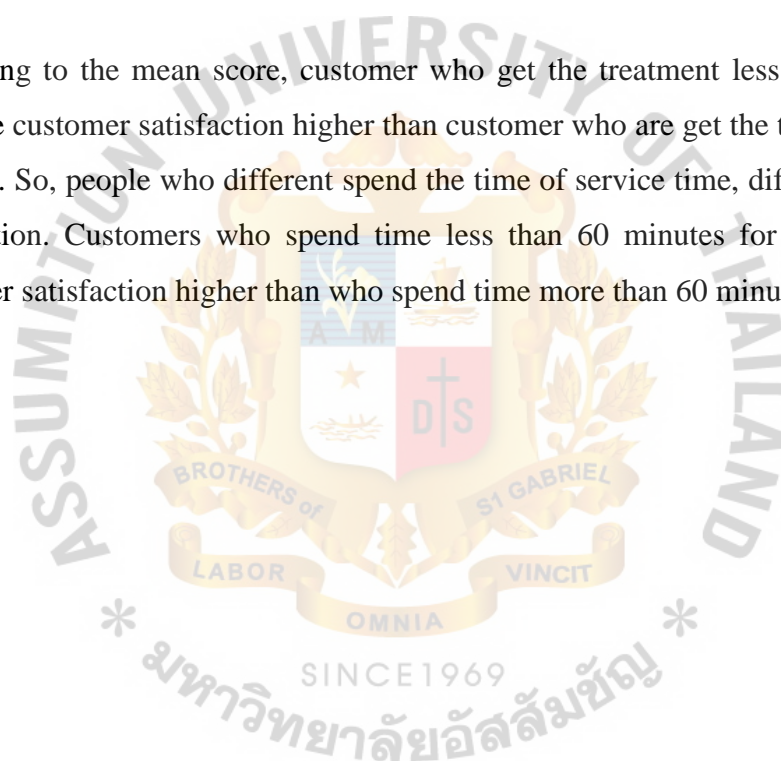
Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	Service time
A	4.8333	16	Less than 60 minutes
B	4.4280	118	From 5 hours above
B			
B	4.3389	119	From 3 - 4 hours
B			
B	4.2619	56	From 4 - 5 hours
B			
B	4.2234	141	From 61 minutes - 2 hours
B			
B	4.1961	34	From 2 - 3 hours

From the table analysis of variance P-value is 0.0007 that less than 0.05 and F-value is 4.36. Hypothesis is support and it means at least one group perceived customer satisfaction differently. Therefore, the Duncan Multiple range test was performed.

The result shows that there are two groups that are different in perception of customer satisfaction which are group A: people who spend the time of the service less than 60 minutes; B: people who spend the time of the service from 5 hours above, people who spend the time of the service from 3 – 4 hours, people who spend the time of the service from 4 – 5 hours, people who spend the time of the service from 61 minutes – 2 hours and people who spend the time of the service from 2 – 3 hours. Mean score of people who spend time less than 60 minutes is 4.8333 and group B mean score between 4.1961 – 4.4280

According to the mean score, customer who get the treatment less than 60 minutes perceive customer satisfaction higher than customer who are get the treatment over 60 minutes. So, people who different spend the time of service time, difference customer satisfaction. Customers who spend time less than 60 minutes for service perceive customer satisfaction higher than who spend time more than 60 minutes.





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

**Table: 4.29: ANOVA Result of Waiting Time of Process for Hypothesis 17**

The ANOVA Procedure

Class Level Information

Class	Levels	Values
Waiting time of process	5	From 16 - 30 minutes, From 31 - 45 minutes, From 46 minutes - 1 hour, Less than 15 minutes, Over 1 hour

Number of Observations Read and Used484

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	5.132709	1.2831773	3.61	0.0065
Error	479	170.2729383	0.3554759		
Corrected Total	483	175.4056474			

R-Square	Coeff Var	Root MSE	Customer satisfaction Mean
0.029262	13.78736	0.596218	4.324380

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Waiting time of process	4	5.13270903	1.28317726	3.61	0.0065

Alpha	0.05
Error Degrees of Freedom	479
Error Mean Square	0.355476
Harmonic Mean of Cell Size	31.43495

Number of Means	2	3	4	5
Critical Range	0.2955	0.3111	0.3215	0.3292

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	Waiting time of process
A	5.0000	8	Less than 15 minutes
B	4.4068	118	Over 1 hour
B			
B	4.2946	99	From 16 - 30 minutes
B			
B	4.2855	136	From 31 - 45 minutes
B			
B	4.2683	123	From 46 minutes - 1 hour

From the table analysis of variance P-value is 0.0065 that less than 0.05 and F-value is 3.61. Hypothesis is support and it means at least one group perceived customer satisfaction differently. Therefore, the Duncan Multiple range test was performed.

The result shows that there are two groups that are different in perception of customer satisfaction which are group A: people who waiting less than 15 minutes; B: people who waiting over 1 hour, people who waiting from 16 – 30 minutes, people who waiting 31 -45 minutes and people who waiting from 46 – 1 hour. Mean score of people who waiting less than 15 minutes is 5.0000 and group B mean score between 4.2683 – 4.4068.

According to the mean score, customers who are waiting less than 15 minutes perceive customer satisfaction higher than customers who are waiting more than 15 minutes.

**4.2.18** Investigate the simultaneous effect of the demographic variables on customer satisfaction

**Table: 4.30: Linear Regression Result of Demographic and Customer Satisfaction**

Number of Observation Read and Used					484
Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	6	51.18173	8.53029	32.75	<.0001
Error	477	124.22392	0.26043		
Corrected Total	483	175.40565			
Root MSE		0.51032	R-Square	0.2918	
Dependent Mean		4.32438	Adj. R-Sq	0.2829	
Coeff Var		11.80102			

From the table analysis of variance P-value is <0.001 that less than 0.05 and F-value is 32.75 which means demographic affect customer satisfaction. Adjusted R square of the result shows 0.2829 it means that demographic can explain customer satisfaction at 28.29%.

**Table: 4.31: Parameter Estimate for Independent Variables of Demographic and Customer Satisfaction**

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr >  t
Intercept	1	4.10629	0.08175	50.23	<.0001
Gender	1	0.30812	0.05441	5.66	<.0001
Age	1	0.11464	0.05987	1.91	0.0561
Marital status	1	-0.02963	0.05369	-0.55	0.5813
Education level	1	0.39945	0.07553	5.29	<.0001
Occupation	1	-0.45189	0.05965	-7.58	<.0001
Income level	1	0.31536	0.05995	5.26	<.0001

From table 4.31 show parameter estimates table of variance P-value is <0.001 that less than 0.05 are gender, education level, occupation and income level.

### 4.3 Chapter Summary

The findings from the quantitative analysis indicated the services that customers perceived and the service quality of hospital. The research has summarized all frequency analysis to explain the means of all data for the observed variables of all six public hospitals as the results (Appendic C), which were discussed in the previous part and the result of hypotheses were developed and tested according to all correlation coefficient were significant ( $Pr < 0.05$ ). Service quality consists of five dimensions, which are tangibility; from the research it was found that the result of data analysis on level of agreement (Appendix B). The research finding shows the highest score of customer satisfaction was reliability while the result 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 include with the control variables (gender, age,

education level, income level, occupation and marital status) had a greater effect on customer satisfaction in all six public hospitals. Perceived price fairness had a greater effect on customer satisfaction. Further result indicated that service time of the hospital and waiting time (queue) of service process had a positive and significant effect on customer satisfaction in all six public 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.



## CHAPTER V

### SUMMARY FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter is to know whether the research question or hypotheses were answered. This part of the research cover the conclusion, implication, limitation, and suggestion for the future research. The conclusion comes from chapter 4 and the discussion based on the theoretical reviews is from chapter 2. In addition, it includes those that are relevant to the public hospitals, organizational level and management discussed in this model.

#### 5.1 Summary of the Findings

Based on hypothesis testing, according to conceptual framework of customer satisfaction toward public hospital, a positive relationship between the independent variables (SERVQUAL : tangibility, responsiveness, assurance, reliability, empathy, communication, perceived price fairness and waiting time) and mediating (customer satisfaction) and dependent variable (customer loyalty). The findings of the hypotheses testing have been presented in chapter 4, which are concluded in Table 5.1 below.

**Table 5.1: Conclusion of Hypotheses Testing**

Hypothesis		Finding
H1	SERVQUAL, communication, perceived price fairness and waiting time affect customer satisfaction on public hospital in Bangkok.	Supported
H2	Customer satisfaction affects customer loyalty to public hospitals in Bangkok.	Supported

<b>Hypothesis</b>		<b>Finding</b>
H3	There is a difference in customer satisfaction between people who are different in gender.	Supported
H4	There is a difference in customer satisfaction among people who are different in age.	Supported
H5	There is a difference in customer satisfaction among people who are different in marital status.	Supported
H6	There is a difference in customer satisfaction among people who are different in education.	Supported
H7	There is a difference in customer satisfaction among people who are different in occupation.	Supported
H8	There is a difference in customer satisfaction among people who are different in income level.	Supported
H9	There is a difference in perceived price fairness between people who are different in gender.	Supported
H10	There is a difference in perceived price fairness among people who are different in age.	Supported
H11	There is difference in perceived price fairness among people who are different in education.	Supported
H12	There is a difference in perceived price fairness among people who are different in occupation.	Supported
H13	There is a difference in perceived price fairness among people who are different in income level.	Supported
H14	There is a difference in customer satisfaction between people who use gold card 30 Baht and do not use gold card 30 Baht.	Not Supported
H15	There is a difference in customer satisfaction between people who use social security and do not use social security.	Not Supported
H16	There is a difference in customer satisfaction among people who experience different service time.	Supported
H17	There is a difference in customer satisfaction among people who experience different waiting time at hospital.	Supported



From table 5.1, it shows the summary of hypothesis testing of the factors affecting customer satisfaction and customer loyalty that hypotheses are support except hypotheses of 14 and 15 are not support. The main research problem was answer by hypothesis 1 and hypothesis 2 that the service quality, communication, perceived price fairness and waiting time affect customer satisfaction. So, the dependent variables significantly affect customer satisfaction. From the result of hypothesis 2, customer satisfaction has a significant effect on customer loyalty.

### **SERVQUAL and Customer Satisfaction**

1) Tangibility: the result shows tangibility affecting satisfaction about personnel behavior that should be more effective and polite. In fact, that public hospital, the patients need for information about the service they would receive. And they found that a lot of patients admitted in public hospitals and the nurses with the other staff have sufficient time to provide the service to them.

2) Reliability: the result shows reliability affecting satisfaction on the system of public hospitals. Patients have an understanding about the number of patients each day and the condition of public hospitals but starting from point of service, the information should be collected because patients do not need to provide the repeated information and after they get the treatment, they need to know the right information and they expect the best service out of the hospital from the first time they visit.

3) Responsiveness: the result shows responsiveness affecting satisfaction on the employee's behavior in public hospitals. In the current situation, public hospitals have a lot of patients and lack of doctors or nurse personnel. However, sometime, patients need to see the willingness of the hospital staff to serve and care for them. So, public hospitals should train the employees as an organizational culture.

4) Assurance: the result shows assurance affecting satisfaction on the employee's behavior in public hospitals. Due to the large number of patients but lack of staff in charge, they have to work speedily with the rapid time and more patients in questions

that express wrong answers and avoid impoliteness. So, public hospitals should conduct managerial competency and improve the confidence with customer.

5) Empathy: the result shows that empathy affecting satisfaction on the hospital service that should understand more the patient's needs in the public hospitals. Although patients get the services they need, individualized attention and the understanding of the hospital staff is important. Patients feel if the staff do not pay attention to them and from this point of view, public hospitals should supply an adequate number of personnel to serve the patients.

### **Communication and Customer Satisfaction**

Communication: the result shows communication affecting satisfaction on the communication between doctor and patient of public hospital. Normally, doctors who diagnose have the specific vocabulary that cannot be understood by the patients. The high impact is when patients do not know what they will do, thus preventing to get the treatment. But, if the doctor has the ability to communicate within the patient's level of understanding, the treatment process will become easier. So, doctor has to know more on how to communicate with patients in simple terms.

### **Perceived Price Fairness and Customer Satisfaction**

Perceived price fairness: the result shows perceived price fairness affecting satisfaction on the price when patient compares it to another hospital. From this case, it can occur with patient who has used clinical health care which is cheaper. But, clinical can serve only normal treatment and if comparing it to the hospital that can treat all diseases, so the price is different. Also, many hospitals reject or have limited space for the government benefit paid that makes patient pay in full. So, public hospitals should get more budget from the government to make people get fees cheaper.

### **Waiting Time and Customer Satisfaction**

Waiting time: the result shows the waiting time affecting satisfaction on the process of nurse who provides the services public hospitals. In the prime time of OPD, it is open to a lot of patients. The number of nurses providing services is not enough. So, public hospitals should design an appointment card to make sure that patients will come on that time and prepare service personnel to serve the number of patients.

It is obvious that public hospitals have large number of patients every single day. It should be given more attention and understand the patients who have specific needs because they need understanding. The relationship among public hospitals and service quality, communication, perceived price fairness and waiting time should have service personnel which can systematically accommodate the increasing number of patients each day. Some patients are satisfied with the services; however, they also expect an improvement in the services provided by the public hospitals.

The relationship between customer satisfaction and customer loyalty were exam and we discovered the patients as satisfied decision to use public hospital. In terms of perception on customer, they still choose public hospitals to get the service. As Oliver & Richard, (1999) said that the customer service is the heart of service business when patient get the service treatment as they expect like first impression so patient will perceived or satisfied on the service and it hard to deny to come back again. The quality of the service of public hospitals during prime time with a lot of patients is still in good quality that makes patients satisfied, so they agree and confident to select the same hospital to get treatment.

Patients background effect on customer satisfaction when demographic (gender, age, marital status, education level, occupation and income level) are included. So the service quality, communication, perceived price fairness and waiting time are workable for customer satisfaction in public hospitals in Bangkok.

The relationship among patients who use government paid (Gold card 30 baht and social security) visit public hospitals and when they get poor service, that makes them perceive that the service quality is low. And service time and waiting time are normally more than one hour to two hours but in some public hospitals where there are a lot of patients, the process to make customer wait and finish the whole service is more than five hours. But in terms of waiting time of each process, not much concern because patients know the amount of patients in each day and they feel that there is not enough personnel like doctors and nurses to provide the services.

## 5.2 Conclusions

Based on the relationship between dependent factors are perceived price fairness and waiting time which means that the hypotheses of two factors show an influence on customer satisfaction. When the product or service outperforms expectation as positive disconfirmation, the satisfaction will be the result (Oliver, 1980). Thus, when patients use the services of public hospitals and get more perceived price fairness and waiting time, they will get more satisfaction. The result of customer satisfaction affects customer loyalty to public hospitals in Bangkok, mostly patient satisfaction and loyalty in B hospital and C hospital in the same rank. The reason might be from the perception of customer who perceived price fairness because B and C hospital get the highest satisfaction on that factor. In fact, public hospitals mostly have the standard price but the key is customer who perceive that the price is fair is not the same.

The results of the test show that the waiting time for the service and the service personnel pay attention to customer have not reached the satisfaction of customer, it can be another meaning because of the prime time and patient increasing in number in every single day and hospitals lack personnel resources that might be the reason of the other four hospitals. The results on customer satisfaction show that the variable has influence on behavioral intention or loyalty. Customer satisfaction is regarded as fundamental determinant of long term consumer behavior (Oliver, 1997) as the

hospitals that also need patients in long term. It has proposed as patient assessment of the service value that influences loyalty to public hospital (Zeithaml et al., 1996). This behavior can be either positive to the service business 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.

### **5.3 Theoretical Implications**

Based on this research, the empirical findings are aimed as part for discussion. The theoretical contribution, concept and relevance to public hospitals for public hospitals to be more effective and enhance patient satisfaction. The model was developed from the previous study and it has contributed to the literature in the sense that it provides knowledge about health care or hospital service. In addition, the variables only service quality not enough for the present situation so add more to communication that can create value to customer while they use the service and another two main theories that can lead to customer satisfaction in public hospitals are perceived price fairness and waiting time.

In the end, a new model was developed on the basis of existing theories and empirical results. It contributes a lot for future research and someone can come up with more factors combination for hospital organization. Service quality is one model that measures the quality of service business. Many previous research studies on SERVQUAL model and most of them found the gap between perception of customer and service personnel as having high impact on customer satisfaction (Choi et al., 2005). Same as this study in part of the sizing of the service personnel and customer, sizing of tangibles or equipment is not enough for customers but it does not affect the perception of the patients in terms of services. The main impact comes from the perceived price fairness and these findings are consistent with the study of Holder and



Berndt (2011) the meaning is when patients perceive that price is fair they will repurchase or loyal to the hospital but if they perceive unreasonable price and not worthwhile they will possibly not come to that hospital again by not minding they will be satisfied with the service or not.

The result is also important as all the factors of loyalty necessarily do not lead to action of customers who perceived not fair for them when compared to the service that they get. This research is concerned with the different variables on patient satisfaction. From the summary of these results, I believe that the present study has a lot of things to be discussed. In this study, patients were satisfied with SERVQUAL measurement of public hospital, this supports the theory of Zineldin (2006) patient satisfaction combined with many different factors in terms of organization that take care of their health (hospital), such as technical, infrastructure and atmosphere factors. In the same time the theory supports the model of my study that different service quality, communication, price fairness and waiting time directly affect patient satisfaction. Based on the inferential statistic, information of my study, the patients in public hospitals in Bangkok gave positive feedback for the service quality such as the infrastructure of the hospital which is enough and accurate, the standard of the service, the willingness and politeness of the staff, the understanding in communication, the reasonable price and the time of waiting in each process. These attributes gave the result and can be linked to word of "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).

#### **5.4 Managerial Implications**

Now diverted to the hospital or health care sector in terms of high competition and the researcher believes that this study is useful to hospital service providers.



First, the results can be used to improve the quality of public hospitals and build patient's loyalty by gaining more satisfaction. This research can be a deep insight toward an improved public hospital, as dissatisfied customers lead to disloyalty might be worse. Thus this research exerts some pressure on public hospitals as well, if lack in service and patient not trust worthy. Public hospitals should focus on significant dimension of perceived price fairness and waiting time because the patients give the positive effect regarding their satisfaction. It reveals that perceived fairness of price increases and shed light on the satisfaction and loyalty of customers.

Second, based on the findings public hospitals should focus on how to make patients get a good service with a reasonable price and how customers sacrifice time and effort and effort in their purchasing then customers will feel worthy in choosing public hospitals. This research provides answers related to how patients perceive public hospital services.

Third, the study also provides the perception from patients regarding the value of using public hospitals. From the public hospital or government perspective, the research can be useful for healthcare industry and in order to be more effective inpatient perception. Providing improved waiting time, price fairness and maintaining service quality can gain the reputation of patient satisfaction level.

And last from this study can be part of decision making, planning, and control the working process to achieve the goal. Public hospitals can develop in part of competency, dependability, integrity and equity, which are core competence that can improve and the information can be a guide to quickly solve the root cause of hospital problems.

## 5.5 Limitations and Recommendations for Future Research

This research used purposive sampling method, though a benefit of this kind of sampling as convenience sampling and this research cannot be validated by all hospitals or all health care organizations because only six public hospitals were used as participants for the data collection. All of them have been developed in terms of process and service personnel. The limitations are as follows:

First the research area, the data collection was focused only in Bangkok. There is a limitation because the questionnaire could not be distributed to patients in other areas such as north and south. It will impact on accuracy of the study and cannot represent as a whole Thai patient.

Second the sampling group came from various background that some respondents needed more explanation to the questions and some did not understand in depth, so it may impact on the accuracy of the answer given. And the answers in the questionnaires may have been distorted because they were distributed to only six public hospitals in the prime time that respondents were in a hurry and needed to meet with the doctor, it made answers not careful and it may be distorted in the current satisfaction.

Third the time and information always have been the main constraint in the research study since the limit of academic research with the limited time and the target only the institution of medical for public hospitals in Bangkok only. The information and permission from each hospital have the pending process and have to wait for the director to approve and some were disapproved. The main topic is concern about factors that affect patient satisfaction and loyalty to public hospitals in Bangkok, thus collecting data from the real patient in the real situation was the most interesting.

The last will show the field that is interesting from this study. 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 between private hospitals to increase

participants and widen generalization. Therefore, the next research for anybody who is interested in this issue can focus on other provinces of Thailand and can be either Thai or foreigners who live in Thailand. When foreigners travel to Thailand, some stay to work or long time and they use public hospital services. And this research has focused only on some variables (SERVQUAL, communication, perceived price fairness and waiting time) relating to customer loyalty and satisfaction. It might be other variables affecting customer satisfaction and loyalty. Therefore, the future researcher may investigate on the sustainability of public hospitals in developing the process in Bangkok, Thailand for deep understanding.



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แผนกเวชศาสตร์ฟื้นฟูศูนย์การแพทย์กาญจนาภิเษก มหาวิทยาลัยมหิดล The Relationship between Lean

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APPENDICES







## APPENDIX A

### Questionnaire

## **FACTORS THAT AFFECT PATIENT SATISFACTION IN PUBLIC HOSPITALS IN BANGKOK**

- Have you ever been Public hospital serviced Please specify and continue to Part 1.
- Siriraj hospital
  - Chulalongkorn hospital
  - Phramongkutklao hospital
  - Rajavithi hospital
  - Vajira hospital
  - Ramathibodi hospital
1. Who is responsible for your medical expenses
- ☐ Myself
  - ☐ Insurance/Company benefit
  - ☐ Government insurance policy
  - ☐ Social security
2. The service time for one time of treatment
- ☐ Less than 60 minutes
  - ☐ From 61 minutes to 2 hour
  - ☐ From 2 hour to 3 hours
  - ☐ From 3 hour to 4 hours
  - ☐ From 4 hour to 5 hours
  - ☐ From 5 hours above
3. The service time for waiting time of the process
- ☐ Less than 15 minutes
  - ☐ From 16 minutes – 30 minutes
  - ☐ From 31 minutes – 45 minutes
  - ☐ From 46 minutes – 1 hour
  - ☐ Over 1 hour
4. Did you used the Government benefit paid (Gold card)
- ☐ Yes
  - ☐ No
5. Did you used the Social security paid
- ☐ Yes
  - ☐ No

**Part II : Construct measurement variables ( Check only one and fill in the blank)**

- 1 Strongly disagree
- 2 Disagree
- 3 Neither agree nor disagree
- 4 Agree
- 5 Strongly Agree

		Strongly Disagree		Strongly Agree		
		←-----→				
TAN	Tangibility	1	2	3	4	5
1	Hospital be furnished with modern equipment and be always standard.	1	2	3	4	5
2	An effective hospital be beautiful and stable in the physical structure.	1	2	3	4	5
3	Hospitals be equipped with effective and gentle employees.	1	2	3	4	5
4	Waiting area have enough and good environment	1	2	3	4	5
5	An excellent hospital provide utensils and equipment i.e. leaflets with clear and accurate information about hospital.	1	2	3	4	5
REL	Reliability	1	2	3	4	5
1	Hospital inform the services prior to service at every time.	1	2	3	4	5
2	Hospital manifest a readiness to serve and ready to solve the problem to the clients immediately.	1	2	3	4	5
3	Hospital provide the standard service from the point which service begin.	1	2	3	4	5
4	Hospital provide a service on exactly schedule time.	1	2	3	4	5
5	Hospitals provide the record of patient information correctly.	1	2	3	4	5
6	Hospital not provide services i.e. provide repeated information on the same topics.	1	2	3	4	5
RES	Responsiveness	1	2	3	4	5
1	Staff provide excellent service to patients as soon as patient arrives at the hospital.	1	2	3	4	5
2	Staff show willingness to serve and care.	1	2	3	4	5
3	Staff be ready to serve upon a patient’s request.	1	2	3	4	5
4	Nurse provide excellent service to patients as soon as patient arrives at the hospital.	1	2	3	4	5
5	Nurse show willingness to serve and care.	1	2	3	4	5
6	Nurse be ready to serve upon a patient’s request.	1	2	3	4	5
ASS	Assurance	1	2	3	4	5
1	Staff ensure the client of confidence in the service.	1	2	3	4	5
2	Staff ensure the patient of a sense of security with the	1	2	3	4	5

		Strongly Disagree			Strongly Agree	
		←————→				
	service provided by hospital.					
3	Staff be polite, well-mannered and courtesy to patients.	1	2	3	4	5
4	Staff be knowledgeable in answering questions for patient.	1	2	3	4	5
5	Nurse ensure the client of confidence in the service.	1	2	3	4	5
6	Nurse ensure the patient of a sense of security with the service provided by hospital.	1	2	3	4	5
7	Nurse be polite, well-mannered and courtesy to patients.	1	2	3	4	5
8	Nurse be knowledgeable in answering questions for patient.	1	2	3	4	5
<b>EMP</b>	<b>Empathy</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	Hospital pay attention to the patient individually.	1	2	3	4	5
2	Hospital provide adequate staffs to take care of the patients.	1	2	3	4	5
3	Hospital access to the patient's feeling.	1	2	3	4	5
4	Hospital have an understanding of the specific needs for patients.	1	2	3	4	5
<b>COM</b>	<b>Communication</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	Doctor have talk, asking the information of patient before treatment.	1	2	3	4	5
2	Doctor use easy vocabulary to more understand.	1	2	3	4	5
3	Doctor has ability to communicate about the medical treatment with patient.	1	2	3	4	5
4	Doctor has ability to communicate with understanding to patient.	1	2	3	4	5
5	Nurse are able to give the information to patient immediately.	1	2	3	4	5
6	Nurse has ability to communicate with understanding to patient.	1	2	3	4	5
7	Nurse are able to use the body language to explain patient.	1	2	3	4	5
8	Staff ask the name and surname of patient before payment.	1	2	3	4	5
9	Staff ask the name and surname of patient before give the medicine.	1	2	3	4	5
10	Staff are able to explain the medicine and payment information to patient immediately.	1	2	3	4	5
<b>PPF</b>	<b>Price fairness</b>	1	2	3	4	5
1	Perceive price fairness when compare with other hospital and healthcare	1	2	3	4	5
2	Reasonable price for medical bill	1	2	3	4	5
3	Reasonable price for medical bill when compare to the economic situation	1	2	3	4	5
4	Affordable fees for treatment and service of the hospital	1	2	3	4	5
5	The service quality of hospital be worthwhile to paid	1	2	3	4	5

		Strongly Disagree			Strongly Agree	
		1	2	3	4	5
<b>WTT</b>	<b>Waiting Time</b>					
1	Doctor have providing services at appoint time.	1	2	3	4	5
2	Nurse have providing services at appoint time.	1	2	3	4	5
3	Staff have providing services at appoint time.	1	2	3	4	5
4	Doctor provided at promise time.	1	2	3	4	5
5	Nurse provides service without delay.	1	2	3	4	5
6	The staff provides service without delay.	1	2	3	4	5
7	The waiting time for physician and receive the treatment is appropriate.	1	2	3	4	5
8	The waiting time for receive nurse service is appropriate.	1	2	3	4	5
9	The waiting time for payment to staff is appropriate.	1	2	3	4	5
<b>CS</b>	<b>Customer satisfaction</b>					
1	If you had to decide again, you still use the service from this hospital.	1	2	3	4	5
2	You are happy with the purchase made on this hospital.	1	2	3	4	5
3	You think you did the right things in using this service of the hospital.	1	2	3	4	5
4	You feel good about your decision to use this hospital.	1	2	3	4	5
5	You are satisfied with your decision to use this hospital	1	2	3	4	5
6	Your decision to use on this hospital were a wise one	1	2	3	4	5
<b>CL</b>	<b>Customer loyalty</b>					
1	In the next year, I still choose this hospital	1	2	3	4	5
2	I am certain that I will continue use this hospital	1	2	3	4	5
3	This hospital will be my first choice in the treatment decision process	1	2	3	4	5
4	The overall quality of service is high than other hospital	1	2	3	4	5
5	My feeling towards hospital's service can be positively best described	1	2	3	4	5

**Part III : Personal Profile ( Check only one and fill in the blank)**

1. Gender
  - ☐ Male
  - ☐ Female
2. Age
  - ☐ Less than 15 years of age
  - ☐ 16 - 25 years of age

- ☐ 26 - 35years of age
- ☐ 36 - 45 years of age
- ☐ From 46 years of age upward
- 3. Marital status
  - ☐ Single
  - ☐ Married
  - ☐ Divorce/ separated
  - ☐ Other ...
- 4. Educational Level
  - ☐ Under high school
  - ☐ High school
  - ☐ Diploma
  - ☐ Bachelor degree
  - ☐ Master degree
  - ☐ Other
- 5. Occupation
  - ☐ Student
  - ☐ Government employee
  - ☐ State enterprises
  - ☐ Company employee
  - ☐ Business owner
  - ☐ Other
- 6. Monthly income
  - ☐ Less than 9,000 baht
  - ☐ 9,001 - 15,000 baht
  - ☐ 15,001 - 30,000 baht
  - ☐ 30,001 - 60,000 baht
  - ☐ More than 60,001 baht

Thank you for your cooperation





## FACTORS THAT AFFECT PATIENT SATISFACTION IN PUBLIC HOSPITALS IN BANGKOK

- คุณเคยใช้บริการของโรงพยาบาลรัฐบาลหากเคยใช้บริการ รบกวนทำแบบสอบถามต่อไปนี้ในส่วนที่ 1 ค่ะ
- โรงพยาบาลศิริราช
  - โรงพยาบาลจุฬาลงกรณ์
  - โรงพยาบาลพระมงกุฎเกล้า
  - โรงพยาบาลราชวิถี
  - โรงพยาบาลวชิระ
  - โรงพยาบาลรามาธิบดี
- 1 ใครเป็นผู้ชำระค่าบริการของโรงพยาบาล
- ☐ จ่ายเอง
  - ☐ ประกันที่ทำ/สวัสดิการของบริษัทจ่ายให้
  - ☐ บัตรทอง 30 บาทรักษาทุกโรค
  - ☐ ประกันสังคม
- 2 ระยะเวลาในการใช้บริการรับการรักษาต่อครั้ง
- ☐ น้อยกว่า 60 นาที
  - ☐ ระหว่าง 61 นาที ถึง 2 ชั่วโมง
  - ☐ ระหว่าง 2 ชั่วโมง ถึง 3 ชั่วโมง
  - ☐ ระหว่าง 3 ชั่วโมง ถึง 4 ชั่วโมง
  - ☐ ระหว่าง 4 ชั่วโมง ถึง 5 ชั่วโมง
  - ☐ 5 ชั่วโมง เป็นต้นไป
- 3 ระยะเวลาในการรอคอยแต่ละขั้นตอน
- ☐ น้อยกว่า 15 นาที
  - ☐ ตั้งแต่ 16 นาที แต่ไม่เกิน 30 นาที
  - ☐ ตั้งแต่ 31 นาที แต่ไม่เกิน 45 นาที
  - ☐ ตั้งแต่ 46 นาที แต่ไม่เกิน 1 ชั่วโมง
  - ☐ มากกว่า 1 ชั่วโมง

4 คุณใช้บัตรทอง 30 บาทในการชำระค่ารักษา

☐ ใช่

☐ ไม่ใช่

5 คุณใช้ประกันสังคมในการชำระค่ารักษา

☐ ใช่

☐ ไม่ใช่

**Part II : Construct measurement variables ( Check only one and fill in the blank)**

1 ไม่เห็นด้วยอย่างยิ่ง

2 ไม่เห็นด้วย

3 เฉยๆ

4 เห็นด้วย

5 เห็นด้วยอย่างยิ่ง

		Strongly Disagree			Strongly Agree		
TAN	Tangibility	1	2	3	4	5	
1	โรงพยาบาลมีอุปกรณ์ที่ทันสมัยและใหม่อยู่เสมอ	1	2	3	4	5	
2	โรงพยาบาลที่มีประสิทธิภาพมีความมั่นคงในโครงสร้างทางกายภาพและความสวยงาม	1	2	3	4	5	
3	โรงพยาบาลมีพนักงานที่มีประสิทธิภาพและอ่อนโยน	1	2	3	4	5	
4	บริเวณที่รอคอยมีเพียงพอและมีสภาพแวดล้อมที่ดี	1	2	3	4	5	
5	โรงพยาบาลชั้นเยี่ยมจัดหาเครื่องมือและอุปกรณ์เช่นแผ่นพับที่มีข้อมูลที่ชัดเจนและถูกต้องเกี่ยวกับโรงพยาบาล	1	2	3	4	5	
REL	Reliability	1	2	3	4	5	
1	โรงพยาบาลแจ้งให้ทราบก่อนบริการทุกครั้ง	1	2	3	4	5	
2	โรงพยาบาลแสดงให้เห็นถึงความพร้อมในการให้บริการพร้อมที่จะแก้ปัญหาให้กับลูกค้าได้ทันที	1	2	3	4	5	
3	โรงพยาบาลให้บริการมาตรฐานตั้งแต่จุดเริ่มต้นบริการ	1	2	3	4	5	
4	โรงพยาบาลให้บริการตามกำหนดเวลา	1	2	3	4	5	
5	โรงพยาบาลให้ข้อมูลผู้ป่วยอย่างถูกต้อง	1	2	3	4	5	
6	โรงพยาบาลไม่ให้บริการเช่นให้ข้อมูลซ้ำ ๆ เกี่ยวกับหัวข้อเดียวกัน	1	2	3	4	5	

		Strongly Disagree			Strongly Agree		
		1	2	3	4	5	
RES	Responsiveness	1	2	3	4	5	
1	พนักงานให้บริการที่เป็นเลิศแก่ผู้ป่วยทันทีที่ผู้ป่วยมาถึงโรงพยาบาล	1	2	3	4	5	
2	พนักงานแสดงความตั้งใจที่จะให้บริการและดูแล	1	2	3	4	5	
3	พนักงานพร้อมที่จะให้บริการตามความต้องการของผู้ป่วย	1	2	3	4	5	
4	พยาบาลให้บริการที่เป็นเลิศแก่ผู้ป่วยทันทีที่ผู้ป่วยมาถึงโรงพยาบาล	1	2	3	4	5	
5	พยาบาลแสดงความตั้งใจที่จะให้บริการและดูแล	1	2	3	4	5	
6	พยาบาลพร้อมที่จะให้บริการตามความต้องการของผู้ป่วย	1	2	3	4	5	
ASS	Assurance	1	2	3	4	5	
1	พนักงานมั่นใจว่าลูกค้ามีความมั่นใจในบริการ	1	2	3	4	5	
2	เจ้าหน้าที่ให้ความมั่นใจกับผู้ป่วยในด้านความปลอดภัยด้วยบริการของโรงพยาบาล	1	2	3	4	5	
3	พนักงานสุภาพมีมารยาทและมารยาทต่อผู้ป่วย	1	2	3	4	5	
4	เจ้าหน้าที่มีความรู้ในการตอบคำถามสำหรับผู้ป่วย	1	2	3	4	5	
5	พยาบาลมั่นใจว่าลูกค้ามีความมั่นใจในบริการ	1	2	3	4	5	
6	พยาบาลให้ความมั่นใจกับผู้ป่วยในด้านความปลอดภัยด้วยบริการของโรงพยาบาล	1	2	3	4	5	
7	พยาบาลสุภาพมีมารยาทและมารยาทต่อผู้ป่วย	1	2	3	4	5	
8	พยาบาลที่มีความรู้ในการตอบคำถามสำหรับผู้ป่วย	1	2	3	4	5	
EMP	Empathy	1	2	3	4	5	
1	โรงพยาบาลให้ความสนใจกับผู้ป่วยเป็นรายบุคคล	1	2	3	4	5	
2	โรงพยาบาลมีบุคลากรที่เพียงพอในการดูแลผู้ป่วย	1	2	3	4	5	
3	โรงพยาบาลเข้าถึงความรู้สึกของผู้ป่วย	1	2	3	4	5	
4	โรงพยาบาลมีความเข้าใจในความต้องการเฉพาะสำหรับผู้ป่วย	1	2	3	4	5	
COM	Communication	1	2	3	4	5	
1	แพทย์มีการพูดคุย สอบถามประวัติของผู้ป่วยก่อนรับการรักษา	1	2	3	4	5	
2	แพทย์ใช้ภาษาง่ายๆ ในการอธิบายเพื่อความเข้าใจ	1	2	3	4	5	
3	หมอมีความสามารถในการสื่อสารเกี่ยวกับการรักษาให้กับผู้ป่วย	1	2	3	4	5	
4	หมอมีความสามารถในการสื่อสารให้ผู้ป่วยเข้าใจ	1	2	3	4	5	
5	พยาบาลสามารถให้ข้อมูลผู้ป่วยในทันที	1	2	3	4	5	
6	พยาบาลสามารถสื่อสารให้ผู้ป่วยเข้าใจ	1	2	3	4	5	
7	พยาบาลสามารถใช้ภาษากายในการอธิบายให้ผู้ป่วย	1	2	3	4	5	
8	พนักงานสอบถามชื่อ สกุล ของผู้ป่วยก่อนการชำระเงิน	1	2	3	4	5	

		Strongly Disagree			Strongly Agree		
		1	2	3	4	5	
9	พนักงานสอบถามชื่อ สกุล ของผู้ป่วยก่อนจ่ายยา	1	2	3	4	5	
10	พนักงานสามารถอธิบายและให้ข้อมูลคำรักษาและยากับผู้ป่วยทันที	1	2	3	4	5	
<b>PPF</b>	<b>Price fairness</b>	1	2	3	4	5	
1	ราคาชุดกรรมเมื่อเปรียบเทียบกับโรงพยาบาลหรือสถานรักษาสุขภาพอื่น	1	2	3	4	5	
2	ราคาสมเหตุสมผลสำหรับคำรักษาพยาบาล	1	2	3	4	5	
3	ราคาที่สมเหตุสมผลสำหรับคำรักษาพยาบาลเมื่อเปรียบเทียบกับภาวะเศรษฐกิจ	1	2	3	4	5	
4	คำรักษาและบริการของโรงพยาบาลราคาไม่แพง	1	2	3	4	5	
5	คุณภาพการให้บริการของโรงพยาบาลคุ้มค่าใช้จ่าย	1	2	3	4	5	
<b>WTT</b>	<b>Waiting Time</b>	1	2	3	4	5	
1	หมอให้บริการตามเวลานัดหมาย	1	2	3	4	5	
2	พยาบาลให้บริการตามเวลานัดหมาย	1	2	3	4	5	
3	บุคลากรให้บริการตามเวลานัดหมาย	1	2	3	4	5	
4	หมอตรวจรักษาตามเวลาที่นัดไว้	1	2	3	4	5	
5	พยาบาลให้บริการปราศจากความล่าช้า	1	2	3	4	5	
6	บุคลากรให้บริการปราศจากความล่าช้า	1	2	3	4	5	
7	การรอเวลาพบแพทย์และรับการรักษาเป็นไปอย่างเหมาะสม	1	2	3	4	5	
8	การรอคอยการรับบริการจากพยาบาลเป็นไปอย่างเหมาะสม	1	2	3	4	5	
9	การรอคอยการชำระเงินจากเจ้าหน้าที่เป็นไปอย่างเหมาะสม	1	2	3	4	5	
<b>CS</b>	<b>Customer satisfaction</b>	1	2	3	4	5	
1	ถ้าฉันได้ตัดสินใจอีกครั้ง ฉันยังคงเลือกการบริการของโรงพยาบาลแห่งนี้	1	2	3	4	5	
2	ฉันมีความสุขที่ได้เสียเงินให้โรงพยาบาลนี้	1	2	3	4	5	
3	ฉันคิดว่าเป็นสิ่งที่ถูกต้องในการเลือกใช้บริการโรงพยาบาลแห่งนี้	1	2	3	4	5	
4	ฉันรู้สึกดีต่อการตัดสินใจเลือกใช้บริการโรงพยาบาลแห่งนี้	1	2	3	4	5	
5	ฉันรู้สึกพึงพอใจในการตัดสินใจใช้โรงพยาบาลแห่งนี้	1	2	3	4	5	
6	การตัดสินใจของฉันในการใช้โรงพยาบาลแห่งนี้เป็นเรื่องที่ฉลาด	1	2	3	4	5	
<b>CL</b>	<b>Customer loyalty</b>	1	2	3	4	5	
1	ในปีหน้าฉันยังคงเลือกใช้บริการของโรงพยาบาลรัฐบาลแห่งนี้	1	2	3	4	5	
2	ฉันจะขอรับบริการจากโรงพยาบาลรัฐแห่งนี้อีกต่อ	1	2	3	4	5	
3	โรงพยาบาลแห่งนี้เป็นตัวเลือกรแรกของฉัน	1	2	3	4	5	
4	โรงพยาบาลรัฐบาลนี้คุณภาพดีกว่าโรงพยาบาลแห่งอื่นทั้งหมด	1	2	3	4	5	
5	ฉันสามารถบรรยายความรู้สึกของฉันต่อโรงพยาบาลรัฐบาลนี้ได้ดีที่สุด	1	2	3	4	5	

**Part III : Personal Profile ( Check only one and fill in the blank)**

1. เพศ

- ☐ ผู้ชาย
- ☐ ผู้หญิง

2. อายุ

- ☐ น้อยกว่า 15 ปี
- ☐ ระหว่าง 16 - 25 ปี
- ☐ ระหว่าง 26 - 35 ปี
- ☐ ระหว่าง 36 - 45 ปี
- ☐ ตั้งแต่ 46 ปีขึ้นไป

3. สถานะ

- ☐ โสด
- ☐ แต่งงาน
- ☐ หย่าร้าง/ แยกทาง
- ☐ อื่นๆ ...

4. ระดับการศึกษา

- ☐ต่ำกว่ามัธยมศึกษา
- ☐ มัธยมศึกษา
- ☐ อาชีวศึกษา
- ☐ปริญญาตรี
- ☐ปริญญาโท
- ☐ อื่นๆ

5. อาชีพ

- ☐ นักเรียน
- ☐ ข้าราชการ
- ☐ รัฐวิสาหกิจ
- ☐ พนักงานบริษัท



☐ เจ้าของธุรกิจ

☐ อื่นๆ

6. รายได้ต่อเดือน

☐ น้อยกว่า 9,000 บาท

☐ 9,001 - 15,000 บาท

☐ 15,001 - 30,000 บาท

☐ 30,001 - 60,000 บาท

☐ มากกว่า 60,001 บาท

Thank you for your cooperation



## APPENDIX C

Table of Mean, Standard Deviation and Opinion Level of Patient Toward Public  
Hospital Service

Table 4.30: Mean, Standard Deviation and Opinion Level of Patient Toward Public Hospital Service

Service obtained	A Hospital			B Hospital			C Hospital			D Hospital			E Hospital			F Hospital		
	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion
TAN 1 Hospital should be furnished with modern equipment and be always standard.	4.393	0.616	Agree	4.356	0.606	Agree	4.388	0.612	Agree	4.378	0.615	Agree	4.376	0.613	Agree	4.382	0.613	Agree
TAN 2 An effective hospital should be beautiful and stable in the physical structure	4.190	0.678	Agree	4.244	0.659	Agree	4.187	0.679	Agree	4.191	0.673	Agree	4.189	0.672	Agree	4.185	0.677	Agree
TAN 3 Hospitals should be equipped with effective and gentle employees.	4.411	0.577	Agree	4.344	0.571	Agree	4.393	0.577	Agree	4.387	0.578	Agree	4.378	0.578	Agree	4.391	0.577	Agree
TAN 4 Waiting area have enough and good environment	4.310	0.706	Agree	4.319	0.606	Agree	4.296	0.704	Agree	4.303	0.682	Agree	4.297	0.680	Agree	4.294	0.705	Agree
TAN 5 An excellent hospital should provide utensils and equipment i.e. leaflets with clear and accurate information about hospital.	4.384	0.543	Agree	4.350	0.527	Agree	4.378	0.543	Agree	4.376	0.540	Agree	4.376	0.541	Agree	4.376	0.543	Agree

Table 4.30: (Continued)

Service obtained	A Hospital			B Hospital			C Hospital			D Hospital			E Hospital			F Hospital		
	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion
REL 1 Hospital should inform the services prior to service at every time.	4.312	0.623	Agree	4.350	0.614	Agree	4.313	0.629	Agree	4.310	0.622	Agree	4.313	0.624	Agree	4.309	0.625	Agree
REL 2 Hospital should manifest a readiness to serve and ready to solve the problem to the clients immediately.	4.442	0.574	Agree	4.400	0.572	Agree	4.440	0.576	Agree	4.426	0.576	Agree	4.426	0.576	Agree	4.433	0.575	Agree
REL 3 Hospital should provide the standard service from the point which service begin.	4.440	0.595	Agree	4.406	0.584	Agree	4.440	0.587	Agree	4.429	0.595	Agree	4.428	0.595	Agree	4.436	0.593	Agree
REL 4 Hospital should provide a service on exactly schedule time.	4.455	0.575	Agree	4.444	0.545	Agree	4.446	0.577	Agree	4.453	0.563	Agree	4.453	0.564	Agree	4.446	0.576	Agree
REL 5 Hospitals should provide the record of patient information correctly	4.459	0.603	Agree	4.344	0.613	Agree	4.442	0.606	Agree	4.426	0.606	Agree	4.421	0.607	Agree	4.438	0.605	Agree
REL 6 Hospital should not provide services i.e. provide repeated information on the same topics.	3.767	0.851	Normal	3.744	0.682	Normal	3.775	0.809	Normal	3.780	0.790	Normal	3.786	0.789	Normal	3.764	0.818	Normal

Table 4.30: (Continued)

Service obtained	A Hospital			B Hospital			C Hospital			D Hospital			E Hospital			F Hospital		
	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion
RES 1 Staff should provide excellent service to patients as soon as patient arrives at the hospital.	4.114	0.543	Agree	4.038	0.473	Agree	4.099	0.531	Agree	4.088	0.527	Agree	4.081	0.525	Agree	4.094	0.531	Agree
RES 2 Staff should show willingness to serve and care.	4.461	0.579	Agree	4.413	0.574	Agree	4.451	0.581	Agree	4.446	0.578	Agree	4.444	0.579	Agree	4.446	0.580	Agree
RES 3 Staff should be ready to serve upon a patient's request.	4.353	0.675	Agree	4.394	0.613	Agree	4.343	0.679	Agree	4.354	0.655	Agree	4.351	0.656	Agree	4.341	0.678	Agree
RES 4 Nurse should provide excellent service to patients as soon as patient arrives at the hospital.	4.068	0.569	Agree	4.025	0.402	Agree	4.056	0.561	Agree	4.053	0.538	Agree	4.047	0.535	Agree	4.054	0.561	Agree
RES 5 Nurse should show willingness to serve and care	4.194	0.489	Agree	4.031	0.343	Agree	4.172	0.478	Agree	4.160	0.475	Agree	4.151	0.474	Agree	4.172	0.480	Agree
RES 6 Nurse should be ready to serve upon a patient's request.	4.081	0.549	Agree	4.019	0.410	Agree	4.069	0.540	Agree	4.068	0.513	Agree	4.061	0.511	Agree	4.067	0.540	Agree

Table 4.30: (Continued)

Service obtained	A Hospital			B Hospital			C Hospital			D Hospital			E Hospital			F Hospital		
	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion
ASS 1 Staff should ensure the client of confidence in the service.	4.159	0.512	Agree	4.081	0.418	Agree	4.146	0.499	Agree	4.134	0.498	Agree	4.128	0.496	Agree	4.144	0.501	Agree
ASS 2 Staff should ensure the patient of a sense of security with the service provided by hospital.	4.186	0.517	Agree	4.063	0.382	Agree	4.174	0.505	Agree	4.158	0.501	Agree	4.153	0.500	Agree	4.170	0.506	Agree
ASS 3 Staff should be polite, well-mannered and courtesy to patients.	4.492	0.598	Agree	4.469	0.601	Agree	4.491	0.601	Agree	4.486	0.603	Agree	4.489	0.603	Agree	4.489	0.600	Agree
ASS 4 Staff should be knowledgeable in answering questions for patient.	4.572	0.600	Agree	4.531	0.601	Agree	4.567	0.605	Agree	4.565	0.603	Agree	4.563	0.604	Agree	4.562	0.604	Agree
ASS 5 Nurse should ensure the client of confidence in the service.	4.519	0.631	Agree	4.513	0.612	Agree	4.524	0.629	Agree	4.516	0.634	Agree	4.523	0.635	Agree	4.519	0.631	Agree
ASS 6 Nurse should ensure the patient of a sense of security with the service provided by hospital.	4.566	0.587	Agree	4.531	0.580	Agree	4.564	0.591	Agree	4.556	0.593	Agree	4.559	0.594	Agree	4.558	0.591	Agree
ASS 7 Nurse should be polite, well-mannered and courtesy to patients.	4.529	0.590	Agree	4.513	0.581	Agree	4.519	0.594	Agree	4.516	0.595	Agree	4.516	0.596	Agree	4.517	0.593	Agree
ASS 8 Nurse should be knowledgeable in answering questions for patient.	4.545	0.589	Agree	4.569	0.577	Agree	4.547	0.592	Agree	4.543	0.594	Agree	4.547	0.595	Agree	4.543	0.592	Agree



Table 4.30: (Continued)

Service obtained	A Hospital			B Hospital			C Hospital			D Hospital			E Hospital			F Hospital		
	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion
EMP 1 Hospital should pay attention to the patient individually.	3.349	1.124	Normal	3.088	1.092	Normal	3.313	1.127	Normal	3.290	1.114	Normal	3.266	1.112	Normal	3.309	1.122	Normal
EMP 2 Hospital should provide adequate staffs to take care of the patients.	4.151	0.477	Agree	4.056	0.375	Agree	4.142	0.474	Agree	4.123	0.464	Agree	4.119	0.463	Agree	4.135	0.470	Agree
EMP 3 Hospital should access to the patient's feeling	4.171	0.524	Agree	4.113	0.461	Agree	4.148	0.513	Agree	4.147	0.506	Agree	4.137	0.504	Agree	4.148	0.516	Agree
EMP 4 Hospital should have an understanding of the specific needs for patients.	4.178	0.587	Agree	4.100	0.450	Agree	4.165	0.579	Agree	4.163	0.558	Agree	4.158	0.557	Agree	4.163	0.581	Agree

Table 4.30: (Continued)

Service obtained	A Hospital			B Hospital			C Hospital			D Hospital			E Hospital			F Hospital		
	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion
COM 1 Doctor have talk, asking the information of patient before treatment.	4.267	0.519	Agree	4.181	0.445	Agree	4.251	0.515	Agree	4.240	0.507	Agree	4.234	0.508	Agree	4.251	0.515	Agree
COM 2 Doctor use easy vocabulary to more understand.	4.223	0.498	Agree	4.063	0.330	Agree	4.202	0.488	Agree	4.185	0.477	Agree	4.176	0.477	Agree	4.197	0.488	Agree
COM 3 Doctor has ability to communicate about the medical treatment with patient.	4.587	0.570	Agree	4.556	0.545	Agree	4.579	0.574	Agree	4.580	0.567	Agree	4.581	0.568	Agree	4.577	0.574	Agree
COM 4 Doctor has ability to communicate with understanding to patient.	4.519	0.580	Agree	4.506	0.570	Agree	4.519	0.583	Agree	4.516	0.580	Agree	4.520	0.581	Agree	4.517	0.582	Agree
COM 5 Nurse are able to give the information to patient immediately.	3.409	1.184	Normal	3.131	1.130	Normal	3.382	1.183	Normal	3.347	1.180	Normal	3.333	1.179	Normal	3.373	1.182	Normal
COM 6 Nurse has ability to communicate with understanding to patient.	4.523	0.590	Agree	4.513	0.548	Agree	4.521	0.586	Agree	4.519	0.592	Agree	4.523	0.588	Agree	4.521	0.589	Agree
COM 7 Nurse are able to use the body language to explain patient.	4.161	0.529	Agree	4.044	0.360	Agree	4.146	0.508	Agree	4.134	0.512	Agree	4.131	0.511	Agree	4.142	0.518	Agree
COM 8 Staff ask the name and surname of patient before payment.	4.217	0.527	Agree	4.113	0.403	Agree	4.204	0.515	Agree	4.191	0.514	Agree	4.185	0.510	Agree	4.202	0.517	Agree
COM 9 Staff ask the name and surname of patient before give the medicine.	4.256	0.523	Agree	4.119	0.424	Agree	4.236	0.516	Agree	4.224	0.513	Agree	4.214	0.511	Agree	4.234	0.516	Agree
COM 10 Staff are able to explain the medicine and payment information to patient immediately.	4.558	0.581	Agree	4.550	0.568	Agree	4.558	0.584	Agree	4.556	0.582	Agree	4.561	0.582	Agree	4.554	0.584	Agree

Table 4.30: (Continued)

Service obtained	A Hospital			B Hospital			C Hospital			D Hospital			E Hospital			F Hospital		
	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion
PPF 1 Perceive price fairness when compare with other hospital and healthcare	4.473	0.614	Agree	4.444	0.578	Agree	4.466	0.611	Agree	4.462	0.616	Agree	4.462	0.616	Agree	4.464	0.613	Agree
PPF 2 Reasonable price for medical bill	4.471	0.554	Agree	4.450	0.534	Agree	4.464	0.556	Agree	4.462	0.556	Agree	4.462	0.557	Agree	4.461	0.555	Agree
PPF 3 Reasonable price for medical bill when compare to the economic situation	4.403	0.617	Agree	4.438	0.533	Agree	4.403	0.622	Agree	4.413	0.589	Agree	4.417	0.590	Agree	4.399	0.620	Agree
PPF 4 Affordable fees for treatment and service of the hospital	4.312	0.816	Agree	4.431	0.730	Agree	4.324	0.800	Agree	4.323	0.795	Agree	4.329	0.796	Agree	4.324	0.797	Agree
PPF 5 The service quality of hospital be worthwhile to paid	4.221	0.513	Agree	4.200	0.458	Agree	4.217	0.514	Agree	4.211	0.499	Agree	4.209	0.500	Agree	4.215	0.512	Agree

Table 4.30: (Continued)

Service obtained	A Hospital			B Hospital			C Hospital			D Hospital			E Hospital			F Hospital		
	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion
WTT 1 Doctor have providing services at appoint time.	3.961	0.875	Normal	3.825	0.884	Normal	3.946	0.871	Normal	3.932	0.876	Normal	3.926	0.876	Normal	3.936	0.872	Normal
WTT 2 Nurse have providing services at appoint time.	4.089	0.840	Agree	3.975	0.836	Normal	4.079	0.836	Agree	4.066	0.841	Agree	4.063	0.842	Agree	4.069	0.839	Agree
WTT 3 Staff have providing services at appoint time.	4.076	0.803	Agree	3.956	0.809	Normal	4.064	0.805	Agree	4.053	0.805	Agree	4.050	0.807	Agree	4.056	0.804	Agree
WTT 4 Doctor provided at promise time.	3.959	0.837	Normal	3.856	0.858	Normal	3.948	0.835	Normal	3.934	0.838	Normal	3.930	0.839	Normal	3.938	0.834	Normal
WTT 5 Nurse provides service without delay.	3.944	0.779	Normal	3.881	0.778	Normal	3.940	0.778	Normal	3.934	0.781	Normal	3.932	0.782	Normal	3.931	0.780	Normal
WTT 6 The staff provides service without delay.	3.979	0.810	Normal	3.906	0.812	Normal	3.972	0.809	Normal	3.967	0.813	Normal	3.964	0.813	Normal	3.964	0.811	Normal
WTT 7 The waiting time for physician and receive the treatment is appropriate.	3.917	0.829	Normal	3.844	0.779	Normal	3.918	0.819	Normal	3.905	0.819	Normal	3.903	0.818	Normal	3.908	0.828	Normal
WTT 8 The waiting time for receive nurse service is appropriate.	4.017	0.881	Agree	3.894	0.856	Normal	4.004	0.879	Agree	3.996	0.872	Normal	3.991	0.872	Normal	3.994	0.880	Normal
WTT 9 The waiting time for payment to staff is appropriate.	4.014	0.832	Agree	3.919	0.790	Normal	4.009	0.831	Agree	4.007	0.818	Agree	4.002	0.818	Agree	4.002	0.832	Agree
Total	4.242			4.182			4.233			4.226			4.223			4.229		

Table 4.30: Mean, Standard Deviation and Opinion level of patient toward public hospital service

Service obtained	A Hospital			B Hospital			C Hospital			D Hospital			E Hospital			F Hospital		
	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion	Mean	S.D.	Opinion
CS 1 If you had to decide again, you still use the service from this hospital.	4.198	0.861	Agree	4.269	0.780	Agree	4.206	0.847	Agree	4.204	0.859	Agree	4.209	0.849	Agree	4.206	0.855	Agree
CS 2 You are happy with the purchase made on this hospital.	4.310	0.592	Agree	4.356	0.563	Agree	4.313	0.597	Agree	4.316	0.588	Agree	4.320	0.590	Agree	4.313	0.592	Agree
CS 3 You think you did the right things in using this service of the hospital.	4.331	0.657	Agree	4.400	0.614	Agree	4.339	0.659	Agree	4.338	0.653	Agree	4.342	0.652	Agree	4.339	0.656	Agree
CS 4 You feel good about your decision to use this hospital.	4.399	0.613	Agree	4.456	0.579	Agree	4.406	0.619	Agree	4.407	0.609	Agree	4.410	0.610	Agree	4.406	0.614	Agree
CS 5 You are satisfied with your decision to use this hospital	4.376	0.609	Agree	4.475	0.580	Agree	4.382	0.615	Agree	4.389	0.606	Agree	4.394	0.608	Agree	4.382	0.609	Agree
CS 6 Your decision to use on this hospital were a wise one	4.333	0.655	Agree	4.419	0.617	Agree	4.341	0.656	Agree	4.345	0.652	Agree	4.351	0.653	Agree	4.341	0.654	Agree
CL 1 In the next year, I still choose this hospital	4.304	0.687	Agree	4.394	0.653	Agree	4.307	0.695	Agree	4.314	0.684	Agree	4.318	0.685	Agree	4.311	0.685	Agree
CL 2 I am certain that I will continue use this hospital	4.283	0.681	Agree	4.344	0.643	Agree	4.285	0.689	Agree	4.290	0.676	Agree	4.293	0.678	Agree	4.290	0.678	Agree
CL 3 This hospital will be my first choice in the treatment decision process	4.246	0.665	Agree	4.350	0.604	Agree	4.245	0.665	Agree	4.255	0.661	Agree	4.255	0.662	Agree	4.249	0.664	Agree
CL 4 The overall quality of service is high than other hospital	4.112	0.710	Agree	4.131	0.603	Agree	4.099	0.696	Agree	4.108	0.686	Agree	4.104	0.687	Agree	4.103	0.701	Agree
CL 5 My feeling towards hospital's service can be positively best described	4.147	0.590	Agree	4.125	0.509	Agree	4.137	0.585	Agree	4.141	0.583	Agree	4.137	0.583	Agree	4.139	0.585	Agree
Total	4.276			4.338			4.278			4.283			4.285			4.280		

## Frequency Analysis

In this part researcher explain the statistically variable constructs. There are many questions of 2 parts and it importance weights. The first part include with SERVQUAL dimension (tangibility, reliability, responsiveness, assurance, and empathy), communication, perceived price fairness and waiting time and the second part is the satisfaction and loyalty of patient answer.

Table 4.30 (Appendix C) present the means of all the data for the observed variables of all six public hospitals (A,B,C,D,E,F hospital). For all public hospital, the range of means was from 4.587 to 3.088. the question with the highest means was “Doctor has ability to communicate about the medical treatment with patient” with means of 4.587, the second highest mean was “Nurse should be knowledgeable in answering questions for patient” with means 4.569 and the lowest mean was “Hospital should pay attention to the patient individually” with the mean of 3.088.

For the tangibility of public hospital services construct the question with the highest mean was “Hospitals should be equipped with effective and gentle employees” with a mean of 4.411, while the question with the lowest mean was “An effective hospital should be beautiful and stable in the physical structure” with a mean of 4.185 in addition the majority of opinion level was agree.

For the reliability of public hospital services construct the question with the highest mean was “Hospital should provide the record of patient information correctly” with a mean of 4.459, while the question with the lowest mean was “Hospital should not provide service i.e. provide repeated information on the same topic” with a mean of 3.744 in addition the majority of opinion level was agree.

For the responsiveness of public hospital services construct the question with the highest mean was “Staff should be ready to serve upon a patient’s request.” with a mean of 4.461, while the question with the lowest mean was “Nurse should be ready



to serve upon a patient's request" with a mean of 4.019 in addition the majority of opinion level was agree.

For the assurance of public hospital services construct the question with the highest mean was "Staff should be knowledgeable in answering questions for patient" with a mean of 4.572, while the question with the lowest mean was "Staff should ensure the patient of a sense of security with the service provided by hospital" with a mean of 4.063 in addition the majority of opinion level was agree.

For the empathy of public hospital services construct the question with the highest mean was "Hospital should have an understanding of the specific needs for patients" with a mean of 4.178, while the question with the lowest mean was "Hospital should pay attention to the patient individually" with a mean of 3.088 in addition the majority of opinion level was agree and normal.

For the communication of public hospital services construct the question with the highest mean was "Doctor has ability to communicate about the medical treatment with patient" with a mean of 4.587, while the question with the lowest mean was "Nurse are able to give the information to patient immediately" with a mean of 3.131 in addition the majority of opinion level was agree and normal.

For the perceived price fairness of public hospital services construct the question with the highest mean was "Perceive price fairness when compare with other hospital and healthcare t" with a mean of 4.473, while the question with the lowest mean was "The service quality of hospital be worthwhile to paid" with a mean of 4.200 in addition the majority of opinion level was agree.

For the waiting time of public hospital services construct the question with the highest mean was "Nurse have providing services at appoint time" with a mean of 4.089, while the question with the lowest mean was "The waiting time for physician and

receive the treatment is appropriate” with a mean of 3.844 in addition the majority of opinion level was agree and normal.

On the other hand A hospital got the most of highest mean from the question construct. For the table 4.13 present mean, standard deviation and opinion toward public hospital service in part of customer satisfaction and customer loyalty.

As can be seen from the tables 4.13 (Appendix) the total of mean score for A hospital the range of the mean was from 4.587 to 3.349. The question with the highest mean was “Hospital should pay attention to the patient individually” with mean of 4.587, while the question with the lowest mean was “Doctor has ability to communicate about the medical treatment with patient” with mean of 3.349. In addition the majority of patient’s opinion level was normal to agree and the patient satisfaction toward to hospital service were agree or satisfied with mean of 4.276.

B hospital the range of the mean was from 4.569 to 3.088. The question with the highest mean was “Nurse should be knowledgeable in answering questions for patient” with mean of 4.569, while the question with the lowest mean was “Hospital should pay attention to the patient individually” with mean of 3.088. In addition the majority of patient’s opinion level was normal to agree and the patient satisfaction toward to hospital service were agree or satisfied with mean of 4.338.

C hospital the range of the mean was from 4.579 to 3.313. The question with the highest mean was “Hospital should pay attention to the patient individually” with mean of 4.579, while the question with the lowest mean was “Doctor has ability to communicate about the medical treatment with patient” with mean of 3.313. In addition the majority of patient’s opinion level was normal to agree and the patient satisfaction toward to hospital service were agree or satisfied with mean of 4.278.

D hospital the range of the mean was from 4.580 to 3.290. The question with the highest mean was “Hospital should pay attention to the patient individually” with mean of 4.580, while the question with the lowest mean was “Doctor has ability to

communicate about the medical treatment with patient” with mean of 3.290. In addition the majority of patient’s opinion level was normal to agree and the patient satisfaction toward to hospital service were agree or satisfied with mean of 4.283.

E hospital the range of the mean was from 4.581 to 3.266. The question with the highest mean was “Hospital should pay attention to the patient individually” with mean of 4.581, while the question with the lowest mean was “Doctor has ability to communicate about the medical treatment with patient” with mean of 3.266. In addition the majority of patient’s opinion level was normal to agree and the patient satisfaction toward to hospital service were agree or satisfied with mean of 4.285.

F hospital the range of the mean was from 4.577 to 3.309. The question with the highest mean was “Hospital should pay attention to the patient individually” with mean of 4.577, while the question with the lowest mean was “Doctor has ability to communicate about the medical treatment with patient” with mean of 3.309. In addition the majority of patient’s opinion level was normal to agree and the patient satisfaction toward to hospital service were agree or satisfied with mean of 4.280.

All the public hospital, overall the weight of the service was the most important in terms of the respect area as follows: Assurance - nurse and staff have knowledge to answer patient and polite to them to ensure that patient willing and confidence in the services (mean over 4.5 of all hospital). And communication – in terms of doctor nurse and staff have ability to communicate about treatment, explain the information and medicine indicator (mean over 4.5 of all hospital).