

ชื่อเรื่อง การประยุกต์ใช้โซ่บริการแห่งกำไรในอุตสาหกรรมบริการสุขภาพ:
กรณีศึกษาโรงพยาบาลเอกชนในตลาดหลักทรัพย์แห่งประเทศไทย

Title Applying the Service Profit Chain in a Health Service Industry:
A Case of Private Hospital Listed in the Stock Exchange of
Thailand

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บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์ที่จะศึกษาความสัมพันธ์ระหว่าง ความพึงพอใจและความจงรักภักดีของพนักงาน ความพึงพอใจและความจงรักภักดีของผู้ใช้บริการ และ ผลประกอบการทางการเงินของโรงพยาบาลเอกชนแห่งหนึ่งซึ่งจดทะเบียนอยู่ในตลาดหลักทรัพย์แห่งประเทศไทย โดยเป็นการประยุกต์ใช้รูปแบบโซ่บริการแห่งกำไร (The Service Profit Chain) เพื่อหาความสัมพันธ์ดังกล่าว ข้อมูลที่ได้จากโรงพยาบาลนำมาใช้ในการวิจัยด้วยการวิเคราะห์หาสหสัมพันธ์แบบสองตัวแปร ผลการวิจัยพบว่า สมมติฐานทั้ง 5 ข้อได้รับสนับสนุนว่า ตัวแปรดังกล่าว คือ ความพึงพอใจและความจงรักภักดีของพนักงาน ความพึงพอใจและความจงรักภักดีของผู้ใช้บริการของโรงพยาบาล และ ผลประกอบการทางการเงินของโรงพยาบาล มีความสัมพันธ์กันโดยมีนัยสำคัญทางสถิติ นอกจากนี้ยังมีการวิเคราะห์ผลการวิจัยและข้อเสนอแนะด้วย

คำสำคัญ: ความพึงพอใจของพนักงาน ความจงรักภักดีของพนักงาน ความพึงพอใจของลูกค้า ความจงรักภักดีของลูกค้า ผลประกอบการขององค์กร โรงพยาบาลเอกชน โซ่การบริการแห่งกำไร

Abstract

This study is an attempt to empirically investigate the relationships between employee satisfaction and loyalty, patient satisfaction and loyalty, and financial performance of a private hospital listed on the Stock Exchange of Thailand. The service profit chain model was adapted to examine such relationships. The data of the sample hospital were processed and analyzed using the simple bivariate correlation analysis. The overall results reveal that the five hypotheses were mostly supported that there were positive associations among internal service quality, employee satisfaction, employee loyalty, patient satisfaction, patient loyalty, and hospital performance. Research findings and implications are also discussed.

Keywords : Employee satisfaction, Employee loyalty, Patient satisfaction, Patient Loyalty, Organizational Performance, Private Hospital, Service Profit Chain

INTRODUCTION

Satisfied and loyal employees eager to deliver good service to customers generate high levels of customer satisfaction. Further, very satisfied customers are more likely to become loyal customers, resulting in repeat purchase, cross-selling, referral or positive word of mouth recommendations to other customers. Thus, loyal customers have an effect on financial performance on service firms. This line of logic is widely accepted in the academic research and business managers. However, as Loveman (1998) points out, most service organizations do not manage in a way that reflects belief in the positive correlation between employee loyalty, customer loyalty, and financial performance. For example, many human resource practices in many firms do not hire frontline employees who have the right attitude or service mind to serve their customers. In addition, top managers do not pay enough attention to how frontline employees work and interact with customers.

Heskett *et al.* (1994) developed the service profit chain model (SPC) which postulates that there are direct and strong relationships between profit, company growth; customer loyalty, customer satisfaction; the value of goods and services delivered to customers; service quality and productivity; and employee satisfaction and employee loyalty. They have conducted and collected empirical research from some large service organizations which lend support to many of the linkages in the chain. Nevertheless, it is noteworthy that Heskett and other researchers using this model make no claims of causality for the elements in the chain. Because of the model's wide acceptance by both academicians and business managers, the SPC model has been demonstrated and explained in some detail in many services marketing and management textbooks to show the significance of linking employees, customers, and financial performance of service firms (e.g. Palmer, 2005; Zeithaml *et al.*, 2006; Lovelock and Wirtz, 2007).

A private hospital listed on the Stock Exchange of Thailand and located in Bangkok has adopted a service strategy based on the central assumptions of the service profit chain, that is, employee satisfaction and loyalty generate patient satisfaction and loyalty, which, in turn, help drive the hospital's profit and growth. This study reports the results of a preliminary analysis of this sample hospital's data to test the links in the service profit chain. It is the first empirical research in Thailand that simultaneously examines the relationships between employee satisfaction and loyalty, customer satisfaction and loyalty, and company financial performance.

LITERATURE REVIEW

The service profit chain (SPC) developed by Heskett *et al.* (1994) is a theoretical concept and framework that links employees, customers, and firm performance (Figure 1). The model hypothesizes that profit and growth is directly linked to customer satisfaction and loyalty from the value received from the firms. And customer satisfaction and loyalty is, in turn, directly related to employee satisfaction and loyalty created by the internal service quality of the firms they work for.

The SPC is a well-received model to explain the sustainable competitiveness of many service firms (Lau, 2000). The model attributes a service organization's financial performance to its relationships

with employees and customers. Internal service quality serves as the foundation of the model. The model also highlights the links between customer satisfaction and loyalty and employee satisfaction and loyalty. Finally, there is a strong link between these elements and overall profit and growth of an organization (Heskett *et al.*, 1997).

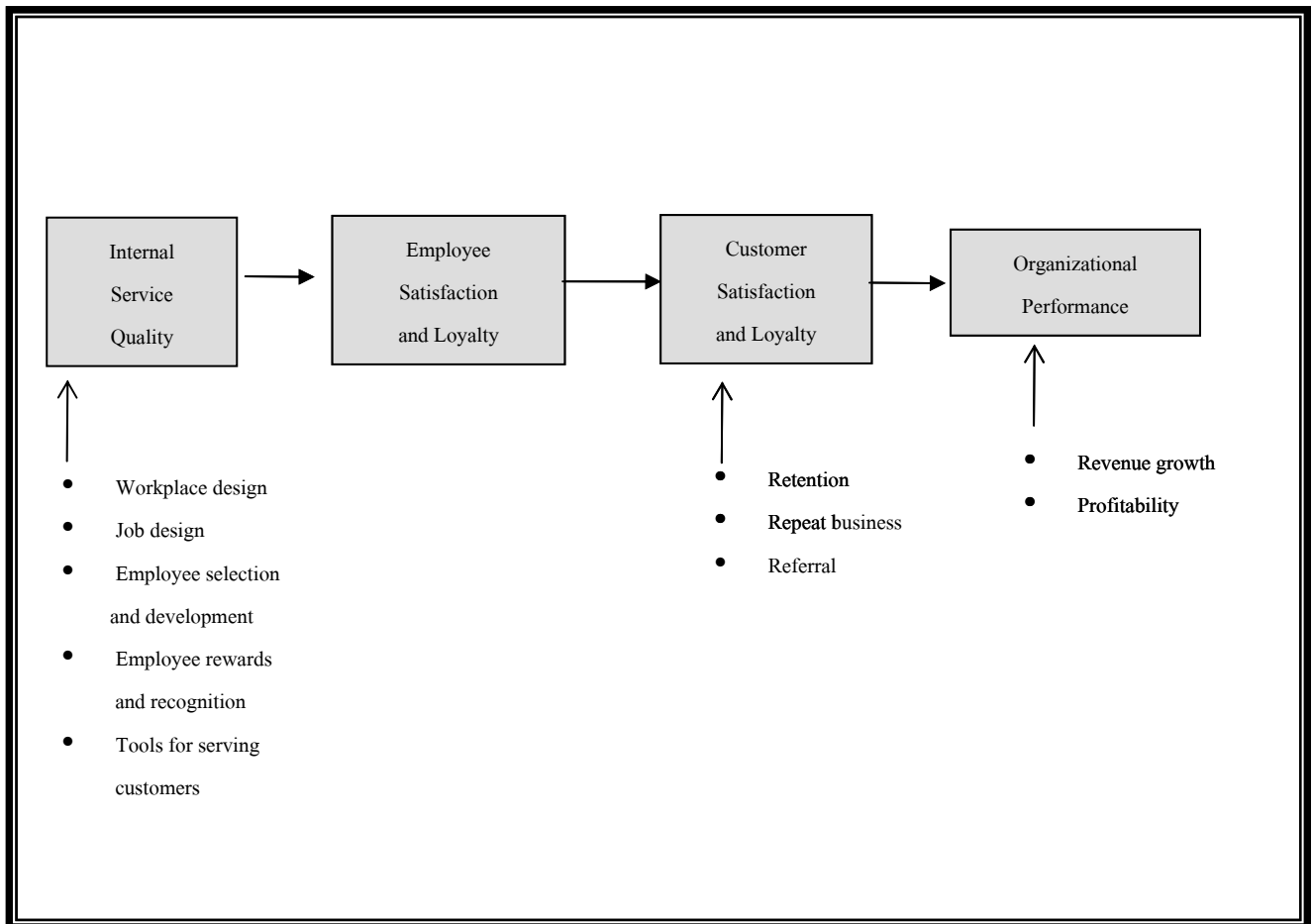


Figure 1: The Service Profit Chain

Source: Adapted from Heskett *et al.* (1994)

Heskett *et al.* (1994) lay out a series of hypothesized links in achieving success in service businesses and develop the SPC model as shown in Figure 1. The service profit chain highlights the behaviors required of service organizations in order to manage effectively. The links in Figure 1 are explained as follows (Heskett *et al.*, 1994):

1. Customer loyalty drives profitability and growth.
2. Customer satisfaction drives customer loyalty.
3. Service value drives customer satisfaction. Service value is measured by comparing results received to the total costs incurred in obtaining the service.

4. Employee retention and productivity drives service value.
5. Employee satisfaction drives retention and productivity. In most service jobs, the real cost of employee turnover is the loss of productivity and decreased customer satisfaction.
6. Internal service quality drives employee satisfaction. Internal service quality describes the environment in which employees work and includes employee selection and development, rewards and recognition, access to information to serve the customer, workplace technology, and job design.

Several studies involving empirical analysis of the links in the service profit chain have been undertaken (e.g. Loveman (1998); Lau (2000); Silvestro and Cross (2000); and Kamakura *et al.*, 2002). These studies lent general support for the links in the chain. However, relatively very few empirical studies have been conducted to test the links in the chain in hospitals.

After an extensive literature search of academic work in Thailand, relatively no research in Thailand has been found to study all the elements in the SPC and the past research so far has examined only one or two elements in the SPC, such as customers and/or service quality. It was found that there are around a dozen books on services marketing and some books and articles on customer relationship management (Tonsorn, 2003, Chaoprasert, 2004), the Balanced Scorecard (Decharin, 2003 and 2004), and Six Sigma (Lertwatthanapongchai, 2002; Kaycharanan, Patpu and Thong-in, 2004). Most of these Thai articles and books are translated or compiled from Western books or academic articles. None of them deals specifically with linking relationships of employees, customers and financial performance at the same time.

Operationalization of the Constructs and Hypotheses

As discussed previously, the available studies only deal with one or two elements of the SPC, mostly customers. Relatively few studies have examined the relationships of all elements in the SPC. This is due to the fact that the data for measures of employee satisfaction and loyalty, customer satisfaction and loyalty, and financial performance, are needed at the same unit of analysis of the firm. Very few firms collect all the required data (Loveman, 1998; Kamakura *et al.*, 2002; Neely *et al.*, 2002).

1) Internal service quality

Internal service quality is a concept that has been explored with a multidisciplinary perspective because its composition can vary for different organizations at different times. Hallowell (1996) identified an underlying belief that organizations attempting to deliver service quality to their external customers must begin by serving the needs of their internal customers, the employees of the company. Internal service quality was operationally defined as eight components: policies and procedures, tools, teamwork, management support, goal alignment, effective training, communication, and rewards and recognition. While components may differ among individual organizations, leading service organizations use internal service quality in the eight components to deliver value to their customers. For the purpose of this study, internal service quality refers to the feelings and attitudes of employees toward their jobs, colleagues, managers, and organizations and highly contributes to employee satisfaction.

2) Employee satisfaction

A frequently used definition of employee satisfaction is that it is a pleasurable or positive emotional state resulting from the appraisal of ones' jobs or job experiences. Employee satisfaction has been found to derive from their perceptions of internal service quality of the company they work for. Employee satisfaction is critical to any service organization. Management must create a positive working environment that promotes employees' job satisfaction and decreases the chance for employee turnover. Employees' needs and wants are satisfied when they perceive that rewards from the organization; such as compensation, promotion, personal growth; meets or exceeds their expectations (Lau, 2000).

3) Employee loyalty

Heskett *et al.* (1997) identified a philosophy that satisfied employees are loyal and productive employees. The strength of the philosophy was drawn from various real-world examples of companies, ranging from banks, restaurants, hotels, to major retailers. Employee loyalty is mostly discussed in relation to job satisfaction, turnover, and retention. Employee loyalty increases as these individuals become more satisfied with their jobs and are allowed to take care of customers. These employees remain in the company and provide a highly productive and valuable workforce because of their established relationships with customers and their experiences on the job that have helped them to better serve the company by cutting costs and improving quality (Reichheld, 1996).

4) Customer satisfaction

Customer satisfaction has long been recognized as a central concept and an important goal of all businesses (Bernhardt *et al.*, 2000; Gupta *et al.*, 2003). Customer satisfaction is frequently cited as a key of non-financial measure of a firm and its management's performance (Gupta *et al.*, 2003). For this research, patient satisfaction is recognized as a profitable competitive strategy and many research studies on patient satisfaction have been conducted and supported.

Satisfaction is a customer's post-purchase evaluation and affective response to overall service experience (Oliver, 1992). Past research has indicated that customer satisfaction is a reliable predictor and thus an antecedent to repurchase intentions (Patterson and Spreng, 1997).

Customer satisfaction is considered to be the most basic of customer concepts and is defined as "the customers' evaluation of a product or service in terms of whether that product or service has met their needs and expectations (Zeithaml *et al.*, 2006).

5) Customer loyalty

Customer loyalty has been recognized by researchers as consisting of two components, attitudinal and behavioral (Dick and Basu, 1994; Too *et al.*, 2001; Peppers and Rogers, 2004). Customer loyalty as an attitude is defined as the different feelings a customer has toward a product or service that lead to the creation of the overall attachment (Hallowell, 1996) and is derived from a customer's intent to repurchase (Lau, 2000). As a behavior, customer loyalty, such as repeat purchase and recommendations or referrals, results from a customer's belief that the value received from one supplier is greater than that from another supplier (Hallowell, 1996) and is derived from customer satisfaction (Lau, 2000).

6) Organizational performance

Organizational performance is defined as the accumulated end results of all the organization's work processes and activities (Robbins and Coulter, 2002). The most used measures for organizational performance include organizational productivity, organizational effectiveness, and industry rankings. It can be classified into two major types; financial and non-financial measures. In regard to the hospital performance, several financial and non-financial indicators have been used. In a study by Naidu *et al.* (1999), six performance indicators were used to study their relationships with relationship marketing practices in US hospitals; 1) occupancy rates, 2) admissions per bed, 3) net income margin, 4) gross patient revenue per patient day, 5) total profit margin, and 6) uncollectible ratio. The key measures of hospital financial performance used in another study included earnings before depreciation, interest, and taxes per bed, net revenue per bed, return on assets (Nelson *et al.*, 1992).

In order to study the links in the service profit chain, it is first necessary to develop performance measures for the links in the chain. Given the information made available to the researcher and literature review, the five constructs in this study are measured as shown in Table 1. The financial performance of the hospital is available from the annual report.

Table 1: Constructs and measures used in the study

Constructs	Measures used
Internal service quality	Employees' attitudes toward jobs, colleagues, managers, hospital
Employee satisfaction	Overall employee satisfaction scores
Employee loyalty	1) Average length of working at the hospital 2) Referral of the hospital as a place to work
Patient satisfaction	Overall satisfaction scores
Patient loyalty	1) Referral (willingness to recommend to others) 2) Repeat visit (intention to return)
Hospital performance	1) Operating profits 2) Operating profit per patient visit 3) Revenue from services 4) Revenue from services per patient visit

Source: Developed for this study

Based on the literature review on the service profit chain and available information provided by the hospital, a model of employee satisfaction and loyalty, patient satisfaction and loyalty, and hospital performance is thus proposed in Figure 2. The following hypotheses are also proposed for the study:

H1: Internal service quality is positively correlated with employee satisfaction

H2: Employee satisfaction is positively correlated with employee loyalty

H3: Employee loyalty is positively correlated with patient satisfaction

H4: Patient satisfaction is positively correlated with patient loyalty

H5: Patient loyalty is positively correlated with hospital performance

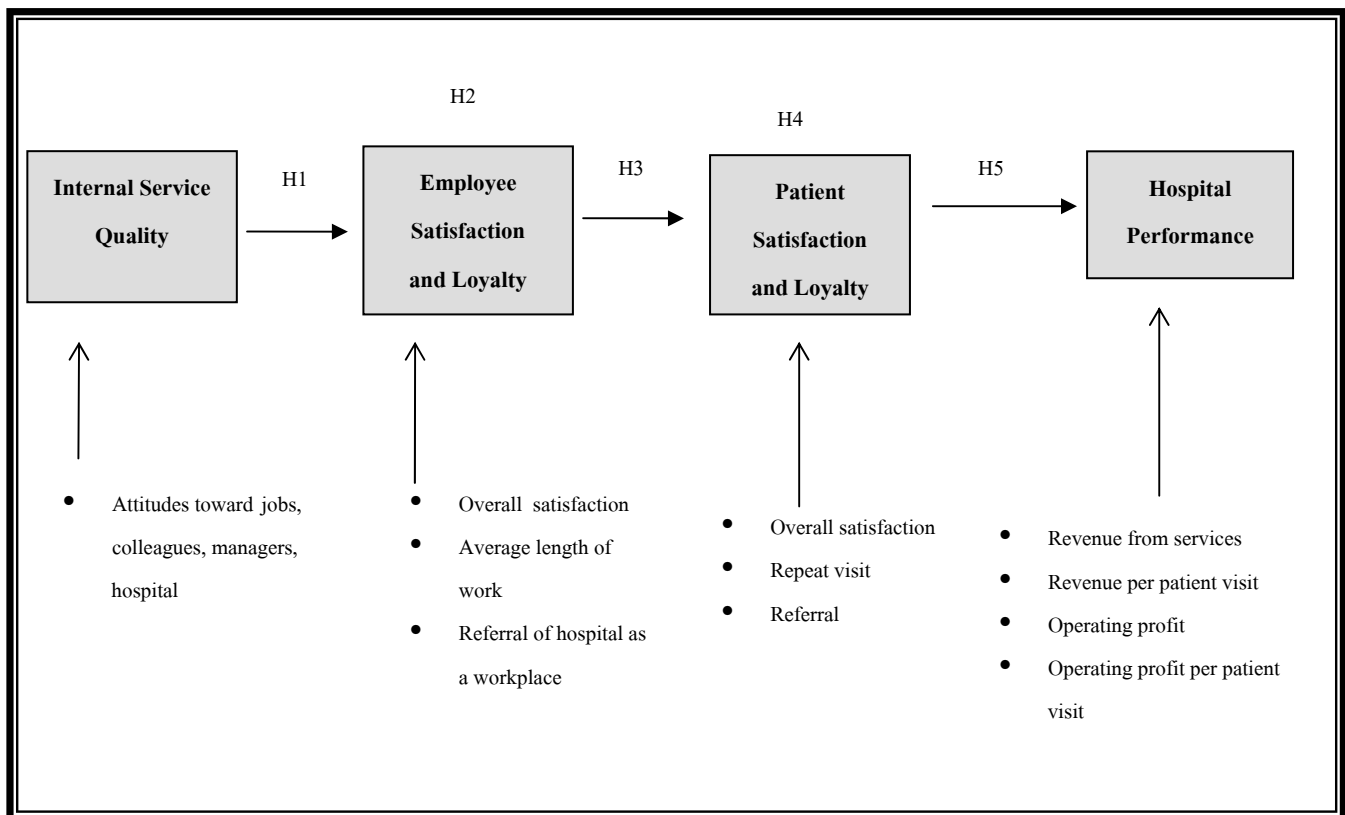


Figure 2 : The Proposed Model

Source: Adapted from Heskett *et al.* (1994) for use in this study

RESEARCH OBJECTIVES

1) The primary objective of this study is to examine the relationships between variables in the service profit chain model in the context of a private hospital in Bangkok, Thailand. Specifically, this research attempts to find out whether there are any relationships between employee satisfaction/employee loyalty and patient satisfaction/loyalty, and patient satisfaction/loyalty and hospital performance.

2) The second objective is to find out whether the service profit chain model is applicable to the service firms in Thailand, especially private hospitals.

RESEARCH METHODOLOGY

Research Design

The purpose of the study is to examine the relationships between employee satisfaction/employee loyalty, patient satisfaction/patient loyalty and hospital performance. It is a cross-sectional study of a private hospital listed on the Stock Exchange of Thailand. This hospital was appropriate for the study because its strategy is based on the assumptions made explicit in the service profit chain. Its senior management believes that patient satisfaction and loyalty are the key drivers of the hospital's profit and growth, which are influenced by how their employees feel about their quality of work life, their rewards and their managers. So, the data of their employee surveys and patient surveys were provided to the researcher on the condition that the hospital's name and identity will not be made public. Thus, this hospital is called Hospital A in the study for the purpose of anonymity.

The correlation analysis was used to test the proposed hypotheses. The methodology adopted was similar to those of previous studies (e.g. Heskett *et al.*, 1997; Loveman (1998) and Lau, 2000; Silvestro and Cross (2000).

Sampling

The target population of the study was 12 hospitals listed on the Stock Exchange of Thailand (SET) and located in Bangkok. However, only one hospital was chosen as the sample because the hospital was able and willing to provide necessary information for the study. In addition, listed hospitals in the SET usually conduct regular patient satisfaction surveys and their financial data are publicly available and reliable.

Data Collection

The 12 hospitals were first contacted in December 2007 by mailing them a formal letter that indicated the purpose and significance of the study and requested their cooperation for an interview with one of their senior managers. If they agreed to participate in the research, their senior managers would sign a consent letter and their managers who would be interviewees would sign a consent form. However, only one hospital agreed to participate and would be able to provide the relevant data. A few personal interviews were arranged with one manager to ask him about how the hospital conducted employee surveys, patient surveys and to obtain samples of the questionnaires and survey data which are in Thai. Conducting surveys by the researcher were not permitted so as not to interrupt the normal operations of the hospital.

The type of interviews used in this study was face-to-face interviews. The semi-structured interview method was selected to ask the senior manager on prepared questions about his experience and views.

As his views and comments were revealed, the answers were noted down as tape-recording was not allowed. The interviews lasted about 30-45 minutes and ended by thanking them and reassuring them that what he had said would be treated as confidential. After that, appointments were made to collect results of survey data and other relevant data.

After the results of employee surveys and patient surveys for the year 2007 were obtained in late March 2008, they were checked for relevance for the study and how they could be processed and analyzed. The employee survey scores were obtained from questions in the questionnaires. Nevertheless, only the data of employee surveys in 2007 were usable for the study. The patient satisfaction and patient loyalty scores were derived from responses to questions in the questionnaires. Both employee surveys and patient surveys were conducted by the hospital's staff. As regards the data of the hospital performance in 2007, it was accessed through the Stock Exchange of Thailand's online database. It was found that the survey data were usable and appropriate for the research purpose.

As the employee and patient survey data were already collected by the hospital, the secondary data analysis method was used for this study. Contrary to primary research, the focus of secondary analysis is on analyzing existing data. It was found that the employee surveys and patient surveys were usable because their research designs, data collection, and data processing were appropriately conducted.

DATA MANAGEMENT

The monthly data of the hospital on employee and patient survey scores were standardized and converted into quarterly data by averaging three monthly data so that they corresponded with the hospital performance measures, such as revenues and profit, which were available in the quarterly form in the Stock Exchange of Thailand's web site. The data were put into tables and were processed using SPSS for Windows. Pair-wise calculations of independent and dependent variables were performed to find Pearson correlation coefficients (r) of each pair. The correlation coefficients measure the degree of linear associations between variables. The higher the correlations, the stronger the level of associations. The independent variables in one quarter were calculated with dependent variables in the next quarter in order to solve the possibility of lagging effects. The results of the processed data were then used to interpret and analyze. The correlation analysis of this study follows the same method used in previous research (e.g. Hallowell, 1996; Loveman, 1998; Silvestro and Cross; 2000).

To ensure that the items used for this study are measuring their respective constructs, item reliabilities were calculated. Reliability is the degree to which a set of two or more indicators share in their measurement of a construct. The test used to measure this was Cronbach's Alpha, a measure of the internal reliability of the items in an index, ranging from 0 to 1, and actually indicates how much the items in an index are measuring the same thing. For most research, an alpha of 0.70 is considered a minimum for an acceptable reliability (Hair *et al.*, 2006). The test results show that all items used had Cronbach's Alpha values of more than 0.70, indicating the internal reliability of the items.

RESULTS

Data Analysis

The employee and patient survey data of the sample hospital were processed and analyzed with the SPSS for Windows, version 11.0. The level of statistical significance was set at 0.05. The variables used in the study are now explained.

1. Internal service quality (ISQ) refers to the overall attitude scores of employees toward their jobs, colleagues, managers, and hospital in 2007
2. Employee satisfaction (ESAT) refers to the overall satisfaction scores derived from the hospital's employee surveys in 2007
3. Employee loyalty (ELOY) refers to the overall scores derived from the hospital's employee surveys in 2007
4. Patient satisfaction (PSAT) refers to the overall satisfaction scores derived from the hospital's patient surveys in 2007
5. Patient loyalty (PLOY) refers to the overall scores derived from the hospital's patient surveys in 2007.
6. Operating profit (OPRO) is derived from the operating profit in 2007.
7. Operating profit per patient (OPRO/P) is derived from the operating profit divided by the number of all patients in 2007.
8. Revenue (REV) is the net revenue from providing medical services.
9. Revenue per patient (REV/P) is the net revenue from services divided by the number of all patients in 2007.

Table 1 shows the interrelationships of variables for Hospital A.

Table 1: Pearson Correlation Matrix of Variables for Hospital A

	ISQ	ESAT	ELOY	PSAT	PLOY	OPRO	OPRO/P	REV	REV/P
ISQ	1	.711*	.675*	.598	.498	.175	.254	.244	.258
ESAT		1	.643*	.701*	.554*	.217	.251	.122	-.005
ELOY			1	.811*	.343	.298	.131	-.163	.230
PSAT				1	.812*	.502*	.478*	.449*	.385*
PLOY					1	.501*	.623*	.512*	.611*
OPRO						1	-.025	.112	-.322
OPRO/P							1	.224	.547
REV								1	.285
REV/P									1

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Source: Developed for this study

Table 2 summarizes the results of hypothesis testing for Hospital A.

Table 2: Research Question, Hypotheses and Results of Hospital A

Research Question	Related Hypotheses	Results
Are there any relationships between employee satisfaction and loyalty, patient satisfaction and loyalty and hospital performance?	H 1: Internal service quality is positively associated with employee satisfaction	- Supported
	H 2: Employee satisfaction is positively associated with employee loyalty	- Supported
	H 3: Employee loyalty is positively associated with patient satisfaction	- Supported
	H 4: Patient satisfaction is positively associated with patient loyalty	- Supported
	H 5: Patient loyalty is positively associated with four hospital performance measures:	
	(1) Operating profit (2) Operating profit per patient visit (3) Revenue (4) Revenue per patient visit	(1) Supported (2) Supported (3) Supported (4) Supported

Source: Developed for this study

DISCUSSION OF RESULTS

In this section the results of the correlation analysis of each link in the proposed model of employee satisfaction/loyalty, patient satisfaction/loyalty, and hospital performance are reported and discussed respectively, as summarized in Tables 1 and 2.

H1: Internal service quality is positively correlated with employee satisfaction

The correlation results demonstrate strong links between internal service quality and employee satisfaction. That is, it was significant at the 95 percent confidence level. In addition, internal service quality is also related to employee loyalty. The results support this hypothesis and are consistent with previous studies (Loveman, 1998; Lau, 2000). This suggests that employees of this hospital are satisfied with their working environment, colleagues, managers, and the hospital. The strong links imply that the hospital's management has successfully aligned their human resource policies and overall management.

H2: Employee satisfaction is positively correlated with employee loyalty

The results in Table 1 show that this hypothesis was supported. The overall satisfaction scores were correlated with measures of employee loyalty, which are average length of employee tenure at the hospital and their willingness to recommend the hospital to other people as the place to work. Furthermore, the results also reveal that employee satisfaction was correlated with patient satisfaction and loyalty. The results are in line with previous research (Olorunniwo, 2006; Maritz and Nieman, 2008).

H3: Employee loyalty is positively correlated with patient satisfaction

There is a strong positive correlation between employee loyalty and patient satisfaction at the 95 percent level, as indicated in Table 1. The results demonstrate that employee loyalty was correlated with patient satisfaction, thus supporting the hypothesis. It suggests that loyal employees are willing and able to serve and make their patients happy and satisfied. This, in turn, helps motivate them to perform their jobs and see that their patients are treated as well as they can. Patients at this hospital appear to like the overall performance of the staff. So, it can be concluded that the more loyal the employees are, the more satisfied their patients are likely to be. The results are in accord with past research work (Loveman, 1998; Silvestro and Cross, 2000).

H4: Patient satisfaction is positively correlated with patient loyalty

The results support this hypothesis that patient satisfaction is correlated with patient loyalty, measured by their willingness to recommend the hospital to people they know and their intention to return to the hospital when they need medical treatment and healthcare service. The results are not surprising as other researchers have pointed out that customer satisfaction is a critical antecedent to customer loyalty (Kamakura *et al.* 2002; Gounaris *et al.*, 2007; Keiningham *et al.*, 2007). Customers must be highly satisfied before they become loyal and willing to recommend the organization to other people (word-of-mouth communication- WOM).

H5: Patient loyalty is positively correlated with hospital performance

The results reveal that patient loyalty is moderately correlated with the four measures of hospital performance, including operating profit, operating profit per patient, revenue, and revenue per patient. Thus, this hypothesis is supported. The moderate correlations can be explained that hospital performance is normally affected by a variety of factors, such as competitive actions, economic conditions. Therefore, patient loyalty alone may have only some positive effects on the hospital's financial performance. The results are consistent with previous research work (Loveman, 1998; Rucci *et al.*, 1998).

Based on the results of the present study, it can be concluded that there is sufficient evidence and support for the relationships of the elements in the SPC for this sample hospital. The overall findings are in line with previous research examining relationships between variables in the SPC (e.g. Heskett *et al.*, 1997; Loveman, 1998, Lau, 2000; Silvestro and Cross, 2000). It also appears that the SPC model can be applied to private hospitals in Thailand. However, as the data used were derived from one hospital only, the application of all the SPC variables to other private hospitals in Bangkok and other

provinces is suggested for further research. Despite the positive relationships of the tested variables in this study, it is important to note that correlation does not mean causation.

RECOMMENDATIONS

For Marketing Practitioners and Senior Executives

1) Based on the results of this study, service firms should take good care of the needs and wants of their internal customers, their employees, and ensure that all human resource policies and practices in the firms reflect top management's concerns and determination to allow their employees to perform their jobs with utmost satisfaction. In service industries, competent and satisfied employees are the key to success. In high-contact services like hospitals, good customer service comes down to managing those people who provide the service and have direct interactions with customers. As pointed out in previous studies (Heskett *et al.*, 1994, 1997), top management in outstanding service firms are committed to the importance of employee and customer loyalty by treating their employees right to deliver superior value to customers. Hospitals should make regular employee surveys to monitor their levels of satisfaction and loyalty toward their jobs, colleagues, managers, hospitals, and customer.

2) Given the fact that Thai people are highly relationship-oriented, service firms should attempt to implement relationship marketing programs which enhance customer satisfaction and loyalty, which in turn can lead to growth and profitability on a long-term basis. The internal marketing within firms is also required to make all departments in the firms function effectively to support the marketing concept that the purpose of any business is to create satisfied and loyal customers.

3) Patients are satisfied when performance meets or exceeds their expectation. Patient satisfaction is, therefore, an attitude that reflects patients' post-exposure likes and dislikes of medical services. Patient satisfaction and loyalty can change because healthcare-related expectations shift over time. Thus, it is recommended that hospitals should make regular surveys of patient satisfaction and loyalty. Hospitals should conduct regular patient surveys monthly or quarterly, with questions that can measure patient satisfaction loyalty such as referrals, intention to return, and cross-selling, being included in their questionnaires.

For Academics

1) More empirical research needs to be conducted to examine all the key elements of the service profit chain, including employee satisfaction and loyalty, patient satisfaction and loyalty and hospital performance, in the private hospital business in Thailand. To do this, it requires complete data of appropriate measures on employee satisfaction and loyalty, patient satisfaction and loyalty, and measures of hospital performance. More samples of hospitals are needed to obtain more satisfactory conclusions. This will certainly take some time before all necessary data is available.

2) Research in other service industries, such as banks, hotels, life insurance firms, and retailers, is recommended to investigate all elements in the SPC model to determine whether the concepts are applicable to service firms in Thailand.

3) Causal models should to be developed and tested in service firms, provided that all relevant data is available. Subsequent studies should investigate by integrating other moderating or intervening variables such as trust, customer commitment, switching costs, customer lifetime value, and length of relationship, which have been found in previous empirical research to affect relationship outcomes.

DELIMITATIONS OF THE RESEARCH

1. Only the data of employee surveys for 2007 were available and usable for the purpose of this study, limiting the research results to only one year. In the future, it would be more preferable to use data of more than one year for analysis. Moreover, given the employee and patient survey results and financial performance from the hospital, secondary data analysis was used. The primary advantages of secondary data are that it is less expensive than acquiring primary data, and can be obtained more quickly. However, the disadvantage of secondary data is that they are not designed specifically to meet the researcher's exact objectives.

2. Using the monthly and quarterly data of employee and patient survey scores of only one year for testing relationships in this study, it is possible that there was the lagging period effect of the employee satisfaction and loyalty, and patient satisfaction and loyalty, on the hospital performance. The solution for this lagging effect may be that in future research, data on employee and patient surveys of at least three years should be used by testing scores of one quarter with those of the next quarter sequentially with the use of more advanced statistical techniques than simple bivariate correlation analysis.

3. Pearson bivariate correlation analysis was used to study relationships between all measures of the three constructs. Pearson correlation coefficient is a statistical measure of the covariation or association between two variables. According to Cooper and Schindler (2003), the Pearson correlation coefficient (r) ranges from +1 through 0 to -1. If the value of r is 1.0, a perfect positive linear relationship. If the value of r is -1.0, a perfect negative relationship or a perfect inverse relationship is signified. No correlation is indicated if $r = 0$. The coefficients indicate both the magnitude and direction of the relationships whether values on one variable are associated with values on the other. If the values correspond in this way, the two variables have a positive relationship: As one increases, the other also increases. If an inverse relationship exists, the greater the value of one variable, the less the value of the other. Nevertheless, a correlation coefficient of any magnitude or sign does not imply causality (Cooper and Schindler, 2003). Thus, it must be cautioned that no claims of causality have been made or tested in this study.

The research method of bivariate correlation analysis at the 95 percent confidence level could be critiqued as a weakness of this study. This method was chosen for this study so that it was in line with previous research testing relationships of variables in the service profit chain (e.g. Heskett *et al.*, 1997; Loveman, 1998; Silvestro and Cross, 2000; Silvestro, 2002). As Loveman (1998) has pointed in his study, although the arrows in the service profit chain model could be interpreted as indicators of causality, it is quite difficult to make convincing causal claims about relationships between variables in the model, such as customer loyalty and profitability. It is possible that other factors can influence

variation in the relationships. Like many studies testing relationships of variables in the model, this study pursues the modest objective of testing for positive correlation.

Although it was the approach used by previous studies, more sophisticated statistical techniques would provide a better understanding of the relationships between variables in the service profit chain model. The more advanced statistical techniques recommended for testing the variables in future research include multiple regression analysis, path analysis, and structural equation models. These three statistical techniques are recommended because of their strengths briefly discussed below.

Multiple regression analysis is a statistical technique that is used to analyze the relationship between a single dependent variable and several independent variables. It allows for the simultaneous investigation of the effect of two or more independent variables on a single interval-scales dependent variable, and shows the overall correlation between each of a set of independent variables and a dependent variable.

Path analysis is a causal model for understanding relationships between two variables. Though this technique is based on regression analysis, it can provide a more useful graphic picture of relationships among several variables. Path analysis assumes that the values of one variable are caused by the values of another, so it is essential to distinguish independent and dependent variables.

Structural equation modeling (SEM) is a multivariate technique combining aspects of factor analysis and multiple regression analysis that can simultaneously examine a series of interrelated dependence relationships among the measured variables and latent variables, as well as between several latent variables. SEM is the only multivariate technique that allows the simultaneous estimation of multiple equations. It has become a very popular technique in the social sciences because of these key advantages (Hair *et al.*, 2006).

4. Given the results in Table 1, there is a possibility of spurious effect from the simple bivariate correlation tests used for this study. A spurious relationship is a common occurrence in which a relationship can be spurious is when an omitted construct explains both the cause and effect. A structural equation model (SEM) can be used to test whether the true cause is related to the effect by testing two SEM models. One model specifies a simple relationship and a second model includes other potential causes as predictor variables as well. If the estimated relationships between constructs remain unchanged when the additional predictors are added, then the relationship is deemed unspurious (Hair *et al.*, 2006).

While the research method used in this study has its limitations described above, this study appears to be the first comprehensive empirical test of the entire service profit chain within a single health care organization in Thailand; nevertheless, the author recognizes the need for more extensive testing of the model in other health care companies, as well as other service contexts.

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