



## SERVICE QUALITY AND LEAN MANAGEMENT: EMPIRICAL STUDY AMONG DENTAL HOSPITALS IN INDONESIA

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### **Abstract:**

The present research aims to evaluate service quality and lean management among dental hospitals in Indonesia. This study employs a quantitative descriptive research approach to achieve the research objectives by testing a set of hypotheses. The data collection is employing a self-administered questionnaire to collect primary data from 350 patients in Indonesian dental hospitals with particular reference to Jakarta and Bali. The research findings reveal that patients in Indonesia expect more from a private hospital, whether it is located in Bali or Jakarta. Likewise, these patients have slightly lower expectations from public hospitals regardless of the hospital location.

**JEL:** O14; I10; I15; I18

**Keywords:** service quality, patient satisfaction, dental hospitals, Indonesia

### **1. Introduction**

The health service sector is one of the major healthcare service providers in the country. Complaints about poor customer care in hospitals are rife, and the most cited health institutions are government hospitals. In recent times, this sector has been encountering an army of problems including poor customer care and poor-quality service in government healthcare institutions thus greatly affecting its corporate image. Due to poor customer care and satisfaction in government hospitals, they have failed to attract healthcare customers. In the healthcare context, numerous researches have also explored how SQ and PS are related. Studies have also been carried out on public hospitals that have taken an empirical approach to address this relationship (Cong et al., 2014;

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Yousapronpaiboon & William, 2013). Additionally, most the majority of these reported public healthcare studies have concentrated on healthcare in North America, Europe, but only rarely in Asia. Little research has been carried out in North African Arab countries, to investigate the relationship between SQ and patient satisfaction in general public hospitals (Al-Hawary, 2012; Diab, 2012).

With the success level, the application of lean has reached the first research in Indonesia on the evaluation of the impact of lean conducted the first research in Indonesia on the evaluation of the impact of lean implementation located at RSIA Kemang Medical Care (KMC). The results suggest that there was a drastic increase in service processes and a decrease in inventory factor, a reduction in management error of 42% after three months of lean application. In addition, the productivity of hospital human resources also proved to be higher than before the implementation of lean. The pharmaceutical rotation rate was found to be 6.1, after six months of lean application, resulting in a five-day period of stored inventory. The research also resulted in the design of hospital lean guide in Indonesia.

Internal challenges facing RSKGM now are the ability to provide and improve quality services without neglecting operational cost efficiency and complexity in the management of human resources that have high authority in work, while the external challenges of RSKGM are rapid changes in hospital business environment as the impact of globalization change, regulations and policies of institutional leaders affecting hospital service standards, along with hospital industry competition. Based on the results of interviews and observations of stakeholders RSKGM FK UI, there are some problems facing the hospital, the queue that includes waiting time for administrative activities, waiting time for the process of examination by a specialist dentist and the waiting process? This queue includes things that can affect the level of customer or patient satisfaction. In addition, there are still other ineffective activities, such as the re-writing of old patient data due to missing data or loss of old patient data and still the discovery of transportation system from information personnel to send medical record files. All these problems are waste that does not provide added value (non-value-added).

The provision of health services in developing, and developed countries are significantly affected by limited funding and other resource constraints. As mentioned earlier, in developing countries, there is considerable poverty and limited facilities and resources available for healthcare. In many developed countries, there has been a trend towards the reduction of funding and infrastructure support for health services in rural and remote communities Strasser, (2003).

Also, in government hospitals the healthcare workers pay poor attention to customers; have negative attitudes and behaviours towards their clients/patients. Besides, there is intense competition between public and private health institutions, lack of modern equipment and a significant shift of customers from government hospitals to private hospitals is adversely affecting the government hospitals revenue Ramez, (2012). Therefore, it has become crucial to maintaining the quality of health services in order to retain customers. The SERVQUAL method of appraising is widely used to examine the

SQ offered by service providers. The healthcare sector is undergoing significant and rapid changes and requires healthcare organisations to strive for advancement to be globally competitive. Like any other service or product, the healthcare industry is also competing in a highly intense competitive environment. The value of Healthcare services includes access to effective, adequate, and efficient care as a basic requirement of any healthcare system (Porter, 2010). Improved quality with access to affordable healthcare service is the value-based goal of the system (cited in Peprah, 2014); Consumer satisfaction is a fundamental requirement for healthcare providers. Satisfaction has become very imperative as patients themselves and institutional healthcare service buyers make selection decisions.

Even very few hospital organizations have infrastructure such as resources that support the requirements when changing the hospital process with the Lean system. All can occur because of a lack of commitment of time and energy by leaders and staff. The application of Lean hospital will only be a side project; it would be very unfortunate if examples of lean implementation occur like that. This is the fact that the company only moves the lean system or adopts it without knowing how to implement it through a basic concept that connects team members and leaders as well as between departments.

Other common mistakes made by hospitals, do not practice standardization. Please note that the core or the main purpose of Lean is Standardization. Continuous improvement will not last long if it is not made standard in every improvement, and one of the big challenges in health care is getting people who are highly educated and trained can also adjust to work standards. Through standardization, it will certainly make it easier all organizational teams identify the problems that occur. So that handling can be done before the emergence of the problem has an impact on the hospital's performance itself.

Although many Jordanian hospitals have begun to adopt different quality improvement initiatives in the last two decades, the literature on patient perception regarding the quality of health services is still unsatisfactory (Al-Damen, (2017). As observed by Elarabi and Johari, (2014), there have been some improvements but 'the poor quality of health services remains' according to a report of the Indonesian Health Ministry (2017). The poor performance of the healthcare sector has been attributed to the following factors: critical staff are absent, essential supplies are generally unavailable, facilities are inadequate, and the quality of staffing is poor. The problems of supervision and accountability also exacerbate the problems; and if corrupt practices are added to the list, it is not difficult to imagine the predicament of the patients. These factors and general public perception of poor and unreliable services may explain why those who can afford it have been seeking healthcare services in other countries. In a country where the population growth rate will place additional demands on the health sector, its preparedness to serve its constituencies effectively is particularly troubling as time goes by. Indonesians have been suffering from the deterioration in the provision of healthcare services. While healthcare services are available and accessible, its utilisation is still limited. This is due to ineffective healthcare facility infrastructures; poor chains of supply;

shortages and inadequate equipment; poor HRH recruitment, and weak leadership and commitment. Such issues have a negative impact on the quality and safety of healthcare provision. Hence, the public's confidence in the healthcare service is at its lowest in Indonesia.

Several attempts have been made to re-engineer the Indonesian healthcare system and assess patients' satisfaction in both dental hospitals in Indonesia after the Indonesian revolution in 2011. The problem that this research seeks to address is the current poor quality of healthcare services being provided to patients which result in patients' dissatisfaction.

Lean can help CEO and owners of the hospital to understand that quality is bad, not because of bad people, but because the system is not working. So that the repair process actually starts small, by employees knowing the process independently, there are already many hospitals in the world that implement lean and show a significant increase in quality control as well as costs.

## 2. Literature Review

The literature on the quality of health services is very much derived from developed countries. Few studies are referring to developing countries (De Geyndt, 1995; Atkinson and Haran, 2005), and even fewer referring to the Indonesian context (e.g. El Taguri et al., 2008; Abdul Salam et al., 2010a and 2010b). Atkinson and Haran (2005) cited Sitzia and Wood (1997), who reported that by 1994, the number of published papers on PS in the US and the UK amounted to almost 1,000. De Geyndt (1995) counted 22 studies on the quality of health services in developing countries published between 1981 and 1993. In all, outcomes as a measure of quality were almost absent; seven studies had used structural indicators to measure quality, 12 had used process indicators, and three had used both.

They attributed this emphasis on quantifiable and measurable inputs to the fact that most studies had been carried out by researchers with a background in economics. They also attributed the absence of outcome measures in developing countries to the fact that: *"Improving outcomes is a presumptive result of improving the process and is not documented, mainly for lack of valid and reliable measuring tools and indicators, the expense involved, and the tenuous cause-effect relationship between process and outcome"* (De Geyndt, 1995). Haddad et al. (1998) maintained that the lack of research in the area of SQ in developing countries might be due to a lack of interest in the idea itself. They believed there are two reasons for this. First, priority has long been given to improving the availability of healthcare in circumstances where there have been extensive needs, which have rarely been fulfilled. Second, the authorities in charge of health services have felt that evaluation and ensuring quality are luxuries reserved for developed countries.

The decisions of a patient to consume or not consuming an item-service is influenced by various factors, among others, are perceptions of service quality. According to Zeithaml, et al. (1990: 23), *"patient expectations for quality service is greatly*

*influenced by the information obtained from mouth to mouth, patient needs themselves, past experiences consuming a product, up to external communication through advertisements, etc. "*. Patient satisfaction has a role important in estimating the quality of hospital services. Satisfaction can be considered as a consideration and decision on the patient's judgment service success (Donabedian, 2000: 96). Patient satisfaction is one measure of the quality of care services and is a tool can be trusted in helping compile a plan, implementation and evaluation of the hospital service system. When patients or patients feel satisfied with the service given in the sense according to what is expected, large chances are this patient will come back on more other occasions

It is important that patients or patients will tell their friends about the satisfaction they receive. For that the hospital needs to be always maintaining relationships with sufferers who have use hospital services. Community satisfaction as recipient of service is comparison between services received with services expected. If the results are close to one, the community will be satisfied; vice versa if the price is much smaller than one then the community is increasingly dissatisfied. The idea is to exceed one that means that the services provided exceed expectations, or there is hope unexpected (anticipated) satisfaction. If this is achieved then the community will be very satisfied with the services received theoretically, the definition above can be interpreted, that the higher the difference between quality health service needs according to the wishes of patients with the services they have received, then there will be a feeling patient dissatisfaction. The theoretical assumptions above are in harmony with Gibson's opinion (2007: 112), which can be concluded that someone's satisfaction (worker, patient or patient) means fulfillment of desired needs obtained from the experience of doing something, work, and get certain treatment or get something accordingly.

The term satisfaction is used to analyze or evaluate results, comparing the desired requirements set individuals with needs that have been obtained. Based on the description on above it can be concluded that various activities and infrastructure activities health services that reflect hospital quality are the main determinant of patient satisfaction. Patient will give assessment (affection reaction) of various health service activities received and towards health facilities and infrastructure related to the implementation of health services. Assessment of the condition of the hospital (good or bad quality) is an illustration the quality of the hospital as a whole is based on individual subjective experience patient some characteristics of individuals suspected of being determinants and indicators of the quality of health services and affect levels patient satisfaction.

As has been indicated by many studies, patient satisfaction is accepted as one of the most crucial dimensions and key success indicators in healthcare (Pakdil & Harwood, 2005). Zineldin (2006) maintains that satisfaction as "*an emotional response.*" Although seemingly similar, perceived SQ and consumer satisfaction are distinctly different constructs that could be described and assessed differently, whereas SQ and consumer satisfaction have some commonalities: satisfaction is usually perceived as a broader concept whereas SQ assessment highlights the dimensions of service (Zeithaml & Bitner,

2000). Normally, SQ is recognised as mainly a cognitive construct whereas satisfaction has been viewed involves greater conceptual complexity that encompasses cognition and affective components. Satisfaction is considered as an attitudinal response to value judgments made by patients concerning their clinical experience (Kane et al., 1997).

Satisfaction, on the other hand, is viewed as a universal consumer response and a consumer's reflection on their degree of pleasure and based on service delivery predictions/norms that are dependent on previous experiences that are conceptually driven. However, perceived SQ could change with each specific experience and is likely to last longer than satisfaction, which is known to be transitory and is only the reflection of a particular service encounter (Vinagre & Neves, 2008). Oliver (1997) defined satisfaction as "*the consumer's fulfilment response,*" a post-consumption assessment by the consumer that a particular service induces a pleasing level of consumption-related fulfilment, including under- or over-fulfilment. The study identified some major elements that separate SQ from satisfaction and suggested that quality is an assessment or evaluation of a performance pattern involving several service dimensions related to the service provided. Quality, on the other hand, is believed to be determined more by external factors.

PS can be investigated regarding terms of the overall experience in healthcare. Priporas, et al. (2008) indicated that a patient's expectations and perceptions are not merely related due to a medical or health service, which is not technically comprehensive. Patients, therefore, are not able to clearly understand their expectations in a clinical setting. The literature review of methods used to obtain patients' perceptions of the quality of healthcare indicates that there are several approaches to measuring patient perceptions. These main broad categories can be grouped primarily into (i) quantitative research derived from positivistic inquiry, and (ii) qualitative research (Neuman, 2003; Bruster, 2005). These approaches include, for instance, counting and categorising complaints, examining critical incidents and adverse events, and satisfaction surveys (Bowling, 2002). The following sections elaborate on these two approaches.

Several instruments have been developed to assess patient satisfaction (Beattie et al., 2002; Castle et al., 2005). These instruments nearly all ask patients to evaluate the services received at either a global level (e.g. overall satisfaction with healthcare) or a service-specific level (e.g. satisfaction with nursing care). Prior research (Wensing et al., 1998) attempted to empirically examine which components of healthcare are important and related to the quality of healthcare. In their study to identify patients' priorities in general practice, Grol et al. (1999) asked 3,540 patients from different European countries to prioritise 38 items of healthcare. They found that the top ten items identified by patients were related to access, the doctor-patient relationship, communication, competence, courtesy, and respect for privacy. Similarly, Bower (2003) identified two "overarching" domains related to quality: access (namely are care facilities accessible when needed) and effectiveness, which can be further divided into the quality of technical care and the quality of interpersonal care (such as whether care if any good when accessed). Moreover, Bower identified a list of eight further sub-domains relevant

to patients' assessments (Bower, 2003): service access, quality of specialised care, the doctor-patient relationship, continuity, coordination and organisation of care.

The measurement method most commonly used was the Likert-type scale: a "quality rating" that ranges from "excellent" to "poor" or a "satisfaction scale" ranging from "very satisfied" to "very dissatisfied," or a "declarative scale" ranging from "strongly agree" to "strongly disagree" (Rosenthal & Shannon, 1997). Similarly, Parasuraman et al. (1988) developed a 22-item SERVQUAL scale to measure the quality of services in retail industries. This scale was later adapted to health services (Babakus & Mangold, 1992) and included questions about patients' perceptions of the actual service delivery and expectations of the HS in providing these services. Sixma et al. (1998) concurred with Pascoe regarding the lack of a theoretical framework in PS research and commented that: "Theory and methodology in this field appear to have developed along separate lines of interest." However, they refuted the idea of dissimilarity between market-based research and PS research. They claimed that the business-based SERVQUAL model of consumer satisfaction, developed by Parasuraman et al. (1994), could fill the gap between theory and practice in PS research.

Therefore, SERVQUAL scales that are effective in western cultures are not guaranteed to succeed elsewhere in countries that are culturally different (Ueltschy et al., 2002) and efforts to replicate the factor structure of SERVQUAL do not always succeed in samples from Asian countries (Jabnoun & Khalifa, 2005). SERVQUAL as a measurement of SQ thus needs on-going validation in various cultural contexts. Thus, it will be significant to determine if replication of the SERVQUAL scales in the Indonesian context results in the theoretical five-factor model. This research strongly advocates that patient satisfaction should also be incorporated into the design of services in developing countries.

De Ruyter, Bloemer et al. (1997) defined SQ as "the discrepancy between consumers' perceptions of services offered by a particular firm and their expectations about firms offering such services." Parasuraman, Zeithaml et al. (1985) proved that if expectations are higher than performance then perceived quality is lower than satisfactory, and hence customer dissatisfaction happens. SQ is also considered to be a perceived attribute based on the experience of the customer regarding the service that the customer perceived during the delivery process of the service (Zeithaml, Parasuraman et al., 1990). Delivering quality service means conforming to customer expectations on a consistent basis (Angelova & Zekiri, 2011). In the specific terms of the hospital service, whenever personal exchanges occur between a customer and service employees, this can be considered to be a service encounter (Bitner, 1990). Bitner (1990) defined a service encounter as "a period during which a consumer directly interacts with a service." Wilson, Zeithaml et al. (2012) proved that many positive experiences create a composite image of high-quality service in the customer's mind, while a single negative experience can obliterate a composite image of high-quality service (Nguyen, Nisar et al., 2018).

### 3. Research Methodology

Descriptive research focuses on describing the characteristics of a particular individual or characteristics of a group (Kothari 2004). On the other hand, Mugenda and Mugenda (2003) view descriptive research as a process of collecting data in order to test hypotheses or to answer questions concerning the current status of the subject of study. This study employs a descriptive quantitative research design, which makes it possible to observe measure and test the hypostudy by using numbers and statistical processes (Thomas 2003). This research began by collecting numerical data, classifying them following the suggested model, and using the correlational method in the attempt to determine the extent of a relationship between perception of patients' satisfaction and the Indonesian healthcare services provided. Finally, the analysis offers a further understanding of the results as well as some assumptions. This research employed a survey questionnaire for the collection of the required data to answer the research questions and test the research hypotheses. A structured questionnaire was constructed in such a way as to require direct answers in a particular prescribed format to facilitate consistency of responses among respondents, (Oso & Onen, 2006). The questionnaire was designed based on the previous research and literature but adapted as necessary and with the addition of some new measures for this study to collect information on assessing healthcare services quality in Indonesia along with patients' satisfaction level. This study was guided by the recommended procedures stated by Deville's (2003) to operationalise the constructs. In this respect, four subsequent steps were followed, namely, identifying the domain of the constructs, generating an item pool, measuring purification, and assessing the reliability and validity of items as well. In the questionnaire the respondents were presented with a series of attitude dimensions for each of which they were asked whether, and how strongly, they agreed or disagreed; using some positions on a five-point Likert scale.

### 4. Research Findings & Discussions

The patient's demographic attributes are summarised in Table 1, showing 4.1. 35.7% of the participants were in the age range 26-35 years with the total of 125 out of 350 patients. The majority of the participants were male with 67.1 % or 235 participants, and 32.9% or 115 were female participants.

A total of 145 participants (41.4%) had undergraduate certificates comprising with high school and post graduate degree holder with 38.9% and 19.7% respectively. A total of 127 (36.6%) participants had a monthly household income in the range of 401-600 Indonesian Dinars (USD) per month, and 28%, 12.3% and 8% had a household income of 200-400 USD, 601-800 USD and more than 800 USD respectively. A total of 60% of the participants reported that they were visiting private hospitals while 40% of the participants were visiting public hospitals (i.e. government hospitals managed by the Indonesian Ministry of Health).



Furthermore, there was very less difference in the number of patients from Jakarta city and Bali city. The number of respondents residing in Jakarta city was 165 or 47.2%, and Bali city had a few more respondents (185 or 52.8%). More brief details of the demographic findings are provided below in the later part of the study.

**Table 1:** Participants Socio–Demographic Characteristics and Hospital Visits (N=350)

Item	Category	Frequency (number of patients)	Frequency (%)
<b>Age (year)</b>	18–25	40	11.4 %
	26–35	125	35.7 %
	36–45	107	30.6 %
	≥46	78	22.3 %
<b>Gender</b>	Male	235	67.1 %
	Female	115	32.9 %
<b>Educational level</b>	High school/diploma	136	38.9 %
	Undergraduate	145	41.4 %
	Postgraduate	69	19.7 %
<b>Income level (USD)</b>	200-400 USD	28	8.0 %
	401–600 USD	127	36.3 %
	601–800 USD	43	12.3 %
	More than 800 USD	28	8.0 %
<b>Hospital type</b>	Public	140	40.0 %
	Private	210	60.0 %
<b>Hospital location</b>	Jakarta	165	47.2 %
	Bali	185	52.8 %

In order to assess the reliability of the study variables, Cronbach Alpha test was employed to measure the internal consistency of the items and provide a useful estimate of reliability (Gregory, 2000). The reliability of a measure reveals the extent to which items are positively correlated to one another and how close they are to (1) range (Hair et al., 2006). Reliability was considered high if the scale items were highly correlated.

According to Hair et al. (2006), and Katsikea et al. (2005), reliability means the degree to which measures are free to form error and therefore yield consistent results. Hair et al. (2006) DID not suggest that Cronbach’s alpha can be used as a measurement. To be reliable, the Cronbach alpha should exceed the threshold of 0.70.

The basis of the Exploratory Factor Analysis (EFA) is the relationships between items, so before using this technique, it is required to examine these relationships with the matrix of correlation indexes. Furthermore, if the correlations are below 0.3, using EFA will likely be insignificant (Hair et al., 2006). The criteria that follow are normally utilised to enhance the relationships of items. The third is a statistical method used to uncover the underlying structure of a relatively large set of variables.

**Table 2:** The results of the EFA and Cronbach's Alpha  
 for Expected Healthcare Service Quality between Dental hospitals

Construct after running EFA	Items	Factor loading EFA	Accept or Reject	Cronbach's Alpha
Tangibility	Hospital staff should appear in a neat and professional appearance.	0.917	Accept	0.908
	Hospitals need to have a clean health centre environment.	0.835	Accept	
	Healthcare equipment must be adequate.	0.885	Accept	
	Physical facilities should be visually appealing and comfortable.	0.782	Accept	
Reliability	When hospitals promise a health service, it must be done.	0.707	Accept	0.901
	Hospitals must show a sincere interest in solving your problems.	0.814	Accept	
	Hospitals must perform the service right the first time.	0.735	Accept	
	Hospitals must provide its service at the time it promises to do so.	0.792	Accept	
	Hospitals should insist on error-free records.	0.723	Accept	
Responsiveness	Hospital staff must tell you correctly when the services will be performed.	0.846	Accept	0.901
	Hospital Staff must give you prompt service.	0.829	Accept	
	Hospital Staff need always to show their willingness to help you.	0.687	Accept	
	Hospital Staff should not be too busy to respond to your request.	0.768	Accept	
Assurance	Hospital staff behaviour should instil confidence in you.	0.687	Accept	0.904
	Patients should feel safe in their transactions with the hospital.	0.846	Accept	
	Hospital Staff should be consistently courteous with patients.	0.829	Accept	
	Hospital Staff must know to answer your questions.	0.711	Accept	
Empathy	Hospitals must give you individual attention.	0.729	Accept	0.905
	Hospitals must have operating hours convenient to all its customers.	0.787	Accept	
	Hospitals must have employees who give your attention.	0.794	Accept	
	Hospitals must have your best interests at heart.	0.806	Accept	
	Hospital staff must understand your specific needs.	0.829	Accept	

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Lean Management	Hospital staffs have to listen to what I have to say.	0.729	Accept	0.957
	The hospital staffs have to understand my needs.	0.759	Accept	
	The hospital staffs have to be concerned about my happiness.	0.850	Accept	
	The hospital staff should provide personalised attention.	0.779	Accept	
	The hospital staff should be able to make it easy to share and discuss our needs.	0.785	Accept	
Patient's Satisfaction	The staffs at the clinic always listen to what I have to say.	0.850	Accept	0.958
	I feel the clinic staff understand what I need.	0.815	Accept	
	The hospital clinic staffs show concern for my happiness.	0.809	Accept	
	The hospital clinic staff always give me personalised attention	0.799	Accept	
	Discussing things with the clinic staff is easy.	0.927	Accept	

The consistent factor loadings and high reliability of SERVQUAL scale across both hospital samples support scale's validity. On the other hand, such evidence is insufficient to establish the scale's construct validity (Parasuraman, Berry, & Zeithaml, 1991). In this, further analyses were carried out for the assessment of the SERVQUAL scales directly. Each patients sample rated the overall SQ of the hospital on a seven-point scale, ranging from 1, "Strongly dissatisfied" to 5, "Strongly satisfied." The overall SQ ratings as DV were regressed along the five SQ perceptions minus expectation gap score dimensions (Parasuraman, Zeithaml, & Berry, 1988).

**Table 3: Regression Analysis of OSQ vs. SERVQUAL Scores for Five Dimensions**

Independent Variables	Private			Public		
	B	SE B	â	B	SE B	â
Dimensions						
Constant	9.434	0.087		8.307	0.130	
Tangibility	0.699***	0.078	0.368***	0.563**	0.114	0.193**
Reliability	0.672***	0.094	0.315***	0.584**	0.137	0.112**
Responsiveness	0.742***	0.076	0.329***	0.495***	0.073	0.285***
Assurance	0.582***	0.060	0.144***	0.664***	0.131	0.447***
Empathy	0.436***	0.083	0.156***	0.709**	0.146	0.227**
R2 Value	0.793***			0.540***		
Adjusted R2	0.791***			0.628***		
F	121.091			85.182		

a Dependent variable: OSQ (5-point scale)

\* Significant at  $p < 0.1$ ;

\*\* Significant at  $p < 0.01$ ;

\*\*\* Significant at  $p < 0.01$

The results were statistically significant for both Private Hospital ( $R^2 = 0.791$ ,  $F = 121.091$ ,  $p < 0.01$ ) and Public Hospitals ( $R^2 = 0.540$ ,  $F = 85.182$ ,  $p < 0.01$ ) suggesting that 79.2% and

62.8% of variance in overall SQ rating can be predicted from tangibility, reliability, responsiveness, assurance and empathy. A distinctive result regarding the relative importance of predicting overall SQ is that assurance is consistently the critical dimensions across both countries.

The analysis of individual country samples in order of importance of each dimension is on the basis of the values of the beta ( $\beta$ ) coefficients, the order of importance for Private Hospital context was responsiveness ( $\beta = 0.742$ ), tangibility ( $\beta=0.699$ ), reliability ( $\beta=0.672$ ), assurance ( $\beta=0.582$ ) and empathy ( $\beta= 0.436$ ). In summing up the case of Private Hospital, tangibility, reliability, responsiveness, empathy, and assurance have a positive association with overall SQ and significantly explains the overall SQ.

As for Public Hospital, the order of importance was empathy ( $\beta=0.709$ ), assurance ( $\beta=0.664$ ), reliability ( $\beta = 0.584$ ), tangibility ( $\beta=0.563$ ) and responsiveness ( $\beta= 0.495$ ). In summing up the case of a Public hospital, assurance, empathy, and tangibility have a positive association. All these five dimensions significantly explained the overall SQ.

Lastly, the regression equation in predicting overall SQ for both Dental hospitals can be defined as follows:

$$\text{Private Hospital: OSQ} = 9.434 + 0.699 (X1) + 0.672 (X2) + 0.742 (X3) + 0.582 (X4) + 0.436 (X5)$$

$$\text{Public Hospital: OSQ} = 8.307 + 0.563 (X1) + 0.584 (X2) + 0.495 (X3) + 0.664 (X4) + 0.709 (X5)$$

where:

- X1: Tangibility;
- X2: Reliability;
- X3: Responsiveness;
- X4: Assurance; and
- X5: Empathy.

The researcher utilised AMOS 22 to run the Structural Equation Model (SEM) used to test the hypotheses about potential interrelationships among the constructs as well as their relationships among variables. SEM had the following outcome (shown in the figure and the table below).

**Table 4: The Outcome of SEM**

			Standardised coefficient	P value
Tangibility	<---	Service Quality	0.898	***
Reliability	<---	Service Quality	0.850	***
Responsiveness	<---	Service Quality	0.684	***
Assurance	<---	Service Quality	0.837	***
Empathy	<---	Service Quality	0.910	***
Lean management	<---	Service Quality	0.896	***
Patient's Satisfaction	<---	Lean management	0.778	***

The above Table 4 shows that among the dimensions of SQ, "Empathy" has the most important role with the standardised coefficient being 0.910. On the contrary, "Responsiveness" has the least effect with standardised coefficient being 0.684. Moreover, the lean management shows that it significantly affects PS with the standardised total effect of about 0.778. For the mediating variable, lean management, also, has a significant role in positively influencing the creation of the hospital's prestigious image.

Nevertheless, the above result illustrates that the overall SQ along with lean management drives PS. The overall SQ has a significant relationship with the lean management with the standardised effect of 0.896. Likewise, the lean management has a significant effect on the PS, with the standardised effect of 0.778.

## 5. Conclusion and Discussion

It is obvious from the SERVQUAL results that a significant gap exists between what patients expect and what Dental hospitals in Indonesia are providing and in general there is a feeling of disappointment and dissatisfaction with the healthcare sector, both private and public. As has been mentioned in the earlier chapters, much has been published about the healthcare industry in general and specifically referring to certain countries and it remains clear that the issue of patient satisfaction (PS) among the general public has been and continues to be a significant public health issue.

As an industry dispensing healthcare, it involves people, both the recipients of healthcare and the providers of healthcare and there exists a significant gap between what is expected and what is provided. The issue involves the expectations of the healthcare seeking public and the industry players who provide the service, and two significant issues are dominant.

The first involves the people who seek and receive healthcare from either public or private providers. The second involves the industry players. One takes; the other gives and it appears that the takers are not happy with what they are given while the givers are doing their best to determine just exactly what it is that will make the recipients satisfied and happy, which will, in turn, make the providers happy. On the part of the providers, the notion of SERVQUAL has been a tool used to try and understand the public they serve, and in this concluding chapter of the study, SERVQUAL is revisited to show just how challenging it can be for human beings to try and understand their fellow human beings.

Much criticism, over some issues, has been published about the SERVQUAL instrument although it must be accepted that this instrument does identify and has identified the weaknesses in private and public healthcare management. With the availability of SERVQUAL, healthcare management has at least a tool to use to try and improve their service, although the tool may not be perfect as numerous researchers has identified its weaknesses.

The objective of this research is to explore the SERVQUAL gap and the significance of its server environment, which is the mediating variable. First, the reliability of the SERVQUAL instrument is ascertained through Cronbach's Alpha analysis. Second, the validity of the SERVQUAL instrument is to affirm through regression of overall SQ endowed with five dimensions (Parasuraman, Berry, & Zeithaml, 1991) and by the EFA and KMO.

The outcome of reliability analysis of the questionnaire instrument using Cronbach's Alpha was more than 0.70 recommended by Hair *et al.* (1998) with a minimum of 0.822. The reliability coefficients for both Dental hospitals in Indonesia for the perception minus expectation gap score for the five SERVQUAL dimensions, overall SQ, lean management and PS are consistently high, hence suggesting high internal consistency among the items in the individual dimensions and the questionnaire instrument is reliable to measure corresponding variables. Along with it, to use EFA, KMO is greater than 0.5. Kaiser (1974) maintained that KMO  $\geq 0.9$ : is good; KMO  $\geq 0.8$ : good; KMO  $\geq 0.7$ : is; KMO  $\geq 0.6$ : temporary; KMO  $\geq 0.5$ : bad and KMO  $< 0.5$ : not acceptable. The results were all more than the minimum value of 0.671.

Moreover, the analysis was also performed on the reliability of the scale on the inter-item correlations as proposed by Hair *et al.* (1998) showing that the inter-item correlation should be greater than 0.30 for data reliability. Regression of overall SQ along with SQ dimension shows that SERVQUAL is an instrument, for the measurement of SQ. The results proved to have statistical significance for both Private Hospital ( $R^2 = 0.791$ ,  $F = 121.091$ ,  $p < 0.01$ ) and Public Hospital ( $R^2 = 0.540$ ,  $F = 85.182$ ,  $p < 0.01$ ) showing that 79.2% and 62.8% of variance in overall SQ rating can be predicted from tangibility, reliability, responsiveness, assurance and empathy. The strength of relationship for Private hospital context is found to be higher than identical research by Parasuraman *et al.* (1991) which reported the  $R^2$  value of 0.58. As for Public hospital context, the strength of the relationship is slightly lower.

This shows that patients in Indonesia expect more from a private hospital whether it is located in Bali or Jakarta. Likewise, these patients have slightly lower expectations from Public hospitals regardless of the hospital location.

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