Service Quality and Its Application in Medical Service

Ming-Tzong Wang[1], Sophia S.-C. Wang[2], Simon W.-C. Wang[2], and Brian C.-J. Lee[2]

Abstract

The main objective of this paper is to give a novice an overview service quality concept. A range of studies that are related to the differences between service sector and manufacturing sector, service quality (SERVQUAL), and recovery satisfaction (RECOVSAT) are examined. The paper summarizes numerous studies on the topic related to service quality. Moreover, it is applied in medical service and presents COQS viewpoint. The paper provides a useful source of information on service quality and its application in medical industry.

Keywords: customer satisfaction, medical service, service quality, SERVQUAL, RECOVSAT

Introduction

According to the world's trend and statistics, the 21st century will see the move towards a service orientated economy. Therefore, the government of Taiwan adopted in March 2004 the following proposal: "Guidelines for the Development of Service Industry and Action Plan" .(Government 2004) In this proposal, it pointed out that the development of the Service industry encompasses five aspects that are: Service, Market, Inno-value, Life, and Employment (SMILE). Moreover, Taiwan's government took "Brighten Taiwan's SMILE" as the slogan to promote its service industry. Its objective was to make "Served by Taiwan" rapidly become as popular as "Made in Taiwan".

Service Industry

Service is highly related to customers' feeling; the essence of service is customer satisfaction. The concept of service can be better understood when it is compared with goods, concrete merchandise. Compared to goods, service has four following characteristics: intangibility, heterogeneity, inseparability, and perishable.(Zeithaml,

1 Associate Professor, Graduate Institute of Industrial Engineering, National Taiwan University, No. 1, Sec. 4, Roosevelt Road, Taipei, 10617 Taiwan (R.O.C), Tel. +886-233663366 ext. 69502, e-mail: mtwang@ntu.edu.tw

2 Graduate Student, Graduate Institute of Industrial Engineering, National Taiwan University, No. 1, Sec. 4, Roosevelt Road, Taipei, 10617 Taiwan (R.O.C)

Parasuraman et al. 1985; Bogen, Hausen et al. 1994; Wolak, Kalafatis et al. 1998)

Service Four Characteristics

First, most kinds of service are intangible. When buying goods, customers can estimate the value of goods beforehand. Unlike purchasing goods, customers cannot know the value of services in advance and cannot evaluate until they actually go through the whole service procedure. Since service is action rather than product, it is hard to maintain uniform quality. Most service cannot be counted, measured, inventoried, and tested.

Second, services, especially labor-intensive services, are heterogeneous: their performance often varies from producer to producer, from customer to customer, and from day to day. It is difficult to keep consistent performance of service.

Third, service could be grouped into service production and service consumption, and production and consumption of many services are inseparable. As long as service delivering and service consuming take place simultaneously, it is impossible to separate them. Manufacturers purchase material from supplier, and produce better goods. Compared with goods, service requires more feedback from consumers. The feedback here means the interacting process between service providers and consumers. Similarly, after service consumption, customers could provide their opinion or feedback. Based on the feedback, service production and service delivering must be better.

Last but not least, since services delivering and services consuming happen simultaneously, service is perishable. Service is generated as soon as customers demand it. Service providers could not prepare service beforehand for next customers. Service business is a trend. Not until service providers understand these four features of services, could they have a better chance to win customers' heart. In today's competitive market, customers' feeling take top priority over everything else. If service business owners realize service features, their service would be more accurate.

Service Industry Development in Taiwan

After oil crisis occurred in 1970s, plenty of employees were fired. Those who were fired had difficulty finding a new job due to oil financial tsunami. Since they still had to raise their family, they started to think about running their own business. Therefore, a growing number of people in Taiwan came to have an idea that they should run their own business. Because of capital limitation, they could only choose the service industry, which is not capital-intensive. Besides, Taiwan government also promoted the service industry development. Currently, most companies in Taiwan are small and medium enterprises (SMEs), and up to 60 percent of which, according to the statistics, are running service business. Moreover, the GDP in the service industry was 66.95

percent of the total GDP in 2009, indicating that service industry is crucial to economic growth in Taiwan. It is shown on the figure below. More and more companies, which are traditionally classified in other industries, claim that they are service industry. For example, IBM is well-known for its computer system development and personal computer (PC) manufacturing; it also provides customers with IT service.
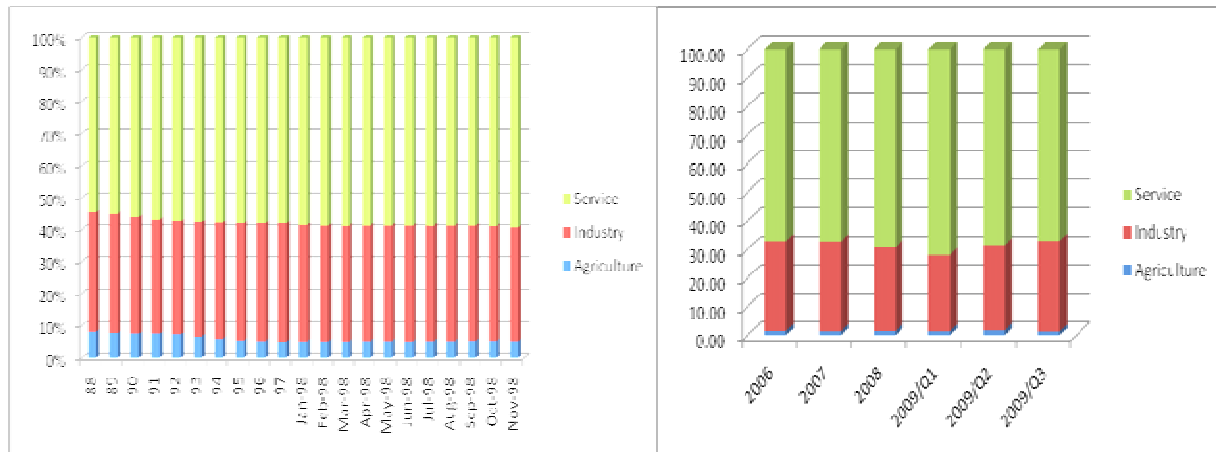

Figure 1. Each industry GDP percentage in Taiwan

The service industry is everywhere nowadays. People may wonder: What is service? How do we define service? It may be defined in several different ways. Kotler defined service precisely and clearly as follows, "Service is a series of activities of more or less intangible nature that normally, but not necessarily, takes place in interactions between the customer and service employees or physical resource or goods or systems of the service provider, which are provided as solutions to customer problems".(Kotler and Andreasen 1996)

Total Service Quality

Quality has become ever more popular, especially with the fierce competition taking place between companies nowadays. The following cover TQM evolution and TQS dimensions.

TQM evolution

The concept of Quality has been implemented through the following fields: quality inspection (QI), quality control (QC), quality assurance (QA), quality management (QM), total quality control (TQC), total quality management (TQM). A large number of scholars have studied quality and provided companies with structured methods to implement quality management. In 1946, the union of Japanese scientist and engineer (JUSE) established statistical quality control (SQC) and invited the quality expert, Dr. Deming, to deliver a speech. In 1951, Feigenbaum published the TQC book which

influenced quality concept very much. He also promoted the ideas of TQC and offered approaches to introducing TQC in 1956. Ishikawa encouraged all the employees involved to improve quality, which resulted in companywide quality control (CWQC) era. During CWQC period, Juran redefined quality, Crosby wrote a book: quality is free, and Deming presented 14 key points for quality respectively. In 1985, TQM was first introduced in the USA. The main idea of TQM is not only fulfilling the technical requirements, such as ISO 9000 certification, but also to make people understand the essence of quality, and is everyone's responsibility.(Dotchin and Oakland 1994; Huq and Stolen 1998; Pheng 1998)

TQS Dimensions

TQM is a general conception. It could be used in not only manufacturing industry but also service sector. However, in either manufacturing industry or service sector, it is dissimilar to carry out TQM because of certain environmental differences and contradictions between manufacturing and service sectors. Bowen and Schneider (1998) stated that the critical TQM dimensions in manufacturing industry and service sector are various.(Bowen and Schneider 1988) The critical factors of TQM dimensions applied to service sector could also vary. A great number of researchers have studied TQM in service sector, which is called total quality service (TQS). (Adam 1994; Flynn, Schroeder et al. 1994; Ahire, Golhar et al. 1996; Huq and Stolen 1998; Sureshchandar, Rajendran et al. 2002; Black and Porter 2007) Based on literatures, TQS dimensions could be generally summarized as following description: TQM dimensions including top management commitment, human resource management, design and management of processes, and continuous improvement and so on, could be applied to service sector with some revision. Although these are crucial to both manufacturing and service, they are seldom emphasized in previous studies. Some scholars (Sureshchandar, Rajendran et al. 2001) organized the literatures related to TQS and identified twelve TQS dimensions which consist of top management commitment and visionary leadership (TMCL), human resource management (HRM), technical system (TS), information and analysis system (I&A), benchmarking (BM), continuous improvement (CI), customer focus (CF), employee satisfaction (ES), union intervention (UI), social responsibility (SR), servicescapes (SP), and service culture (SC).

Service Quality

Service quality could be regarded as a perceived judgment to differentiate one company from others. According to different receivers, service perceptions are generally diverse. In this section, it includes service five gaps, SERVQUAL instrument, and debating issues related to SERVQUAL.

Service Five Gaps

Once customers' expectation with service is not equivalent to the service they perceived and received, service gaps emerges. Service gaps are defined as the service discrepancies between the customers' perception and providers' offer. Parasuraman, Zeithaml, and Berry developed a service quality model which derived from five service gaps in 1985. (Parasuraman, Zeithaml et al. 1985) It was a breakthrough. The model is illustrated as following:
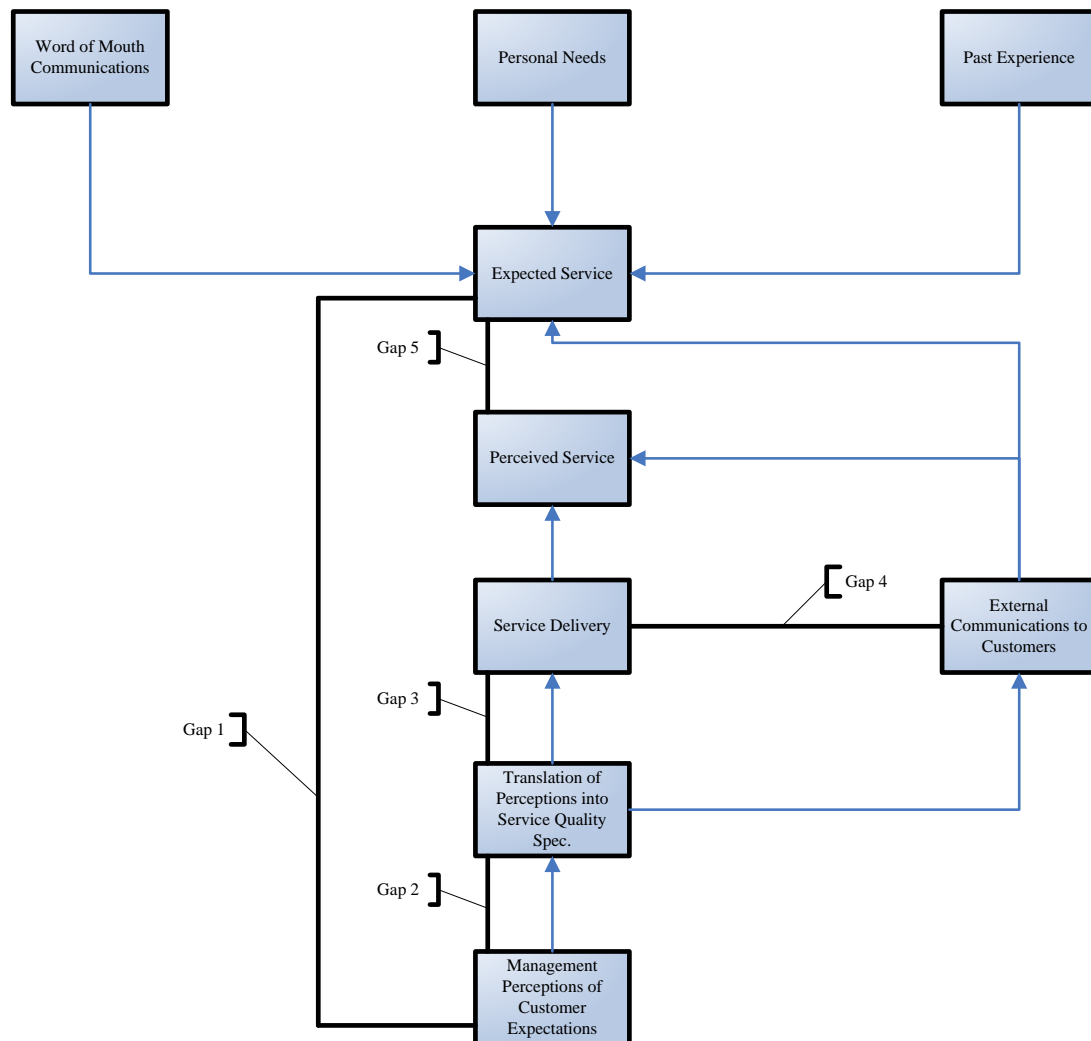

Figure 2. PZB five gaps model

Upon purchase of a service, a customer expects to receive a certain level of service (this level depends on factors such as: - word of mouth - personal needs - past experience - external communication to other customers). (Gronroos 1984; Brown and Swartz 1989) The level of service received however rarely matches that expected, and the difference between these two levels can result in the following 5 gaps:

- gap 1: represents the misunderstandings between executive perceptions and

customer expectations
- gap 2: represents wrong specifications
- gap 3: represents failure to deliver the service
- gap 4: represents over-promising
- gap 5: represents the difference between the expected service and the service perceived and it is also a function of the 4 previous elements.

Gaps 1 to 4 occur within the organization, and should therefore be controlled to shorten gap 5 (which is the general indicator). Hence, the objective of the service quality model is to reduce gap 5 so that the other four gaps are reduced (triggered by the decrease of gap 5).

SERVQUAL Instrument

There are more and more companies addressing on service quality in competitive marketing. Customers' perception of service quality is regarded as the probability of repurchase and influence the business in a company. For that reason, it is crucial for the marketer to understand what service quality is composed of, how to satisfy customers' needs and to find the means to measure service quality. Parasuraman *et al* therefore developed an instrument, SERVQUAL, to measure service quality. (Parasuraman, Zeithaml et al. 1985) The instrument aids service providers to realize how important their service is and how they could improve service quality.

Parasuraman *et al* conducted the survey in five service industries including retail banks, credit card companies, a communication company, a product repair and maintenance firm, and a securities broker, and then concluded SERVQUAL scale into ten dimensions with 100 questions. (Ladhari 2009) The revised scale, which was composed of 22 questions/items, was presented later on, and was condensed into five generic service-quality dimensions. Original dimensions 4-8 could be defined as assurance; moreover, original dimensions 9-10 talked about empathy.

Table 1. SERVQUAL dimensions

Original PZB	Revised PZB
tangibles	tangibles (4 items)
reliability	reliability (5 items)
responsiveness	responsiveness (4 items)
communication	assurance (4 items)
credibility	
security	
competence	
courtesy	
understanding/knowing customers	empathy (5 items)
access	

These dimensions could be adopted in a variety of service industries with some appropriate modifications because of its common idea. SERVQUAL scale is also widespread use in several countries, which includes China, Australia, Honk Kong, South Africa, and so on.

Recovery Satisfaction

The rules of marketing concept are a philosophy that aids people with making decision. To implement the marketing concept properly could make a company understand what customer wants and needs. However, many companies carry out the marketing concept improperly, and then customers feel dissatisfied, even unsatisfied, which results in the impact on companies is negative.

Customer Satisfaction

Service failure could harm the image of companies. Moreover, the great quality guru W. Edwards Deming stated in his book that research with consumers has found that happy customers tell eight friends about their positive experience, but angry customers tell their troubles on average to sixteen people. (Kochkin 2000) Worse still, 13% of those unhappy former customers will tell their stories to more than 20 people. (Buttle 1998) In recent studies, the trend of similar statistics appeared to be on the rise due to the vast popularization of internet and all other technologies that thrive on it. Therefore, customer complaints have become ever more knotty to handle and if one single problem is left unresolved, the effect of word-of-mouth will soon take on a larger scope.

Service industries and customer-focused companies have become increasingly aware of the importance of retaining customers while attracting new ones. Therefore, measuring customer satisfaction has also become one of their endeavors as it serves as one of company's performance index. However, customer satisfaction is an ambiguous term because satisfaction is a psychological state mixed of subjective emotions and feelings, which are rather difficult to be translated into scales and even harder to be put in words. As a result, innumerable studies and researches have been dedicated to scientific standards and methodologies on measuring customer satisfaction. In reality, oftentimes it is much easier for service department to track dissatisfactions than satisfaction, because those dissatisfactions are usually expressed in forms of surveys or complaints. However, for every complaint heard, the average company has 26 other customers with the same problem.(Gates 2005) It is apparent that most of the unsatisfied customers tend to be reserved about their negative opinions; in fact, according to Bill Cates, the average business never hears from 96% of its unsatisfied customers. A similar study further indicated that a survey on "Why customers quit?" revealed a fact that 68 percent quit because of an attitude of

indifference toward the customer by the owner, manager, or some employee. (LeBoeuf 2000) The same study also concluded that the average business spends six times more to attract new customers than it does to keep old ones. Yet customer loyalty is in most cases worth ten times the price of a single purchase. (LeBoeuf 2000) Hence, it is evident that it is equally important for a business to attract new customers and to keep old ones, because ultimately customer loyalty will have a huge impact on how well the business performs.

RECOVSAT Instrument

The objective of service recovery is to compensate customer satisfaction. Hence, developing an instrument to assess post-recovery is indispensable. The instrument, RECOVSAT, could be shown with six dimensions, which are communication, empowerment, feedback, atonement, explanation, and tangibles. (Boshoff 1999; Boshoff 2005)

- communication: Service providers communicate with service receivers (customers) clearly, and identify the problem, then understand the further problem. Finally, service providers show their reliability and competency to solve the problem.
- empowerment: The provider who first get the complaint could deal with the complaint immediately without asking for authorization.
- feedback: After service providers solve the problem, they write the report to take down how to handle, solve the similar problem.
- atonement: Whenever service failure occurs, the service providers would take some action to make it up so that service receivers are more likely to remain their loyalty.
- explanation: Service providers give an explanation of why the problem occurs, what goes wrong.
- tangibles: Service providers must dress up, or well-dressed to show their professional knowledge and attitude in working environment.

Service Quality in Medical Industry

Medical industry is a special service sector, and its process and outcome are more related to human being's life. Therefore, the service quality in medical is crucial and vital.

Medical Service Quality

People have three pursuits with regard to medical service: convenient clinic/hospital, reasonable price, reliable quality. Medical service quality consists of two quality dimensions: technical quality and functional quality. (Lam 1997; Kenagy, Berwick et

al. 1999) The former is defined as accuracy of medical diagnoses and specification conformance, such as appropriate dose of medicine and precise suture placements. The latter refers to the medical methods, such as relieving the fear and pain of patients with understandable ways. Both qualities attribute to customers' satisfaction, namely clients' satisfaction in medical setting. Moreover, Donabedian also stated that the technical quality refers to medical technology and functional quality refers to medical art. (Donabedian 1980) However, it is difficult for most patients to distinguish between curing performance (technical quality) and caring performance (functional quality). (Ware Jr and Snyder 1975; Ware Jr, Wright et al. 1975) It is inevitable that medical quality cannot be improved if an objective instrument is not developed.
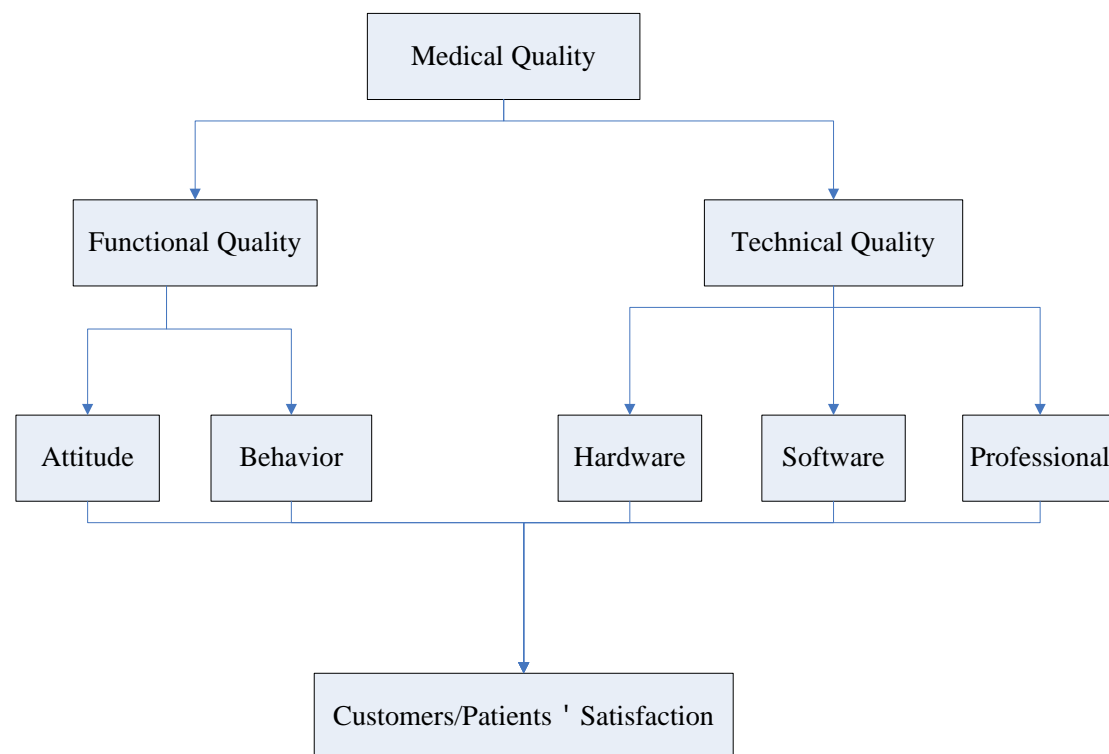

Figure 3. Medical service quality

Methods of quality assessment

On the basis of Casanova's research, the hospital administrators' quality perception is higher than physicians'. (Casanova 1990) Medical treatment and administration are separate in America. However the physician can also be the administrator at the same time in Taiwan. It is much easier in Taiwan to implement quality improvement program. The quality assessment has become an inevitable issue. Process data, outcome data, or both data can be the fundamental of accrediting medical quality by means of five approaches. (Brook, McGlynn et al. 1996) Some (The 1st, 2nd, and 3rd approaches) of the five approaches are implicit because of no specific standards. Next,

the 4th approach uses a clear process standard to assess care supply. Finally, the 5th approach examines the consistency between the outcomes of care and the results of prediction with the use of a prior standard.

Comprehensiveness of Quality-of-Care Measure

The development of medical technology updates quicker and quicker. National Committee for Quality Assurance (NCQA) has developed a system, which is the Health Plan Employer Data and Information Set (HEDIS), to measure the performance of health plans. (Brook, McGlynn et al. 1996) By HEDIS website definition, it is a tool to measure performance on important dimensions of care and service, which consists of 71 measures cross 8 domains of care. In addition, there are nine indicators of quality in HEDIS system. Seven indicators are process indicators among nine indicators. Five indicators are relevant to prevention out of these process indicators. HEDIS results are shown on the website so that the users can access to the benchmarking information. Based on benchmarking information, quality can be evaluated objectively.

References

Adam, E., 1994. Alternative quality improvement practices and organization performance. Journal of Operations Management, 12(1): 27-44.

Ahire, S., D. Golhar, et al., 1996. Development and validation of TQM implementation constructs. Decision Sciences, 27(1): 23-56.

Black, S. and L. Porter, 2007. Identification of the Critical Factors of TQM*. Decision Sciences, 27(1): 1-21.

Bogen, M. A., H.-L. Hausen, et al., 1994. Handling of QoS characteristics. Computer Networks and ISDN Systems, 26(Supplement 2): S107-S118.

Boshoff, C., 1999. Recovsat: An Instrument to Measure Satisfaction with Transaction-Specific Service Recovery. Journal of Service Research, 1(3): 236-249.

Boshoff, C., 2005. A re-assessment and refinement of RECOVSAT: An instrument to measure satisfaction with transaction-specific service recovery. Managing Service Quality, 15(5): 410 - 425.

Bowen, D. and B. Schneider, 1988. Services marketing and management: Implications for organizational behavior. Research in organizational behavior, 10: 43-80.

Brook, R., E. McGlynn, et al., 1996. Measuring quality of care-part two of six. The New England journal of medicine, 335(13): 966.

Brown, S. W. and T. A. Swartz, 1989. A Gap Analysis of Professional Service Quality. The Journal of Marketing, 53(2): 92-98.

Buttle, F., 1998. Word of mouth: understanding and managing referral marketing. Journal of Strategic Marketing, 6(3): 241-254.

Casanova, J., 1990. Status of quality assurance programs in American hospitals. Medical Care, 28(11): 1104-1109.

Donabedian, A., 1980. Explorations in quality assessment and monitoring. Health Administration Press Ann Arbor, MI.

Dotchin, J. and J. Oakland, 1994. Total Quality Management in Services Part 3: Distinguishing Perceptions of Service Quality. International Journal of Quality &# 38; Reliability Management, 11(4): 6-28.

Flynn, B., R. Schroeder, et al., 1994. A framework for quality management research and an associated measurement instrument. Journal of Operations Management, 11(4): 339-366.

Gates, B., 2005.Turn Complaining Customers into Loyal Customers. from http://www.referralcoach.com/members/articles/Turn_Complaining_Customers_into_Loyal_Customers.php.

Government (2004). Guidelines and Action Plans for Service Industry Development. E. P. a. D. E. Yuan. R.O.C.

Gronroos, C., 1984. A service quality model and its marketing implications. European journal of marketing, 18(4): 36-44.

Huq, Z. and J. D. Stolen, 1998. Total quality management contrasts in manufacturing and service industries. International Journal of Quality & Reliability Management, 15(2): 138 - 161.

Kenagy, J., D. Berwick, et al., 1999. Service quality in health care. JAMA, 281(7): 661.

Kochkin, S., 2000. MarkeTrak V. The Hearing Journal, 53(2): 34.

Kotler, P. and A. Andreasen, 1996. Strategic marketing for nonprofit organizations. Englewood Cliffs, NJ.

Ladhari, R., 2009. A review of twenty years of SERVQUAL research. International Journal of Quality and Service Sciences, 1(2): 172 - 198.

Lam, S., 1997. SERVQUAL: A tool for measuring patients opinions of hospital service quality in Hong Kong. Total Quality Management & Business Excellence, 8(4): 145-152.

LeBoeuf, M., 2000. How to Win Customers and Keep Them for Life. Tomlinson and Associates.

Parasuraman, A., V. Zeithaml, et al., 1985. A conceptual model of service quality and its implications for future research. The Journal of Marketing, 49(4): 41-50.

Pheng, L. S., 1998. Managing total service quality: a systemic view. Managing Service Quality, 8(1): 34 - 45.

Project Management

Sureshchandar, G., C. Rajendran, et al., 2002. The relationship between management's perception of total quality service and customer perceptions of service quality. Total Quality Management, 13(1): 69-88.

Sureshchandar, G. S., C. Rajendran, et al., 2001. A holistic model for total quality service. International Journal of Service Industry Management, 12(4): 378 - 412.

Ware Jr, J. and M. Snyder, 1975. Dimensions of patient attitudes regarding doctors and medical care services. Medical Care, 13(8): 669-682.

Ware Jr, J., W. Wright, et al., 1975. Consumer perceptions of health care services: implications for academic medicine. Academic Medicine, 50(9): 839.

Wolak, R., S. Kalafatis, et al., 1998. An investigation into four characteristics of services. Journal of Empirical Generalisations in Marketing Science, 3(2).

Zeithaml, V., A. Parasuraman, et al., 1985. Problems and strategies in services marketing. The Journal of Marketing, 49(2): 33-46.