

**Foreign patients' perceptions of healthcare
services in a private hospital in Thailand:
Development of an integrative model**

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Integrative model of foreign patients' perceptions of healthcare services in Thailand

ABSTRACT

The hospital industry is a lucrative business, especially when it involves foreign patients as customers. Millions of foreigners receive medical treatment outside of their home country each year, and foreign patients have become a valuable market segment of the hospital industry, as they generate huge revenue for the industry worldwide. The competitive environment of the industry is not only local but has also expanded to include international clients. Hospital marketers are therefore, forced to adapt strategies to gain a significant advantage over competitors. Factors such as Service Quality (SQ), Customer Satisfaction (SAT) and Customer Value (CV) are identified as predictors of Behavioural Intentions (BI) that enhance competitive advantage in the services literature. A number of researchers have studied the perception of patients to SQ, CV, SAT and BI; however, research focusing on foreign patients' perceptions is rare. 'Foreign patients' is chosen as a sample of the study because they are an important market segment of healthcare consumers and there is little research available on foreign patients' perception of healthcare services.

The proposed integrative model was examined by collecting data from foreign patients in one of the leading private hospitals in Thailand. The use of Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) for the same data set, as is the case in this thesis, has been debated in the literature. In this thesis we provide sufficient rationale for the use of EFA followed by CFA. In the main, EFA has served to refine theory while CFA was used to confirm the hypotheses about the data. SPSS AMOS version 20 was applied to test the measurement models and the structural model proposed in this thesis. The proposed integrative model is an addition to the healthcare service literature and provides a comprehensive view of the relationships among the key constructs (SQ, CV, SAT and BI).

The findings have identified determinants of Service Quality and Customer Value as perceived by foreign patients. Eight out of nine hypotheses proposed to study the direct and indirect relationships between constructs were confirmed. The hypothesis that was rejected was the direct effect of Service Quality on

Behavioural Intentions. Particularly, the findings highlighted the importance of Customer Value on Behavioural Intentions. In addition, between the two antecedents of Customer Satisfaction (Service Quality and Customer Value), Customer Value also has a stronger direct effect than Service Quality. Furthermore, the findings suggested that the inclusion of Service Quality did not increase the support for Behavioural Intentions. However, the inclusion of Service Quality provided an insight into the relationships in a holistic manner and demonstrated that Service Quality had a substantive direct impact on Customer Value. Another major finding was that foreign patients are value-conscious oriented customers.

To the novelty of the study, this is the only study in the healthcare service literature that: (1) utilised the SERVQUAL dimensions in the integrative model consisting of these four constructs (SQ, CV, SAT and BI), (2) conceptualised Customer Value as a multidimensional construct in the integrative model consisting of these four constructs (SQ, CV, SAT and BI) and (3) investigated the perceptions of specific market segment of healthcare consumers such as foreign patients.

The theoretical contribution of this thesis is the development of a comprehensiveness model of service quality in the healthcare industry in Thailand as perceived by foreign patients. The model development incorporates studies from various service industry contexts and this has provided a holistic understanding of the relationships between constructs (SQ, CV, SAT and BI) and their effect on consumer behaviour such as Behavioural Intentions.

The practical contributions of this thesis are that the findings provide valuable understandings for healthcare practitioners with regard to the antecedents and the determinants of Service Quality and Customer Value as perceived by foreign patients. The study also provides an understanding of the relationships perceived by foreign patients of the four key constructs related to the enhancement of competitive advantage of the hospital industry.

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DECLARATION

This is to certify that:

- This thesis contains no material which has been accepted for the award to the candidate of any other degree or diploma, except where due reference is made in the text of the examinable outcome;
- To the best of the candidate's knowledge, contains no material previously published or written by another person, except where due reference is made in the text of the examinable outcome;
- Where the work is based on joint research or publications, discloses the relative contributions of the respective workers or authors;
- The content of this thesis is the result of work which has been carried out since the official commencement date of the approved research program;
- This thesis is less than 100,000 words in length exclusive of bibliography and appendices;
- David Hudson edited this thesis. The editing addressed only style and grammar and not its substantive content;
- This thesis has met all the requirements of the Ethics Approval from the Swinburne University of Technology under SUHREC Project 2012/025 (see Appendix 2).

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PART ONE

INTRODUCTION

Chapter 1

Introduction

Part one has one chapter. Chapter one discusses the research context, including Thailand's economic performance and industry outlook, the research background and justification, the research objectives and research questions, the importance of the study, the research process and the thesis structure.

CHAPTER 1: INTRODUCTION

This chapter introduces the rationale for the study of ‘Foreign patients’ perceptions of healthcare services in a private hospital in Thailand: Development of an Integrative model’ as a topic of this thesis. The principle objectives of this thesis are: 1) to examine the determinants of Service Quality perceived by foreign patients; 2) to examine the determinants of Customer Value perceived by foreign patients; 3) to examine the relationships among and between Service Quality (SQ), Customer Value (CV), Customer Satisfaction (SAT) and their effect on Behavioural Intentions (BI) as perceived by foreign patients; and 4) to develop an integrative model to support the relationship between the constructs.

To achieve these objectives, the integrative conceptual model that includes these constructs and simultaneously analyses the relationships is essential. Consequently, their relationships are simultaneously analysed. The results of the study will be interpreted in a holistic manner and a comprehensive insight into the relationships of these key constructs will be established.

This chapter covers the content related to the research environment (Section 1.1), research background and justification (Section 1.2), research objectives and research questions (Section 1.3), importance of the study (Section 1.4), research process (Section 1.5) and thesis structure (Section 1.6).

1.1 Research environment: Foreign patients in Thailand and their importance to the healthcare service industry

This section commences with reviewing Thailand’s economic performance, followed by its healthcare industry, Thai private healthcare industry and the importance of foreign patients as revenue contributors to the global economy. These critical reviews provide the understanding of the importance of foreign patients as sample for this research. The study is therefore embedded in the context of Thailand’s economic growth and national development.

1.1.1 Overview of Thailand's economic performance

Thailand is primarily an agrarian nation but its current economy embraces many industries and an active private sector. As one of the emerging economies in Southeast Asia, it has abundant and diverse natural resources, as well as a robust private sector that propels the growth and diversification of various industries. The government provides infrastructure support and limited interference in private enterprise (*Thailand: Country Profile 2010*).

After the 1997 Asian financial crisis, the Thai government undertook a USD 17.2 billion economy program with the assistance of the IMF. With this program, Thailand was able to stabilise the value of the Baht by the second half of 1998 and took steps to restore its foreign reserves level. Recovering from the crisis, Thailand became one of the best economic performers in East Asia from 2002-2004 with its annual GDP growth averaging over 6 per cent. Acceleration in GDP growth from 2.2 per cent in 2001 to 6.6 per cent in 2002-2004 was attributed to the increase in consumption and investment spending, as well as substantial growth in the export market (Coleman 2010).

However, political unrest beginning in 2005 weakened business confidence and slowed economic growth. From 2005 to 2007, the positive growth slowed down to 4.9 per cent, attributed to the devastation brought about by the 2004 tsunami, high oil prices and prolonged drought. Political uncertainties such as the September 2006 military coup dampened private investment growth. By late 2008, economic growth slowed down substantially because of the on-going global financial crisis. GDP growth fell to 2.6 per cent in 2008 and into negative growth in 2009. This reflected the higher energy prices and higher inflation (from 2.7 per cent in 2004 to 5.5 per cent in 2008). Thailand also had a large deficit of 4 per cent of GDP by 2009, compared to 0.8 per cent in 2008 (Coleman 2010).

In 2009, agriculture accounted for 41.4 per cent of the total workforce. Major exports included palm oil, rice and natural rubber. Thailand was the world's largest rice producer, yielding 22.5 million tonnes in 2009-2010. Manufacturing accounted for 35.7 per cent of GDP. In the first half of 2009, the country experienced a decline, with the hardest hit industries being electronics, petrochemicals and leather goods; which were all highly dependent on exports. In 2009, in the service sector, growth fell by 2 per cent per annum, while tourism

suffered because of political instability in the south and Bangkok during the second half of 2008 (*Thailand: Country Profile* 2010).

In 2011, floods devastated the nation. As a consequence, the GDP shrunk from 7.8 per cent in 2010 to 0.1 per cent in 2011 ('Country Report: Thailand' 2013). By huge injections from the government sector in post-flood reconstruction, infrastructure programs and private consumption, the economy grew by 6.4 per cent in 2012. Regardless of the post-recession bounce in 2010, growth in 2012 was the greatest growth (6.4 per cent) over the past decade ('Country Report: Thailand' 2013).

This discussion described the background in terms of economic performance. The next section will discuss the Thai healthcare industry.

1.1.2 Thailand's healthcare industry

Thailand's healthcare system is a private/public mix, with the public system providing general healthcare nationwide, including to the rural and remote places (Suraratdecha & Okunade 2006). Thailand introduced the Universal Coverage Scheme (UCS) in 2001, which is a public insurance system that provides comprehensive medical coverage such as maternity benefits, annual physical check-up, health prevention and promotion (Wagstaff & Manachotphong 2012). Under the program initiated by Prime Minister Thaksin Shinawatra in 2001, Thai citizens are entitled to consult a doctor or visit a hospital for a government subsidised minimal payment of Baht 30 per visit (roughly USD 1). This is the fee required from patients to cover the healthcare services. The remaining treatment cost is provided by government subsidy (*Thailand* 2005). By 2004, the implementation of USC successfully covered 95.5 per cent of the population (Garabedian et al. 2012). When the government was deposed following a coup in 2006, the military-installed government kept the scheme but imposed a fixed subsidy. With the Baht 30 scheme, the government allocated Baht 1,202 fixed subsidy per patient per year to acquire hospital services. In 2008 this increased to Baht 2,202 ('Thailand: Healthcare report' 2009).

In 2012, Thailand's healthcare sector was comprised of 1,002 public hospitals and 322 private hospitals; that is, private hospitals comprise one-third of the sector ('Healthcare Industry Report: Thailand' 2012). Of the 145,000 beds available, 40,000 belong to the private sector (*Thailand: Market profile* 2005). Most beds in Bangkok belong to private hospitals, whereas most beds in the provinces

belong to public hospitals (Supakankunti & Herberholz 2011). As of November 2012, 23 hospitals in Thailand were awarded Joint Commission International (JCI) accreditation ('Healthcare Industry Report: Thailand' 2012).

In Thailand, the doctor-patient ratio remained low at 0.3 per 1,000 people in 2012. Compared to other Asian countries, the ratio is the same as in Indonesia (0.3), but much lower than in Vietnam (0.6), Malaysia (0.8), Philippines (1.2) and Singapore (1.6) ('Healthcare Industry Report: Thailand' 2012). There is also an imbalance in the number of doctors exiting and entering the healthcare system. From 2001 to 2004, 2,000 doctors left the public sector hospitals while less than 1,000 new doctors entered the public healthcare sector (*Thailand* 2005). Most doctors are in the private sector (p. 105). About 10,000 doctors are working in public hospitals, but only one third are based in provincial and community hospitals. This number is quite low and the public hospitals need to meet the needs of 38 million people living in rural and remote places (*Thailand* 2005).

Thailand's healthcare expenditure remained at 3.3 per cent of the GDP in 2012. This is lower than in countries such as Malaysia (4.5%), Philippines (4.3%) and Singapore (4%), but still higher than in Indonesia (2.8%) ('Healthcare Industry Report: Thailand' 2012).

1.1.3 Industry outlook: Thailand's private hospital industry and the importance of foreign patients to the Thai private hospital industry and economy

1.1.3.1 The evolution of Thailand's private hospital industry

The Asian financial crisis of 1997 impacted the profitability of private hospitals when they lost income due to the sharp decline in the number of local patients. They needed to cope with the situation by expanding to new market segments, and foreign patients were one of them. The downturn in the economy propelled the private hospitals into the medical tourism industry (Wongkit & McKercher 2013).

The private hospitals of Thailand took the lead in making the country one of the preferred destinations for medical tourists by providing state-of-the-art medical services. The opening of the private hospitals to foreign patients was an economic decision by these hospitals (Teh 2007). Accordingly, the Thai government was

not remiss in performing its duty as a primary campaigner for medical tourism. The 'Medical Hub of Asia' was one of the most successful campaigns launched by the government ('Thailand: Market data at a glance' 2009). For example, in 2004, it launched a five year plan along with a budget of 2.6 billion Baht (USD 65 million) to make the hospital industry a medical service hub (*Thailand* 2005). Among the medical tourism promotional schemes was 'Thailand Health Paradise'. This campaign was co-promoted with Thai Airways, a government owned airline, and was aimed at Europeans. Travellers on Thai Airways were offered packages such as all-inclusive heart, dental and health check-ups at hospitals in Bangkok, Chiang Mai and Phuket (Whittaker 2008).

Another factor influencing the development of the Thai private hospital industry was the implication of the Universal Coverage Scheme (USC) in 2001. When the government implemented the Baht 30 scheme in 2001 for treatment at public hospitals, occupancy rates of private hospitals fell and, as a result, they upgraded their facilities and sought to serve the middle to upper income Thais and foreigners. However, what most private hospitals feared did not materialise because the inability of public hospitals to serve patients, such as the long queuing times and failing service quality, forced many to revert to private healthcare ('Thailand: Healthcare report' 2009). Therefore, the pressure from the Asian economic crisis and the strategy aiming to serve the middle to upper income Thais and foreigners were the main drivers that contributed to the development of Thai's medical tourism industry.

The demand for medical tourism is generated by a number of parties such as uninsured patients and insurance companies (Forgione & Smith 2007). Factors driving demand from medical tourists include cheaper treatment, elective procedures not covered by patients' health insurance in their home country, personal reasons, such as sex change, drug rehabilitation and plastic surgery. These factors include unavailability of medical services at home, such as reproductive treatment for non-fertile patients (Wongkit & McKercher 2013). Thailand has become an attractive destination for those seeking medical services not only because of reasons stated above but also because of its position as a natural medical hub aligned with supportive infrastructure. Aside from the medical services, Thai private hospitals have tie-ups and affiliations with travel agencies, referral agencies and patients' home-country hospitals (Teh 2007).

The Thai private hospital industry has gained a good reputation abroad when it comes to the quality of service. Horowitz and Rosensweig (2007) wrote that Thailand has a good reputation of having hospitals at par with international standards providing superior medical equipment and excellent medical services. Nicolaides (2012) reports that Thai private hospitals are known for possessing state-of-the-art technology and that this enables them to provide the highest quality of medical treatment and medical services. Furthermore, they offer their patients top-class facilities and high quality of services usually found in a 5-star hotel; services such as luxury restaurants and coffee shops on the premises, concierge, chauffeur, hotel-like check-in process, personalised room service, personal translator and prayer facilities. Hospital staff are trained to be patient friendly and deeply concerned about patients' needs. In addition, Thai private hospitals offer medical treatment at much lower cost than developed countries such as America and Britain, while the treatment is provided by highly skilled, qualified doctors and high-end medical technology. For example, a heart bypass procedure costing USD 130,000 in the US can be had for USD 11,000 in Thailand, a spinal fusion procedure costing USD 65,000 can be found for USD 7,000, cosmetic surgery procedures are 50 per cent less expensive, and root canal treatment costing between USD 500 and 2,000 can be found for USD 170 in Thai private hospitals; making them one of the best medical treatment destinations (Nicolaides 2012).

Over the past few years, there has been a significant increase in the number of hospital providers in Thailand. Currently, of the 322 private healthcare providers, 115 have less than 50 beds, 107 have 51 to 100 beds, and 107 have more than 100 beds. Almost half of the providers with more than 100 beds are in Bangkok; 47 in Bangkok and 53 in regional areas surrounding Bangkok (Bangkok Dusit Medical Services 2011). As of 2010, there were 197 private healthcare providers with 41 hospitals and 156 specialist clinics (Wongkit & McKercher 2013). As of June 2011, 13 private hospitals were listed on the Stock Exchange of Thailand (Supakankunti & Herberholz 2011). The Bangkok Dusit Medical Services (BDMS) is the largest private hospital management company in Thailand and has the strongest networks including Bangkok Hospitals, Samitivej, and Phayathai hospital groups. It manages 28 private hospitals with a total of 3,929 registered beds. Seven of these hospitals have received JCI international accreditation (Supakankunti & Herberholz 2011). Another big private hospital is Bumrungrad, with a capacity of 484 beds and over 4,500 out-patients per day (Bumrungrad

Hospital Public Company Limited 2011). Bumrungrad is a stand-alone hospital located in Bangkok, is a pioneer in the medical tourism industry and was the first Thai hospital to receive JCI accreditation in 2001 (Supakankunti & Herberholz 2011). To date, about 23 private hospitals have been accredited (*JCI Accredited Organizations* 2013).

1.1.3.2 Foreign patients and medical tourists

Generally the term ‘medical tourist’ is used as a proxy for ‘foreign patient’ in the literature. For example, see Leng (2010, p. 344) where he states “The significance of medical tourists to the private hospitals is reflected in the percentage of foreign patients”. In Thailand, foreign patients treated in private hospitals are described as medical tourists. For example, Bangkok Hospital or BDMS, as one of the main players in the industry in its annual report, used the phrase “Foreign patients who come to Thailand for healthcare services (Medical Tourism)...” (Bangkok Dusit Medical Services 2011, p. 45). “...medical services revenue from foreign patients, which includes persons living or working in Thailand, or persons travelling to Thailand for pleasure or specifically to receive medical care, as well as staff of foreign governments or agencies, or employees of foreign companies...”(Bangkok Dusit Medical Services 2011,p. 48). The hospital used the terms ‘medical tourists’ and ‘foreign patients’ interchangeably. Another main player, Bumrungrad International Hospital, reported 460,000 international patients were treated in 2011, including both expatriates and medical tourists (Bumrungrad Hospital Public Company Limited 2011), not distinguishing the number of medical tourists from foreign patients.

In reviewing the number of medical tourists in Thailand, it is hard to identify the quantity due to the differentiation in interpretation of the term ‘medical tourist’. There is no general rule or agreement in definition or in the methodology for counting them (Hodges, Turner & Kimball 2012). The major problem is that the reported number from each hospital or government sector may include expatriates, tourists, business travellers and foreigners who live and work in the country (Horowitz & Rosensweig 2007). Many scholars have attempted to define ‘medical tourist’. For example, Heung et al. (2010) define medical tourist as a traveller who either purposely received the medical treatment or combined it alongside his/her holiday. Brotman (2010) argues that travelling abroad for receiving medical procedures could not be viewed as a vacation or holiday; medical tourists should be counted as travellers who seek medical treatment as a

primary purpose of their trip. However, Hodges et al. (2012) suggest that while international organisations such as the Organisation for Economic Co-operation and Development (OECD) and World Health Organization (WHO) are developing a common definition for medical tourists, the term should be defined broadly as those who seek/receive medical care abroad, regardless of the main purpose of travelling, including those who fell ill while travelling or working.

The suggestion reflects the present situation regarding the number of medical tourists as mentioned by Horowitz and Rosensweig (2007), in the sense that the reported number might have included those foreigners who work and live in the country. This is in line with the report from McKinsey prepared by Ehrbeck, Guevara, and Mango (2008). They commented that the medical tourists market is actually not as huge as reported and that the number of global medical tourists (in-patients) is approximately 60,000 to 80,000 only. Therefore, the number of medical tourists presented in reports, articles and journals are interpretable as a proxy of the number of foreign patients. In addition, it would be difficult to know precisely the number of foreign patients in Thailand, the amount of money they spend, and the particular treatment procedures they undergo because the Thai government has no records on this specific economic activity (James 2012). Based on the interpretation used in the current literature and in practice, it is reasonable to study targeted outcomes of medical tourists based on perceptions of foreign patients.

1.1.3.3 The number of foreign patients in Thailand

James (2012) concluded that the number of foreign patients in Thailand from 2006 to 2008 was estimated to be around 1.2 million and speculated that 300,000 were medical tourists. In 2009, an estimated 1.4 million foreigners sought medical services in Thailand. Of these, approximately 200,000 were from the USA and 100,000 were from the UAE and the Middle East (Nicolaidis 2012). Of the 1.4 million foreign patients, 41.4 per cent were expatriate residents of Thailand, 26.6 per cent flew there for medical treatment (medical tourists) and 32 per cent were tourists who needed medical care during their holiday (Wongkit & McKercher 2013). However, NaRanong and NaRanong (2011) contended that the proportion of foreign patients who work and live in Thailand would be 60 per cent, medical tourists would be 30 per cent, and those who fell sick during their holiday would be 10 per cent.

Wibulpolprasert and Pachanee (2008) estimated that the number of foreign patients would increase by 10 to 20 per cent annually. Another source stated that the number had been increasing at approximately 16 per cent per year on average between 2001 and 2007 and this contributed to the total number of 2.5 million foreign patients receiving medical treatment in Thailand ('Healthcare Industry Report: Thailand' 2012).

1.1.3.4 Foreign patients: The contribution to Thailand's private hospital industry and the national economy

Medical tourism is the main economic driver of the Thai private hospital industry. Its value is quantifiable through the number of patients served and the annual revenues generated. Foreign patients paying for medical services contribute a significant amount to the hospitals' annual revenues ('Thailand: Healthcare report' 2009). The DMBS (Bangkok Hospital) group reported Baht 8,520.3 million (USD 284.01 million) and Baht 9,863.4 million (USD 328.78 million) as income generated from foreign patients in 2010 and 2011 respectively. This accounted for 36 and 26 per cent of their total revenue (Bangkok Dusit Medical Services 2011). The Bumrungrad International hospital reported Baht 6,509 million (USD 219.96 million) generated from 460,000 foreign patients in 2011, accounting for 59.1 per cent of the overall revenue from medical services (Bumrungrad Hospital Public Company Limited 2011).

In 2008, the medical tourism industry in Thailand earned USD 850 million in hospital and clinic revenues, and a total of USD 2 billion was contributed to the national economy (Wibulpolprasert & Pachanee 2008). The online travel agency Agoda reported foreigners coming to Thailand for medical treatment are a source of income for the hospitality industry, accounting for 40 per cent of the agency's accommodation revenue for 2009 (Oxford Business Group 2009). This indicates that medical tourism not only benefits the private hospital industry in Thailand, but also other critical components of the country's tourism sector.

NaRanong and NaRanong (2011) highlighted the importance of the medical tourism industry in contributing to the Thai economy, studying its effects based on high and low growth scenarios. Foreign patients generated roughly 46 to 58 billion Baht revenue from medical services based on a high growth scenario and roughly 31 to 35 billion Baht based on a low growth scenario; this was approximately equivalent to 0.4 per cent of Thailand's GDP. In addition, the

value added from medical tourism was estimated to contribute between 59 and 110 billion Baht by 2012.

Considering the large number of foreign patients who receive medical service from the Thai private hospitals and their contributions to both the hospital revenue and the economy of the country, the importance of foreign patients as a valuable market segment should not be neglected.

1.1.4 The importance of foreign patients to the global economy

As discussed in Section 1.1.3.2, the terms ‘foreign patients’ and ‘medical tourists’ are used interchangeably as there is no general rule in distinguishing between the two (Hodges, Turner & Kimball 2012). In addition, the reported number of medical tourists from each hospital or government sector may include expatriates, tourists, and business travellers (Horowitz & Rosensweig 2007). To be consistent with the literature, this thesis uses the term ‘foreign patients’ as representative of foreigners who live and work in the country, who travel from their home country purposely to receive medical care and who require medical care during travelling.

Foreigners’ receiving medical treatment outside their home countries is not a new phenomenon. It has been happening since ancient times when wealthy patients from developing countries travelled to developed countries to obtain the best possible medical treatment (Nicolaidis 2012). This gathered momentum in the 1980s when developing countries began to serve foreign patients from developed and developing countries (Supakankunti & Herberholz 2011).

Results from the medical tourist survey with 650 respondents who experienced as foreign patients affirmed that they saved money from receiving medical treatment abroad, with 17 per cent reporting that they had saved more than Euro 10,000. At least 96 per cent of respondents stated that if they needed medical treatment, they would definitely go abroad again and that they would go back to the same provider/doctor, and they would recommend the treatment abroad to others (Treatment Abroad 2013).

In 2007, 1 million Americans travelled to other countries for medical treatment and this was forecast to exceed 6.5 million by 2012 (Nicolaidis 2012). An estimated 50,000 UK patients flew abroad annually, of whom 20,000 were seeking medical

treatment, 14,500 were seeking cosmetic surgery, 9,000 had elective surgery and 5,000 went for fertility treatments (Lunt, Hardey & Mannion 2010).

Medical tourism is one of the fastest growing industries globally, involving over 780 million tourists spread across 96 countries. In 2006, it was a USD 60 billion international business (Yeoh, Othman & Ahmad 2013), with an average growth rate of 20 per cent annually (Wongkit & McKercher 2013; Yu & Ko 2012). Medical treatment abroad also has an enormous impact on the global economy in terms of the increase in GDP by investment in the medical industry, foreign exchange activities, the more favourable balance of international trade, and enhancement of related businesses including tourism (Heung, Kucukusta & Haiyan 2010). Medical tourism was projected to be a USD 100 billion industry globally by 2012 (Nicolaidis 2012).

1.2 Research background and justification

1.2.1 Research on perceptions of foreign patients

Given the importance of foreign patients as one of the main contributors to the hospital industry, national economy and global economy, it is surprising that their perceptions have not received much attention from scholars and researchers. Most articles and empirical studies focus on the characteristics of medical tourism industry such as the development of medical tourism in countries such as India (Brotman 2010; Garg & Bhardwaj 2012), Taiwan (Liu 2012), Thailand (Teh 2007), Korea (Yu & Ko 2012) and Egypt (Helmy & Travers 2009). Scholars have discussed typologies of medical tourists (Wongkit & McKercher 2013) and the factors related to perceptions of foreign patients regarding the possibility of participation in medical tourism (Yu & Ko 2012). Topics such as the impact of medical tourism on the hospital industry (Forgione & Smith 2007; James 2012), on the national economy (NaRanong & NaRanong 2011; Wilson 2011) and on the global economy (Horowitz & Rosensweig 2007) have also been discussed. Other studies emphasise the importance of the conceptual model of medical tourism (Heung, Kucukusta & Haiyan 2010; Pocock & Phua 2011) and other perspectives (Hopkins et al. 2010; Lunt & Carrera 2010; Riczo & Riczo 2009). However, discussion of the perceptions of foreign patients towards concepts that influence behavioural patterns such as Service Quality, Customer Value, and Customer Satisfaction is very rare.

1.2.2 Foreign patients and the effect of cultural difference

The hospital industry is becoming internationally focused as it involves both local and foreign patients around the world. The business is responding to globalisation pressures that are driving service providers to consider international service marketing (Morales & Ladhari 2011). Javalgi and White (2002) state that “managing business in the service sectors with people from different cultures will never be as clear and simple as conducting business in the domestic market (p. 569)”. This statement implies the importance of culture to consumer behaviour in an international context. It means local customers usually exhibit similar consumer behaviour due to the fact that they have the same cultural background whereas the consumer behaviour of foreign customers may be different due to the effect of cultural differences. Javalgi and White’s statement is supported by the study by Ho, Teik, Tiffany, Kok, & The (2012). The results of their study disclose that the perceptions of Service Quality are different for local and foreign companies and these differences affect the satisfaction of customers in the courier service industry.

Foreign patients are selected as a sample of this thesis because it is reasonable to assume that perceptions of foreign patients should be different from the local patients as supported by Javalgi and White (2002) and Ho et al. (2012). However, it is not the purpose of this study to provide explanation of cultural needs of the foreign patient groups predominantly looking for healthcare in Thailand but rather on their perceptions of satisfaction to services provided.

Hofstede (1983) states that cultural background makes consumers perceive and behave differently. For example, people from Thailand, Malaysia, Hong Kong and most other Asian countries perceive that superiors are entitled to privileges more than subordinates (Tsang & Ap 2013). Therefore, Asian customers tend to expect a high level of service quality as the service employees are considered as having a lower importance than the customers (Mattila 1999). Thus, the dimensions such as responsiveness, reliability and empathy are perceived as having greater importance to Asian customers (Furrer, Liu & Sudharshan 2000). On the contrary, customers from Australia, the United States and most of the Western countries are more likely not to agree with the inequality and have less tolerance to class differentiations. Hence, they tend to be satisfied with a reasonable service quality received from provider (Hofstede 1983). Mattila (1999) based on the study by Hofstede (1983)

have categorised their sample as 'Western' and 'Asian' customers. Mattila (1999) reports that Western customers are attached to tangible dimension more than Asian customers; tangible is used as a measure for evaluating Service Quality more for Western customers than Asian customers in the hotel service context. The different perceptions between Western and Asian customers are also supported by the study by Tsang and Ap (2007) in the tourism industry. They report that Asian tourists are more critical on evaluation of Service Quality than Western tourists.

Consumer behaviour is different across cultures and it has influence on the perceptions of Service Quality (Furrer, Liu & Sudharshan 2000; Ho et al. 2012; Weiermair 2000). For example, Furrer et al. (2000) hypothesise that there is a relationship between culture and the perceptions of Service Quality. The results demonstrate that the relative importance of each service quality dimension (a five-dimension of SERVQUAL) perceived by customers varies from one culture to another in the retail banking service context. Regarding Behavioural Intentions of customers, Weiermair (2000) states that the cultural differences help to provide explanation with regard to consumer behaviour in relation to the perceptions of Service Quality and Customer Satisfaction. Furthermore, culture plays an important role as a moderator of shopping values on shopper Satisfaction (Jones et al. 2010).

However, Walters (1996) argues that cultural difference is rarely an important indicator of consumer behaviour because the consumer behaviour of foreign markets is influenced mainly by non-cultural rather than cultural factors. Joynt and Warner (1996) add that this is because the consumption behaviour of customers is not always necessarily embedded in culture. Based on the arguments of Walters (1996) and Joynt and Warner (1996), it is reasonable to say that culture has an uncertain effect on consumer behaviour.

Though there are arguments for and against controlling for cultural differences in service quality studies, as stated, this thesis is not a cross-cultural study. The aim of this thesis is to look at the determinants of Service Quality and Customer Value perceived by foreign patients and to study the interrelationships between Service Quality, Customer Value, Customer Satisfaction and their effect on Behavioural Intentions.

1.2.3 Competitive advantage in relation to Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions

In service literature, the terms 'competitiveness' and 'competitive advantage' are used widely. These concepts are linked, often misinterpreted and used interchangeably (Eiriz, Barbosa & Figueiredo 2010). The central concept of competitiveness is about value creation and value-addition to product or service; it is used as a tool to gain an advantage in market positioning relative to competitors (Hassan 2000). Generally, competitiveness refers to the capability of a firm in developing, generating, and maintaining competitive advantage. In this sense, competitive advantage is when a firm possesses superior performance or creates greater value compared to competitors (Eiriz, Barbosa & Figueiredo 2010; Lin & Lin 2006).

A number of studies report that Service Quality is considered an essential concept that influences firm success and failure. The high performance of Service Quality leads to improvement of company profits, market share, return on investment, customer satisfaction and customer retention (Chen & Hu 2010; Choi et al. 2004; Dagger, Sweeney & Johnson 2007; Gounaris, Dimitriadis & Stathakopoulos 2010; Javalgi & White 2002; Ladhari 2009; Nekoei-Moghadam & Amiresmaili 2011; Rapert & Wren 1998; Wu, Liu & Hsu 2008; Zeithaml, Berry & Parasuraman 1988). Bharadawaj and his colleagues (1993) advocate that a firm that delivers high Service Quality can gain competitive advantage in much the same way as price, expertise and brand. Rapert and Wren's (1998) study demonstrates that Service Quality affects not only short-term performances (e.g. increasing in immediate Customer Satisfaction and positive word-of-mouth communication), but also long-term performance such as gaining market share, overall financial performance and growth in net revenues. The relationship between Service Quality and company profit is mediated by Customer Satisfaction (Choi et al. 2004).

Customer Satisfaction is commonly accepted as one of the primary goals in the service industry as it leads to a higher profit and influences consumer behaviour such as higher sales performance, customer loyalty, and positive word-of-mouth communication (Luo & Homburg 2007; Zhao et al. 2012). Customer Satisfaction affects a firm's market share and magnetises re-purchase intentions (Ooi et al. 2011; Rivers & Glover 2008). Similarly, Kuo et al. (2009) maintains that Service

Quality is a critical component of a firm's profit and competitive advantage whereas Customer Satisfaction is a key factor in establishing a long-term relationship with customers.

Similarly, both Service Quality and Customer Satisfaction are recognised as key antecedents to behavioural intentions such as customer loyalty, repurchase intentions and positive word-of-mouth communication. The direct and indirect relationships between Service Quality, Customer Satisfaction, and Behavioural Intentions have been empirically validated in many services sectors (Jen, Tu & Lu 2011; Ladhari 2009; Lee, Jeon & Kim 2011), including healthcare (Choi et al. 2004; Wu, Liu & Hsu 2008). Therefore, Service Quality and Customer Satisfaction are undeniable generators of competitive advantage that is widely acknowledged in service literature (Andaleeb 1998; Kuo, Wu & Deng 2009).

Even though Service Quality and Customer Satisfaction are important factors contributing to competitive advantage, some studies denote the importance of Customer Value as a better predictor of consumer behaviour than either Service Quality or Satisfaction (Kuo, Wu & Deng 2009; Omar et al. 2010; Wu, Liu & Hsu 2008). In addition, the direct relationship between Service Quality and Behavioural Intentions is not consistent in services literature. Researchers found no direct relationships between these constructs such as in the telecommunication services (Lai, Griffin & Babin 2009), transportation (Jen, Tu & Lu 2011), hotel (Hu, Kandampully & Juwaheer 2009), tourism (Chen & Chen 2010) and healthcare industries (Omar et al. 2010; Wu 2011).

In contrast, Customer Value is found to have a direct relationship with Behavioural Intentions in the services literature, such as in education (Sheu 2010), transportation (Jen, Tu & Lu 2011; Lai & Chen 2011), airline (Chen 2008), hotel (Hu, Kandampully & Juwaheer 2009), tourism (Chen & Chen 2010) and healthcare industries (Chahal & Kumari 2011; Choi et al. 2004; Wu, Liu & Hsu 2008).

Therefore, Customer Value is identified as a significant source for a firm in creating competitive advantage (Chahal & Kumari 2011; Sheu 2010; Wang & Chen 2011). Customer Value enhances the explanations of consumer behaviour, such as purchase intentions and re-patronage (Gallarza, Gil-Saura & Holbrook 2011). Kuo et al. (2009) provide evidence that when Service Quality of a firm is strengthened, it directly has a positive impact on Customer Value and Customer Satisfaction, and induce re-purchase intentions and positive word-of-mouth communication. This implies that Customer Value is crucial to competitive

advantage. Likewise, the study conducted by Hu et al. (2009) suggests that the high Service Quality, high-perceived Customer Value and high Satisfaction improve customer retention; these are evidence that they are all related to the improvement of a firm's competitive advantage. Similarly, Flint, Blocker & Boutin (2011) maintain that customers with positive perceptions of Customer Value have positive perceptions of Customer Satisfaction and Behavioural Intentions; suggesting that positive Customer Value and Customer Satisfaction leads to positive behavioural patterns of customers that lead to the improvement of competitive advantage.

This thesis; therefore, includes Service Quality, Customer Value, and Customer Satisfaction as predictors of Behavioural Intentions in the proposed integrative conceptual model. These factors enhance and improve opportunities for competitive advantage suggested by service literature as mentioned above.

1.2.4 The importance of examining Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions in the healthcare service context

The concepts of Service Quality and Customer Satisfaction have been emphasised in the healthcare sector as important antecedents to Behavioural Intentions (Laohasirichaikul, Chaipoopirutana & Combs 2011). Similar to other service sectors, healthcare providers are commonly referred to by the quality of service they provide. Especially for the healthcare providers of the medical tourism industry, the quality of services is similar to a 5-star hotel; that is, the luxury facilities, the friendliness of hospital staff, and the staff attention to the needs of their patients are emphasised, especially among private hospital providers in Thailand (Nicolaidis 2012).

However, the healthcare industry is unique. The way services are delivered and their outcome are two different things. In the healthcare sector, the way services are delivered is viewed as a functional quality. The outcome is the result of the treatment or diagnostic process termed technical quality (Duggirala, Rajendran & Anantharaman 2008). Both functional and technical quality aspects of Service Quality definitely have effects on patient satisfaction (Gallan et al. 2013). The higher the quality of service, the higher the Customer Satisfaction (Wu, Liu & Hsu 2008). Empirical evidence from the healthcare service industry emphasises that

both Service Quality and Customer Satisfaction are factors leading to the improvement of competitive edges (Lee et al. 2010).

Nevertheless, the highest quality of service is not always indicated by patients' return to the hospital when they feel ill. Patients might perceive that the Service Quality they receive may not match the money value they paid (Clemes, Gan & Ren 2011). There are other factors that patients may consider. In this case, Customer Value plays a significant role as a predictor of Customer Satisfaction and Behavioural Intentions. However, the perception of patients is commonly based on how well satisfied they are with the services. The research based on patient's perception of Customer Value as an important predictor of Behavioural Intentions has been neglected and not yet fully studied in the healthcare service context (Wang & Chen 2011).

In addition to the perceptions of patients in relation to Service Quality, Customer Satisfaction, and Customer Value, the factors such as the high competition between hospitals and the rising cost of their operation are drivers for providers to focus on designing proper strategies to achieve competitive performance and competitive advantage. Service Quality, Customer Value, and Customer Satisfaction are indicated as strategic concepts that improve the firm's performances (Hu, Kandampully & Juwaheer 2009; Kuo, Wu & Deng 2009). Even though the relationships between these concepts are found in literature, their effect on consumer behaviour is not yet fully explored and empirically tested (Hu, Kandampully & Juwaheer 2009).

The above views justify the importance of examining the influence of Service Quality, Customer Satisfaction and Customer Value on Behavioural Intentions in the healthcare sector. The relationships among them will be investigated. The findings will improve the understanding of consumer behaviour in the service industry context in general and the healthcare service industry in particular. This will assist healthcare management in designing a competitive strategy in order to achieve a competitive position.

1.2.5 The rationale for the proposed study

In services literature, empirical studies have validated the relationships amongst concepts such as Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions. Healthcare, as a service industry, has similar characteristics to other service industries. Therefore, the perceptions of patients towards Service

Quality, Customer Value, and Customer Satisfaction are important. The investigation of the relationships among these concepts and their influences on Behavioural Intentions helps marketers and scholars understand behaviour of customers. The proposed integrative conceptual model in this thesis incorporates the four key constructs: Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions. The model simultaneously tests these relationships. The results of the analysis should provide similar impacts as found for other service industries (Jen, Tu & Lu 2011; Kuo, Wu & Deng 2009; Lai & Chen 2011). An investigation of the simultaneous relationships among these four key constructs in the proposed integrative model would provide insights into understanding patients' perceptions that lead to the improvement of marketing strategies to achieve a competitive advantage.

In the healthcare service literature, most researchers examine the relationships between either a pair or a maximum of three constructs. Examples of studies in paired constructs are Service Quality and Behavioural Intentions (Lonial et al. 2010; Wang, Huang & Howng 2011), Service Quality and Customer Satisfaction (Gallan et al. 2013; Miranda & Antonio 2012), Customer Satisfaction and Behavioural Intentions (Sanjaya Singh et al. 2011), and Customer Value and Behavioural Intentions (Chahal & Kumari 2011). Relationships among three constructs, namely Service Quality, Customer Satisfaction and Behavioural Intentions, have also gained attention from researchers (Alrubaiee & Alkaa'ida 2011; Wu 2011). Studies utilising four key constructs consisting of Service Quality, Customer Satisfaction, Customer Value, and Behavioural Intentions, such as in this thesis, are very rare (Choi et al. 2005). In healthcare service research, there are only three studies with four key constructs. These three studies are (1) in the South Korean context by Choi et al. (2004), (2) in the Taiwanese context by Wu et al. (2008) and (3) in the Malaysian context by Omar et al. (2010). There are no studies in the Thai healthcare service context to date.

In addition to the very limited amount of healthcare research that employs these four constructs and simultaneously investigates their relationships in one integrative model, as proposed in this study, most of the previous research only conceptualises them as unidimensional constructs consisting of multiple items. This is especially so for Service Quality (Hu et al. 2010; Omar et al. 2010; Shukla 2010) and Customer Value (Chen 2008; Choi et al. 2004; Kuo et al. 2009; Lai & Chen 2011; Omar et al. 2010; Wu et al. 2008). This research aims to extend the

existing body of knowledge by proposing ‘an integrative conceptual model’, which examines the relationships of the constructs simultaneously and by conceptualising Service Quality and Customer Value as multidimensional constructs.

Correspondingly, the complexity of the relationships among the four key constructs can be investigated in a holistic manner by both direct and indirect effects of each construct on the others, including the influence on Behavioural Intentions of Service Quality, Customer Value and Customer Satisfaction. The results of the analysis will provide an insight into the inter-relationships among them, and are essential in order to respond to the research questions. The novelty of the findings can only be demonstrated in the context of this complex model.

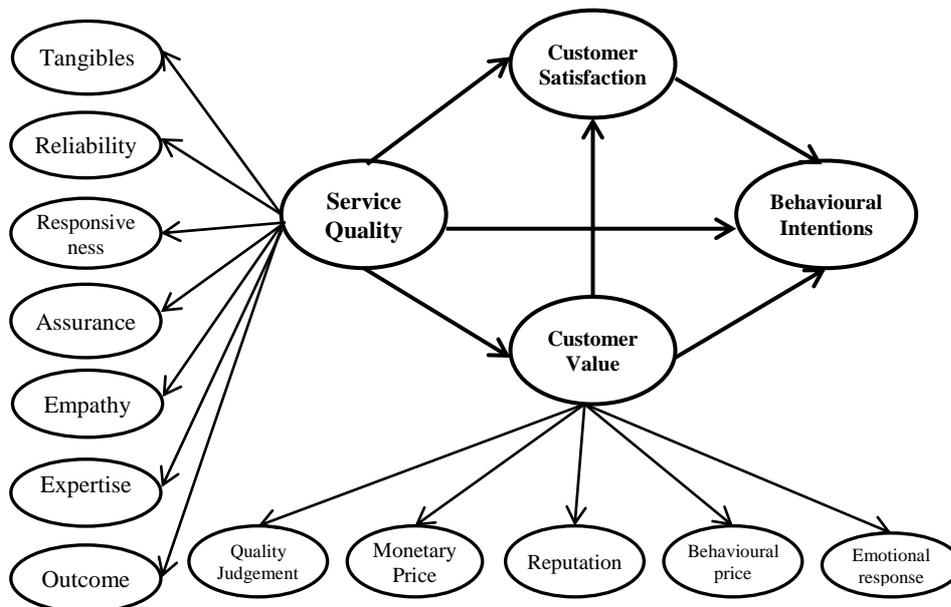
1.3 Research objectives and research questions

There are very few empirical studies in the healthcare service sector that employ these constructs (SQ, CV, SAT and BI) and investigate the relationships simultaneously. The understanding of relationships between these constructs has not yet been fully investigated. The inclusion of Customer Value in the complex model is especially rare. There is, therefore, a gap in services literature and by proposing an integrative conceptual model and empirically testing the relationships among the constructs, we hope to mitigate this situation. The purpose of this research is, hence, to provide a better understanding of the relationships among these four key constructs in a holistic manner for the healthcare sector, especially the complexity of Service Quality and Customer Value as multidimensional constructs. These four key constructs are concepts related to the improvement of competitive advantage. Therefore, this research is designed to answer the question: “What are the determinants of Service Quality and Customer Value for foreign patients in Thai private hospitals?” This question is important because both Service Quality and Customer Value have impact on Customer Satisfaction and Behaviour Intentions. Thus, “What are the relationships among Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions based on the perceptions of the foreign patients in Thai private hospitals?” is another significant question that needs to be addressed. The results of the empirical tests may assist practitioners to improve the understanding of relationships between these constructs. These understandings are expected to assist the healthcare industry in particular and service industry in general when designing a market strategy to capture this foreign market segment.

To answer these questions, the issues in relation to Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions are reviewed in Chapters 2 and 3. The relationships among the constructs in the proposed integrative model are driven by services literature and the causal relationships of the multi-attribute attitudinal model, meaning that cognitive (Service Quality and Customer Value) precedes affective response (Customer Satisfaction) which in turn ultimately lead to conative behaviour (Behavioural Intentions) (Choi et al. 2004; Han, Kim & Kim 2011; Žabkar, Brenčič & Dmitrović 2010).

Services literature provides evidence for strong causal relationships among constructs that support hospital performance (Choi et al. 2004; Etgar & Fuchs 2009). Service Quality and Customer Value are viewed as cognitive, while Customer Satisfaction is viewed as emotive response or affective. Behavioural Intentions is a conative behaviour. These four constructs are modelled and the relationships are investigated simultaneously. Accordingly, the determinants of Service Quality and Customer Value are examined. The direct and indirect relationships among the four constructs including the mediating roles of Customer Value and Customer Satisfaction are tested. Figure 1.1 presents the proposed integrative conceptual model of this thesis.

Figure 1.1: Integrative conceptual model



1.4 Importance of the study

1.4.1 International competition: Medical tourists

The importance of foreign patients on the global economy has been discussed in Section 1.1.4. Despite the fact that medical tourists are only a part of the overall number of foreign patients and the term ‘medical tourists’ is commonly used interchangeably with foreign patients, the importance of foreign patients as a group for study is based on the medical tourism industry literature.

With this huge business and vigorous growth of the industry, it is not surprising that at least 60 countries from all continents such as Mexico, Costa Rica, Panama, Jordan and the UAE are involved, competing for the revenue generated from foreign patients (Labonte et al. 2013). This is particularly relevant in Asia where India, Singapore and Thailand comprised 90 per cent of the medical tourism market share in 2008 (NaRanong & NaRanong 2011).

Singapore reported 571,000 foreign patients were treated in 2007 and injected revenue of USD 1.7 billion into the country. Most are from Indonesia, Malaysia, and the Middle East. Hospitals in Singapore specialise in cardiac and neurosurgery, joint replacement, and liver transplants (Pocock & Phua 2011). Most private hospitals in Singapore are participating in the medical tourism program (Lee 2010) and 15 received JCI accreditation (Grail Research 2009). In 2008 to 2010, Singapore reported 646,000, 665,000 and 725,000 foreign patients were treated there respectively (Labonte et al. 2013). With support from the government, the ‘Singapore Medicine’ program was launched in 2003. It strengthens Singapore as a world class, affordable, and safe healthcare destination. The government projected to attract 1 million medical tourists per year from 2012 onwards (Lee 2010; Pocock & Phua 2011).

India is another leading medical tourism destination in Asia (Nicolaidis 2012), treating 450,000 foreign patients in 2007, increasing steadily to 530,000, 609,000 and 731,000 from 2008 to 2010 (Labonte et al. 2013). A study by the Confederation of Indian Industry and McKinsey in 2002 predicted that revenue from medical tourism would increase from USD 300 million in 2002 to USD 2.2 billion by 2012 based on an average growth rate of 25 per cent (Garg & Bhardwaj 2012). At this rate, India is expected to overtake Thailand as the market leader of world medical tourism destinations (Nicolaidis 2012). Most foreign patients are

from Sri Lanka, Bangladesh, Nepal, and Pakistan. Similar to Singapore and Thailand, private hospitals in India play an important role as medical tourism suppliers. These hospitals, including Apollo, Fortis, Max Healthcare, and Columbia Asia have established their reputation as specialists in cardiac surgery and joint replacement. Over 10 Indian private hospitals have been awarded JCI accreditation (Labonte et al. 2013).

The Malaysian government is also working on establishing the country as a medical tourism destination in the region. Malaysia reported the increasing number of foreign patients from 425,500 in 2009 to 519,000 in 2010 with USD 1.3 billion revenue being generated (Musa et al. 2012). These figures were collected by the Association of Private Hospitals Malaysia (APHM) and included both foreigners who live and work in the country and foreigners who need medical care during their holidays. Both private and public hospitals in Malaysia are suppliers of the medical tourism industry (Leng 2010). The government projected 16 per cent average growth rate from 2011 to 2014 in medical tourism (Leng 2010) and expected USD 5 billion to be generated from this industry in 2012 (Nicolaidis 2012). The main medical tourism hubs are in Kuala Lumpur, Selangor, Penang, and Malacca. A total of eight hospitals received JCI accreditation. Most foreign patients are Indonesian and Singaporean who came for cardiology treatment, general surgery and cardiothoracic surgery (Musa et al. 2012). The private hospital industry in Malaysia has had rapid growth evidenced by the huge increase in the number of private hospitals from 10 in 1980 to 128 in 2003 (Leng 2010).

Taiwan emerged as a newcomer to the medical tourism industry that mainly targeted mainland Chinese. In 2007, with collaboration between the government and private hospitals, the Taiwanese hospital tourism industry positioned itself as a specialist in main areas of medical services such as liver transplant, craniofacial surgery, cardiovascular surgery, and arthroplasty. The number of foreign patients has been increasing dramatically from 5,000 in 2008, 40,000 in 2009, to 85,000 in 2011. Most sought health check-ups and cosmetic surgery. The government projects that with its state-of-the-art medical technology and low treatment costs, Taiwan will be able “to take business away from the likes of India and Thailand” (Liu 2012, p. 431).

1.4.2 Local competition

The number of foreign patients in Thailand and their importance to private hospitals and to the economy has been stated in Section 1.1.3. The competition of private hospitals in Thailand is intensifying. The hospitals face fierce competition, with state-of-the-art technology and innovative services being provided. The chain hospitals or hospital groups gain advantage over competitors in terms of the size of their network, the wider coverage area, economies of scale, the referrals within the network, and a well-known brand (Bangkok Dusit Medical Services 2011). Endeavouring to become market leaders, private hospitals strive towards excellence by providing superior service quality, hiring highly qualified medical experts, investing in state-of-the-art medical equipment and information technology, and establishing specialised medical centres (Bumrungrad Hospital Public Company Limited 2011).

In the private hospital industry, 197 out of 322 providers (Bangkok Dusit Medical Services 2011) are listed as suppliers of medical tourism operators (Wongkit & McKercher 2013) and 13 large providers are listed on the Stock Exchange of Thailand (Supakankunti & Herberholz 2011). As of May 2013, 23 private hospitals in Thailand have accreditation by the JCI. However, the main players in the industry are dominated by three groups: Bangkok Hospital, Bumrungrad Hospital and Samitivej Hospital (Supakankunti & Herberholz 2011).

Bangkok Dusit Medical Services PLC (BDMS) is the largest hospital management group in Thailand and owns 28 private hospitals. It has a strong network of brand hospitals such as Bangkok Hospital group (14 hospitals), Samitivej Hospital group (three hospitals), Phayathai Hospital group (four hospitals), Paola Memorial Hospital group (four hospitals), and BHN hospital that is spread throughout the country (Bangkok Dusit Medical Services 2011). Bangkok hospital located in Bangkok is one of the main players in the field. Bumrungrad is a stand-alone hospital that treated 460,000 foreign patients in 2011, accounting for 59 per cent of its total revenue (Bumrungrad Hospital Public Company Limited 2011).

1.4.3 The importance of competitive advantage in the Thai private hospital industry

The discussion in Sections 1.4.1 and 1.4.2 highlighted the strong competition of the Thai private hospital industry both locally and globally. Some scholars and practitioners suggest the competitive advantage for the hospital industry is as follows:

*“Thailand’s main advantages are its **high quality medical professionals and a hospitable and service-minded culture**. In addition, the **cost of medical treatments is reasonable**”*

(Supakankunti & Herberholz 2011, p. 162)

*“The Company’s strategy is to continue building on this advantage in **clinical expertise, service capability and patient satisfaction** which results in a differentiated product based on **quality superiority** ...to offer a compelling **value proposition**.”*

(Bumrungrad Hospital Public Company Limited 2011, p. 68)

Although the ability to give treatment to patients is a core competence of a hospital, it is not enough for a hospital to survive in the business. Different marketing approaches are needed. Empirical studies have shown that Service Quality, Customer Value and Customer Satisfaction have influence on Behavioural Intentions. These concepts are related to the enhancement of competitive advantage. Therefore, it is essential for Thai private hospital providers to understand what constitutes Service Quality and Customer Value, and comprehend the influence of Service Quality, Customer Value, and Customer Satisfaction on Behavioural Intentions of foreign patients. To achieve these objectives, it is essential to employ the integrative conceptual model as proposed in this thesis.

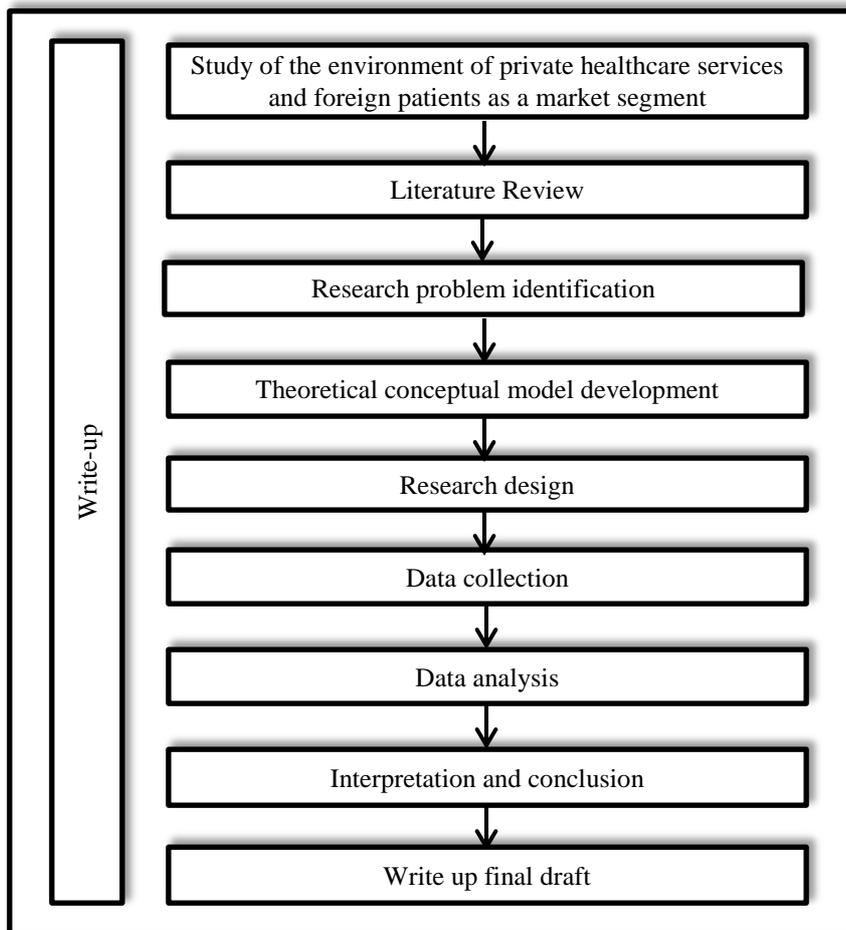
Thailand as a leading medical tourism destination is selected for studying due to the competitive environment, not only locally but also among global players, Asian countries in particular. Thai private hospitals compete with India and Malaysia on the low cost treatments and compete with Singapore on the high-end medical services (Teh 2007). Recently, Singapore increased its competitive advantage by offering equivalent medical treatment at a comparable price to Thailand (Teh 2007).

The results from this empirical study may provide greater insight into the concepts related to the improvement of competitive advantage to attract foreign patients. The better understanding of the relationships between these concepts will assist healthcare management to design marketing strategies to increase competitive advantage and gain better market position in an increasingly competitive environment.

1.5 Research process

Figure 1.2 is a summary of the steps followed in this research. The first is to extensively review the relevant theoretical literature and empirical research relating to the areas of interest such as the industrial environment, importance of foreign patients to the Thai private healthcare industry, importance of foreign patients to the global economy, and factors related to the improvement of competitiveness. The next step is to identify the research objectives, research questions, and related hypotheses. This is followed by the establishment of the theoretical integrative conceptual model. The research methodology is then designed to suit the proposed model and to be able to answer research questions before actual fieldwork was conducted in Thailand. The self-administered survey questionnaire was developed as an instrument to collect data. This data was analysed by multivariate techniques, such as SEM. The results of the findings are interpreted before the final draft write-up.

Figure 1.2: Research process flowchart



1.6 Thesis structure

Nine chapters are grouped into five parts and the following section describes the parts. The contents of the thesis are further explained in Figure 1.3 Thesis structure.

Part One consists of one chapter, the Introduction. Even though most theses have the industry overview in a separate chapter, in this thesis, it is incorporated in Chapter 1. Section 1.1 aligns with Thailand's economic performance, providing the context for the Thai private hospital operations (the evolution of the private healthcare industry, the number of foreign patients treated, the contribution of foreign patients to the industry and the economy), and the importance of foreign patients to the global economy. The rest of the chapter consists of research background and justification, research objectives, research questions, importance of research, research process, thesis structure, and chapter summary.

Part Two is the literature review and model development consisting of three chapters. Chapter 2 reviews Service Quality and Chapter 3 reviews Customer Value, Customer Satisfaction and Behavioural Intentions concepts. Both chapters focus on the reviewing of theoretical literature regarding the concept, the importance, the definitions, the dimensionality and their roles in the healthcare service industry. Chapter 4 presents a model development and hypotheses. This chapter reviews the previous empirical studies that used these four constructs (SQ, CV, SAT, and BI) in their research. These reviews lead to the development and formation of the integrative conceptual model of this study.

Part Three is the research methodology and data analysis strategy consisting of two chapters. Chapter 5 describes the research methods used in this thesis. The construct development and operationalisation, questionnaire design and measurement, and sampling design and procedures. Chapter 6 describes the data analysis procedures focusing on the exploratory factor analysis and the structural equation modelling.

Part Four is the analysis consisting of two chapters. Chapter 7 is the preliminary analysis and the scale refinement. This chapter presents the data screening, demographic analysis – the characteristic of respondents, and the scale refinement. Chapter 8 is the measurement model confirmation and the structural model analysis. The proposed integrative conceptual model is validated by a series of analyses. The unidimensionality, convergent and discriminant validity, reliability,

and Goodness-of-Fit (GOF) of each construct are assessed before the structural model is evaluated.

Part Five is the results and conclusion consisting of two chapters. Chapter 9 contains hypotheses testing, results, and findings. This chapter depicts the hypotheses testing based on the analysis of the final model. The results and findings are then compared to the other studies in the services industry and healthcare service industry in particular. Chapter 10 is the conclusions, recommendations, and limitations. This chapter presents a summary of the overall findings and results, the contributions of the study, the implications for marketers and practitioners, the limitation of the study, and suggestions for future research.

Figure 1.3: Thesis structure

PART ONE	INTRODUCTION AND RESEARCH BACKGROUND
Chapter 1	Introduction This chapter discusses the research environment, the overview of Thailand's economic performance, Thai healthcare industry, Thai private hospital industry, and the importance of foreign patients to the local and global economy. Furthermore, the research background and justification, research objectives and research questions, importance of the study, research process, and research structure are included.
PART TWO	LITERATURE REVIEW AND MODEL DEVELOPMENT
Chapter 2	Service Quality and Service Quality in the healthcare industry This chapter reviews the empirical literature focusing on the Service Quality construct and Service Quality in the healthcare industry.
Chapter 3	Customer Value, Satisfaction and Behavioural Intentions in the healthcare industry This chapter reviews the empirical literature focusing on Customer Value, Customer Satisfaction, Behavioural Intentions and their roles in the healthcare industry
Chapter 4	Model development and hypotheses This chapter reviews the empirical studies focusing on the development of the proposed integrative model, research questions and their related hypotheses.
PART THREE	RESEARCH METHODOLOGY AND DATA ANALYSIS STRATEGY
Chapter 5	Research method This chapter describes the research design and paradigm used in this thesis. The quantitative approach was selected as a method of data collection and analysis.
Chapter 6	Data analysis strategy This chapter describes the strategy for data analysis emphasising the use of exploratory factor analysis and structural equation modelling.
PART FOUR	ANALYSIS
Chapter 7	Preliminary analysis and scale refinement This chapter presents the data screening, demographic analysis and the scale refinement.
Chapter 8	Measurement model confirmation and structural modelling This chapter presents the analysis of structural equation modelling (SEM) which involves a two-step approach: measurement model confirmation and structural model analysis.
PART FIVE	RESULTS AND CONCLUSION
Chapter 9	Hypotheses testing, results and findings This chapter presents the hypotheses testing based on the analysis of the final model. The results and findings are discussed and compared to the services industry, especially in healthcare sectors.
Chapter 10	Conclusions, recommendations and limitations This chapter presents a summary of the overall results and findings, the contributions of the study, the implications for marketers and practitioners, the limitations and the suggestions for future research.

PART TWO

LITERATURE REVIEW AND CONSTRUCT DEVELOPMENT

Chapter 2	Service Quality
Chapter 3	Customer Value, Customer Satisfaction and Behavioural Intentions
Chapter 4	Model development and hypotheses

Part Two consists of three chapters. Chapter 2 reviews the concepts of Service Quality and of Service Quality in healthcare. Chapter 3 reviews the concepts of Customer Value, Customer Satisfaction, and Behavioural Intentions. Chapter 4 reviews the relationships among Service Quality (SQ), Customer Value (CV), Customer Satisfaction (SAT), and Behavioural Intentions (BI) by evaluating the previous empirical studies that employed these four constructs (SQ, CV, SAT, and BI). These reviews are the foundation of hypotheses development and the formation of the proposed integrative model.

CHAPTER 2: SERVICE QUALITY

Chapter 2 consists of nine sections. Section 2.1 reviews the nature and characteristics of services. Section 2.2 is the definition of quality. These two sections provide a general idea about ‘services’ and ‘quality’ before reviewing the ‘Service Quality’ in Section 2.3. Section 2.4 reviews the development of SERVQUAL. Section 2.5 reviews the development of SERVPERF. Sections 2.6 and 2.7 review the measurement and the dimensionality of Service Quality respectively. Section 2.8 discusses Service Quality in the healthcare service context. Section 2.9 is the conclusion of this chapter.

2.1 The nature and characteristics of services

The characteristics of service can be described as intangibility, heterogeneity, inseparability and perishability, often referred to as IHIPs. These are recognised as significant conceptual elements in developing the Service Quality construct (Gummesson, Lusch & Vargo 2010). A brief discussion of the four distinctive characteristics of service is presented below.

Intangibility is the most obvious characteristic of a service. Services are considered intangible while goods are considered tangible, as most services cannot be counted, measured, inventoried, tested and verified prior to assure quality (Parasuraman, Zeithaml & Berry 1985). It is less likely that customers can see, hear, smell and touch the service on offer before it is purchased (Ghobadian, Speller & Jones 1994). For example, the service of a stand-up comedy performance is intangible and cannot be touched. As services are subjective, this aspect is used to differentiate them from goods. Therefore, customers evaluate the Service Quality by the perceived service performance and the outcomes of the services based solely on their perceptions and satisfaction (Corbin, Kelley & Schwartz 2001).

Heterogeneity is the diversity (non-standard nature) of the services. This is based on the idea that services are performed by human beings while goods are manufactured by machines (Gummesson, Lusch & Vargo 2010). Each service transaction is bound to be unique as it is performed by people. Each encounter is difficult to assess, compare and evaluate as it lacks standardisation. Since each service transaction involves both customers and service providers with different personalities at different times and situations, the service offered is unique in itself

as both sides are the core parts of the service delivery, process, production and consumption (Zeithaml, Parasuraman & Berry 1985).

Based on the concept that each service encounter involves both service providers and customers in processing and delivering, services are *inseparable* as their production and consumption occur at the same time (Moeller 2010) and are impossible to separate. Corbin et al. (2001) add that in the healthcare sector, for instance, “surgery cannot be performed without physical presence of both a patient and physician” (p. 2). Hence, when services are sold, production and consumption occur at the same time or later (Rahman & Areni 2010).

Perishability refers to the fact that service processes or activities cannot be stored, kept, held, and resold or returned in the way that physical products can. Unlike goods, services are consumed only as long as the process or activity lasts. They cease to exist when the processes or activities come to an end (Yeo 2008).

Goods and services have three common properties – search properties, experience properties, and credence properties (Martínez Caro & Martínez García 2008) – these influence goods and services differently as explained below.

Search properties refer to the evaluation of customers before making a decision to purchase or consume based on the general criteria of that particular product or service such as colour, size and price. In this respect, goods are more reliant on the search properties than services.

Experience properties are based on the concept that the evaluation occurs during or after the consumption such as a good taste, the joy of watching a movie, and the appreciation of a new hair style. In this respect, services are more reliant on the experience properties than goods.

Credence properties refer to the fact that it is almost impossible to evaluate the Service Quality confidently even after consumption, such as a surgical procedure from a healthcare provider (Corbin, Kelley & Schwartz 2001). In contrast to goods which are high in search properties (Martínez Caro & Martínez García 2008), services are usually very low in search properties, high in credence properties and need experience properties (Ghobadian, Speller & Jones 1994; Martín-Ruiz & Rondán-Cataluña 2008).

2.2 Quality

The definition of quality is ambiguous, and it is hard to establish a universal comprehensive definition. There are several approaches of defining the concept of quality (Schneider & White 2004). In the *philosophical approach*, quality is defined from a subjective perspective providing that quality is a synonym of innate excellence, supremacy, and superiority. In this sense, it is abstract, cannot be defined further, and is useless for researchers as it is unmeasurable (Oliver 1997).

Opposite to the philosophical approach, the *technical approach* defines quality from an objective perspective. Based on the solid view of the outcome, quality is the result. Since this approach focuses on what is objective and measurable, it is applicable for measuring the quality of standardised products rather than services (Kasper & De Vries 1999).

Another approach is the *user-based approach*. As the name implies, quality is defined by the user. It is subjective and different from one person to another. Therefore, the nature and characteristics of services are taken into account when defining their 'quality' (Schneider & White 2004). For example, customers evaluate the quality of service by their perceptions because they cannot physically touch the service (intangibility) and they cannot compare one to another (heterogeneity). Customers perceive the quality of service based on how it is delivered by the provider (inseparable). Customers perceive the quality of services while they are engaging in the service processes or activities (perishability).

The definitions of quality can be classified into five main groups: transcendent, product led, process or supply led, customer led, and value led (Ghobadian, Speller & Jones 1994). The definition by 'customer led' is mostly applied in services marketing research and services literature (Ghobadian, Speller & Jones 1994) where quality is defined as the requirements of customers that make them satisfied. The concept of customer led is similar to the user-based approach.

2.3 Service Quality

Service Quality is a significant and popular research topic in services marketing literature (Sureshchandar, Rajendran & Anantharaman 2002) as it is used to measure and improve a firm's performance (Sliwa & O'Kane 2011). Efforts to understand and identify Service Quality align into five main streams of research proposed by Perez et al. (2007) and discussed below.

The effort of identifying the concept and nature of Service Quality: The attempts to identify the concept and nature of Service Quality have gained attention from scholars and researchers in the last three decades. However, Perez et al. (2007) and Kang and James (2004) argue that general agreement relating to its nature or dimensions has not been reached even though Service Quality is commonly accepted as a multidimensional construct.

The effort of identifying the measurement of Service Quality: Several authors have developed *measurement* scales to assess the quality of services. For example, the SERVQUAL scale is one of the popular measurements proposed by Parasuraman et al. (1985). The main idea of the SERVQUAL scales focuses on the gap between expected and perceived Service Quality. In contrast, Cronin and Taylor (1992) proposed the SERVPERF scale and stated that the measurement of perception-only is superior to the gap measurement used to measure Service Quality. Despite the fact that there are numerous studies attempting to develop the Service Quality scale, there is no generic scale to measure the Service Quality of every service industry (Perez et al. 2007).

The strategic importance of Service Quality as a factor leading to the improvement in competitiveness: It has been widely accepted that an improvement in Service Quality positively impacts customer retention, market share and profitability (Gounaris, Dimitriadis & Stathakopoulos 2010). However, Rust and Oliver (1994) argued that not all quality efforts have an impact on customers and are not necessarily having a direct impact on success indices such as profitability or market share.

The importance of the effect of Service Quality on customer Behavioural Intentions: A number of studies have identified that Service Quality has a positive effect on customer Behavioural Intentions either directly or through the mediation of Customer Value and Customer Satisfaction (Baker & Crompton 2000; Wu, Liu & Hsu 2008). There is some research, such as Laohasirichaikul et al. (2011) and

Udo et al. (2010), that attempts to verify the relationships which potentially lead to the improvement of customers' behavioural patterns.

Research generated by the effort of improving Service Quality: Results of empirical studies regarding Service Quality suggest ways to improve this (Perez et al. 2007). For example, Kang and James (2004) urge healthcare operators to recognise the different influence of technical and functional quality and insist that functional quality usually plays a significant role in customers' perceptions.

As discussed above, Service Quality is an important construct and of interest to researchers and practitioners. The research on Service Quality is important for expanding the existing knowledge regarding the five main streams of research as suggested by Perez et al. (2007).

2.3.1 Definition of Service Quality

Service Quality is an abstract construct. It is harder to define, measure and evaluate than product quality (Büyüközkan, Çifçi & Güteryüz 2011) as it requires customers' perceptions of its attributes in defining, measuring and evaluating (Li, Huang & Yang 2011). Therefore, it is necessary to understand the Service Quality definition as the first step of quality improvements and assessments (Ghobadian, Speller & Jones 1994).

Among the definitions of quality, "a conformance to customer specifications" is a popular definition proposed by Barry, Parasuraman & Zeithaml (1988, p. 35). In this definition, the emphasis is on the customer who interprets the meaning of quality, not the organisation or provider. Therefore, Service Quality is perceived by customers (Bolton & Drew 1991; Gronroos 1988). This implies that the concept of perceived Service Quality is based on a user-based approach where the customer is central to the judgement regarding quality of service (Parasuraman, Zeithaml & Berry 1988).

Perceived Service Quality is an outcome of an evaluation process in which the customers compare their expectations of the service they are going to receive with perceptions of the service they have received (Gronroos 1984). In other words, Service Quality is a set of customers' perceptions of how well a service meets or exceeds their original expectations (Zeithaml, Parasuraman & Berry 1990). Customers assess the quality of services based on their perceptions of the nature and characteristics of services: intangibility, heterogeneity, inseparability and

perishability (Büyüközkan, Çifçi & Güteryüz 2011; Schneider & White 2004). With the complex nature of services, customers use perception as a proxy to assess service quality (Parasuraman et al. 1988). Thus, the terms ‘perceived Service Quality’ and ‘Service Quality’ are used interchangeably in this thesis.

A major contribution to the early literature was by Parasuraman et al. (1985, 1988) whose definition of Service Quality consists of three basic elements. Firstly, Service Quality, compared to quality of goods, is harder for customers to evaluate. Secondly, Service Quality is not measured by the outcome of the service but is the result of comparing perceptions of expectations and actual performance. Lastly, Service Quality is mainly related to the evaluations of the service process or service delivery.

Even though there is no general consensus regarding its definition, there is agreement that the customer is a judge of Service Quality. Thus, the central idea of Service Quality is to meet customers’ needs and expectations in that particular transaction. Customers consider how well the service is delivered by the provider, and whether it is above or below their expectations (Lewis 1993). The definition of Service Quality should begin with considering customers’ needs and expectations in relation to overall superiority of service (Zeithaml, Parasuraman & Berry 1990).

Therefore, this study adopts the concept of Service Quality based on a user-based approach, suggested by Schneider & White (2004), where the customer is the centre of the judgement. Service Quality in this study is defined as the perceptions of patients towards the service delivery processes and their outcome as suggested by Gronroos (1984).

2.3.2 Importance of Service Quality

Evidence in marketing and service industries literature indicates that by delivering high Service Quality, companies gain benefits in terms of profit, cost saving and increased market share (Zeithaml, Berry & Parasuraman 1988). Ladhari (2009) suggests that firms generally recognise Service Quality as one of the success factors. It is then used as a tool to improve a firm’s performance and to differentiate it from competitors. To differentiate the service offered is considered not only to be a defensive strategy but also an offensive one (Gounaris, Dimitriadis & Stathakopoulos 2010). High quality of service reduces the price elasticity and then provides insulation from price competition (Johnson & Sirikit 2002).

Empirical studies support the relationships between Service Quality and key performance indicators such as positive financial return (Gounaris, Dimitriadis & Stathakopoulos 2010; Zeithaml 2000), positive influence on customer retention (Gounaris, Dimitriadis & Stathakopoulos 2010; Johnson & Sirikit 2002), and market growth (Lonial et al. 2010). High Service Quality leads to increasing retention of existing customers while at the same time attracting prospective customers (Gounaris, Dimitriadis & Stathakopoulos 2010). It leads to lower costs, reinforcement of corporate image, a rise in positive word-of-mouth communication, and increased customer satisfaction and profitability (Cronin Jr, Brady & Hult 2000; Kang & James 2004; Ladhari 2009; Nekoei-Moghadam & Amiresmaili 2011).

Therefore, Service Quality is considered as an essential driving force of a company's performance. Because of its importance as discussed above, marketers use it as a tool to achieve competitive advantage (Lee et al. 2010).

2.4 The development of SERVQUAL

The concept proposed by Parasuraman, Zeithaml & Berry (1985) is accepted widely as a foundation for studying Service Quality. The results from focus groups with customers and in-depth interviews with executives from service firms have provided the authors' insight into the key attributes of Service Quality. They named these key attributes as SERVQUAL. SERVQUAL is related to two aspects of Service Quality. One is a dimensionality and the other is a measure. SERVQUAL as a dimensionality of Service Quality is called RATER scales or SERVQUAL scales (Parasuraman, Zeithaml & Berry 1988). SERVQUAL as a measure of Service Quality is called a 'gap model', 'gap score' or SERVQUAL score which represents a discrepancy between expectation-minus-perception score.

2.4.1 SERVQUAL as dimensions of Service Quality:

The RATER scale

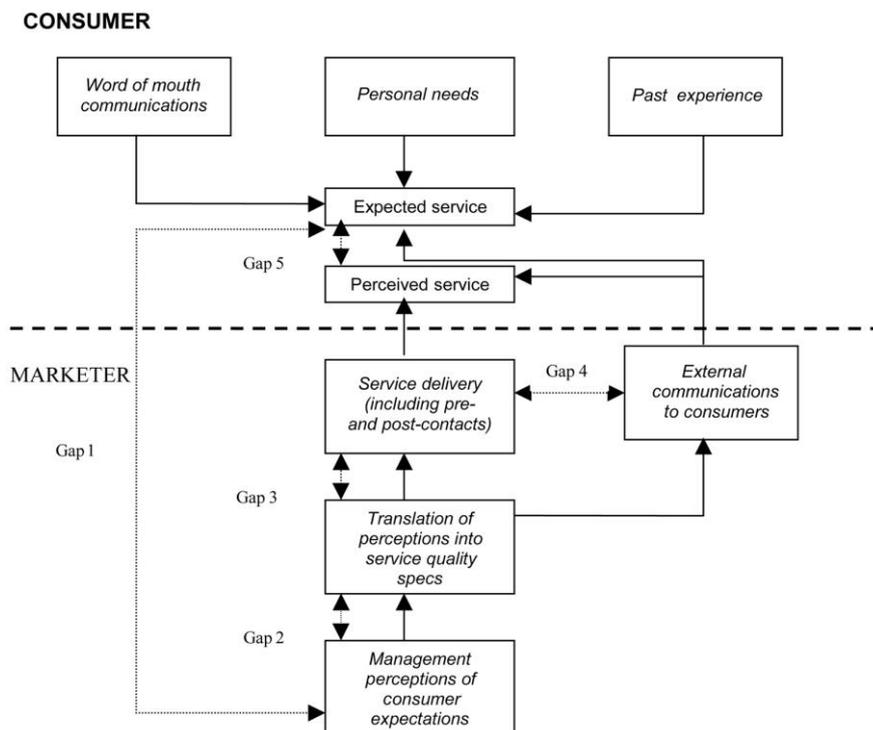
Based on the results of the focus groups interviews, Parasuraman, Zeithaml & Berry (1985) were able to develop ten dimensions of Service Quality: *tangibles*, *reliability*, *responsiveness*, *communication*, *credibility*, *security*, *competence*, *courtesy*, *understanding/knowing customers*, and *access*.

However, the study by Parasuraman et al. (1988) of four different service industries (banking, credit cards, repair and maintenance, and long distance telephone services) suggested revising the original ten dimensions and reducing them to five. The original seven out of ten dimensions (communication, credibility, security, competence, courtesy, understanding/knowing customers and access) were reduced to two dimensions (assurance and empathy) after a two-step scale refinement process. Parasuraman et al. (1988) explained that these dimensions did not remain distinct and the revised five dimensions still capture aspects of all ten original dimensions. Thus, the revised dimensions from seven to two (assurance and empathy) and the three remaining dimensions (reliability, tangibles, and responsiveness) were introduced and labelled as RATER scale.

2.4.2 SERVQUAL as a measure of Service Quality: A gap score

In addition to the dimensions of SERVQUAL, Parasuraman, Zeithaml & Berry (1985) identified five gaps of Service Quality. Gaps one to four emerged from the marketers' point of view whereas gap five emerged from the customers' perspective as presented in Figure 2.1.

Figure 2.1: Five gaps of Service Quality (SERVQUAL)



Source: Parasuraman et al. (1985), p. 44

As this thesis focuses on the perceptions of healthcare customers, only gap five is relevant to the research. This represents the discrepancies or gaps between customer expectations and customer perceptions.

Parasuraman, Zeithaml & Berry (1988) proposed four to five items to measure each of the five dimensions (RATER scales) thus making a total of 22 items across the five dimensions. These items are administered twice in two different forms: expectation and perception. The expectations measure what the customer expects from the service, whereas the perceptions measure what the customer perceives from the actual service delivered.

The gap score of SERVQUAL can be calculated as G (gap score) = P (perception of service received) – E (expectation of service) where the higher score reflects the customers' perceptions of Service Quality being higher than their expectation (Buttle 1996). Ladhari (2009) suggests that the gap analysis is essential for management to identify where the discrepancies are and try to close or reduce the gap in order to improve the Service Quality as perceived by customers.

2.4.3 Critique of SERVQUAL

Even though the SERVQUAL instrument has been widely adopted in the services marketing literature by scholars, researchers, and practitioners, it has also been criticised regarding the potential difficulties with empirical operationalisation of the scale and conceptual foundation issues such as the “difference scores, dimensionality, applicability and validity of model especially with respect to the dependence or independence of five main variables” (Kang & James 2004, p. 267). The main concern is whether the five generic dimensions of the SERVQUAL scale and its elements are generically applicable in all service industry contexts (Ladhari 2009).

Furthermore, SERVQUAL does not address the service encounter outcomes or technical quality attributes and only focuses on the service delivery process or functional quality attributes. Despite its developers originally pointing out that Service Quality encompasses functional quality and technical quality dimensions, the technical quality dimension was not included in the measurement of the instrument (Kang & James 2004).

Besides, the debates regarding the applicability of the SERVQUAL instrument cover various aspects (Ladhari 2009) such as the psychometric issue, and the

conceptual and methodological issues (Asubonteng, McCleary & Swan 1996). With regard to the psychometric issue, SERVQUAL is critiqued regarding the reliability, convergent and discriminant validity (Asubonteng, McCleary & Swan 1996; Ladhari 2009). With regard to the conceptual and methodological issues, SERVQUAL is critiqued regarding the defining a construct using gap scores, the emphasis on process rather than outcome, its applicability as a generic scale for measuring Service Quality in all service settings, and its applicability in different cultural contexts (Babakus & Boller 1992; Ladhari 2009). For example, Babakus and Boller (1992) stated that the difference scores derived from perception-minus-expectation do not contribute any extra information beyond the perception components which already have value in themselves in the SERVQUAL scale.

Even though Parasuraman et al. (1991) claim that SERVQUAL's dimensions and items cover all evaluation criteria regarding Service Quality across all service industries context, numerous empirical studies still propose other quality dimensions and attributes to suit their context of study. For example, Brady and Cronin (2001) identify three components (interaction quality, physical environment quality and outcome quality) for four service industries (fast food, photograph developing, amusement parks and dry cleaning). Dagger, Sweeney and Johnson (2007) propose four components (interpersonal quality, technical quality, environment quality and administrative quality) for the healthcare industry. Akbaba (2006) suggests five components (tangibles, adequacy in service supply, understanding and caring, assurance, and convenience) for the hotel industry. Kang (2006) introduces six components (tangibility, reliability, responsiveness, assurance, empathy and technical quality) for the mobile phone industry.

In addition, two administrations of expectations and perceptions led to respondents' boredom and confusion (Buttle 1996). Carman (1990) observed that it is too theoretical to expect respondents to complete expectations statements before received services and to complete perception statements immediately after a service encounter.

Despite having been criticised in many areas, the SERVQUAL instrument remains the most popular as the foundation in Service Quality research (Ladhari 2008) and is widely applied in many areas of research in service industries (Büyüközkan, Çifçi & Güleriyüz 2011; Jain & Gupta 2004; Nekoei-Moghadam & Amiresmaili 2011; Sureshchandar, Rajendran & Anantharaman 2002).

2.5 The development of SERVPERF

The applicability of SERVQUAL in measuring the Service Quality has been criticised by researchers in terms of operationalisation and conceptualisation (Cronin Jr & Taylor 1992; Ramez 2011). Even though Parasuraman et al. (1988) and Cronin and Taylor (1992) agree that perceived Service Quality is a form of attitude, they disagree on the method of measurement. Cronin and Taylor (1992) proposed SERVPERF, which comprises 22 perception items in the SERVQUAL scales and excludes all expectation items. They tested the goodness-of-fit of two models, SERVQUAL and SERVPERF, with four service industries (banking, pest control, dry cleaning and fast food) and the results revealed that SERVQUAL showed a good fit in two out of four industries whereas SERVPERF showed an excellent fit in all four.

These results appear to give considerable support to the superiority of measurement of Service Quality by SERVPERF over SERVQUAL. It is not only that the scale is more efficient as the number of items to be measured is decreased by 50 per cent (due to the use of perception items only without expectation items), but also the ability to explain greater variance in overall Service Quality through the application of single (perception) items scale (Jain & Gupta 2004). This argument is supported by Ramez (2011) who confirmed that SERVPERF explains the variance in Service Quality better than SERVQUAL in the banking industry.

Compared with other methods of measurement for Service Quality, it has been acknowledged that the perception-only scores gain advantages such as the measurement can occur quickly after the delivery of services and it does not rely on data records (Narang 2010).

Jain and Gupta (2004) also state that their study supports the superiority of SERVPERF over SERVQUAL in terms of the validity, the reliability and the methodological soundness of Service Quality. Pitt, Watson and Kavan (1997) support the superiority of SERVPERF as providing higher convergent and predictive validity.

2.6 Measurement of Service Quality

A number of studies have investigated the quality of service and agree that Service Quality can be mainly assessed based on three measures. Ladhari (2008) studies a total of 30 industries and identifies three main measurement methods in the development of Service Quality measurement instruments:

- 1) Expectation-only scores, applied by Markovič (2006), Knutson et al. (1990) and Khan (2003),
- 2) Perception-minus-expectations score or gap model of SERVQUAL developed by Parasuraman et al. (1985) (see Section 2.4.2), and
- 3) Performance-only scores (SERVPERF) developed by Cronin and Taylor (1992) (see Section 2.5).

All measurement methods have their pros and cons. Even though many scholars agree that customer expectations play a significant role in the evaluation processes of service performance (Bolton & Drew 1991; Parasuraman, Zeithaml & Berry 1985; Parasuraman, Zeithaml & Berry 1988), the expectation-only measurement has been applied for some studies due to the limitation and the necessity of their cases. For example, Khan (2003) gives the reason for using it in his study of ecotourism that it is hardly possible to have the tourists (respondents) complete the expectation questionnaire before the trip and complete the perception questionnaire after the trip.

Jain and Gupta (2004) state that compared to SERVQUAL, the SERVPERF scale is found to have less ability in its diagnostic power to identify areas of improvement for managerial corrective actions. SERVPERF (perception-only measurement) does not entail a gap comparison of performance perceptions with expectations as SERVQUAL (a gap score) does. Therefore, SERVPERF lacks the ability to pinpoint areas for intervention by management. While SERVQUAL (a gap score) is dominant in terms of a diagnostic power for corrective actions, it has several pitfalls as discussed in Section 2.4.3.

Table 2.1 is the summary of the previous studies categorised by the measures used including expectation-only scores, perceptions-minus-expectation scores (SERVQUAL) and performance-only scores (SERVPERF).

Table 2.1: Service Quality measurement and scales from service industries

Study	Service Industry	Data analysis procedure	Dimension	Items	Scale
Measured by Expectation only score					
Markovič (2006)	Higher education service (Croatia)	EFA	RATER + students in scientific work, e-learning	26 items	Five point Likert Scale
Khan (2003)	Ecotourism (USA)	EFA	RATER + ecotangibles	29 items	Seven point Likert Scale
Measured by a gap score of SERVQUAL (Perception-minus-expectation score)					
Ramez (2011)	Banks (Bahrain)	EFA	SERVQUAL - RATER dropped to three factors	22 items	Seven point Likert Scale
Isik et al. (2011)	Hospital (Turkey)	EFA, CFA	5 dimensions: RATER	22 items	Seven point Likert Scale
Butt & de Run (2010)	Hospital (Malaysia)	EFA, CFA	5 dimensions: RATER	17 items	Seven point Likert Scale
Akbaba (2006)	Business hotel industry (Turkey)	EFA	5 dimensions: tangibles, adequacy in service supply, understanding and caring, assurance, convenience	25 items	No mention
Mostafa (2005)	Hospitals (Egypt)	PCA, ANOVA	RATER	22 items	Five point Likert Scale
Wolfinger & Gily (2003)	Online e-tail quality (USA)	EFA, CFA	4 dimensions: website design, fulfilment/reliability, security/privacy, customer service	14 items	Seven point Likert Scale
Vaughan & Shiu (2001)	Voluntary sector (Scotland)	EFA	10 dimensions: access, responsiveness, communication, humaneness, security, enabling/empowerment, competence, reliability, equity, tangibles	27 items	No mention
Engelland et al. (2000)	Career service centres on college campuses (USA)	EFA, CFA	RATER	17 items	Seven point Likert Scale
Measured by SERVPERF (Perception-only score)					
Wong & Fong (2012)	Casino (China)	CFA	CASERV (Casino service quality), 4 dimensions: service environment, service delivery, gaming service, food service	12 items	Five point Likert Scale

Measured by SERVPERF (Perception-only score) (Continued)					
Alrubaie & Alkaaida (2011)	Hospital (Jordan)	Multiple regression analysis	5 dimensions: RATER	26 items	Five point Likert Scale
Li et al. (2011)	Hospital (Taiwan)	EFA Multiple regression analysis	4 dimensions: reliability, responsiveness, assurance, empathy	22 items	Seven point Likert Scale
Wu (2011)	Hospital (Taiwan)	CFA	5 dimensions of RATER	Nil	Seven point Likert Scale
Padma et al. (2010)	Hospital (Chennai, India)	CFA	8 dimensions: infrastructure, personal quality, process of clinical care, administrative procedures, safety indicators, hospital image, social responsibility, trustworthiness	43 items	Seven point Likert Scale
Lonial et al. (2010)	Hospital (Turkey)	EFA, CFA,	6 dimensions: RATER + courtesy	22 items	Seven point Likert Scale
Chanio-takis & Lymperopoulos (2009)	Hospital (Greece)	CFA	5 dimensions of RATER	20 items	Five point Likert Scale
Martínez Caro & Martínez Garcia (2007)	Urgent transport service (Spain)	EFA, CFA	4 dimensions: personal interaction, design, physical environment, outcome	36 items	Five point Likert Scale
Wilkins et al. (2007)	Hospitality service (Australia)	EFA, CFA	3 dimensions: physical product, service experience, quality food and beverage	30 items	No mention
Gounaris (2005)	B2B service (Greece)	CFA	4 dimensions: potential quality, hard process quality, soft process quality, output	22 items	Seven point Likert Scale
Jobnoun & Khalifa (2005)	Bank (United Arab Emirates)	EFA	4 dimensions: personal skills, reliability, image, value	29 items	No mention
Karatepe et al. (2005)	Bank service (Cyprus)	EFA, CFA	4 dimensions: service environment, interaction quality, empathy, reliability	22 items	Five point Likert Scale
Parasuraman et al. (2005)	Electronic Service Quality (internet-users)	EFA, CFA	4 dimensions: efficiency, system availability, fulfilment, privacy	22 items	Five point Likert Scale
Yoon & Suh (2004)	Consulting service (Korea)	EFA	6 dimensions: assurance, responsiveness, reliability, empathy, process, education	36 items	Seven point Likert Scale

Measured by SERVPERF (Perception-only score) (Continued)					
Getty & Getty (2003)	Lodging industry (USA)	EFA	5 dimensions: tangibility, reliability, responsiveness, confidence, communication	26 items	Four point Scale
Aldlaigan & Buttle (2002)	Banking (UK)	EFA	4 dimensions: service system quality, behavioural Service Quality, machine Service Quality, service transactional accuracy	21 items	Seven point Likert Scale
Janda et al. (2002)	Internet retail Service Quality (USA)	CFA	5 dimensions: performance, access, security, sensation, information	22 items	Seven point Likert Scale
Sureshchandar et al. (2002)	Banking (India)	CFA	5 dimensions: core service or service product, human element of service delivery, systemisation of service delivery, tangibles of service, social responsibility	41 items	Seven point Likert Scale

Note: RATER = five dimensions of SERVQUAL (reliability, assurance, tangibles, empathy, responsiveness)

Source: developed based on Ladhari (2008, pp. 69-74)

2.7 Dimensionality of Service Quality

There is no general consensus regarding the concept, nature, and content of Service Quality (Perez et al. 2007; Schembri & Sandberg 2011). It is generally accepted and acknowledged as a multidimensional or multi-attribute construct (Brady & Cronin 2001; Cronin Jr & Taylor 1992; Gronroos 1982; Kang & James 2004; Parasuraman, Zeithaml & Berry 1988). However, the dimensions of Service Quality have been extensively studied and proposed by many researchers.

In early research, the general conceptualisations regarding Service Quality dimensions fall into two categories: the American (Parasuraman et al. 1985, 1988) and the European (Gronroos 1984) perspectives. While the American perspective of Service Quality mainly focuses on functional quality attributes, the European perspective advises further three elements: technical quality, functional quality and organisational image (Brady & Cronin 2001). American scholars such as Parasuraman et al. (1988) suggest that Service Quality is evaluated by the functional attributes and characterised by five dimensions (the RATER scales) as a generic multidimensional construct to evaluate the quality of service. While the proposal of Parasuraman et al. (1988) disregarded the importance of the service outcome or technical quality, European scholars such as Gronroos (1984) affirm

that Service Quality attributes consist of functional quality and technical quality. In addition, the author introduces the organisation image as an important attribute of Service Quality as it has an influence on customers' perceptions. Customers evaluate the quality of service of each provider in each encounter they experience with them. Then, customers form the perceptions of their experiences in many aspects. For example, they usually forgive and forget a minor mistake by a service provider if they have a positive image of the firm in mind. On the other hand, if the service provider has a negative image in a customer's mind, even a minor mistake is usually picked up. This reflects that customers naturally use corporate image as a filter to form a perception of Service Quality (Kang & James 2004).

As the emergence of research supports that a service environment is a component of functional quality (Kang & James 2004), the service environment has been included as a dimension in research. For instance, Rust and Oliver (1994) conceptualise Service Quality with three dimensions: service product, service environment and service delivery. Brady and Cronin (2001) introduce three dimensions: interaction quality, physical environment quality and outcome quality. Based on this study, Karatepe, Yavas and Babakus (2005) suggest four dimensions: service environment, interaction quality, empathy and reliability. They identify the service environment dimension as the appearance of premises such as the interior and exterior design which is similar to the Tangibles dimension of SERVQUAL. Dagger et al. (2007) denote four main attributes of Service Quality: interpersonal quality, technical quality, environment quality, and administrative quality. The environment quality is defined as features (e.g. pleasant and comfortable premises) that influence customers' perceptions of service quality such as atmosphere and tangibles. Even though the service environment dimension is applied in research and treated as one of the Service Quality dimensions, the interpretation of this dimension is similar to the concept of Tangibles dimension of SERVQUAL scale (Dagger, Sweeney & Johnson 2007; Karatepe, Yavas & Babakus 2005)

Despite the popularity of SERVQUAL dimension, there is criticism that it is a fixed set of attributes mainly focusing on the service delivery processes (Kang & James 2004). Richard and Allaway (1993) add that measuring only functional Service Quality attributes to understand consumers' perception and forecast customer behaviour might be too loose and produce low predictability. Gronroos (1982; 1984) states that Service Quality can be characterised as a combination of technical outcome and functionality (process-related). Technical outcome is the

‘what’ customers actually receive as a result of their interaction with the service firm or ‘what’ service delivers. Functionality refers to ‘how’ customers get the technical outcome or how the services are delivered. In this respect, additional service attributes such as technical quality have been recommended (Kang & James 2004; Schneider & White 2004).

Schembri and Sandberg (2011) suggest that customers interpret the meaning of Service Quality according to their experiences of service encounters which are not comprised of a fixed set of dimensions or attributes such as reliability and responsiveness. The meaning of Service Quality and its attributes therefore varies according to experiences and perceptions (Ghobadian, Speller & Jones 1994). Babakus and Boller (1992) and Ladhari (2008) agree that there has been doubt regarding the SERVQUAL scale (RATER scale) as a generic measure of Service Quality. They argue that Service Quality can be a simple and unidimensional construct in some contexts and a complex and multidimensional one in others, depending on the specific service settings. Thus, the development of a Service Quality model to suit the specific industry context has gained momentum (Ladhari 2008).

As discussed, Service Quality is a multidimensional construct. Despite a number of researchers proposing the dimensions of Service Quality to suit their study contexts, the SERVQUAL scales are used as a foundation. Also, the dimensionality of Service Quality is varied.

2.8 Service Quality in the healthcare context

Service Quality is a key measurement component to evaluate success in the healthcare industry. Hospital providers compete with each other by delivering a superior quality of service and patient satisfaction. Even though all hospitals offer the same types of medical care, such as dental and routine check-ups, it is impossible to offer the same level of Service Quality (Suki, Lian & Suki 2011). The level of Service Quality is becoming more important because patients are becoming aware of the choices being offered and harbour concerns about the Service Quality being provided by hospitals. They are being more proactive in searching information related to their illness, such as asking for details regarding the choices of treatment, the procedures, and the length of treatment (Büyüközkan, Çifçi & Güleriyüz 2011). Patients have higher expectations regarding the quality of service delivered by the hospitals (Sharma & Narang 2011). With intense

competition among hospital providers, the healthcare operators try to increase their competitive advantage by delivering satisfaction through Service Quality. Thus, the patient's perceptions of the healthcare provider are important and cannot be neglected (Suki, Lian & Suki 2011).

However, the attributes used by patients to evaluate service experiences are usually limited because of the uniqueness of the hospital industry (Corbin, Kelley & Schwartz 2001). The uniqueness can be explained as having dominantly credence property and search property. The industry is high in credence properties (see Section 2.1) when the patients are generally unable to identify or evaluate the result of the healthcare process or treatment due to the lack of understanding of the medical procedure (Narang 2010). Also, the hospital industry is low in search properties (see Section 2.1) when the patients find it hard to search the general criteria of the medical services before they make a decision on whether or not to go ahead with the treatment.

Researchers argue that technical quality is not appropriate to be included in assessing Service Quality (Laohasirichaikul, Chaipoopirutana & Combs 2011; Padma, Rajendran & Lokachari 2010; Gallan et al. 2013) as patients are generally unable to identify or evaluate the result of the healthcare process or treatment (Narang 2010). Accordingly, patients usually depend on the perceptions of quality based on functional dimension such as politeness of staff, appearance of the premises, waiting time, and how the medical services are delivered in general (Kang & James 2004). Patients; therefore, rely more on visible signs that imply the quality of treatment they will receive from providers, such as the aesthetics of the premises, staff appearance, modern-looking equipment, and prompt service. These signs or indicators are often used as invaluable surrogates to assess the Service Quality of a hospital (Suki, Lian & Suki 2011).

However, many researchers insist that patients are capable of assessing the technical quality and able to distinguish technical quality from functional quality (Dagger & Sweeney 2007; Gallan et al. 2013). For example, 'Process of clinical care' is used as a technical quality dimension in the studies by Duggirala, Rajendran & Anantharaman (2008) and Padma, Rajendran & Lokachari (2010).

Dagger and Sweeney (2007) propose a more specific concept of technical quality. They suggest that the degree of professionalism (expertise) and the result of care (outcome) offered by the hospital provider are important aspects of technical quality dimension for assessing Service Quality of the hospital. Hence, technical

quality cannot be overlooked in the healthcare service context (Dagger & Sweeney 2007; Duggirala, Rajendran & Anantharaman 2008).

Table 2.2 is the summary of previous healthcare service studies that used SERVQUAL as the foundation of Service Quality scale.

Table 2.2: Summary of healthcare service studies that used SERVQUAL as foundation of Service Quality scale

Sources/ Usable sample size	Location	Measurement	Quality dimensions (number of items)
Sriram & Ganesh (2012) (150 patients)	Meenakshi Mission Hospital, India	GAP score 5 dimensions 24 items 7 scales	Tangibles (4), Reliability (5), Responsiveness (4), Assurance (4), Empathy (7)
Suki et al. (2011) (191 patients)	Three private hospitals, Klang Valley, Malaysia	GAP score 8 dimensions 23 items 5 scales	Tangibles (4), Reliability (3), Responsiveness (4), Assurance (3), Empathy (2), Courtesy (2), Communication (3), Understanding the customer (2)
Isik et al. (2011) (610 patients)	Sakarya Metropolitan, Turkey	GAP score 5 dimensions 22 items 7 scales	Tangibles (4), Reliability (5), Responsiveness (4), Assurance (4), Empathy (5)
Nekoei-Moghadam & Amiresmaili (2011) (385 in- and out-patients)	Kerman University of Medical Sciences hospitals, Iran	GAP score 5 dimensions 22 items 6 scales	Tangibles (nil), Reliability (nil), Responsiveness (nil), Assurance (nil), Empathy (nil)
Ahuja et al. (2011) (100 out-patients)	Eye hospitals, India	GAP score 5 dimensions 22 items 7 scales	Tangibles (4), Reliability (5), Responsiveness (4), Assurance (4), Empathy (5)
Yesilada & Direktor (2010) (806 patients)	Hospitals in Northern Cyprus	GAP score 3 dimensions 21 items 5 scales	Reliability – Confidence (13), Empathy (4), Tangibles (3)
Zaim et al. (2010) (256 patients)	12 hospitals in Turkey	GAP score 6 dimensions 34 items 7 scales	Tangibles (9), Reliability (5), Responsiveness (8), Assurance (5), Empathy (2), Courtesy (5)
Pansiri & Mmereki (2010) (151 in- and out-patients)	Botswana hospitals, Africa	GAP score 5 dimensions 21 items 7 scales	Tangibles (4), Reliability (4), Responsiveness (4), Assurance (4), Empathy (5)
Butt & de Run (2010) (340 in-and out-patients)	Private doctors or hospitals, Malaysia	GAP score 5 dimensions 17 items 7 scales	Tangibles (3), Reliability (4), Responsiveness (4), Assurance (3), Empathy (3)

Sources/ Usable sample size	Location	Measurement	Quality dimensions (number of items)
Jacob et al. (2010) (500 dental patients)	Dental clinics, Malaysia	GAP score 6 dimensions 17 items 5 scales	Tangibles (4), Reliability (3), Responsiveness (3), Assurance (3), Empathy (3), Outcome (1)
Bakar et al. (2008) (472 in- and out- patients)	6 Baskent University Hospitals networks, Turkey	GAP score 5 dimensions 15 items 5 scales	Reliability (3), Tangibles (3), Responsiveness (3), Assurance (4), Empathy (2)
Rohini & Mahadevappa (2006) (500 patients)	5 hospitals in Bangalore city, India	GAP score 5 dimensions 22 items 7 scales	Tangibles (4), Reliability (5), Responsiveness (4), Assurance (4), Empathy (5)
Taner & Antony (2006) (200 out- patients)	Public and private hospitals, Turkey	GAP score 5 dimensions 40 items 7 scales	Nil
Mostafa (2005) (332 In- and out- Patients)	Public and private hospitals, Egypt	GAP score 3 dimensions 22 items 7 scales	Human performance (nil), Human reliability (nil), Facility quality (nil)
Wisniewski & Wisniewski (2005) (64out-patients)	United Kingdom	GAP score 5 dimensions 19 items 7 scales	Tangibles (4), Reliability (5), Responsiveness (3), Assurance (3), Empathy (4)
Zamil et al. (2012) (450 patients)	10 hospitals in Amman, Jordan	SERVPERF 5 dimensions 20 items	Tangibles (4), Reliability (4), Responsiveness (4), Assurance (4), Empathy (4)
Alrubaiee & Alkaaida (2011) (290 in-patients)	Amman Hospital, Jordan	SERVPERF 5 dimensions 32 items 5 scales	Tangibles (6), Reliability (7), Responsiveness (5), Assurance (3), Empathy (5)
Li et al. (2011) (665 out-patients)	12 hospitals, Taiwan	SERVPERF 4 dimensions 20 items 7 scales	Reliability (9), Responsiveness (6), Assurance (3), Empathy (2)
Wu (2011) (437 patients)	2 hospitals, Taiwan	SERVPERF 5 dimensions (Nil) items 7 scales	Tangibles (nil), Reliability (nil), Responsiveness (nil), Assurance (nil), Empathy (nil)
Laoharirichaikul et al. (2011) (500 out-patients)	5 hospitals, Thailand	SERVPERF 4 dimensions 19 items 5 scales	Doctor concerns (5), Staff concerns (5), Tangibles (4), Convenience of the care process (5)
Padma et al. (2010) (408 ;204 in-patients and 204 attendants)	Hospitals in Chennai, India	SERVPERF 8 dimensions 43 items 7 scales	Infrastructure (10), Personal quality (11), Process of clinical care (6), Administrative procedures (8), Safety indicators (3), Hospital image (3), Social responsibility (3), Trustworthiness (5)
Lonial et al. (2010) (139 in-patients)	One large hospital in Istanbul, Turkey	SERVPERF 6 dimensions 28 items 7 scales	Tangibility (8), Reliability (4), Responsiveness (6), Assurance (4), Courtesy (4) Empathy (2)

Sources/ Usable sample size	Location	Measurement	Quality dimensions (number of items)
Chaniotakis & Lympelopoulas (2009) (1,000 patients)	Athens, Greece	SERVPERF 5 dimensions 20 items 5 scales	Tangibles (4), Reliability (4), Responsiveness (4), Assurance (4), Empathy (4)
Choi et al. (2005) (537 out-patients)	General Hospital, Seoul, South Korea	SERVPERF 4 dimensions 19 items 5 scales	Doctor concerns (5), Staff concerns (5), Tangibles (4), Convenience of the care process (5)

As seen in Table 2.2, both the GAP score and SERVPERF have been used as a measurement of Service Quality. Those that used GAP score, their main purpose was to assess the quality of services in hospitals and identify room for improvement. Five out of nineteen studies that used the gap scores measurement shown in Table 2.2 did not support the five dimensions of the SERVQUAL scale. The results varied between three to eight dimensions. Similarly, five out of nine studies that used the SERVPERF measurement did not support the five dimensions of the SERVQUAL scale. The results varied between four to eight dimensions.

2.9 Chapter summary

This chapter provides a comprehensive review of literature in relation to the Service Quality construct.

Section 2.1 reviewed the nature and characteristics of ‘service’ as a tool to differentiate services from goods. Because of the characteristics of service, the quality measurement of ‘service’ and ‘good’ is different.

This is followed by Section 2.2, the definition of ‘quality’. Even though the definition can be conceptualised by the philosophical approach and the technical approach, the user-based approach is the most appropriate method of defining the concept of Service Quality. Based on a user-based approach, the customer is a judge of a good or bad quality of service.

Section 2.3 discussed ‘Service Quality’. The efforts of understanding and identifying this are categorised into five main research areas of interest to researchers and practitioners. The terms ‘perceived service quality’ and ‘service quality’ are often used interchangeably in services marketing research. Service Quality in this thesis is defined as the perceptions of patients towards the service

delivery processes and the outcome of these processes as suggested by Gronroos (1984).

Section 2.4 discussed SERVQUAL. SERVQUAL is widely accepted as the foundation of Service Quality measurement. This section considers the dimensionality of SERVQUAL, a gap model of SERVQUAL, and the critiques of SERVQUAL.

Section 2.5 discussed another Service Quality measurement, SERVPERF. While SERVQUAL uses a gap model or the perception-minus-expectation score, SERVPERF uses only the perception-only score. It is accepted as a better measurement than SERVQUAL in terms of validity, reliability, and methodological soundness.

Section 2.6 discussed the three measurements of Service Quality: a gap model of SERVQUAL, a performance-only measure (SERVPERF), and an expectation-only measure. The pros and cons of each measurement were provided.

Section 2.7 discussed the dimensions of Service Quality. Although there is no general consensus regarding the concept and definition of the Service Quality, it is commonly acknowledged as a multidimensional construct consisting of multi-attributes. A number of researchers propose the dimensions of Service Quality to suit their studies by using the SERVQUAL scales as a foundation.

Section 2.8 described Service Quality in the healthcare industry, and in particular, the importance of technical quality. Additionally, the summary of previous healthcare service studies that used SERVQUAL as foundation of Service Quality scale is provided.

The next chapter, Chapter 3, reviews the Customer Value, Customer Satisfaction, and Behavioural Intentions constructs. The relationships among these constructs are discussed before moving to Chapter 4, the model development and hypotheses.

CHAPTER 3: CUSTOMER VALUE, CUSTOMER SATISFACTION AND BEHAVIOURAL INTENTIONS

This chapter consists of three sections: Customer Value (Section 3.1), Customer Satisfaction (Section 3.2) and Behavioural Intentions (Section 3.3). These have been noted in literature as important constructs relating to the behavioural patterns of customers and competitive advantage. Section 3.4 provides a conclusion to the chapter.

3.1 Customer Value

This section reviews the Customer Value construct which covers the following issues: the importance of Customer Value (Section 3.1.1), its concept and definition (Section 3.1.2), and its dimensionality (Section 3.1.3). These are followed by Section 3.1.4, reviewing the Customer Value concept in relation to the Service Quality concept as previously discussed in Chapter 2. Section 3.1.5 describes the roles of Customer Value in the hospital context. Section 3.1.6 is the summary of the Customer Value construct.

3.1.1 Importance of Customer Value

Customer Value is a significant part of marketing activities as it leads to a better understanding of consumer behaviour. Customer Value has become pivotal in strategic management and is seen to generate competitive advantage as well as sustainability for the firms (Gallarza, Gil-Saura & Holbrook 2011). The Customer Value concept has been applied in fields of study such as economics, social sciences, accounting and finance, product and service management, and marketing. Likewise, it is one of the most popular and commonly used constructs among managers and researchers (Uлага 2001).

The manager who understands Customer Value can use that perception as a tool to tailor the product, to create differentiation of products or service, to build brand positioning, and to classify the market segment according to the concept of Value which customers have in mind (Thomas, Painb ni & Barton 2013). Managers who place Customer Value as a core of the marketing approach and listen to the

customers' voice will gain benefits from a better understanding of the customers, a quicker response to their perceptions, an improvement in customer satisfaction, and an improvement in the company's performance and competitive advantage (Gallarza, Gil-Saura & Holbrook 2011).

Delivering a superior value to customers has become a critical objective for marketers as this has a significant impact on Customer Satisfaction (Eggert & Ulaga 2002; Oh 1999; Tam 2004) and Behavioural Intentions (Gallarza, Gil-Saura & Holbrook 2011; Hu, Kandampully & Juwaheer 2009). For example, customers with positive perceptions of Customer Value tend to be satisfied with the product/service offered (Choi et al. 2004; Flint, Blocker & Boutin 2011; Gallarza, Gil-Saura & Holbrook 2011; Sánchez et al. 2006). Customer Value has an effect on Behavioural Intentions in the form of loyalty, retention, positive word-of-mouth communication (Tam 2004; Zeithaml 1988), and repurchase intentions (Wu, Liu & Hsu 2008), which leads to increasing market share (Ulaga 2001) and improving competitive advantage (Choi et al. 2004; Flint, Blocker & Boutin 2011).

3.1.2 Concept and definition of Customer Value

Though Customer Value is widely recognised in the services marketing literature, the growing number of research studies are still fragmented and do not provide consistency in defining the concept (Hu, Kandampully & Juwaheer 2009; Tam 2004; Wang, Lo & Yang 2004).

The Customer Value concept is complex and multi-faceted (Caruana, Money & Berthon 2000; Gallarza, Gil-Saura & Holbrook 2011), highly personal, peculiar to an individual and varies widely from one customer to another (Holbrook 1994; Hu, Kandampully & Juwaheer 2009). The term 'Value' is abstract. It has a diversity of meanings among consumers, practitioners and researchers (Gallarza, Gil-Saura & Holbrook 2011; Huber, Herrmann & Morgan 2001). This is because the concept has been interpreted according to its contexts and cultures (Sánchez et al. 2006). The discrepancy in the interpretations (Sweeney & Soutar 2001) results from the diversified approaches used in identifying the concept (Sánchez-Fernández, Iniesta-Bonillo & Holbrook 2009; Wang, Lo & Yang 2004; Woodruff 1997). The use of diversified approaches leads to the problem associated with theoretical definitions of the Customer Value construct (Caruana, Money & Berthon 2000; Gallarza & Gil-Saura 2006; Huber, Herrmann & Morgan 2001). Therefore, the

concept remains ambiguous for consumers, researchers, and practitioners (Woodruff 1997; Zeithaml 1988).

Nonetheless, from a consumer research point of view, the term ‘Customer Value’ is understood as being synonymous with ‘Perceived Value’ and ‘Value’. Whether understood as ‘Customer Value’, ‘Perceived Value’, or ‘Value’, it represents customers’ possession and consumption of products and services (Gallarza, Gil-Saura & Holbrook 2011; Gallarza & Gil-Saura 2006; Sánchez-Fernández, Iniesta-Bonillo & Holbrook 2009).

The concept of Customer Value has been revisited and refined in many streams of marketing literature, yet there is a lack of consistency which results in numerous interpretations of its conceptualisation (Boksberger & Melsen 2011; Sánchez-Fernández, Iniesta-Bonillo & Holbrook 2009). Research studies have defined the concept in different ways, for example, as a perceived preference for and evaluation by customers of the product attributes, performance attributes and consequences of the consumption of products/services (Woodruff 1997).

Customer Value can be defined as an evaluation of an object (e.g. a good or a service) by a subject (e.g. consumer) that interrelates among four facets: interactive, relativistic, preference and experience (Holbrook 1999). As interactive, Customer Value requires an interaction between some subjects (consumers) and some objects (products/services) and that interaction creates the constitution of Value. As relativistic, Customer Value is comparative (among objects), personal (varies across people), and situational (specific to the context). As preference, Customer Value is involved in various disciplines such as affect (pleasing and displeasing), attitude (like and dislike), evaluation (good and bad), predisposition (favourable and unfavourable), opinion (pros and cons), response tendency (approach and avoid), and valence (positive and negative). As experience, Customer Value is related to the consumption experience which the customer received rather than the product or services received or brand chosen.

Zeithaml (1988) proposes that “perceived value is a consumer’s overall assessment of the utility of a product based on perceptions of what is received and what is given... while value represents a trade-off the salient give and get components” (p. 14). It is not necessary that customers always select the best product or service, but rather, they choose on the basis of Value assessment by weighing the benefits they received with the sacrifices they made. It is a cognitive assessment of what they give and what they get from receiving the service (Wu, Liu & Hsu 2008). With the

definition given by Zeithaml (1988), Value has four meanings. Firstly, Value is low price. Secondly, Value is whatever one wants in a product/service. Thirdly, Value is the quality that the consumer receives for the price paid. Lastly, Value is what the customers get for what they give.

According to Flint, Woodruff and Gardial (1997), Value is developed based on three notions: values, desired value and value judgement. The notion of 'values' is viewed as implicit beliefs that guide behaviour. It is abstract, centrally held, desired end-states and higher-order goals. It is different from person to person and its performance/attachment is enduring. Next, the notion of 'desired value' is interpreted as what the customer wants to have happen (benefit sought). It is less abstract, less centrally held, lower-order goals, and benefits sought to facilitate higher-order goal achievement. Its performance/attachment is moderately enduring. Finally, the notion of 'value judgement' refers to the value assessment of what already has happened (benefits and sacrifices). It is an overall view of a trade-off between benefits and sacrifices actually made and its performance/attachment does not last long.

With regard to the above discussion, the fourth meaning of Customer Value given by Zeithaml (1988) is what the customers get for what they give. This is similar to the value judgement concept introduced by Flint et al. (1997) whose value is an overall view of trade-off benefits and sacrifices that actually happened. These two definitions have some aspects of interpretation in common. For instance, Customer Value is perceived by customers rather than providers (Hu, Kandampully & Juwaheer 2009). Next, the perceptions of Customer Value involve a trade-off between the benefits customers received and the sacrifices they made (Wang, Lo & Yang 2004). Further, Customer Value is assessed before purchase, at the time of purchase, and after purchase. Finally, Customer Value involves cognitive perspective (Sánchez et al. 2006). However, the interpretation of the definition of value proposed by Zeithaml (1988) is extensively adopted by researchers as a foundation for defining the concept of Customer Value (Gallarza & Gil-Saura 2006; Nasution & Mavondo 2008).

Based on the definitions proposed by Zeithaml (1988) and Flint et al. (1997), Customer Value in this thesis is defined as what the patients get for what they give as a trade-off between benefits and sacrifices in acquiring the medical services from the hospital.

3.1.3 Dimensionality of Customer Value

The interpretation of 'trade-off' and 'benefits-sacrifices' is commonly used as an approach to conceptualise Customer Value. The approach taken to the development of the dimensionality of Customer Value can be viewed either in a narrow perspective or in a broader perspective (Nasution & Mavondo 2008).

According to the interpretation in the narrow perspective, the concept of Customer Value is posited as a trade-off between benefits received and sacrifices made by customers (Sánchez et al. 2006). This concept is mainly focused on the economic theory of rational choice (Sánchez-Fernández, Iniesta-Bonillo & Holbrook 2009; Sánchez et al. 2006). The benefit is identified as quality of product/service customers received while sacrifice is viewed as price paid (Nasution & Mavondo 2008). Customer Value is created solely when customers perceive that the benefit received is more than the price paid (Nasution & Mavondo 2008). Customers consider whether or not they received value for money (Bolton & Drew 1991; Hu, Kandampully & Juwaheer 2009). When they perceive that the product/service they received is worth their spending, they are more likely to re-patronise the same provider (Wu, Liu & Hsu 2008).

Therefore, the narrow perspective of interpretation primarily concerns a monetary aspect to conceptualise the concept of value (Sánchez-Fernández, Iniesta-Bonillo & Holbrook 2009). This perceived value is conceptualised by cognitive perspective as a one-dimensional construct (Sánchez et al. 2006).

This narrow perspective is criticised as it reflects only one dimension of a bundle of the 'benefits-sacrifices' (Boksberger & Melsen 2011). Even though defining Customer Value based solely on the monetary aspect is important, it has been argued to be too simplistic (Bolton & Drew 1991; de Ruyter et al. 1997; Sánchez-Fernández, Iniesta-Bonillo & Holbrook 2009; Sweeney & Soutar 2001), not practicable (Huber, Herrmann & Henneberg 2007), not enough for conceptualisation (Boksberger & Melsen 2011), lacks validity (Boksberger & Melsen 2011) and ignores the multidimensionality of the construct (Sweeney & Soutar 2001).

Thus, the second approach based on a broader perspective of interpretation of Customer Value is developed which considers the total bundle of benefits and sacrifices (Sánchez et al. 2006).

Similar to the monetary aspect, even though the quality of products or services is considered as a core benefit to customers, it is too simple to identify Customer Value only as a function of quality (Bolton & Drew 1991; Ruiz et al. 2008). Perceived benefits are not regarded purely as the quality of products or services but as a combination of physical attributes, service attributes and technical support (Ravald & Grönroos 1996). The benefits refer to economic, quality, social and relationship (Sánchez et al. 2006).

As in the benefits concept, the sacrifices concept is defined much broader than just monetary cost. Perceived sacrifices are not only a price they pay but also an additional and non-monetary cost for customers when acquiring products/services (Grönroos 2004). The sacrifices refer to price, time, effort, risk, convenience (Sánchez et al. 2006), research costs (Petrick 2002), acquisition costs, transportation, and risk of failure or poor performance (Ravald & Grönroos 1996). This notion is similar to Sheth et al. (1991) who suggest that sacrifice presents categories of monetary, time, risk, human, and energy.

This broader perspective of interpretation of the Customer Value concept consists of both monetary and non-monetary aspects that reflect more than just one dimension of Customer Value (Nasution & Mavondo 2008). It is conceptualised based on the notion of a holistic representation of a complex phenomenon of several attributes or dimensions and posited as a multidimensional construct (Holbrook 1994; Sánchez-Fernández, Iniesta-Bonillo & Holbrook 2009; Sánchez et al. 2006; Sweeney & Soutar 2001).

The broader interpretation considers Customer Value as a multidimensional construct which overcomes some of the problems faced in the narrow approach such as the excessive concern on economic utility in particular (Sánchez et al. 2006) and the ability to explain the Customer Value concept (Boksberger & Melsen 2011). Indeed, the narrow approach based on comparing benefits and sacrifices is prominently cognitive and rational, whereas the broader approach attempts to explain the concept by taking both cognitive and affective perspectives into account (Sánchez et al. 2006). In addition, the multidimensional approach includes new theoretical developments, especially in relation to the role played by feelings in purchase and consumption behaviour (Sánchez et al. 2006; Zeithaml 1988).

Customer Value is a higher-order construct represented by benefits and sacrifices elements (Ruiz et al. 2008). Among the various multidimensional proposals,

Holbrook (1994) propounds the Customer Value typology by aggregating diverse aspects of the consumption experiences both in terms of cognitive and affective dimensions, categorised as extrinsic (social value and economic value) and intrinsic (hedonic and altruistic value). Based on Holbrook's (1994, 1999) model, Sanchez et al. (2009) support Customer Value as a multidimensional construct consisting of Efficiency, Quality, Social value, Play, Aesthetics and Altruistic value attributes.

Similar to Holbrook (1994), Sheth, Newman & Gross (1991) explain that Customer Value can be viewed as consumption values and can be used in predicting customer choice behaviour. They develop five value dimensions: Functional value, Conditional value, Social value, Emotional value and Epistemic value. Based on this model, Sweeney and Soutar (2001) introduced PERVAL to access customers' perceptions of value and describe it as consisting of four value dimensions: Emotional value, Social value, Functional value (price/value for money), and Functional value (performance/quality). Providing more specific meaning and direction of Customer Value, Petrick (2002) by consulting the SERVQUAL model of Parasuraman et al. (1985, 1988) has developed multiple dimensions of Customer Value specifically for service industry named SERV-PERVAL. The author suggests that Customer Value consists of five dimensions: Behavioural price, Monetary price, Emotional response, Quality (or Quality judgement), and Reputation.

A number of researchers developed the Customer Value dimensions further based on the early research. For example, Gallarza and Gil-Saura (2006) propose six dimensions (*Efficiency, Service quality, Social value, Play, Aesthetics, Perceived monetary cost, Perceived risk, and Time and effort spent*) for the tourism industry. Boetsch, Bieger and Wittmer (2011) measure the concept in the airline industry by five dimensions (*Journey time value, Product and service quality, Emotional value, Monetary costs, and Non-monetary costs*). Choo, Moon, Kim and Yoon (2012) propose four dimensions (*Utilitarian, Hedonic, Symbolic, and Economic*) to assess the Customer Value of luxury brands' consumers.

Customer Value introduced by Ruiz et al. (2008) comprises four dimensions: Service Quality, Service Equity (service image or brand equity), Confidence Benefits (benefit derived from an ongoing relationship with service provider), and Perceived Sacrifice (involve both monetary and non-monetary cost to obtain a service).

Gallarza, Gil-Saura & Holbrook (2011) and Chen & Hu (Chen & Hu 2010) suggest that Customer Value in consumer behaviour literature is summarised into two main dimensions. Gallarza et al. (2011) denote that it comprises the economic dimension and psychological dimension. The economic dimension is related to the perceived price and known as transaction value (cognitive perspective) whereas the psychological dimension is associated with the cognitive and affective influences (e.g. product purchase and brand choice). Similarly, Chen & Hu (2010) state that Customer Value consists of two dimensions: Functional and Symbolic. The Functional value reflects an overall assessment of value in relative to quality, price and convenience characteristics whereas Symbolic value represents the value perception from the social, reputation, emotional, and aesthetic components.

As discussed above, the interpretation of a broader perspective of the Customer Value concept covers and explains the concept better than an interpretation within a narrow perspective. Especially in the hospital sector, the concept is not only concerned with how much money the patients pay for the medical services but also other factors including the prestige or reputation of the providers (Choi et al. 2004), the emotional response, the enjoyment, and the experience from receiving the services (Petrick 2002; Sweeney & Soutar 2001).

3.1.4 Service Quality and Customer Value

The concept of Customer Value gained importance during the 1990s among scholars, researchers and practitioners. In an endeavour to better understand Service Quality, Customer Value emerged as an important concept to customer service experience (Gallarza, Gil-Saura & Holbrook 2011). However, the measure of Service Quality and Customer Value is different. Customer Value is viewed as a more realistic and individualistic measure whereas Service Quality is viewed as an absolute measure. This means Customer Value has an advantage over Service Quality in terms of flexibility and adaptability in capturing changes in the behaviour of consumers (Gallarza, Gil-Saura & Holbrook 2011). As the concept of Customer Value is involved in the give-and-get component (Zeithaml 1988), Service Quality is acknowledged as the 'get' component by researchers (Gallarza, Gil-Saura & Holbrook 2011).

In addition, whereas Service Quality is viewed as a cognitive construct (Choi et al. 2004; Gallarza, Gil-Saura & Holbrook 2011; Spreng, Hui Shi & Page 2009), Customer Value is viewed as a combination between cognitive and affective

constructs (Gallarza, Gil-Saura & Holbrook 2011; Holbrook 1994; Sánchez et al. 2006).

3.1.5 Customer Value in the healthcare context

Most research studies have conceptualised Customer Value as an evaluation of perceived benefits and perceived sacrifices based on the perception of what is received and what is given (Gallarza & Gil-Saura 2006; Nasution & Mavondo 2008). In the healthcare sector, benefits are mainly considered as a result of Service Quality outcomes and processes. Even though delivery of superior service performance is viewed as a significant element of perceived benefits, patients may consider the importance of other components such as the reputation of the provider, the beauty of the premises and the feeling in treatment (Wang & Chen 2011). On the other hand, perceived sacrifices in the patients' view have two aspects: monetary and non-monetary (Choi et al. 2004). The monetary aspect is the price they paid for the hospitalisation and consultation while the non-monetary aspect is comprised of aspects such as the time spent and the experiences with the hospital provider (Choi et al. 2004). The concept of perceived benefits and perceived sacrifices has been revisited by Wang & Chen (2011) who propose a model of Patient Perceived Value (PPV) consisting of three aspects instead of two (monetary and non-monetary) as other service industries do. The three aspects are perceived benefits, perceived sacrifices, and perceived risk.

Customer Value in the healthcare context has been neglected by providers especially when forming a marketing strategy (Choi et al. 2004; Wu, Liu & Hsu 2008). Given that it is an essential indicator to predict Behavioural Intentions, healthcare managers need to understand the nature and relationships between patients' Customer Value and Customer Satisfaction which leads to patients' Behavioural Intentions (Choi et al. 2004).

The Customer Value concept in healthcare service literature is limited, and there are very few research publications from the patients' perspective (Wang, Huang & Howng 2011). As such, the concept is fragmented and lacks consensus (Wang & Chen 2011; Wu, Liu & Hsu 2008). Despite this scarcity of research on Customer Value in the healthcare context, there are some empirical studies investigate the relationships between Service Quality, Customer Value, Customer Satisfaction,

and Behavioural Intentions such as the works of Choi et al. (2004), Cronin Jr, Brady & Hult (2000), Wu, Liu & Hsu (2008) and Omar et al. (2010).

Among the limited research in the healthcare context, Customer Value has been found to be conceptualised more as an unidimensional construct such as the works of Choi et al. (2004), Cronin Jr, Brady & Hult (2000), Wu, Liu & Hsu (2008) and Omar et al. (2010) and less as a multidimensional construct, such as the works of Chahal & Kumari (2011) and Hu et al. (2010). The following are the studies that conceptualise Customer Value as a multidimensional construct in the healthcare context.

The concept of Customer Value consists of six dimensions in Chahal & Kumari's (2011) study of the relationships between Customer Value and Customer Loyalty in the Indian healthcare sector: Transaction value, Efficiency value, Aesthetic value, Social interaction value, Self-gratification value, and Acquisition value. The study by Hu et al. (2010) suggests that Customer Value comprises two dimensions, namely, the Cost-time value and Comparison with other medical service value of the hospital (p. 3211). Wang & Chen (2011) propose three dimensions: Perceived benefits, Perceived sacrifices, and Perceived risk.

3.1.6 Summary of Customer Value

Even though Customer Value can be conceptualised as unidimensional and multidimensional construct, unidimensionality is criticised for purely focusing on the monetary aspect and failing to consider the other aspects of Customer Value.

Despite the importance of Customer Value as an essential predictor of consumer behaviour, there is not much research that includes Customer Value in the study of healthcare, especially the inclusion of Customer Value as a multidimensional construct.

3.2 Customer Satisfaction

This section commences with the importance of Customer Satisfaction (Section 3.2.1), followed by the definition, theories and dimension of the construct (Section 3.2.2). Next is a comparison of Service Quality and Customer Satisfaction constructs (Section 3.2.3) and Section 3.2.4 is the discussion about the relation of Customer Satisfaction and Customer Value. Sections 3.2.5 and 3.2.6 are devoted to the antecedents and consequences of Customer Satisfaction. Section 3.2.7 reviews Customer Satisfaction in the healthcare context. Section 3.2.8 is the summary of Customer Satisfaction.

3.2.1 Importance of Customer Satisfaction

Achievement of Customer Satisfaction is considered as one of the most primary goals among players in the services industry (Hanan & Karp 1989; Hu et al. 2010; Jones & Sasser Jr 1995). Szymanski and Henard (2001, p. 16) state that “Customer Satisfaction has come to represent an important cornerstone for customer-oriented business practices across a multitude of companies operating in diverse industries.” The concept is prominent in a market-oriented firm (Kandampully & Suhartanto 2000) because it enhances a higher profit and influences positive customer behaviours (Oliver 1997). In addition, a firm with higher Customer Satisfaction benefits by attracting better employees and enjoying superior human capital performance (Dess & Shaw 2001). To achieve Customer Satisfaction is not to sell and not to service, but to satisfy the needs that drive a customer to do business and that the customer is the primary source of the company’s revenue (Hanan & Karp 1989; Tam 2004).

Therefore, to satisfy customers’ needs and wants is one of the most significant topics in services literature (Laohasirichaikul, Chaipoopirutana & Combs 2011). Consumer behaviour literature affirms that Customer Satisfaction can be used to predict future consumer behaviour (Kim, Lee & Yoo 2006; Lambert 1998) such as loyalty, repurchase intentions and positive word-of-mouth communication (*Country lists based on United Nations country grouping* 2013; Kim, Lee & Yoo 2006; Li, Huang & Yang 2011; Seiders et al. 2005). Satisfied customers are likely to buy products or services offered by a provider more often and to say positive things about the provider to others (Agarwal 2011; Hu et al. 2010; Kim, Lee & Yoo 2006; Lee, Chang & Chao 2007). They are willing to pay a higher price for

quality products and services due to the fact that Customer Satisfaction reduces price elasticity (Matzler & Hinterhuber 1998).

Positive Customer Satisfaction has a strong impact on company performance such as higher sales through customer loyalty and inelastic price of goods and services (Luo & Homburg 2007). On the other hand, negative Customer Satisfaction leads to critical unfavourable consequent behaviours such as switching provider, influencing others by spreading negative perceptions, and discrediting the provider's reputation by sharing unpleasant experiences with others (Hu et al. 2010; Sanjaya Singh et al. 2011; Suki, Lian & Suki 2011). Many studies have evidenced the positive relationship between Customer Satisfaction and customer retention and loyalty (Anderson, Fornell & Lehmann 1994; *Country lists based on United Nations country grouping* 2013; Kim, Lee & Yoo 2006; Oh 1999; Shamdasani, Mukherjee & Malhotra 2008), company performance (Homburg, Koschate & Hoyer 2005; Williams & Naumann 2011), financial performance and profit (Anderson, Fornell & Lehmann 1994; Luo & Homburg 2007; Oliver 1997).

3.2.2 Definition, nature and concept of Customer Satisfaction

3.2.2.1 Definition of Customer Satisfaction

“Everyone knows what satisfaction is until asked to give a definition. Then it seems, nobody knows” (Oliver 1997, p. 13)

While it has been seen now and then that firms denote their company's motto such as ‘Our focus is Customer Satisfaction’ and ‘Customer is the king’ (Butt & Murtaza 2011), the endeavours at definitional considerations gain little attention from researchers and practitioners (Giese & Cote 2000).

Despite numerous empirical studies on Customer Satisfaction, there has been no universal agreement regarding the definition of Customer Satisfaction among researchers (Giese & Cote 2000; McCollough, Berry & Yadav 2000; Mill 2011). The lack of consensus on a definition limits research in Customer Satisfaction and has restricted the ability to establish valid measures (Giese & Cote 2000), and also the ability to compare and interpret empirical results (Gardial et al. 1994; Giese & Cote 2000; Peterson & Wilson 1992).

One of the most popular definitions of Customer Satisfaction is proposed by Oliver (2011): “Satisfaction is the consumer’s fulfilment response. It is a judgement that a product or service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfilment, including levels of under- or over-fulfilment” (p. 1). Customer Satisfaction can be viewed as an overall assessment of the consumption experience: whether the product or service has met customers’ predetermined set of requirements and expectations (Bitner 2003). Customer Satisfaction is a result of customers’ comparison of the outcome of purchase between the benefits and costs in relation to the anticipated consequences (Churchill Jr & Surprenant 1982). Customers are considered to be satisfied when they get more benefits than the costs they paid for services/products (Hu et al. 2010). Oliver (1980) suggests that Customer Satisfaction is an evolution of customers’ perceptions resulting from acquisition and/or consumption experience. Even though the literature indicates a variety, an inconsistent and overlapping in the definitions of Customer Satisfaction, there are three common components: 1) Customer Satisfaction is a response (either affective or cognitive), 2) the response relates to a particular focus (e.g. expectations, product, and consumption experience), and 3) the response occurs at a particular time (e.g. after consumption or based on accumulated experiences) (Giese & Cote 2000, p. 4).

3.2.2.2 Nature and Concept of Customer Satisfaction

The above discussion has underlined the controversy surrounding the definitions of Customer Satisfaction specifically based on the reviews of Giese and Cote (2000). The following discussion moves towards the nature and concept of Customer Satisfaction. It is conceptualised by three major approaches: a cognitive and affective aspects of satisfaction, an expectancy disconfirmation approach, and a cumulative and transaction-specific approach.

Customer Satisfaction concept based on Cognitive and Affective aspects: One ongoing debate in Customer Satisfaction paradigms is to find out the extent to which it is a cognitive or affective process (Mill 2011). A number of studies consider that Customer Satisfaction is an affective (emotional) state rather than a cognitive process (Olsen 2002; Owusu-Frimpong, Nwankwo & Dason 2010; Spreng, Hui Shi & Page 2009). Gill and White (2009) and Olorunniwo and Hsu (2006) affirm that satisfaction is an emotional affect resulting from a cognitive evaluation process of the products/services experience and it is subject to individual perception. Therefore, it is an affective construct.

Customer Satisfaction is used for a customer's subjective judgement of service and for evaluating a cognitive construct of Service Quality (*Country lists based on United Nations country grouping* 2013). Based on Gill and White (2009) and the aim of this thesis, Customer Satisfaction is acknowledged as an affective construct resulting from a cognitive evaluation process.

Customer Satisfaction concept based on Expectancy Disconfirmation: An expectancy disconfirmation concept is a common approach to explain how customers evaluate their experience and form satisfaction judgement (Oliver 1997). The approach is composed of three steps. Firstly, customers naturally form expectations before consumption (Oliver 1993). Next, they consider product/service performance (attribute performance). After that, they form disconfirmation perceptions and compare these with their expectation level.

The result of this comparison is satisfaction judgement, termed an expectancy disconfirmation. Customer Satisfaction, therefore, is an outcome of comparison between expectation and actual service experiences (Olorunniwo & Hsu 2006).

However, Oliver (2011) adds that Satisfaction can occur from a direct effect of performance and does not need comparison between expectation and actual service experience. This direct effect is termed expectancy disconfirmation with performance.

Customer Satisfaction concept based on Transaction-Specific and Cumulative Evaluation: The level of transaction-specific and cumulative evaluation (overall satisfaction) is another approach to conceptualising Customer Satisfaction (Boulding et al. 1993; Jones & Suh 2000; Kuo, Wu & Deng 2009; Oliver 1997).

The transaction-specific evaluation focuses on individual Customer Satisfaction at each transaction or service encounter (Johnson, Anderson & Fornell 1995). The product and/or service is evaluated immediately after consumption (Oliver 1997). Therefore, it is an affective evaluation of the first consumption with a new product or service (Tuun & Olsen 2010). It refers to the results of customer evaluation of satisfaction based on the last purchase experience (Kuo, Wu & Deng 2009).

Cumulative satisfaction (overall satisfaction), on the other hand, can be viewed as a function of all previous transaction-specific satisfactions (Teas 1993). It is an overall affective evaluation of product or service from accumulated experience over time (Anderson, Fornell & Lehmann 1994). Transaction-specific is a particular event of service encounter while cumulative satisfaction is about holistic

impressions and is an aggregation of all previous transaction-specific evaluations (Jones & Suh 2000).

Similarly, Zeithaml & Bitner (2003) note that there are two ways of viewing Customer Satisfaction: as a service encounter satisfaction or as an overall satisfaction. That means Satisfaction can occur either at each service experience or based on multiple experiences. A little satisfaction at single service encounters is counted towards overall satisfaction.

Results from empirical studies (Boulding et al. 1993; Homburg, Koschate & Hoyer 2005; Johnson, Anderson & Fornell 1995; Tuu & Olsen 2010) suggest that transaction-specific satisfaction and cumulative satisfaction are different constructs. In order to determine which approach is suitable for measuring satisfaction, Parasuraman et al. (1988) recommend that the cumulative satisfaction is more effective in evaluating the service performance. When the goal is to predict customer behavioural or repurchase intentions, cumulative satisfaction would be suggested. If the goal is to monitor Customer Satisfaction at the service encounter level, transaction-specific satisfaction is recommended to identify problems (Jones & Suh 2000).

3.2.3 Comparison of Service Quality and Customer Satisfaction

Many researchers have debated over Service Quality and Customer Satisfaction. Some state that Customer Satisfaction and Service Quality are highly similar constructs (Bitner & Hubbert 1994; Churchill Jr & Surprenant 1982; Olsen 2002) and often being treated interchangeably (Bei & Chiao 2001; Chen 2008; Kleinsorge & Koenig 1991). However, these are distinct constructs even though they are closely related (Cronin Jr & Taylor 1992; Johnston 1995; Li, Huang & Yang 2011; Oliver 1993a; Shemwell, Yavas & Bilgin 1998; Wu, Liu & Hsu 2008; Zeithaml, Berry & Parasuraman 1993). They are independent constructs but have a positive relationship; that is, increased Service Quality is likely to increase Customer Satisfaction (Mansor & Che Hamdan Che Mohd 2010).

To distinguish Service Quality from Customer Satisfaction is an area that has caused considerable confusion in the marketing literature (Anderson & Fornell 1994). In an attempt to clarify this confusion, the evaluation of expectation (Boulding et al. 1993; Spreng & Mackoy 1996), the intensity of the transaction – either transaction-specific or cumulative judgement (Oliver 1997) and the cognitive and affective processes (Taylor & Baker 1994) are three approaches used to differentiate these two constructs.

3.2.3.1 Differentiation of Service Quality from Customer Satisfaction by the Evaluation of Expectation

Although Service Quality and Customer Satisfaction are concerned with evaluation of expectation, they are expressed differently (Spreng & Mackoy 1996). Service Quality is based on expectancy perception, whereas satisfaction is the discrepancy between the expectancy and disconfirmation (Johnston 1995; Oliver 1993a). To understand Customer Satisfaction, predictive expectations are used as a benchmark of comparison, which reflects what 'will' happen during future transactions. On the other hand, Service Quality uses a different method of evaluation. To understand Service Quality's expectation, customers compare a firm's performance with their perception of how it 'should' provide services (Spreng & Mackoy 1996).

The terms ('will' for Satisfaction and 'should' for Service Quality) used are similar to Reeves and Bednar (1994), Cronin and Taylor (1992), and Boulding et al. (1993). Reeves and Bednar (1994) suggest that customers form their expectation of Satisfaction from what 'would' happen, whereas in the case of Service Quality, customers form their expectation from what they feel 'should' be offered by the provider. Cronin and Taylor (1992) advocate that Satisfaction is a mirror of 'something that will happen' while Service Quality is a mirror of 'something that should be provided by the firm'. Boulding et al. (1993) recommend that Satisfaction uses the desirable expectation (or 'will') and Service Quality uses the ideal expectation (or 'should') for the differentiation between these two constructs.

3.2.3.2 Differentiation of Service Quality from Customer Satisfaction by the transaction intensity

Many researchers apply the concept of transaction intensity (transaction-specific and cumulative judgement) to identify the distinction between Service Quality and Customer Satisfaction (Baker & Crompton 2000; Spreng & Mackoy 1996; Westbrook & Reilly 1983). Satisfaction-oriented researchers give priority to a specific transaction while Service Quality-oriented researchers emphasise cumulative judgement (Boulding et al. 1993). Satisfaction is likely as a reflection of a short-term transaction-specific measurement whereas Service Quality results from a forming of attitude on overall evaluation over a period of time (Taylor & Cronin Jr 1994). Perceived Service Quality is related to the superiority of the service. It is a global judgement, a summary of attitude towards a service over a period of time after several experiences (cumulative judgement). On the other

hand, Satisfaction is related to a specific service transaction (Baker & Crompton 2000; Parasuraman, Zeithaml & Berry 1988).

However, the intensity of the transaction may lead to difficulty in making a distinction between Service Quality and Customer Satisfaction constructs. Results from an empirical study (Bitner & Hubbert 1994) suggest that customers find it difficult to differentiate between overall perception of Service Quality (based on cumulative judgement in terms of superiority) and satisfaction/dissatisfaction (result of repetitive satisfaction of transaction-specific encounters). Customer Satisfaction may arise as a response not only to a specific service encounter but also to their accumulation over time and then will finally form an impression of overall quality. Therefore, the repetitive satisfaction from each transaction-specific encounter may result in a positive global judgement of satisfaction (Oliver 1997).

3.2.3.3 Differentiation of Service Quality from Customer Satisfaction by cognitive and affective judgement

A cognitive and affective judgement is another dominant view to identify the difference between Service Quality and Customer Satisfaction. Service Quality is usually accepted as a cognitive judgement, whereas Customer Satisfaction is more an affective evaluation (Gallarza, Gil-Saura & Holbrook 2011; Oliver 1997; Oliver 1993a; Smith Gooding 1995; Spreng, Hui Shi & Page 2009). Service Quality is rational and formed by evaluation and judgement, while Customer Satisfaction is formed by feeling or emotional approach (del Bosque & Martín 2008).

The SERVQUAL scale is a significant indicator confirming that Service Quality is a cognitive judgement because customers use their judgement in evaluation of Service Quality scale (Choi et al. 2004). Furthermore, most studies (Oliver 1997; Taylor 1994) agree that Customer Satisfaction is a result of an affective formation. This is because cognitive is a perceived judgement-based approach, whereas affective is an emotion-based approach (Schoefer 2010).

By using a cognitive-affective judgement approach, a causal direction in the structural relationship between Service Quality and Customer Satisfaction can be identified (Li, Huang & Yang 2011). When Service Quality is treated as a cognitive construct and Customer Satisfaction as an affective construct, Service Quality is an antecedent to Customer Satisfaction (Choi et al. 2004; Wu, Liu & Hsu 2008). Even though some researchers have identified Customer Satisfaction as an antecedent of Service Quality (Bitner & Hubbert 1994; Bolton & Drew 1991;

Parasuraman, Zeithaml & Berry 1988), the Service Quality construct is generally accepted and acknowledged as antecedent to Customer Satisfaction (Cronin Jr & Taylor 1992; Gallarza, Gil-Saura & Holbrook 2011; Kuo, Wu & Deng 2009; Oliver 1993a).

Despite the similarities between Service Quality and Customer Satisfaction, researchers have identified aspects that differentiate these two constructs, as summarised in Table 3.1.

Table 3.1: Summary of studies on the differences between Service Quality and Customer Satisfaction

Source	Service Quality	Customer Satisfaction
Gallarza et al. (2011)	<ul style="list-style-type: none"> - Service Quality does not depend on experience. - The dimensions are fairly specific and cognitive. - The assessment is by positive or descriptive approach. 	<ul style="list-style-type: none"> - Customer Satisfaction is a judgement of a post-consumption or experience based. - The dimensions cover a broader range of cognitive and affective aspects. - The assessment is by normative or prescriptive approach.
Johnson et al. (1995)	<ul style="list-style-type: none"> - Service Quality is evaluated by the differences between expectancy and perception. 	<ul style="list-style-type: none"> - Customer Satisfaction is evaluated by the differences between expectancy disconfirmation as in satisfaction.
Reeves and Bednar (1994)	<ul style="list-style-type: none"> - Expectation is a prediction of what “would” happen, based on perception of excellence. 	<ul style="list-style-type: none"> - Expectation reflects the feeling of what “should” happen, based on quality and non-quality issues.
Oliver (1997a), Dagger et al. (2007)	<ul style="list-style-type: none"> - It is a cognitive judgement. 	<ul style="list-style-type: none"> - It is more of an affective judgement.
Rust and Oliver (1994), Padma et al. (2009), Oliver (1993b)	<ul style="list-style-type: none"> - Perceptions on quality do not require prior experience with service provider. 	<ul style="list-style-type: none"> - Judgement on satisfaction requires experience with service provider.
Baker and Crompton (2000)	<ul style="list-style-type: none"> - Service Quality is a summary of attitude towards a service over a period of time after several experiences. 	<ul style="list-style-type: none"> - Satisfaction is related to a specific service transaction.
Choi et al. (2004), Lee et al. (2000), Dagger et al. (2007)	<ul style="list-style-type: none"> - Service Quality is an antecedent of Customer Satisfaction. 	<ul style="list-style-type: none"> - Customer Satisfaction is a consequence of Service Quality.
Padma et al. (2009)	<ul style="list-style-type: none"> - Customer evaluates a service process or a Service Quality at a specific point in time. 	<ul style="list-style-type: none"> - Customer Satisfaction involves both process and end-state, thus both cognitive and emotional elements are accounted.
Padma et al. (2009)	<ul style="list-style-type: none"> - Service Quality usually does not consider prices. 	<ul style="list-style-type: none"> - Customer Satisfaction tentatively relates to value and price.
Narang (2010)	<ul style="list-style-type: none"> - Patients rate the quality of service by the specific aspects they perceived. 	<ul style="list-style-type: none"> - Customer Satisfaction covers not only specific aspects of services but also reflects their values, experiences and expectations.

3.2.4 Customer Value and Customer Satisfaction

Customer Value has been found to have an important relationship with Customer Satisfaction (Choi et al. 2004; Kuo, Wu & Deng 2009). It is commonly accepted as an antecedent of Customer Satisfaction rather than the other way around (Caruana, Money & Berthon 2000; Chen 2008; Dagger, Sweeney & Johnson 2007; Gallarza, Gil-Saura & Holbrook 2011; Petrick 2004). This is because Customer Value is considered as a pre-purchase and encounter-specific input to Customer Satisfaction (Caruana, Money & Berthon 2000) whereas Customer Satisfaction is considered as a post-consumption judgement based on one's experience (Gallarza, Gil-Saura & Holbrook 2011; Wang & Chen 2011). Therefore, the in-depth learning of Customer Value is useful for marketers as a back-up strategy in order to satisfy the customer (Woodruff 1997).

3.2.5 Antecedents of Customer Satisfaction

The three measures, namely SERVQUAL (Parasuraman et al. 1985), SERVPERF (Cronin & Taylor 1992) and disconfirmation of expectations approach (Oliver 1980), have been generally used in predicting Customer Satisfaction (Andreassen & Lindestad 1998). Although the measurement process of both Service Quality and Customer Satisfaction is based on a disconfirmation paradigm (Iacobucci, Ostrom & Grayson 1995), the approach to defining disconfirmation is different. Disconfirmation in Customer Satisfaction literature uses a 'better than/worse than' approach (Oliver 1980), whereas the disconfirmation in Service Quality literature, especially the gap model of SERVQUAL, is a cognitive difference between perceived performances and expectations (Iacobucci, Ostrom & Grayson 1995).

The attributions of Customer Satisfaction have been elaborated by Oliver (1997b) in three components: 1) the direct effect of performance on satisfaction, 2) the indirect effect of performance on satisfaction (through disconfirmation), and 3) the combination of disconfirmation and performance. These three components are termed 'complete expectancy disconfirmation with performance model'. The application of this model is a result of any one of seven measured antecedents of satisfaction: 1) expectation only; 2) performance only; 3) disconfirmation only; 4) expectation and performance only; 5) expectation and disconfirmation; 6) performance and disconfirmation; and 7) expectation, disconfirmation and performance.

Results from a study by Anderson and Sullivan (1993) support the sixth measured antecedent of Oliver's and affirm that Customer Satisfaction is a function of both perceived quality (performance) and disconfirmation, not the expectation (the first measured antecedent of Customer Satisfaction) that has been frequently suggested in the literature. The findings also suggest that when quality does not meet the expectation (negative disconfirmation), it has more effect on satisfaction than when quality exceeds expectation (positive disconfirmation).

Even though most marketing researchers agree that Service Quality performance leads to Customer Satisfaction (Dabholkar, Shepherd & Thorpe 2000; Etgar & Fuchs 2009; Oh 1999; Yu et al. 2005), recent researchers have also identified Customer Value as an important antecedent (Choi et al. 2004; Dagger, Sweeney & Johnson 2007; Eggert & Ulaga 2002; Flint, Blocker & Boutin 2011; Wu, Liu & Hsu 2008). Therefore, Customer Value is introduced into this thesis as one of the antecedents of Customer Satisfaction besides Service Quality.

3.2.6 Consequences of Customer Satisfaction

Customer Satisfaction has been accepted widely by both practitioners and researchers as determining the behavioural patterns of customers and affecting organisations' performances (Luo & Homburg 2007). However, most research studies pay attention to the consequence of Customer Satisfaction in relation to customer-related categories including customer behaviour and behavioural intentions (Luo & Homburg 2007). A number of empirical studies suggest that Customer Satisfaction has a positive impact on repurchase intentions (Kuo, Wu & Deng 2009), willingness to pay a higher price (Homburg, Koschate & Hoyer 2005), loyalty (Boshoff & Gray 2004; Flint, Blocker & Boutin 2011; Hu et al. 2010; Lai, Griffin & Babin 2009; Lee, Jeon & Kim 2011), retention (Seiders et al. 2005), positive word-of-mouth communication, and willingness to recommend (Anderson 1998; Chaniotakis & Lymperopoulos 2009; Chen 2008). Table 3.2 illustrates a variety of consequences of Customer Satisfaction in different service industries.

Table 3.2: Consequences of Customer Satisfaction

Source	Context	Consequences of Customer Satisfaction
Olorunniwo and Hsu (2006)	Retail banking	Willingness to recommend the bank to someone else, continue to use bank service, consider the bank fee is reasonable.
Chen (2008)	Airline passengers	The likelihood to fly with this airline again and recommend this airline to the other.
Hu et al. (2009)	Hotel customers	Positive impact on corporate image, word-of-mouth, repurchase intention, and price sensitivity
Lai et al. (2009)	Telecom (mobile)	Satisfied customers tend to recommend provider to friends and family and not to switch to other provider
Kuo et al. (2009)	Mobile value-added service	Continue to use the value-added services and recommend to others
Chen and Chen (2010)	Heritage tourists	Intention to revisit and willingness to recommend
Spreng et al. (2009)	Business to business marketing	The likeliness to use the distribution centre
Yu et al. (2005)	Automotive (Luxus)	Negative relation to customer complaints and positive relation to customer loyalty
Homburg et al. (2005)	Restaurant customers and CD-Rom tutorial	Strong positive impact on willingness to pay
Williams and Naumann (2011)	Fortune 100 (a firm-level analysis)	Strong effect on customer retention, revenue, earning per share, stock price
Tam (2004)	Restaurant	Positive effect on re-patronage, recommendation, and loyalty
Wang et al. (2004)	Telecom (China)	Repurchase and recommend to others

3.2.7 Customer Satisfaction in the healthcare context

Healthcare service providers are urged to pay attention to understanding patients' needs and to satisfy them. To achieve this goal, patient satisfaction is treated as one of the most desired outcomes and absolutely essential in the strategic processes of hospital providers (Choi et al. 2004; Donabedian 1988).

The concept of satisfaction is well researched in the healthcare context. Many scholars apply the Customer Satisfaction concept to the hospital service industry and use the term 'patient satisfaction' as an analogue of Customer Satisfaction in the hospital setting (Lee et al. 2010). Patient satisfaction is a significant indicator for evaluation of Service Quality in the healthcare industry. Patients use their Satisfaction as an indicator to choose a healthcare provider (Donabedian 1996). Hospital providers use Customer Satisfaction as a guideline to adjust their medical service process and marketing strategy in order to increase the Satisfaction

perceived by patients (Lee et al. 2010). Patients' perceptions of satisfaction are important because both satisfaction and dissatisfaction provide opportunity for improvement for hospital management (González-Valentín, Padín-López & De Ramón-Garrido 2005). Patient satisfaction influences the rates of compliance of the hospital, retention and loyalty (Choi et al. 2005). Its measurement provides information regarding patients' perceptions in a form that can be used for evaluating and monitoring the hospital service process (Avis, Bond & Arthur 1995).

Studies in the healthcare industry suggest that expectation, perception and medical service experiences are key factors to influence patient satisfaction (Choi et al. 2004; Naidu 2009; Padma, Rajendran & Lokachari 2010). In the hospital context, Service Quality has been identified as the antecedent of Customer Satisfaction (Andaleeb 2001; Boshoff & Gray 2004; Padma, Rajendran & Lokachari 2010; Taner & Antony 2006) as well as Customer Value (Choi et al. 2004; Wu, Liu & Hsu 2008).

To understand factors influencing patient Satisfaction, many healthcare researchers employ the dimensions of Service Quality and Customer Value (Choi et al. 2005), see Table 2.2 in Chapter 2.

For example, Tangibility, Reliability, Responsiveness, Assurance, Courtesy, and Empathy are used to predict Customer Satisfaction and future purchase of hospitals in Turkey (Zaim, Bayyurt & Zaim 2010). The quality of hospital facilities, the confidence of the staff and the service quality of the healthcare process are determinants of Customer Satisfaction through Customer Value as a mediator in Taiwan hospitals (Sheng-Hsiung 2010). The Perceived quality, Hospital image and Perceived value influence Customer Satisfaction whereas the Customer expectation is not a direct predictor of Customer Satisfaction (Hu et al. 2010).

Customer orientation, Customer value, and Medical service quality are significant determinants of Customer Satisfaction in Lee's (2010) study of the Kaohsiung Medical University Hospital in Southern Taiwan. Yesilada and Direktor (2010) reveal that Reliability-confidence, Empathy and Tangibles dimensions have a certain influence on patient Satisfaction in private hospitals. However, the Tangibles dimension exerts no influence on Satisfaction in public hospitals. Findings from Padma et al.'s (2010) study on Customer Satisfaction among patients and attendants (family and friends) in public and private hospitals in India suggest that Infrastructure, Personal quality, Process of clinical care,

Administrative procedures, Safety indicators, Hospital image, Social responsibility and Trustworthiness of hospital are the factors that influence Customer Satisfaction.

Although healthcare researchers have found various attributes of patient Satisfaction, the SERVQUAL framework has played a dominant role in the service environment and hospital services (Andaleeb 2001). Several research studies in the healthcare sector have identified factors or attributes that contribute to patient satisfaction. Table 3.3 presents a summary of the findings of the studies on satisfaction in the healthcare context.

Table 3.3: Customer Satisfaction studies in the healthcare context

Sources	Country	Finding
Veerasoontom, Zee & Sivayathorn (2011)	Thailand	The authors argue that although low price and highly medical quality are significant to the success of healthcare providers, the results from the study reveal that patient-centred and highly personalised Service Quality are the most influential factors to Customer Satisfaction and re-patronage.
Omar et al. (2010)	Malaysia	The findings reveal that Service Quality and Customer Value are significant antecedents to Customer Satisfaction. Customer Value plays an important role of mediator between Service Quality and Customer Satisfaction.
Padma et al. (2010)	India	The authors investigated the relationship between Service Quality on patients' and attendants' perspectives and their satisfaction. The results revealed that personal quality is the most significant factor predicting patients' and attendants' Satisfaction. Personal quality, clinical care, image and trustworthiness influence patients' satisfaction while infrastructure, personal quality and administrative procedures strongly influence attendants' satisfaction.
Etgar & Fuchs (2009)	Israel	The Service Quality provided by physicians has an important effect on patients' attitude response along cognitive, affective and conative levels.
Wu et al. (2008)	Taiwan	Service Quality and Customer Value are important antecedent variables with direct and indirect effect to patient satisfaction and behavioural intentions in the Taiwan healthcare context.
Choi et al. (2005)	South Korea	The causal relationship between Service Quality and Customer Satisfaction existed and the pattern of relationship is similar across the gender, age, and service type subgroups.
Kara et al. (2005)	Turkey	The intangible factors are more significant than tangible factors in influencing Service Quality and Customer Satisfaction.
Choi (2004)	South Korea	Both Service Quality and Customer Value are important determinants of patient satisfaction. Service Quality exerts a stronger effect on patient satisfaction than Customer Value.
Boshoff & Gray (2004)	South Africa	Service Quality is positively correlated with satisfaction. Especially services provided by nursing staff has the most influence on patient satisfaction followed by fees and meals.
Tucker & Adams (2001)	USA	Caring, empathy, reliability and responsiveness are antecedents to patient satisfaction.

3.2.8 Summary of Customer Satisfaction

Customer Satisfaction is one of the most important concepts in the service literature as it is used as an evaluation of Service Quality and predictor of consumer behaviour. Despite its importance, the endeavours at defining the construct have not gained much attention from researchers and yet no universal agreement regarding the definition of Customer Satisfaction.

Most of the satisfaction literatures suggest that Customer Satisfaction is an affective construct. Customer Satisfaction can be a response either to a specific service encounter or the accumulation of each service encounters over time.

Even though Service Quality and Customer Satisfaction are highly similar constructs, they are distinct. The approaches, such as the evaluation of expectation, the transaction intensity and the cognitive VS affective judgement are used for the differentiation.

In service literature, Customer Satisfaction is commonly conceptualised as a unidimensional construct. Its antecedents are Service Quality and Customer Value. Customer Satisfaction is generally identified as an important predictor of consumer behaviour.

3.3 Behavioural Intentions

The Behavioural Intentions section consists of a review of its importance (Section 3.3.1), the concept (Section 3.3.2) and the relationships between Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions (Section 3.3.3).

3.3.1 Importance of Behavioural Intentions

Behavioural Intentions is generally accepted as a better predictor of performance than Service Quality or Customer Satisfaction (Žabkar, Brenčič & Dmitrović 2010). It can be used as an indicator of whether customers will remain with the provider or switch to other providers and has a significant impact on the firm's performances (Ladhari 2009). Favourable Behavioural Intentions lead to positive word-of-mouth communication, insensitive price (premium price: customer pays higher price at the provider than competitors), buying more products/services from provider, re-patronising, and remaining loyal. On the other hand, unfavourable Behavioural Intentions lead to negative courses of actions such as spreading

negative word-of-mouth, leaving the company, switching to other providers and spending less on products/services (Ladhari 2009).

Therefore, company profitability does not come from satisfied customers but rather from loyal customers who support the company either by repurchasing, paying a higher price at the company than at a competitor and saying positive things about the company to others (Sanjaya Singh et al. 2011; Suki, Lian & Suki 2011). Suki, Lian and Suki (2011) suggest that five loyal customers out of one hundred bring about a one hundred per cent increase in profit.

3.3.2 Concept of Behavioural Intentions

The relationship between intention and behaviour is widely researched in social and healthcare behaviour literature (Webb & Sheeran 2006). To understand the behaviour of consumers, the intention is used to predict the behavioural patterns (Ajzen 2002; Webb & Sheeran 2006).

The theory of planned behaviour is the most fundamental concept used for explaining how intention influences Behavioural Intentions (Ajzen 2002). The theory suggests that people's intention is formed by three kinds of beliefs: a behavioural belief, a normative belief, and a control belief (Ajzen 2002). The *behavioural belief* refers to the individual's global attitude towards behaviour. This expresses either favourable or unfavourable feelings towards a particular behaviour. The *normative belief* is a normative expectation that the individual uses as a reference for the performance of the behaviour. It is formed by a social norm or expectation that the individual complies with; that is, it is a general social expectation that people are aware of and influences their behaviour on what to do or not to do. The *control belief* is a state of a perceived behaviour reflecting the ease or difficulty of performing behaviour. Individuals have a good deal of control providing that conditions (such as resources, skills, opportunities and cooperation) facilitating a control are available (Ajzen 2002; Armitage 2001; Webb & Sheeran 2006). The combination of these three kinds of beliefs leads to a constitution of intentions that determine performance of the behaviour (Ajzen et al. 2011).

Most consumer behavioural research measures consumer loyalty using Behavioural Intentions by applying attitudinal and behavioural approaches (Luis et al. 2010; Chahal & Kumari 2011). The attitudinal approach refers to a consumer *feeling and/or emotion* towards a service experience and results in either positive or negative behaviour such as the willingness to recommend a provider to others

(Luis et al. 2010). The behavioural approach refers to a *commitment* of the customer towards a service provider and leads to certain behaviours such as revisiting the same provider for the same services, patronising it for different services and willingness to pay a premium price (Chahal & Kumari 2011).

Intention can be viewed as an instruction to perform or not to perform particular behaviours, e.g. to do or not to do, to try or not to try. Intention indicates the extent of the efforts of performing particular behaviours (Webb & Sheeran 2006). Behavioural Intention, therefore, is interpreted as a degree to which an individual has decided to engage in specific future activities or behaviours (Jang & Namkung 2009). In consumer science, intentions imply the degree to which customers are willing to try or participate in using the product or service and the amount of effort that they would make (Ajzen 1992). Thus, Behavioural Intentions embody a variety of customer responses such as engaging in positive word-of-mouth communication, recommending a provider to others, and being willing to spend more on a company's products or services and to pay a premium price (Zeithaml, Berry & Parasuraman 1996). Behavioural Intentions are characterised by multiple concepts such as customer loyalty, positive recommending behaviour, and repurchase intentions (Cronin Jr, Brady & Hult 2000; Wu, Liu & Hsu 2008).

Behavioural Intentions proposed by Zeithaml et al. (1996) comprise five dimensions with thirteen items: loyalty, switch, pay more, external response and internal response. Among these, loyalty is the most important dimension. It consists of saying positive things about the company, recommending the company to someone who seeks advice, encouraging family and friends to do business with the company, considering the company as the first choice from which to buy services, and doing more business with the company. Therefore, Behavioural Intentions has been used to predict customer loyalty in numerous studies (Hu, Kandampully & Juwaheer 2009). Consequently, Behavioural Intentions and loyalty are used as a proxy to each other with the different term but similar in nature in service literature (Hightower, Brady & Baker 2002). Extensive research conceptualises Behavioural Intentions as a conative construct reflecting willingness to recommend, intention to repurchase, willingness to purchase other services from the same provider, compliance and positive word-of-mouth communication (Choi et al. 2004; Jang & Namkung 2009; Wu, Liu & Hsu 2008).

A review of services literature affirms that the Behavioural Intentions construct is conceptualised as unidimensional and operationalised mostly with three to five

items reflecting the willingness to recommend, intention to repurchase and positive word-of-mouth communication (Jang & Namkung 2009; Li, Huang & Yang 2011; Žabkar, Brenčič & Dmitrović 2010). However, some research conceptualises Behavioural Intentions as a multidimensional construct and operationalised with one item per dimension (Ladhari 2009). In the healthcare service sector, Behavioural Intentions have been widely applied as a unidimensional construct, and as a consequence of Service Quality, Customer Value, and Customer Satisfaction (Boshoff & Gray 2004; Chaniotakis & Lymperopoulos 2009; Choi et al. 2004; Dagger, Sweeney & Johnson 2007; Hu et al. 2010; Wu, Liu & Hsu 2008).

This thesis employs Behavioural Intentions as a proxy for customer loyalty. Behavioural Intentions is thus conceptualised as a unidimensional construct. Even though it is a unidimensional construct, it reflects both attitudinal and behavioural aspects. For instance, ‘the willingness to recommend’ represented the attitudinal aspect whereas ‘the intention to repurchase’ and ‘positive word-of-mouth communication’ reflected the behavioural aspect.

3.3.3 The evolution of the relationships between Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions and the multi-attitudinal model

The conceptual and methodological relationships between Service Quality, Customer Value, and Customer Satisfaction have been revisited by researchers over the last two decades (Gallarza, Gil-Saura & Holbrook 2011).

Even though Service Quality is accepted as an antecedent of Customer Value and Customer Satisfaction, the vast majority of research has placed emphasis on the relationships between Service Quality and Customer Satisfaction rather than on those between Service Quality and Customer Value (Gallarza, Gil-Saura & Holbrook 2011; Wu, Liu & Hsu 2008). In consumer behaviour research, the role of Customer Value has been somewhat neglected while the role of Service Quality and Customer Satisfaction has gained more attention and been studied in depth (Gallarza, Gil-Saura & Holbrook 2011; Petrick 2004).

During the late 1980s and early 1990s, the concept of these three constructs (Service Quality, Customer Value, and Customer Satisfaction) was vague. It was

claimed that the concepts were similar and the terms were used interchangeably in a sense that any one of the concepts was generally conceptualised and implied to the others (Gallarza, Gil-Saura & Holbrook 2011). Although studies have shown that Service Quality is a significant antecedent of Customer Satisfaction, other studies have found a significant relationship between Customer Value and Customer Satisfaction (Chen 2008; Wu, Liu & Hsu 2008). In addition, previous research has identified Customer Value as an important antecedent to Behavioural Intentions (Chen 2008; Cronin Jr, Brady & Hult 2000; Lai & Chen 2011).

Studies have also found significant links and interrelationships among Service Quality, Customer Satisfaction, Customer Value, and Behavioural Intentions (Cronin et al. 2000; Wu et al. 2008, Choi et al. 2004). Many researchers have advocated that Customer Value is a better predictor of buying behaviour or repurchase intentions than both Service Quality and Customer Satisfaction and state that Service Quality positively influences Customer Value and Customer Satisfaction which in turn influences Behavioural Intentions (Hu, Kandampully & Juwaheer 2009; Kuo, Wu & Deng 2009; Omar et al. 2010; Wu, Liu & Hsu 2008).

Numerous empirical studies have applied the multi-attitudinal model which suggests the relationship among the constructs by the cognitive-affective-conative approach (Choi et al. 2004; Žabkar, Brenčič & Dmitrović 2010). Service Quality is understood as an outcome of cognitive evaluation (Gill & White 2009) whereas Customer Satisfaction is viewed as affective response (Owusu-Frimpong, Nwankwo & Dason 2010; Spreng, Hui Shi & Page 2009). Customer Value is somewhat between cognitive and affective perspectives (Sánchez et al. 2006) and Behavioural Intentions is a product of conative attitude or intention (Etgar & Fuchs 2009). These causal relationships or the multi-attitudinal model, based on the notion of cognitive component precedes affective response that, in turn, determines conative attitude or intentions, gain strong support from services literature (Etgar & Fuchs 2009; Žabkar, Brenčič & Dmitrović 2010). For example, Choi et al. (2004) and Wu et al. (2008) found that Service Quality and Customer Value as cognitive constructs have a direct effect on Customer Satisfaction (as an affective construct) and Behavioural Intentions (as a conative construct).

Studies have; however, revealed that Service Quality does not have a direct effect on Behavioural Intentions but has indirect effect through mediators such as Customer Satisfaction and Customer Value (Chen & Chen 2010; Chi & Qu 2008; Dabholkar, Shepherd & Thorpe 2000; Kuo, Wu & Deng 2009). These findings are

in line with Li, Huang and Yang (2011) who suggests that the relationships among these constructs take on different forms of direct effect, indirect effect, and mediating effect. As Cronin et al. (2000) suggest, the relationships, especially between Service Quality and Behavioural Intentions, are industry-specific.

3.4 Chapter summary

While the review of literature regarding Service Quality is provided in Chapter 2, this chapter provides a literature review in relation to the three key constructs: Customer Value, Customer Satisfaction, and Behavioural Intentions. These constructs serve as foundation for an integrative model proposed in Chapter 4.

The literature review of the Customer Value construct begins in Section 3.1. Even though Customer Value is an elusive concept in services literature, it is significant in explaining Customer Satisfaction and Behavioural Intentions of customers. This thesis adopts the concept and definition of Customer Value proposed by Zeithaml (1988) and Flint et al. (1997): Customer Value is what the patients get for what they give as a trade-off between benefits and sacrifices in acquiring the medical services from the hospital. Based on a broader perspective of interpretation, it is conceptualised as a multidimensional construct in this thesis as the fact that Customer Value is not represented only in a monetary aspect but also in non-monetary attributes reflecting what patients give and get from medical services in the hospital. Customer Value is conceptualised as a consequence of Service Quality and an antecedent of Customer Satisfaction and Behavioural Intentions.

Section 3.2 is the discussion on Customer Satisfaction. Customer Satisfaction is viewed as an affective process of a cumulative evaluation of service experience from the provider. Despite that the concept is likely to be a result of transaction-specific evaluation, it is suggested that Customer Satisfaction at cumulative level is the most suitable method used to predict customer behaviour rather than the transaction-specific method which is suitable for monitoring satisfaction at the service encounter level. Though some researchers have argued that Customer Satisfaction and Service Quality are similar, this thesis differentiates these two constructs employing the cognitive-affective differentiation. Service Quality is conceptualised as a cognitive construct and Customer Satisfaction is conceptualised as an affective construct. Customer Satisfaction in this thesis is conceptualised as an antecedent of Behavioural Intentions and a consequence of Service Quality and Customer Value.

Section 3.3 reviews the Behavioural Intentions construct. Briefly, Behavioural Intentions is used as a proxy to customer loyalty reflecting willingness to recommend, intention to repurchase and positive word-of-mouth. It is conceptualised as a unidimensional construct and as a consequence of Service Quality, Customer Value, and Customer Satisfaction.

The relationships of these four constructs (Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions) are confirmed by numerous studies. However, the details of the relationships among these four constructs will be reviewed in the next chapter including the development of research questions, hypotheses and a proposing of an integrative conceptual model.

CHAPTER 4: INTEGRATIVE MODEL AND HYPOTHESES DEVELOPMENT

Service Quality (SQ), Customer Value (CV), Customer Satisfaction (SAT) and Behavioural Intentions (BI) are important and accepted as contributions to the enhancement of competitiveness (Hu, Kandampully & Juwaheer 2009; Wu, Liu & Hsu 2008). There are studies regarding these four constructs in services literature (Chen 2008; Lai & Chen 2011; Shukla 2010). However, their studies, specifically based on foreign patients' perceptions, have not yet gained full understanding from researchers. Besides local patients, foreign patients are an important contributor to the demand driven healthcare sector, contributing to global and national economic development (Heung, Kucukusta & Haiyan 2010) (see Sections 1.1.3.4 and 1.1.4, in Chapter 1).

While the prior research predominantly discusses foreign patients as a part of medical tourism, the studies in relation to the perceptions of foreign patients towards these four constructs (SQ, CV, SAT, and BI) have gained less attention from researchers (Choi et al. 2004; Veerasoontorn, Beise-Zee & Sivayathorn 2011; Wu, Liu & Hsu 2008). This gap in the literature has become the research problem:

“How do Service Quality, Customer Value, and Customer Satisfaction influence Behavioural Intentions of foreign patients?”

The reviews of service industry literature regarding the four constructs (SQ, CV, SAT, and BI) in Chapters 2 and 3 are used as a basis for further discussion of the relationships among these key constructs in this chapter which consists of five sections.

This chapter commences with discussions on the five previous studies from different services sectors (Section 4.1) and the three empirical studies specific to the healthcare industry (Section 4.2). These studies were selected because their model related to the constructs of interest (SQ, CV, SAT, and BI). The purpose of reviewing previous studies is to provide an overview of their contributions to the model development (Section 4.4) and to simultaneously investigate the relationship of the constructs that support, the hypothesis development (Section 4.3). Section 4.5 is a chapter summary.

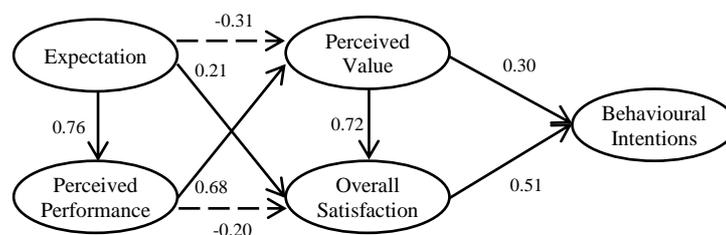
4.1 Service industry: Integrative models of Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions

The purpose of this section is to provide an understanding of the relationships between the four constructs (SQ, CV, SAT, and BI) based on previous studies. These constructs are incorporated into an integrative model and the relationships among them are analysed simultaneously. Empirical studies testing the model in various service industries explain the direct, indirect and total effects relating to these four key constructs. The examples from five service industries comprise the airline industry by Chen (2008), the hotel industry by Hu, Kandampully and Juwaheer (2009), the telecommunication industry by Kuo, Wu, and Deng (2009), the tourism industry by Chen and Chen (2010), and the public transport industry by Lai and Chen (2011). These studies are selected as representative of service industries from different sectors as they use similar constructs to this thesis. The summary of the findings is provided in Section 4.1.6.

4.1.1 The airline (passengers) industry

Chen (2008) used structural equation modelling to examine the interrelationships between Service Quality (both Expectation and Perceived Performance), Customer Value, Overall Satisfaction and Behavioural Intentions for international airline passengers. Service Quality was a four-dimensional construct consisting of 30 attributes. The Customer Value and Behavioural Intentions constructs were measured by two items whereas Overall Satisfaction was measured by one item (Figure 4.1).

Figure 4.1: Integrative model of the airline industry



Note: the dotted line presents non-significant ($p > 0.05$) whereas the continuous line presents significant links between the constructs (at a level specified in the respective studies).

Source: Chen (2008, p. 714)

Results of the study (Chen 2008) revealed that Expectation did not have a direct effect on Perceived Value but had a significant direct effect on Perceived performance and a minor direct effect on Overall Satisfaction. Perceived performance had a strong direct effect only on Perceived Value but did not have a direct effect on overall satisfaction. Perceived Value had a very strong direct effect on Overall Satisfaction. Behavioural Intentions was a consequence of Perceived Value and Overall Satisfaction. In addition, Overall Satisfaction (0.51) exerted a stronger significant direct effect than Perceived Value (0.30) on Behavioural Intentions (Figure 4.1).

The findings also affirmed the indirect effect between Perceived Performance and Overall Satisfaction. The indirect effect was through Perceived Value as a mediator as well as the indirect effect between Perceived Value and Behavioural Intentions through Overall Satisfaction as a mediator.

It is interesting to note that even though Perceived Performance was a very important antecedent to Perceived Value, it did not have a direct effect on Overall Satisfaction. In addition, Perceived Value had the strongest total effect on Behavioural Intentions. Chen (2008) recommended that Perceived Value was the most important antecedent to Overall Satisfaction, and Overall Satisfaction was the most important antecedent to Behavioural Intentions in the airline service industry. Also, the increase in the Service Quality (Perceived Performance) did not guarantee that Overall Satisfaction would increase unless customers' perceptions of Value were increased. Nonetheless, the relationship between Service Quality (both Expectation and Perceived Performance) and Behavioural Intentions was not tested.

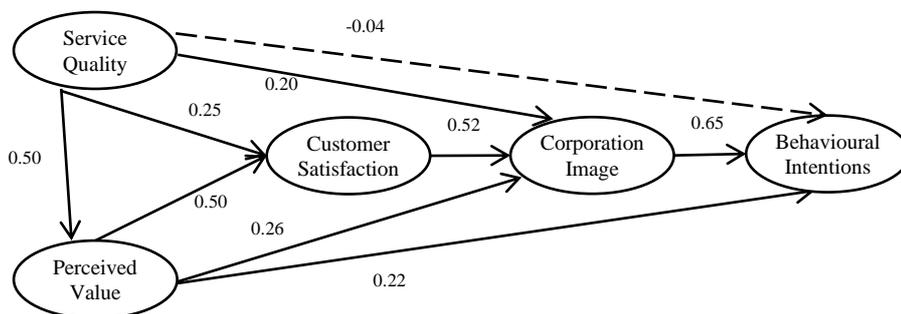
The primary chain of effects is: Expectation→Perceived Performance→Perceived Value→Overall Satisfaction→Behavioural Intentions. The model results showed the following fit indices:

$\chi^2 (58) = 238$, $p = 0.0$, $\chi^2/df = 4.10$, $GFI = 0.88$, $AGFI = 0.86$, $NFI = 0.93$, $RMSEA = 0.07$, $RMR = 0.02$.

4.1.2 The hotel industry

An integrative model consisting of Service Quality, Perceived Value, Customer Satisfaction, Corporation Image and Behavioural Intentions was tested by Hu et al. (2009). The Service Quality construct was measured by multiple items based on the SERVQUAL scales. Other constructs consisted of one to three items. Behavioural Intentions consisted of three items reflecting repurchase intentions, willingness to recommend and price sensitivity (Figure 4.2).

Figure 4.2: Integrative model of the hotel industry



Note: the dotted line presents non-significant ($p > 0.05$) whereas the continuous line presents significant links between the constructs (at a level specified in the respective studies).

Source: Hu et al. (2009, p. 120)

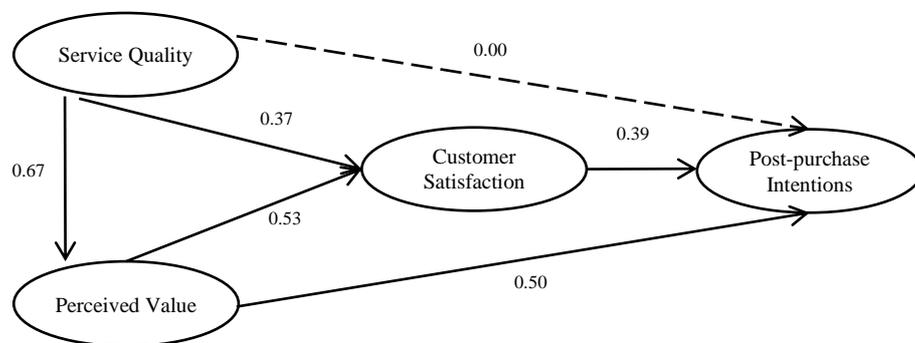
The results of the study (Hu, Kandampully & Juwaheer 2009) revealed that Service Quality had no direct effect on guests’ Behavioural Intentions but had an indirect effect through Perceived Value, Customer Satisfaction and Corporate Image. Customer Perceived Value showed a significant direct and indirect effect on Behavioural Intentions through Customer Satisfaction and Corporate Image. It was interesting to note that Corporate Image was a key attribute of the hotel industry in Mauritius and had the strongest direct impact on Behavioural Intentions. The authors suggested that to improve the competitive edge of a hotel, the most important thing was to create a strong corporate image by achieving high Customer Satisfaction through the delivery of superior Perceived Value and high Service Quality. Nonetheless, the direct relationship between Customer Satisfaction and Behavioural Intentions was not tested. Also the total effects were not mentioned.

The primary chain of effects is: Service Quality → Perceived Value → Customer Satisfaction → Corporation Image → Behavioural Intentions. The results of fit indices were $\chi^2 = 3.814$, $p > 0.5$, CFI, NFI and TLI = 0.99, RMSEA = 0.04

4.1.3 The telecommunication industry

Structural equation modelling and regression analysis were used to analyse data and evaluate the relationships among Service Quality, Perceived Value, Customer Satisfaction and Post-purchase Intentions of college and graduate students in a telecommunication industry (a mobile value added service). The Service Quality construct consisted of four dimensions with 24 items. Perceived Value, Customer Satisfaction, and Post-purchase Intentions were conceptualised as unidimensional constructs. Each consisted of three items (Figure 4.3).

Figure 4.3: Integrative model of the telecommunication industry



Note: the dotted line presents non-significant ($p > 0.05$) whereas the continuous line presents significant links between the constructs (at a level specified in the respective studies).

Source: Kuo et al. (2009, p. 894)

The findings from the study (Kuo, Wu & Deng 2009) suggested that Service Quality had a positive direct effect on Perceived Value and Customer Satisfaction but no direct effect on Behavioural Intentions (Post-Purchase Intentions). However, Service Quality had an indirect effect on Behavioural Intentions through Perceived Value and Customer Satisfaction as mediators. Perceived Value (0.50) showed a stronger direct effect than Customer Satisfaction (0.39) on Behavioural Intentions. Regarding the total effects, Customer Value (0.71) had the strongest total effect on Behavioural Intentions, followed by Service Quality (0.62) and Customer Satisfaction (0.39). These findings indicated that telecommunication companies should prioritise the improvement of Customer Value in order to stimulate Post-Purchase Intentions by mobile phone users and make them feel that the services are more valuable than costs. Even though Service Quality had no direct impact on the Post-Purchase Intentions of the users, it had an indirect impact through Perceived Value and Customer Satisfaction. Thus, the improvement of Service Quality cannot be neglected.

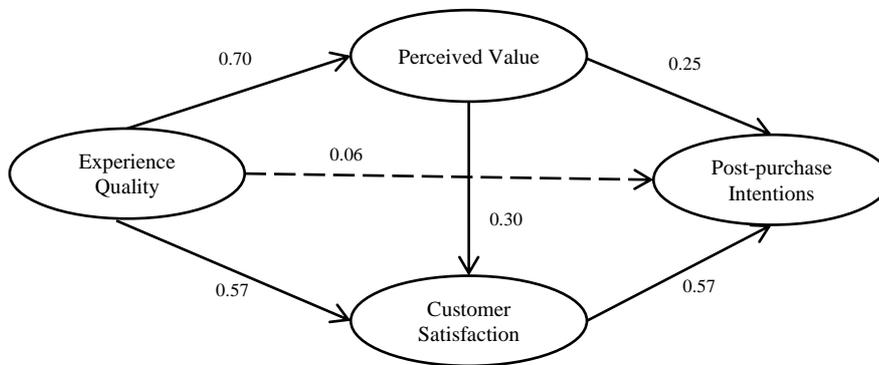
The primary chain of effects is: Service Quality → Perceived Value → Customer Satisfaction → Post-purchase Intentions.

The results of fit indices were $\chi^2/df = 1.58$, GFI = 0.96, CFI = 0.99, NFI = 0.99, NNFI = 0.99, RMR = 0.03, RMSEA = 0.04

4.1.4 The tourism industry

Chen and Chen (2010) examined the Experienced Quality perceived by heritage tourists and tested the causal relationships among Experience Quality, Perceived Value, Satisfaction and Post-purchase Intentions. They proposed a concept of Experience Quality to suit the industry context. Similar to Service Quality, it was hypothesised as an antecedent of Perceived Value, Customer Satisfaction and Post-purchase Intentions. Experience Quality comprised three dimensions: *Involvement*, *Peace of mind*, and *Educational experience*, after a scale refinement process or an exploratory factor analysis. Perceived Value, Satisfaction, and Post-purchase Intentions constructs were conceptualised as unidimensional constructs consisting of five, four, and two items respectively.

Figure 4.4: Integrative model of the tourism industry



Note: the dotted line presents non-significant ($p > 0.05$) whereas the continuous line presents significant links between the constructs (at a level specified in the respective studies).

Source: Chen & Chen (2010, p. 32)

The results of structural equation modelling analysis (Figure 4.4) suggested that Experience Quality had a substantial influence on Perceived Value and Satisfaction, but no direct effect on Post-purchase Intentions. Perceived Value had a direct effect on Customer Satisfaction and Post-purchase Intentions. Customer Satisfaction and Perceived Value were antecedents of Post-purchase Intention. Even though Experience Quality had no direct effect on Behavioural Intentions, it

had an indirect effect on Post-purchase Intentions through the mediations of Perceived Value and Satisfaction.

Experience Quality (0.62) also had a stronger total effect on Post-purchase Intentions than Satisfaction (0.57) and Perceived Value (0.42). The authors suggested the sustainability strategies to heritage managers: that the improvement of Experience Quality led to the improvement of Perceived Value, which had a direct impact on the improvement of visitors' Satisfaction and, in turn, creating Post-purchase Intentions.

The primary chain of effects is: Experience Quality → Perceived Value → Customer Satisfaction → Behavioural Intentions.

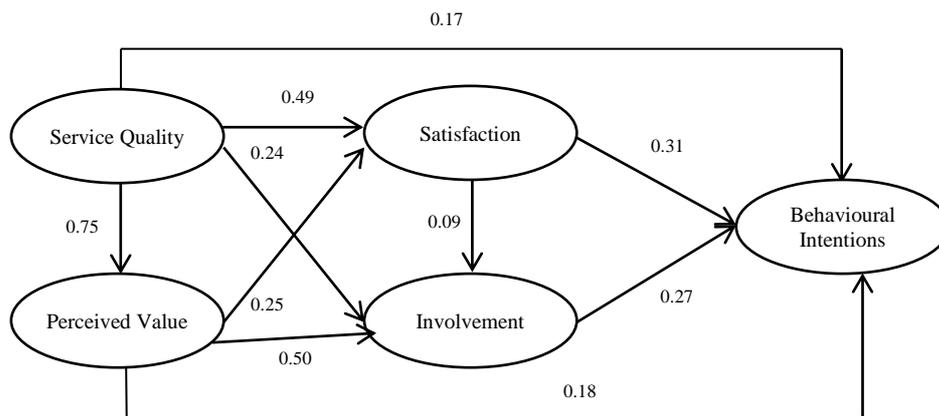
The results of fit indices were $\chi^2/df = 3.8$, GFI = 0.93, AGFI = 0.90, RFI = 0.97, CFI = 0.98, NFI = 0.97, NNFI = 0.97, RMR = 0.04, RMSEA = 0.07

The results of this study (Chen & Chen 2010) were consistent with the findings by Kuo et al. (2009) and Hu et al. (2009) that Service Quality had no direct effect on Behavioural Intentions.

4.1.5 The public transport (passengers) services industry

Apart from the key constructs of Service Quality, Perceived Value, Satisfaction, and Behavioural Intentions, Lai and Chen (2011) addressed the importance of Involvement in the integrative model. Involvement was defined as the level of importance of public transit to a passenger such as their experience while taking the public transport services. The process of exploratory factor analysis revealed that it was a unidimensional construct consisting of nine items. Service Quality consisted of two dimensions with nine and seven items respectively. Satisfaction, Perceived Value, and Behavioural Intentions were unidimensional constructs consisting of one, three, and two items respectively.

Figure 4.5: Integrative model of the public transport industry



Note: the continuous line presents significant links between the constructs (at a level specified in the respective studies).

Source: Lai & Chen (2011, p. 323)

The findings (Lai & Chen 2011) suggested that Service Quality had the strongest direct effect on Perceived Value (0.75), followed by Satisfaction (0.49), Involvement (0.24), and Behavioural Intentions (0.17) (Figure 4.5). Perceived Value (0.50) had a stronger direct effect than Satisfaction (0.25) on Involvement. Satisfaction (0.31) and Involvement (0.27) had a direct effect on Behavioural Intentions. However, when considering the total effect on Behavioural Intentions, Involvement (0.69) had the largest total effect followed by Service Quality (0.42), Satisfaction (0.31), and Perceived Value (0.24) in the public transport service in Taiwan (KMRT system). These results suggested that Involvement played a significant role in Behavioural Intentions. Regardless of Involvement, Service Quality had the strongest total effect on Behavioural Intentions.

The primary chain of effects is: Service Quality → Perceived Value → Involvement → Behavioural Intentions.

The results of fit indices were χ^2/df (83.52/18) = 4.65, GFI = 0.97, AGFI = 0.94, CFI = 0.99, NFI = 0.99, RMSEA = 0.07

The finding of the direct relationship between Service Quality and Behavioural Intentions was not consistent with the results of Kuo et al. (2009), Hu et al. (2009) and Chen & Chen (2010). This means that Service Quality had a direct effect on Behavioural Intentions in this study while it had no direct effect in the other three studies.

4.1.6 Summary of the integrative models of various service industries

The review of integrative models from different service industries revealed the different approaches used to measure the constructs (such as the multidimensional construct of Service Quality). Regarding Service Quality, the SERVQUAL scale by Parasuraman et al. (1988) was used as a foundation. However all of the five previous studies employed the perception-only measurement or SERVPERF to measure the Service Quality construct. That means none of them used the expectation-minus-perception or a gap model. Even though the study conducted by Chen (2008) employed Expectation and Perceived Performance as proxy to Service Quality, both constructs were treated as independent variables without measuring the gap scores.

Regarding the Customer Value construct, it was conceptualised as unidimensional construct measured by either one or multiple items. None of the five previous studies conceptualised Customer Value as a multidimensional construct.

Other constructs, namely Customer Satisfaction and Behavioural Intentions, were all conceptualised as a unidimensional construct consisting of only a few items.

Results from the examination of the five previous studies revealed that there are relationships among Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions constructs. These relationships are summarised as follows:

- Service Quality (operationalised as ‘Service Quality’, ‘Expectation’, ‘Perceived Performance’, and ‘Experience Quality’) has a direct effect on Customer Value (operationalised as ‘Value’ and ‘Perceived Value’) and Customer Satisfaction ($SQ \rightarrow CV$ and $SQ \rightarrow SAT$).
- Customer Value has a direct effect on Customer Satisfaction (operationalised as ‘Customer Satisfaction’, ‘Satisfaction’, and ‘Overall Satisfaction’) and Behavioural Intentions ($CV \rightarrow SAT$ and $CV \rightarrow BI$).
- Customer Satisfaction has a direct effect on Behavioural Intentions (operationalised as ‘Behavioural Intentions’ and ‘Post-purchase Intentions’) in four of five previous studies ($SAT \rightarrow BI$) except Hu et al.’s (2009) as the authors did not test this relationship.

- The direct relationship between Service Quality and Behavioural Intentions is not consistent in the services industry. Of the five previous studies examined, one proved the relationship between SQ and BI, another three did not (SQ→BI, not consistent), and one did not test this relationship.
- Furthermore, Customer Value shows a strong significant effect (direct, indirect and total) on Behavioural Intentions in all of these five previously reviewed studies.

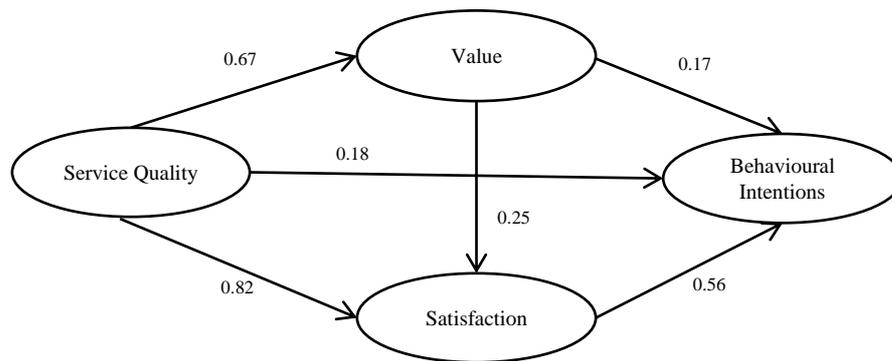
The next section will examine three studies from the healthcare industries based on the integrative model using SQ, CV, SAT and BI constructs.

4.2 The integrative models of Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions in the healthcare industry

The healthcare service literature in relation to the integrative model of Service Quality (SQ), Customer Value (CV), Customer Satisfaction (SAT), and Behavioural Intentions (BI) is relatively limited. This section comprises three studies from different hospital contexts: South Korea, Taiwan, and Malaysia. These were selected because they all applied the same four constructs (SQ, CV, SAT and BI) in a single integrative model, as intended in this research. An examination of the three models from previous studies is undertaken to provide insight into relationships among the four constructs specifically for the healthcare industry.

4.2.1 The healthcare industry in South Korea

Choi et al. (2004) used four constructs (SQ, CV, SAT and BI) to examine the interrelationships among them for the South Korean healthcare context with 537 usable data for analysis. This study applies the multi-attribute attitude model framework which describes the causal relationship among cognition (Service Quality and Customer Value), affection (Customer Satisfaction) and conation (Behavioural Intentions) (Choi et al. 2004).

Figure 4.6: Integrative model of the South Korean healthcare context

Note: the continuous line presents significant links between the constructs (at a level specified in the respective studies).

Source: Choi et al. (2004, p. 916)

Exploratory factor analysis confirmed the hypothesis of Service Quality with four factors: *Convenience of the care process*, *Healthcare provider's concern – other than physicians*, *Physician's concern*, and *Tangibles*. The authors used SERVPERF or the perception-only measure instead of examining the gap model of the SERVQUAL. The Perceived Value construct was operationalised by two items, Patient Satisfaction by two items and Behavioural Intentions by three items.

The results of structural equation modelling suggested that Service Quality (0.82) had a stronger direct effect on Satisfaction than Value (0.25). Satisfaction (0.56) had a stronger direct impact on Behavioural Intentions than Service Quality (0.18) and Value (0.17) (Figure 4.6).

Service Quality also had an indirect effect on Customer Satisfaction through the mediation of Perceived Value. Service Quality had the strongest total effects on Behavioural Intentions. Therefore, it is clear that Service Quality was an important determinant of Value, Satisfaction, and Behavioural Intentions for the healthcare context in South Korea. The results showed significant evidence that the cognitive constructs (Service Quality and Customer Value) were important antecedents of an affective construct (Customer Satisfaction), which in turn affected a conative construct (Behavioural Intentions) corresponding to the multi-attribute attitudinal model framework. The authors noted that even though Service Quality as a cognitive construct exhibited as a more important determinant of patient Satisfaction than Value, the significance of the Value concept should not be ignored as it influenced Satisfaction and Behavioural Intentions as well as playing a significant role as a mediator between Service Quality and Behavioural Intentions.

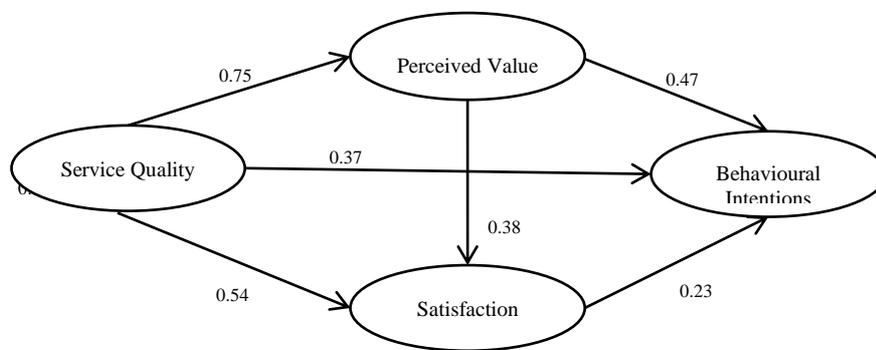
The primary chain of effects is: Service Quality → Customer Satisfaction → Behavioural Intentions.

The results of fit indices were $\chi^2(38) = 152.29$, $p = 0.00$, $\chi^2/df = 4.00$, CFI = 0.98, NFI = 0.97, AGFI = 0.91.

4.2.2 The healthcare industry in Taiwan

322 Taiwanese out-patients were used as a sample in Wu, Liu and Hsu's (2008) study to assess the perceptions of out-patients towards Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions. The authors developed quality dimensions based on a focus group interview with patients and healthcare providers. The results of interviews came up with fourteen items under four meaningful quality dimensions: *Tangible assets*, *Speed of responsive to patients' demands*, *Interaction between medical staff and patients* and *Mental assurance from medical staff*. The Behavioural Intentions scale comprised three items reflecting willingness to recommend, intention to repurchase and compliance. The authors used three items to examine Perceived Value and two items to assess Satisfaction.

Figure 4.7: Integrative model of the Taiwanese healthcare context



Note: the continuous line presents significant links between the constructs (at a level specified in the respective studies).

Source: Wu et al. (2008, p. 1312)

Results from the study (Wu, Liu & Hsu 2008) indicated that Service Quality had a strong direct effect on Perceived Value (0.75), Satisfaction (0.54) and Behavioural Intentions (0.37). Perceived Value had a direct effect on Satisfaction (0.38) and Behavioural Intentions (0.47). Satisfaction had a direct influence on Behavioural Intentions (0.38). Perceived Value (0.47) showed the strongest direct effect on Behavioural Intentions; this was followed by Service Quality (0.37) and Satisfaction (0.23). Service Quality had the greatest total effect on Behavioural

Intentions through the mediations of Perceived Value and Satisfaction. Perceived Value was a significant mediator between Service Quality and Satisfaction whereas Satisfaction played a weak role of mediator between Perceived Value and Behavioural Intentions. Even though Perceived Value had a weaker total effect than Service Quality on Behavioural Intentions, it showed a stronger direct effect than Service Quality on Behavioural Intentions (Figure 4.7).

The results demonstrated that Perceived Value was a key competitive factor determining the success of Taiwan's healthcare providers. The authors affirmed the multi-attitudinal framework that cognitive construct (Service Quality and Perceived Value) was an antecedent to affective construct (Customer Satisfaction) and both drive conative construct (Behavioural Intention).

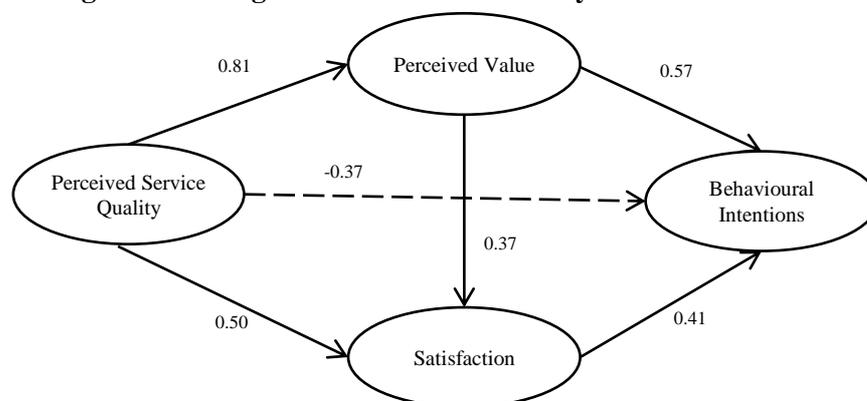
The primary chain of effects is: Service Quality → Perceived Value → Behavioural Intentions.

The results of fit indices were GFI = 0.91, CFI = 0.97, AGFI = 0.85, SRMR = 0.04.

4.2.3 The healthcare industry in Malaysia

The integrated model of Service Quality, Perceived Value, Customer Satisfaction and Behavioural Intentions was tested by the data collected from 201 parents who sent their children to childcare centres in Malaysia (Omar et al. 2010). All constructs were conceptualised as unidimensional constructs measured by multiple item scales. Service Quality was measured by five items whereas Perceived Value, Satisfaction and Behavioural Intentions were measured by four items.

Figure 4.8: Integrative model of the Malaysian healthcare context



Note: the dotted line presents non-significant ($p > 0.05$) whereas the continuous line presents significant links between the constructs (at a level specified in the respective studies).

Source: Omar et al. (2010, p. 4444)

The results of the study (Omar et al. 2010) contradicted the findings by Choi et al. (2004) and Wu et al. (2008) in terms of the direct relationship between Service Quality and Behavioural Intentions. In this study, Perceived Service Quality had no direct effect on Behavioural Intentions, but it had a direct effect only on Perceived Value and Satisfaction. Perceived Value had a direct effect on Satisfaction and Behavioural Intentions. Satisfaction had a direct effect on Behavioural Intentions (Figure 4.8). Service Quality and Perceived Value had an indirect effect on Behavioural Intentions. Service Quality had an indirect effect on Satisfaction through the mediation of Perceived Value. Regarding the total effect on Behavioural Intentions, Perceived Value (0.72) showed the strongest total effect, followed by Service Quality (0.42) and Satisfaction (0.41). Even though Service Quality had no direct effect on Behavioural Intentions, it had a strong direct impact on Perceived Value.

The findings from this study affirmed that the Service Quality and the Perceived Value formed the Satisfaction of parents which in turn were strong predictors on Behavioural Intentions in the Malaysian childcare industry.

The primary chain of effects is: Service Quality → Perceived Value → Behavioural Intentions.

The results of fit indices were $\chi^2 (47) = 99.86$, $\rho = 0.00$, CFI = 0.96, NFI = 0.92, RFI = 0.90, RMSEA = 0.07, $\chi^2/df = 2.12$.

4.2.4 Summary of the findings in the healthcare industry regarding the four valuable constructs from three studies

The three integrative models from three Asian countries demonstrate the noteworthy relationships (both direct and indirect) among the four constructs (SQ, CV, SAT and BI). Even though five of six kinds of direct relationships among these four constructs including (SQ → CV), (SQ → SAT), (CV → SAT), (CV → BI) and (SAT → BI) are confirmed in all three studies, the relationship between Service Quality and Behavioural Intentions (SQ → BI) is not consistent in the healthcare literature and in the other services literature (see Table 4.1 and Section 4.2.6).

The findings regarding the indirect relationships between Service Quality and Behavioural Intentions support Cronin, Brady and Hult (2000) who state that

Customer Value and Customer Satisfaction play a role as important mediators between Service Quality and Behavioural Intentions.

Comparing the magnitude of direct effects between Service Quality, Customer Value, and Customer Satisfaction on Behavioural Intentions, the results from the three studies are varied. Choi et al. (2004) (South Korea) found that Customer Satisfaction had the strongest direct effect on Behavioural Intentions, whereas Customer Value had the strongest direct effect on Behavioural Intentions in studies by Wu et al. (2008) (Taiwan) and Omar et al. (2010) (Malaysia). Service Quality had a direct effect on Behavioural Intentions in Choi et al. (2004) (South Korea) and Wu et al.'s (2008) (Taiwan) studies, but did not have a direct effect in Omar et al.'s (2010) study (Malaysia).

Service Quality showed a substantial direct effect on Customer Value and Customer Satisfaction. Customer Value had a strong direct effect on Customer Satisfaction in all of the three studies. Considering the direct effect of Service Quality, Customer Value, and Customer Satisfaction on Behavioural Intentions, it is worth noting that Customer Value is the most important antecedent of Behavioural Intentions in Taiwan and Malaysia, while it is the least important in South Korea. Furthermore, Service Quality had a stronger direct effect than Customer Value on Customer Satisfaction in all of the three studies (Table 4.1).

It can be concluded that Service Quality, Customer Value and Customer Satisfaction are important determinants of Behavioural Intention, but the extent of the relationship depends on the country context.

Table 4.1: Findings of direct, indirect and total effects in the healthcare studies

Effect	Direct effect			Indirect effect			Total effect		
	South Korea	Taiwan	Malaysia	South Korea	Taiwan	Malaysia	South Korea	Taiwan	Malaysia
SQ-->BI	0.21	0.34	-0.37	0.67	0.54	0.42	0.88	0.87	0.42
CV-->BI	0.18	0.47	0.57	0.14	0.09	0.15	0.32	0.55	0.72
SAT-->BI	0.56*	0.28	0.41				*0.56	0.28	0.41
SQ-->CV	0.67*	0.75	0.81				*0.67	0.75	0.81
SQ-->SAT	0.77	0.54	0.50	0.19	0.29	0.30	0.96	0.83	0.80
CV-->SAT	0.25	0.38	0.37				0.25	0.38	0.37

Note: SQ = Service Quality, CV = Customer Value, SAT = Customer Satisfaction, and BI = Behavioural Intentions, * = unstandardised as the standardised was not reported in South Korea

Source: South Korea (Choi et al. 2004), Taiwan (Wu, Liu & Hsu 2008), and Malaysia (Omar et al. 2010)

As shown in Table 4.2, Service Quality had a stronger total effect than Customer Value and Customer Satisfaction on Behavioural Intentions in South Korea and Taiwan, whereas Customer Value had the strongest total effect on Behavioural Intentions in Malaysia. However, the total effect of Service Quality on Customer Satisfaction through the mediation of Customer Value from the three studies was substantial.

Customer Value and Customer Satisfaction exerted a strong indirect effect as mediators between Service Quality and Behavioural Intentions in all of the three studies. This can be interpreted as Service Quality, Customer Value, and Customer Satisfaction being very important in predicting Behavioural Intentions in the healthcare sector.

In these three previous studies, Service Quality construct developed by Parasuraman et al. (1988) was used as a foundation. Two of the three studies developed the construct based on the results of focus group interviews with patients and some of the items were modified from SERVQUAL scale items. In addition, the perception-only measurement or SERVPERF was used in these three studies.

Even though the gap model of SERVQUAL (perception-minus-expectation measurement) is widely accepted as it outperforms SERVPERF (perception-only measurement) in terms of diagnostic power because management can take interventions in case of a shortfall of Service Quality's performance (Jain & Gupta 2004), it is not the main purpose of this study. This study aims to examine the causal relationships among Service Quality Customer Value, Customer Satisfaction and Behavioural Intentions. Therefore, the SERVPERF or perception-only measurement is employed as it is suitable and outperforms the gap model in terms of validity, reliability and methodological soundness (Section 2.5).

4.3 Hypothesis development

This section begins with reviewing the operationalised constructs such as Service Quality (Section 4.3.1) and Customer Value (Section 4.3.2). The review focuses mainly on the dimensionality of these two constructs in particular. Section 4.3.3 reviews the relationships among SQ, CV, SAT, and BI. These reviews are essential in providing background for the hypothesis development.

For ease of reading, the constructs are identified by the upper-case first letters (e.g. Service Quality). Their dimensions are identified by upper-case of the first letters and italics format (e.g. *Tangibles*) throughout the chapter.

4.3.1 Service Quality construct (SQ)

The application of Service Quality in the healthcare domain has yielded varied results (Section 2.8). The discrepancies might be caused by differences in its interpretation in the healthcare service systems across geographical and cultural settings (Choi et al. 2004).

In healthcare literature, the five dimensions of SERVQUAL (*Reliability, Assurance, Tangibles, Empathy, and Responsiveness*) proposed by Parasuraman et al. (1988) are commonly used as a foundation and a powerful tool for measuring ‘functional quality’ from the patients’ perspective (Işık, Tengilimoğlu & Akbolat 2011; Nekoei-Moghadam & Amiresmaili 2011).

However, it has been argued that the application of SERVQUAL lacks consideration of the ‘technical quality’ (Kang 2006). Therefore, there has been debate among the researchers regarding the use of technical quality in the healthcare sector. Some contend that it is not appropriate to be included as a measure of Service Quality because patient is generally unable to identify or evaluate the results of the healthcare process or treatment (Laohasirichaikul, Chaipoopirutana & Combs 2011; Narang 2010; Padma, Rajendran & Lokachari 2010). Others argue that a patient is capable of distinguishing and assessing the technical quality (Dagger & Sweeney 2007; Gallan et al. 2013). Still, there is no consensus on including technical quality for measuring Service Quality in the healthcare sector.

Technical quality in the healthcare sector is defined as patients’ perceptions of the expertise and skill of a hospital provider as a facilitator of measuring a satisfactory service outcome (Gallan et al. 2013). It reflects the physician’s expertise to explain the process of the diagnostic tests and the outcome of diagnostic procedures. Therefore, technical quality facilitates patients’ judgement of overall Service Quality (Eleuch 2011). In conclusion, technical quality is an indicator of the accuracy of the medical diagnoses and procedures, or the conformance to professional specification that patients use to evaluate the Service Quality of the hospital provider (Padma, Rajendran & Lokachari 2010). For example, Eleuch (2011) uses *Functional quality* and *Technical quality* to assess Service Quality of

hospitals in Japan. Many of researchers such as Eleuch (2011) and Gallan et al. (2013) conceptualise *Technical quality* as one of the Service Quality dimensions reflecting both the ‘outcome’ of the medical processes and the ‘expertise’ of hospital staff measured by multiple items.

Dagger et al. (2007) articulate that *Technical quality* is better explained by two core themes: *Expertise* and *Outcome*. *Expertise* and *Outcome* have been included in measuring Service Quality of the Australian healthcare context (Dagger & Sweeney 2007; Dagger, Sweeney & Johnson 2007). In the Taiwanese hospital context (Lee et al. 2010), Service Quality is measured by three dimensions: *Structure*, *Process*, and *Outcome*. The definition of *Process* is similar to *Expertise* whereas the definition of *Outcome* is similar to *Outcome* proposed by Dagger and Sweeney (2007).

Despite that fact that the SERVQUAL dimensions are widely accepted and applied in healthcare research (Nekoei-Moghadam & Amiresmaili 2011; Sriram & Ganesh 2012), they have rarely been integrated in the complex model consisting four constructs or more. This thesis employs SERVQUAL, a well-established measure accepted in service literature, to provide a better understanding of the Service Quality construct in a holistic view. Alongside the SERVQUAL dimensions (*Reliability*, *Assurance*, *Tangibles*, *Empathy*, and *Responsiveness*) reflecting ‘functional quality’, *Expertise* and *Outcome* proposed by Dagger and Sweeney (2007) are included as measurement dimensions of Service Quality reflecting technical quality in this thesis. Therefore, these seven dimensions are posited as the determinants of the Service Quality construct. The hypotheses are formulated and will be tested as follows: **Hypothesis 1:** Service Quality is a multidimensional construct. Its determinants are *Tangibles*, *Reliability*, *Responsiveness*, *Assurance*, *Empathy*, *Expertise*, and *Outcome*.

- H1.a *Tangibles* is a significant and distinct determinant of Service Quality.
- H1.b *Reliability* is a significant and distinct determinant of Service Quality.
- H1.c *Responsiveness* is a significant and distinct determinant of Service Quality.
- H1.d *Assurance* is a significant and distinct determinant of Service Quality.
- H1.e *Empathy* is a significant and distinct determinant of Service Quality.
- H1.f *Expertise* is a significant and distinct determinant of Service Quality.
- H1.g *Outcome* is a significant and distinct determinant of Service Quality.

4.3.2 Customer Value (CV)

Customer Value is an important concept of marketing strategy and currently gains attention from researchers because Service Quality and Customer Satisfaction are not always the best predictors in explaining Behavioural Intentions and organisation performance (Sweeney 2003). There are only limited numbers of studies that include Customer Value in healthcare service context (Choi et al. 2004; Wu et al. 2008). Customer Value can be viewed as a unidimensional construct and a multidimensional construct. As a unidimensional construct, it reflects only the monetary aspect (Nasution & Mavondo 2008). Therefore, Customer Value is better to be conceptualised as a multidimensional construct that reflects a broader aspect such as non-monetary (Sanchez et al. 2006).

Even though the multiple dimensions are able to capture broader aspects of the Customer Value construct better than a single dimension and several researchers have applied a multidimensional conceptualisation of Customer Value as discussed in Section 3.1.3., the multidimensional construct is rarely used in an integrative model when more than two constructs are incorporated. Especially in the healthcare sector, Customer Value has been commonly measured by a single dimension (Choi et al. 2004; Cronin Jr, Brady & Hult 2000; Wu, Liu & Hsu 2008) and only a few studies measure the construct by multiple dimensions. For instance, Hu et al. (2010) use two dimensions in the integrative model consisting of six constructs. Wang and Chen (2011) measure Customer Value using three dimensions of Patient Perceived Value in the integrative model consisting of three constructs. Chahal and Kumari (2011) use five dimensions of Customer Perceived Value in the integrative model consisting of two constructs.

This thesis adopts the multidimensional construct of Customer Value proposed by Petrick (2002). These five dimensions are *Behavioural price*, *Monetary price*, *Emotional response*, *Quality (or Quality judgement)*, and *Reputation*.

Behavioural price is named as efficiency by Sanchez et al. (2009), as time and effort spent by Gallarza and Saura (2006) and as efficiency by Gallarza and Saura (2006). These dimensions are identified similar to a *Behavioural price* dimension of Customer Value proposed by Petrick (2002). *Monetary price* has been identified in the majority of Customer Value studies (e.g. Sweeney & Soutar 2001; Gallarza and Saura 2006; Boetsch et al. 2011). *Emotional response* has been identified as a dimension of Customer Value by Sweeney & Soutar (2001), Boetsch et al. (2011)

and Sheth et al. (1991). *Quality* has been identified as a dimension of Customer Value in Sweeney & Soutar (2001), Gallarza and Saura (2006), Boetsch et al. (2011), Sanchez et al. (2009) and Ruiz et al. (2008). *Reputation* has been identified in Petrick (2004) and is named as a service equity dimension in Ruiz et al. 2008. Furthermore, these five dimensions have been validated and tested in the study of cruise passengers by Petrick (2002), Petrick (2004) and tourism industry by Chen and Chen (2010).

Based on the review of literature that identified the significance of these dimensions in service industry studies, the following hypotheses are proposed:

Hypothesis 2: Customer Value is a multidimensional construct. Its determinants are *Quality judgement*, *Monetary price*, *Reputation*, *Behavioural price*, and *Emotional response*.

H2.a *Quality judgement* is a significant and distinct determinant of Customer Value.

H2.b *Monetary price* is a significant and distinct determinant of Customer Value.

H2.c *Reputation* is a significant and distinct determinant of Customer Value.

H2.d *Behavioural price* is a significant and distinct determinant of Customer Value.

H2.e *Emotional response* is a significant and distinct determinant of Customer Value.

4.3.3 The relationships between Service Quality, Customer Satisfaction, Customer Value, and Behavioural Intentions (SQ, CV, SAT, and BI)

The causal order of the relationships between Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions has been documented in a variety of field studies. These relationships were supported by empirical studies and the multi-attitudinal model as discussed in Section 3.3.3. In services industry literature, a number of studies have found significant links and relationships among these four concepts (Cronin Jr, Brady & Hult 2000; Hu, Kandampully & Juwaheer 2009; Jen, Tu & Lu 2011; Lai & Chen 2011; Shukla 2010) including healthcare services (Choi et al. 2004; Hu et al. 2010; Wu, Liu & Hsu 2008).

4.3.3.1 The relationship between Service Quality and Customer Satisfaction (SQ and SAT)

Even though it has been argued that Service Quality and Customer Satisfaction are highly similar constructs, many researchers insist that they are different (Ziethaml et al. 1993; Gill & White 2009; Dagger et al. 2007). One of the most popular approaches to the differentiation is a cognitive-affective approach. This approach is widely applied in a number of studies in service industries (Choi et al. 2004; Gallarza, Gil-Saura & Holbrook 2011; Li, Huang & Yang 2011). Commonly Service Quality is conceptualised as a cognitive construct and Customer Satisfaction is conceptualised as an affective construct resulting from a cognitive evaluation process (Dagger et al. 2007; Etgar & Fuchs 2009; Gill & White 2009; Johnson 2007; Oliver 1997; Olorunniwo & Hsu 2006).

In the healthcare service industry literature, Service Quality is acknowledged as an antecedent of Customer Satisfaction (SQ→SAT). Evidence supports that Service Quality dimensions are significant antecedents to Customer Satisfaction. For instance, the study by Kara, Lonial, Tarim and Zaim (2005) on the non-profit healthcare sector in Turkey reveals that the intangibles factor is more significant antecedent to Service Quality and Customer Satisfaction than the tangibles factor (SQ→SAT). In another study in Turkey, Service Quality is posited as an antecedent to Customer Satisfaction. The findings suggest that there is a direct relationship between these two constructs (SQ→SAT) (Zaim, Bayyurt & Zaim 2010). These findings are supported by Laohasirichaikul et al.'s study (2011) proving that the relationship between Service Quality and Customer Satisfaction exists in the Thai hospital context (SQ→SAT).

In the Indian hospital context, Padma, Rajendran and Lokachari (2010) investigated the relationship between seven dimensions of Service Quality and Satisfaction from patients' and attendants' perspectives. The findings suggest that personal quality is the most important dimension of Service Quality that has influenced Customer Satisfaction from both patients' and attendants' points of view. Note that all Service Quality dimensions have influenced Customer Satisfaction of both patients and attendants but at different degrees of magnitude (SQ→SAT).

Gallan et al. (2012) posit Service Quality as an antecedent of Customer Satisfaction in specialty medical clinics in the United States. They find that technical quality and functional quality have effects on Customer Satisfaction (SQ→SAT).

In conclusion, Customer Satisfaction is a key success factor of healthcare services based on the causal link between Service Quality and Customer Satisfaction articulated in literature. The chain of effect of Service Quality on Customer Satisfaction (SQ→SAT) is well supported by researchers (Carrillat, Jaramillo & Mulki 2009; Gallan et al. 2013; Padma, Rajendran & Lokachari 2010; Zaim, Bayyurt & Zaim 2010). Based on the psychological process, cognitive precedes emotions. Service Quality stands at the cognitive stage and Customer Satisfaction represents an affective stage (Carrillat, Jaramillo & Mulki 2009). This leads to the following hypothesis:

Hypothesis 3: Service Quality has a direct effect on Customer Satisfaction (SQ→SAT).

4.3.3.2 The relationships among three constructs: Service Quality, Customer Satisfaction and Behavioural Intentions (SQ, SAT, and BI) Giese & Cote (2000, p. 16) propose that “cognitive [Service Quality] and conative [Behavioural Intentions] components are strongly related to antecedents and consequences of affective determination [Customer Satisfaction]”. The relationships between Service Quality, Customer Satisfaction, and Behavioural Intentions have been well researched in services literature.

In the Korean tourism industry (Lee, Jeon & Kim 2011), the perceptions of 500 Chinese tourists are investigated. The findings suggest that the *Tourist expectations* and *Tourist motivations* are the determinants of Tourist Quality. In turn, Tourist Quality is an antecedent to Tourist Satisfaction (SQ→SAT) whereas Tourist Satisfaction is an antecedent to Tourist Loyalty (SAT→BI). However, the relationship between Tourist Quality and Tourist Loyalty is not tested (Lee, Jeon & Kim 2011).

In the Canadian hotel industry (Ladhari 2009), 200 usable questionnaires were collected from hotel guests. The findings support that Perceived Service Quality has a direct effect on Emotional Satisfaction (SQ→SAT) and Behavioural Intentions (SQ→BI). Emotional Satisfaction has a direct effect on Behavioural Intentions (SAT→BI). Perceived Service Quality also has an indirect effect on

Behavioural Intentions (SQ → (SAT) →BI) through Emotional Satisfaction as a mediator (Ladhari 2009).

These causal relationships are also tested in the business-to-business services sector (Spreng, Hui Shi & Page 2009), with 296 usable data collected from internal customers of the distribution centre who supply equipment to the state agency. The findings reveal that Cumulative Perceived Service Quality has a direct effect on Cumulative Customer Satisfaction and Intentions (SQ→SAT, SQ→BI) and Cumulative Customer Satisfaction has a direct influence on Intentions (SAT→BI).

In the retail services industry, Pollack (2009) proposes a model consisting of Service Quality, Customer Satisfaction, and Loyalty. The author hypothesises that Service Quality is an antecedent to Customer Satisfaction and Loyalty (SQ→SAT, SQ→BI), and Customer Satisfaction is an antecedent to Loyalty (SAT→BI). This model is tested on 250 customers of barber services and 300 of local phone service subscribers. The results from both industries confirm the hypotheses.

In e-business environments, these chains of effects are widely investigated. For example, in the context of internet shopping, the model proposed by Gounaris et al. (2010) is used to examine the causal relationships among these three constructs (SQ, SAT, BI). This model is tested on 1,052 online shoppers and posited that e-Service Quality has both a direct (SQ→BI) and an indirect effect on Behavioural intentions (SQ→SAT as mediator→BI) and has a direct effect on e-Customer Satisfaction (SQ→SAT). All of the hypotheses are confirmed. Another model proposed by Udo et al. (2010) posited that Web Service Quality and Satisfaction have influenced Behavioural Intentions (SQ→BI, SAT→BI). Web Service Quality has both direct (SQ→BI) and indirect (through the mediation of Satisfaction) effect on Behavioural Intentions (SQ→(SAT)→BI). All of the hypotheses are supported by the significant path coefficients.

The phenomenon is similar in the healthcare industry. In the Jordanian hospital context (Alrubaiee & Alkaa'ida 2011), Healthcare Quality is posited as having a direct effect on Patient Satisfaction (SQ→SAT) and Patient Trust (SQ→BI), while having an indirect effect on Behavioural Intentions through the mediation of Patient Satisfaction (SQ→SAT as mediator→BI). The findings confirm that Healthcare Quality has both a direct and an indirect influence on Patient Trust. Healthcare Quality has a direct influence on Patient Satisfaction (SQ→SAT), and Patient Satisfaction has a direct effect on Patient Trust (SAT→BI).

In the Greek hospital context (Chaniotakis & Lympelopoulos 2009), the RATER scales of SERVQUAL (*Responsiveness, Assurance, Tangibles, Empathy, and Responsiveness*) are conceptualised as independent variables. They are hypothesised to have a direct effect on Satisfaction (SQ→SAT), and Satisfaction has a direct effect on word-of-mouth communication (SAT→BI) in the purchase behaviour context. *Empathy* (as the only scale of SERVQUAL) and Satisfaction have a direct effect on word-of-mouth communication (*Empathy*→BI, SAT→BI), whereas *Responsiveness, Assurance, and Tangibles* have an indirect effect on it through Satisfaction as a mediator (*Responsiveness, Assurance, and Tangibles*→SAT as mediator→BI).

In the Taiwanese hospital context (Li, Huang & Yang 2011), the findings suggest that three of four Quality dimensions (*Reliability, Responsiveness, and Assurance, except Empathy*) and Satisfaction have a direct effect on Behavioural Intentions (*Reliability, Responsiveness, and Assurance*→BI, SAT→BI). *Reliability and Empathy* dimensions have an indirect effect on Behavioural Intentions through the mediation of Satisfaction (SQ/ *Reliability and Empathy* →(SAT) →BI). However, the relationship between Satisfaction and Behavioural Intentions is not tested. Another study in this context (Wang, Huang & Howng 2011) investigates the effect of Service Quality on Patient Loyalty. The results affirm that the physician's Caring Service Quality and Interpersonal Service Quality have a positive influence on Patient Loyalty (SQ→BI).

In the Turkish hospital context (Lonial et al. 2010), the model hypothesises the causal relationships between Service Quality, Overall Quality of the Hospital, Feeling towards Hospital Services, and Re-patronage Intentions. The results suggest that Service Quality has a direct effect on Overall Quality of the Hospital and Feeling towards Hospital Services (SQ→SAT) but does not have a direct effect on Re-patronage Intentions.

In the Indian hospital context (Guar et al. 2011), the findings suggest that Satisfaction has a direct effect on Loyalty (SAT→BI); more specifically, patients satisfied with their relationships with doctors increase their loyalty with their hospital providers. Based on the relationships among Service Quality, Customer Satisfaction, and Behavioural Intentions found in services literature, the following hypotheses are proposed:

Hypothesis 4: Service Quality has a direct effect on Behavioural Intentions (SQ→BI).

Hypothesis 5: Customer Satisfaction has a direct effect on Behavioural Intentions (SAT→BI).

4.3.3.3 The inclusion of Customer Value

In service sectors, Customer Value is identified as one of the most important measures for achieving a competitive edge due to the fact that even if customers are satisfied with a product or service, it does not mean that they perceive it as good value (Petrick 2002). Customer Satisfaction is not always the best indicator of Behavioural Intentions as highly satisfied customers can spend somewhere else for different reasons (Wu, Liu & Hsu 2008). Similarly, Service Quality alone is not always the only reason why customers buy the product or service as they might perceive that the quality they receive may not match with the money-value they paid (Clemes, Gan & Ren 2011; Cronin Jr & Taylor 1992). They are more likely to purchase from the providers when they perceive the product or service has a good value (Wu, Liu & Hsu 2008). Thus, both of the high Service Quality and high Customer Satisfaction cannot guarantee that customers will be loyal to the provider (Žabkar, Brenčič & Dmitrović 2010).

For that reason, Customer Value is an important antecedent to Behavioural Intentions and can be used to predict behavioural patterns besides Service Quality and Customer Satisfaction (Chen 2008; Hu, Kandampully & Juwaheer 2009; Kuo, Wu & Deng 2009). Zeithaml (1988) provides evidence that Customer Value has a direct influence on customers' purchase decisions and it is a direct consequence of Service Quality. A number of studies suggest that Customer Value is a consequence of Service Quality (Chen & Hu 2010; Jen, Tu & Lu 2011; Lai & Chen 2011; Shukla 2010).

Accordingly, the concept of Customer Value, therefore, cannot be neglected by marketers and scholars as a way to better understand consumer behaviour (Gallarza, Gil-Saura & Holbrook 2011). Thus, an understanding of antecedents and consequences of Customer Value is considered as the most important prerequisite for understanding consumer behaviour which leads to sustainable competitive advantage for the firms (Gallarza, Gil-Saura & Holbrook 2011). Besides Sections 4.3.3.1 and 4.3.3.2 reviewing the relationships between SQ, SAT, and BI, the following reviews are from the services literature that incorporates Customer Value into their models.

In the services literature, Service Quality is acknowledged as an antecedent to Customer Value (SQ→CV). For example, in a food and beverage (coffee outlets) sector (Chen & Hu 2010), the attributes of Service Quality (*Coffee quality, Service, Food and beverage, Atmosphere, and Extra benefits*) are tested as the antecedents to Perceived Value (*Symbolic Value and Functional Value*). The findings support that the relationship between Service Quality and Perceived Value is confirmed (SQ→CV). In particular, *Coffee quality, Food and beverage, and Extra benefits* have a direct impact on Symbolic Value whereas *Coffee quality, Service, and Food and beverage* have a direct influence on Functional Value.

In the New Zealand motel industry (Clemes, Gan & Ren 2011), Service Quality (consisting of *Interaction quality, Physical environment quality, and Outcome quality*) is hypothesised as an antecedent to Customer Satisfaction and, in turn, Customer Satisfaction is an antecedent to Behavioural Intentions. The results suggest that *Outcome quality* is the most significant attribute of Service Quality, followed by *Physical environment quality* and *Interaction quality*. Service Quality has a direct relationship with Customer Satisfaction (SQ→SAT), and Customer Satisfaction has a direct relationship with Behavioural Intentions (SAT→BI). The results also suggest that Customer Value plays a vital role as moderator between Service Quality and Customer Satisfaction. However, the indirect effect between Service Quality and Behavioural Intentions is not tested as Customer Value is posited as a moderator, not as a mediator (Clemes, Gan & Ren 2011).

In another study from the Taiwanese hotel industry (Hu, Kandampully & Juwaheer 2009), Service Quality is found to have a positive impact on Perceived Value (SQ→CV), Customer Satisfaction (SQ→SAT), and Corporate Image. However, it is found not to have a direct effect on Behavioural Intentions. Perceived Value has a positive impact on Customer Satisfaction (CV→SAT), Corporate Image, and Behavioural Intentions (CV→BI). Customer Satisfaction has a positive impact on Corporate Image, and Corporate Image has a positive impact on Behavioural Intentions. However, the indirect relationships among these constructs are not mentioned by the authors.

In the telecommunication contexts, the United Kingdom mobile industry (Shukla 2010) and the Chinese telecommunication industry (Lai, Griffin & Babin 2009) are investigated.

In the United Kingdom mobile industry (Shukla 2010), Service Quality is found to have a positive direct effect on Perceived Value (SQ→CV), Customer Satisfaction

(SQ→SAT), Customer Loyalty (SQ→BI), and Customer Switching. Perceived Value has a positive direct effect on Customer Satisfaction (CV→SAT), Customer Loyalty (CV→BI), and Customer Switching. Customer Satisfaction has a positive direct effect on Customer Loyalty (SAT→BI), and Customer Switching. The findings also suggest the indirect effects of Service Quality and Perceived Value on Behavioural Intentions (SQ→CV as mediator→BI, SQ→SAT as mediator→BI, SQ→(CV→SAT as mediators)→BI, and CV→SAT as mediator→BI).

In the Chinese telecommunication industry (Lai, Griffin & Babin 2009), Service Quality has a direct effect only on Customer Value (SQ→CV) and Image but does not have a direct effect on both Satisfaction and Customer Loyalty. Service Quality has an indirect effect on Loyalty through the mediation of Customer Value (SQ→CV as mediator →BI). Customer Value has a direct effect on Satisfaction (CV→SAT), and both Customer Value and Satisfaction have a direct effect on Loyalty (CV→BI, SAT→BI). The total effects show that Customer Value has the strongest total effect on Loyalty.

In the transportation industry (Jen, Tu & Lu 2011), Service Quality has a direct effect on Perceived Value (SQ→CV) and Satisfaction (SQ→SAT). Although Service Quality does not have a direct effect, it has an indirect effect on Behavioural Intentions (SQ→SAT as mediator→BI, SQ→CV as mediator→BI, and SQ→(CV and SAT as mediators)→BI). Perceived Value has a direct effect on Satisfaction (CV→SAT) and Behavioural Intentions (CV→BI). Satisfaction has a direct effect on Behavioural Intentions (SAT→BI). Service Quality (through the mediation of Perceived Value and Satisfaction) and Perceived Value (through the mediation of Satisfaction) have an indirect effect on Behavioural Intentions.

In the education sector (Sheu 2010), the multi-attribute attitude model framework is used to investigate the causal sequence of relationships among Service Quality, Value, Satisfaction, Favourable Behavioural Intentions (FBI), and Unfavourable Behavioural Intentions (UFBI). The causal relationships among the constructs support the multi-attribute attitude model for FBI but not for UFBI. More specifically, Service Quality, Value, and Satisfaction have a positive direct relationship to FBI (SQ→(F)BI, CV→(F)BI, SAT→(F)BI) but not to UFBI. Service Quality has an indirect relationship to FBI through the mediation of Value and Satisfaction (SQ→(CV→SAT as mediators)→(F)BI) whereas Value has an indirect relationship to FBI through the mediation of Satisfaction (CV→SAT as mediator→(F)BI).

In the recreation context (Hutchinson, Lai & Wang 2009), the constructs including Equity, Service Quality, Value, Satisfaction, Intention to Revisit, Word-Of-Mouth, and Search for Alternatives are investigated. The results reveal that Service Quality does not have an influence on Value, Satisfaction, or any attributes of Behavioural Intentions (Intention to revisit, Word-Of-Mouth, and Search for Alternatives). However, it has an indirect effect on Satisfaction through Equity, and an indirect effect on Intention to Revisit and Word-Of-Mouth through Equity, Value and Satisfaction ($SQ \rightarrow (Equity \rightarrow CV \rightarrow SAT \text{ as mediators}) \rightarrow BI$). Equity has a direct effect and indirect effect on Satisfaction through Value. Value has a direct effect on Satisfaction and Intention to Revisit ($CV \rightarrow SAT$, $CV \rightarrow BI$). Value and Satisfaction have a direct effect on Word-Of-Mouth and Intention to Revisit ($SAT \rightarrow BI$).

The previous extensive review of services literature reveals that the causal sequences of relationships among the four constructs Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions are varied. Table 4.2 presents the summary of the relationships. These reviews lead to the following hypotheses:

Hypothesis 6: Service Quality has a direct effect on Customer Value ($SQ \rightarrow CV$).

Hypothesis 7: Customer Value has a direct effect on Customer Satisfaction ($CV \rightarrow SAT$).

Hypothesis 8: Customer Value has a direct effect on Behavioural Intentions ($CV \rightarrow BI$).

Hypothesis 9: Service Quality has an indirect effect on Customer Satisfaction through Customer Value as a mediator ($SQ \rightarrow CV$ as mediator $\rightarrow SAT$).

Hypothesis 10: Service Quality has an indirect effect on Behavioural Intentions

a) Through Customer Value as a mediator ($SQ \rightarrow CV$ as mediator $\rightarrow BI$).

b) Through Customer Satisfaction as a mediator ($SQ \rightarrow SAT$ as mediator $\rightarrow BI$).

Hypothesis 11: Customer Value has an indirect effect on Behavioural Intentions through Customer Satisfaction as a mediator ($CV \rightarrow SAT$ as mediator $\rightarrow BI$).

Table 4.2: Summary of the relationships between Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions

Authors	Industry	Direct Effect						Indirect Effect		
		SQ-->SAT	SQ-->BI	SAT-->BI	SQ-->CV	CV-->SAT	CV-->BI	SQ-->SAT	SQ-->BI	CV-->BI
Kara et al (2005)	Healthcare	Y								
Zaim et al (2010)	Healthcare	Y								
Laohasirichaikul et al. (2011)	Healthcare	Y	Y							
Padma et al. (2010)	Healthcare	Y								
Miranda & Antonio (2012)	Healthcare	Y								
Gallan et al. (2012)	Healthcare	Y								
Wu (2011)	Healthcare	Y	N	Y					Y	
Lee et al. (2011)	Tourism	Y		Y						
Ladhari (2009)	Hotel	Y		Y					Y	
Spreng et al. (2009)	B2B	Y	Y	Y						
Pollack (2009)	Retails	Y	Y	Y						
Gounaris et al. (2010)	E-Business	Y	Y						Y	
Udo et al. (2010)	E-Business		Y	Y					Y	
Alrubaiee & Alkaaida (2011)	Healthcare	Y	Y	Y					Y	
Chaniotakis & Lymperopoulos (2009)	Healthcare	Y	Y/N	Y					Y/N	
Li et al. (2011)	Healthcare		Y/N	Y					Y/N	
Wang et al. (2011)	Healthcare		Y							
Lonial et al. (2010)	Healthcare		N							
Guar et al. (2011)	Healthcare			Y						
Chen & Hu (2010)	Coffee outlets				Y					
Flint et al. (2011)	Logistics service					Y	Y			
Chahal & Kumari (2011)	Healthcare						Y			
Clemes, Gan & Ren (2011)	Motel	Y		Y						
Sheu (2010)	Education		Y	Y			Y		Y	Y
Lai, Griffin & Babin (2009)	Telecom	N	N	Y	Y	Y			Y	
Jen, Tu & Lu (2011)	Transportation	Y	N	Y	Y	Y	Y		Y	
Chen (2008)	Airline	Y		Y	Y	Y	Y		Y	
Hu et al. (2009)	Hotel	Y	N	Y	Y	Y	Y		Y	Y
Shukla (2010)	Mobile	Y	Y	Y	Y	Y	Y			
Lai & Chen (2011)	Transportation	Y	Y	Y	Y	Y	Y	Y	Y	Y
Kuo, Wu & Deng (2009)	Mobile	Y	N	Y	Y	Y	Y	Y	Y	Y
Chen & Chen (2010)	Tourism	Y	N	Y	Y	Y	Y	Y	Y	Y
Hutchinson et al. (2009)	Recreation	N	N	Y	N	Y	Y	Y	Y	
Omar et al. (2010)	Childcare Centre	Y	N	Y	Y	Y	Y	Y	Y	Y
Hu et al. (2010)	Healthcare	Y		Y	Y	Y		Y	Y	Y
Choi et al. (2004)	Healthcare	Y	Y	Y	Y	Y	Y	Y	Y	Y
Wu et al. (2008)	Healthcare	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: Y = There is an effect, N = There is no effect, Blank = Not tested, SQ = Service Quality, SAT = Customer Satisfaction, CV = Customer Value, BI = Behavioural Intentions

Note that the previous discussions are the result of extensive review of service industry research that include some or all of these constructs (SQ, CV, SAT, and BI) in their studies.

4.4 Integrative conceptual model development

The concept of Service Quality alone does not provide enough information to service providers to achieve competitive advantage in the market. Customer Value (CV), Customer Satisfaction (SAT), and Behavioural Intentions (BI) are needed to the understanding for the improvement of competitive advantage. These concepts (SQ, CV, SAT, and BI) provide more insight into customers' perceptions and how these concepts are used to predict consumer behaviour (Kuo, Wu & Deng 2009). In addition to Service Quality and Customer Satisfaction, Customer Value is introduced as an important antecedent to Behavioural Intentions (Chen & Chen 2010). Thus, the use of integrative concepts is considered as a more comprehensive approach than the use of any single concept (e.g. Service Quality or Customer Satisfaction) to understand healthcare consumers, which leads to the improvement of marketing strategies for competitive advantage (Woodruff 1997; Wu, Liu & Hsu 2008).

In addition, the discussion in Section 4.1 (five previous studies from service industries), Section 4.2 (three previous studies from healthcare sectors) and Section 4.3 (the relationships between SQ, CV, SAT and BI) confirmed the relationships among these four constructs (SQ, CV, SAT, BI). After an extensive review of theoretical literature and empirical studies, this thesis proposes the integrative conceptual model consisting of the four constructs (SQ, CV, SAT, and BI) for the study in healthcare service context. The proposed integrative model is presented in Figure 4.9. This model will explain the relationships among Service Quality, Customer Satisfaction, Customer Value and Behavioural Intentions in Thai private hospitals based on foreign patients' perceptions, and will answer research questions and related hypotheses.

This thesis models the causal relationships according to the multi-attribute attitude model framework which posits the causal order of the relationships as cognitive→affective→conative (Chen & Chen 2010; Choi et al. 2004). Cognitive is Service Quality and Customer Value, affective is Customer Satisfaction, and conative is Behavioural Intentions (Choi et al. 2004; Giese & Cote 2000; Han, Kim & Kim 2011; Sheu 2010). The summary of research questions and hypotheses is presented in Table 4.3.

Figure 4.9: Integrative conceptual model of the study

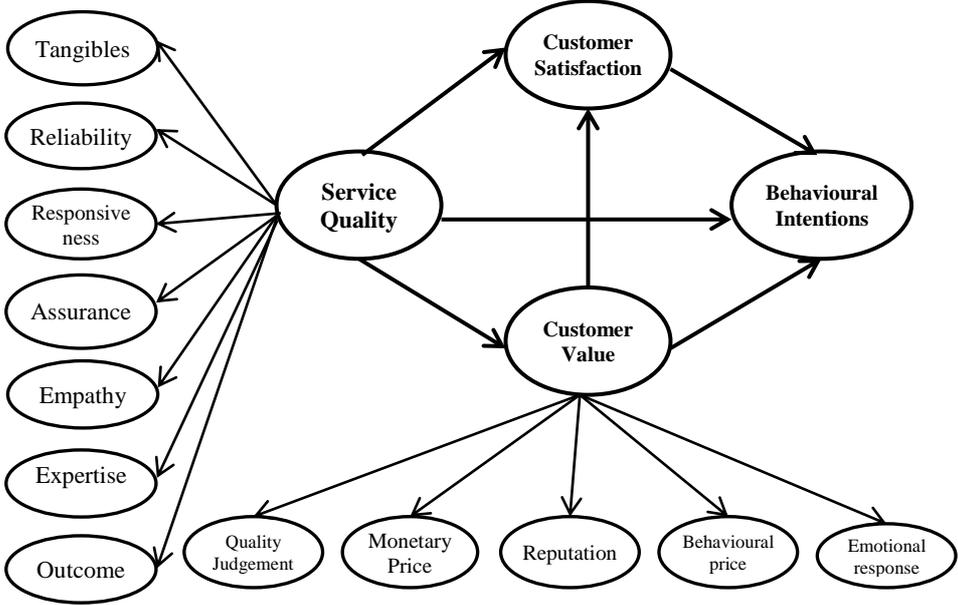


Table 4.3: Summary of research questions and hypotheses

Research question 1: What are the determinants of Service Quality for foreign patients in Thai private hospitals?	
Hypothesis 1: Service Quality is a multidimensional construct consisting of Tangibles, Reliability, Responsiveness, Assurance, Empathy, Expertise, and Outcomes.	
H1.a	Tangibles is a significant and distinct determinant of Service Quality.
H1.b	Reliability is a significant and distinct determinant of Service Quality.
H1.c	Responsiveness is a significant and distinct determinant of Service Quality.
H1.d	Assurance is a significant and distinct determinant of Service Quality.
H1.e	Empathy is a significant and distinct determinant of Service Quality.
H1.f	Expertise is a significant and distinct determinant of Service Quality.
H1.g	Outcome is a significant and distinct determinant of Service Quality.
Research question 2: What are the determinants of Customer Value for foreign patients in Thai private hospitals?	
Hypothesis 2: Customer Value is a multidimensional construct consisting of Quality judgement, Monetary price, Reputation, Behavioural price, and Emotional response.	
H2.a	Quality judgement is a significant and distinct determinant of Customer Value.
H2.b	Monetary price is a significant and distinct determinant of Customer Value.
H2.c	Reputation is a significant and distinct determinant of Customer Value.
H2.d	Behavioural price is a significant and distinct determinant of Customer Value.
H2.e	Emotional response is a significant and distinct determinant of Customer Value.
Research question 3: What are the relationships among Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions in Thai private hospitals, based on the perceptions of the foreign patients?	
Hypothesis 3: Service Quality has a direct effect on Customer Satisfaction.	
Hypothesis 4: Service Quality has a direct effect on Behavioural Intentions.	
Hypothesis 5: Customer Satisfaction has a direct effect on Behavioural Intentions.	
Hypothesis 6: Service Quality has a direct effect on Customer Value.	
Hypothesis 7: Customer Value has a direct effect on Customer Satisfaction.	
Hypothesis 8: Customer Value has a direct effect on Behavioural Intentions.	
Hypothesis 9: Service Quality has an indirect effect on Customer Satisfaction through Customer Value as a mediator.	
Hypothesis 10: Service Quality has an indirect effect on Behavioural Intentions	
H10.a	Through Customer Value as a mediator.
H10.b	Through Customer Satisfaction as a mediator.
Hypothesis 11: Customer Value has an indirect effect on Behavioural Intentions through Customer Satisfaction as a mediator.	

4.5 Chapter summary

This chapter commences with Sections 4.1 and 4.2 with reviews of integrative models that have studied the relationships among the four constructs (SQ, CV, SAT and BI). These models have simultaneously related these four constructs in service industries and healthcare industries. Hence they provide a benchmark for testing the proposed hypotheses using the structural equation modelling technique. These reviews also provide a foundation for the hypothesis development in Section 4.3 and the model development in Section 4.4.

This review reveals that the direct relationships ($SQ \rightarrow CV$, $SQ \rightarrow SAT$, $SQ \rightarrow BI$, $CV \rightarrow SAT$, $CV \rightarrow BI$, and $SAT \rightarrow BI$) and indirect relationships among the constructs are not consistent in the services literature. The summary of the relationships among these four constructs is shown in Table 4.2.

Next, Chapter 5 (Methodology) will describe the methodology and design used to test hypotheses. This includes the research design, the sample design, the development of measures and instruments used. The choices of statistical techniques and analysis are outlined. The ethics considerations are reviewed.

PART THREE

RESEARCH METHODOLOGY AND DATA ANALYSIS STRATEGY

Chapter 5 Research method

Chapter 6 Data analysis strategy

Part Three consists of two chapters. Chapter 5 describes the research method including the research paradigm, research design, construct development and operationalisation, questionnaire design and, sampling design and procedures. Chapter 6 focuses on the preparation for data analysis and data analysis strategy.

CHAPTER 5: RESEARCH METHOD

The previous chapter presented the research problems and hypotheses development. The extensive review of relevant literature employing the constructs of Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions was presented. The integrative conceptual model was developed to study and evaluate this model.

This chapter consists of several sections. Sections 5.1 and 5.2 describe the methodology and design used to test the hypotheses (see Chapter 4, Table 4.3). These sections introduce the roles in the research paradigm and the research design. Their function is to provide the information on how to evaluate the assumptions inherent in the hypothesis and to give guidelines for the collection of relevant data. Section 5.3 discusses the development of measures, the operationalisation of the construct and the survey method. In Section 5.4 the questionnaire design and the measurement scaling are presented. Section 5.5 describes the sampling design and procedures such as the definition of the population, the population of the study, the sample frame, the sampling technique, and the data collection process of this study. Section 5.6 looks at ethics considerations. Section 5.7 is the summary of the chapter.

5.1 Research paradigm

The definition of paradigm has been discussed in a variety of ways in many areas of research. A paradigm is the underlying assumptions of research (Huene 1993) that provides the instruction on how evaluate the assumptions inherent in the hypothesis and to give guidelines for the collection of relevant data (Kuhn 1977). It is a result of observation that brings about an understanding to explain what to see and how to interpret the problems (Babbie 2010). Paradigm suggests procedures, processes and theoretical points by which researchers can develop a greater understanding of the topic and gather data (Collis & Hussey 2009).

In marketing literature, paradigms are identified by positivist social science, interpretive social science and critical social science (Neuman 2011). Positivist social science focuses on the general trends of human behaviour and therefore the true understanding is based on experience of senses that can be gained by careful empirical observation and experiment (Neuman 2011).

Interpretive social science emphasises self-interpretation based on the ideological positions one possesses. It is a more intensive and flexible relationship with the respondents as it requires a more in-depth method to understand the phenomenon of interest (Collis & Hussey 2009).

Critical social science assumes that there is an interactive link between investigator and respondents, resulting in an inevitable influence on the view of the phenomenon. While critical theory aims to critique the phenomenon, positivist and interpretive social science approaches aim at providing an explanation and prediction of the phenomenon (Guba & Lincoln 1998).

The two main research paradigms that are applied widely are the positivist and interpretive paradigms. Positivist is commonly understood as quantitative or objectivist whereas the interpretive paradigm is commonly known as qualitative or subjectivist (Collis & Hussey 2009).

The positivist paradigm aims at understanding the phenomenon of interest and predicting phenomena from a more general to a more specific point of view. For that reason, the deductive approach such as a survey is applied to gathering data, measuring and testing of hypotheses. In contrast, the interpretive paradigm requires a more in-depth technique to comprehend the phenomenon, therefore, an inductive approach such as a field study including interviews and a focus group are suitable.

The positivist paradigm and deductive approach are adopted for this study because this research aims to understand the general trends of human behavioural, that is, the foreign patients' perspectives towards Service Quality, Customer Value, and Customer Satisfaction in relation to Behavioural Intentions. A quantitative method and a research instrument such as a questionnaire are needed because they are designed to confirm research hypotheses and to test the integrative model based on existing theory.

5.2 Research design

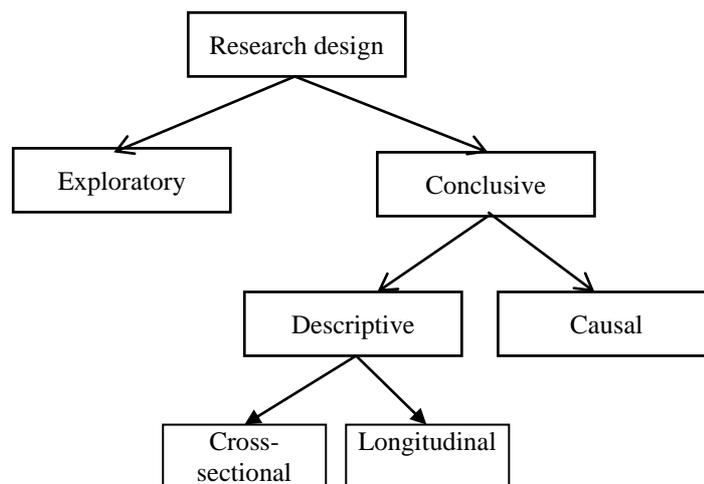
A research design can be viewed as the blueprint of the study which guides the researcher to the specific method for data collection and analysis. It is a framework, a plan and a strategy of investigation to ascertain the answers to research questions (Churchill & Iacobucci 2004). A research design describes the outline of the research scheme, explains how the research is carried out, specifies the method and procedures for acquiring the information needed, and enables the

researcher to find a valid conclusion of the study and solve the research problem (Aaker 2011). A good research design enables the researcher to have a clear understanding of procedures for data collection and analysis. It also “ensures that the information obtained is relevant to the research problem, and that it is collected by objective and economical procedures” (Smith & Albaum 2010, p. 21). Research is designed in accordance with three types of studies: exploratory research, descriptive research and causal research (Smith & Albaum 2010).

5.2.1 Type of research approach

Type of research design implies the method of data collection (Neuman 2011). Type of research is influenced by factors such as purpose, time frame, objective, and nature of the research problem (Boyce 2005). Research design can be classified as exploratory or conclusive (descriptive and causal) (Gupta & Gupta 2011) as shown in Figure 5.1.

Figure 5.1: Classification of research designs



Source: Gupta & Gupta (2011, p. 36)

There are differences between exploratory and conclusive research in four main areas: objectives, characteristics, findings and outcomes (Gupta & Gupta 2011). The objective of exploratory research is to discover and understand the study under investigation whereas the objective of conclusive research is to test hypotheses and identify relationships between variables. Regarding the characteristic differences, the exploratory research process is unstructured, flexible and qualitative while conclusive research process is more formal, structured and quantitative. The findings from exploratory research are viewed as tentative whereas the findings from conclusive research are viewed as a conclusion of the research. The outcome

from exploratory research is generally used as input for further study. In contrast, the outcome from conclusive research is used as input to decision making.

Exploratory research is used to explain why and how a phenomenon occurred (Gupta & Gupta 2011). In other words, its purpose is to explore the unknown situation, to provide an understanding of the nature of the situation of interest, and to discover the ideas and causes (Boyce 2005). Exploratory research is suitable for finding the causes of a specific problem and identifying alternative courses of action (Smith & Albaum 2010). So, it is considered as a starting point of all research design and can be used as the introductory phase of a larger study such as a conclusive research (Malhotra 2006). Data collection methods such as focus group interviews, discussions with experts and review of literature are appropriate for exploratory research which is unstructured and qualitative (Neuman 2011).

By contrast, conclusive research is more structured than exploratory research and is quantitative (Malhotra 2006). It is classified into two categories: descriptive and causal. Descriptive research aims at describing the characteristics of a particular group or individual and focuses on finding the answer regarding who, what, when, where and how of the subject under study rather than identifying cause and effect of relationship (Gupta & Gupta 2011; Neuman 2011). Consequently, descriptive research generally focuses on describing characteristics or functions such as the characteristics of potential customers of a firm. It is used commonly in marketing fields such as product research, promotion research, distribution research and pricing research. Therefore, descriptive research aims to provide a sound solution of marketing problems or predictive purposes rather than to explain the relationships between the cause and effect (Smith & Albaum 2010).

Further point to note about descriptive research is that it can be cross-sectional or longitudinal (Gupta & Gupta 2011). Cross-sectional research is viewed as a snapshot taken at a particular time whereas longitudinal research is viewed as a diary provided observing people or behaviours over a given period (Saunders, Lewis & Thornhill 2009). Bryman and Bell (2011) suggest that cross-sectional research has four characteristics: employing more than one case, data collecting at a single point in time, being quantitative in nature, and examining the relationships between variables.

Therefore, the exploratory research design that is normally used in the introductory phase is not appropriate because the proposed framework of this study is developed based on the previous studies in the service literature. The descriptive research

design, which aims to describe the phenomenon and answer research questions, is a suitable approach for this thesis. This thesis, therefore, focuses on the explanation of the relationships among Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions constructs. The quantitative method is used as an input of data analysis and data are collected at a single point in time. Consequently, for the reasons stated above, the cross-sectional research design (which is a sub-category of the descriptive research design) is best suited to explore the research questions of this study.

5.3 Construct development and operationalisation

5.3.1 Service Quality

5.3.1.1 Service Quality as a multidimensional construct

Service Quality is a complex concept (Pollack 2009). Therefore, the multidimensional concept of Service Quality helps to explain the construct better than using single item or dimension as an indicator (Pollack 2009; Vandamme & Leunis 1993). Even though Service Quality is widely accepted as a multidimensional construct by numerous studies in a variety of research contexts such as banking (Ramez 2011), casino (Wong & Fong 2012), transportation (Martínez Caro & Martínez García 2007), and healthcare (Butt & de Run 2010; Işık, Tengilimoğlu & Akbolat 2011; Sharma & Narang 2011), these studies only look at the determinants of Service Quality and do not test the relationship between Service Quality and other constructs such as Customer Satisfaction, Customer Value and Behavioural Intentions. Service Quality is usually conceptualised as a unidimensional construct in the integrative models consisting of four or more constructs. For example, the studies in the hotel industry (Hu, Kandampully & Juwaheer 2009), the mobile industry (Shukla 2010), and healthcare service industry (Omar, Abu, Sapuan, Aziz & Nazri 2010).

The conceptualisation of Service Quality is also postulated as a hierarchical construct by many authors such as Rush and Oliver (1994) and Brady and Cronin (2001). Building upon these two works, Martínez Caro and Martínez Garcia (2008) and Pollack (2009) contended that it is a hierarchical construct consisting of three dimensions: outcome quality, interaction quality and physical environment quality.

Dagger et al. (2007) nominate four hierarchical dimensions: interpersonal quality, technical quality, environment quality and administrative quality.

To explicate the determinants of Service Quality and better elucidate the composite nature of the construct; this thesis adopts the multidimensional and hierarchical concept in operationalising Service Quality.

5.3.1.2 Measurement of Service Quality

A number of studies investigate measurement of Service Quality and conclude that it can be assessed by three measurement methods as discussed in Chapter 2, Section 2.6.

The SERVQUAL scores (a perception-minus-expectations score) have been widely accepted and extensively used as a basic foundation for accessing Service Quality in services marketing research (Alrubaiee & Alkaa'ida 2011). However, they have been criticised for their lower levels of reliability and validity (Cronin Jr & Taylor 1992; Jain & Gupta 2004). Empirical studies suggests that SERVPERF (a performance-only score) outperforms SERVQUAL (an expectation-minus-perceptions score) as it is more reliable and able to explain more variations (Cronin Jr & Taylor 1992; Dabholkar, Thorpe & Rentz 1996; Ramez 2011; van Dyke, Kappelman & Prybutok 1997).

Numerous researchers suggested that SERVPERF is more suitable in services marketing research. This is because it provides better content and discriminant validity (Cronin Jr & Taylor 1992), it is more efficient as the number of items to be measured is reduced by half (Jain & Gupta 2004), it explains the variance better than SERVQUAL (Ramez 2011), it provides a higher convergent and predictive validity (Pitt, Watson and Kavan 1997) and the expectation items do not contribute any extra information (Boller 1992).

Consequently, the research that incorporates the Service Quality concept into the integrative framework mostly adopts the performance-only scores or SERVPERF to measure Service Quality (Choi et al. 2004; Martínez & Martínez 2007; Naceur & Azaddin 2005; Zhihui 2010). Based on this academic support, this thesis adopts SERVPERF (a performance-only score) as an instrument to measure Service Quality. In addition, this thesis does not aim to justify the gap between customers' expectation and perception but to examine the relationship between the Service Quality and other constructs including Customer Value, Customer Satisfaction and

Behavioural Intentions. Therefore, SERVPERF is the most suitable measure for this thesis.

5.3.1.3 Dimensions of Service Quality

The five-dimensions with its items of SERVQUAL labelled as RATER scales have been widely employed by many researchers to evaluate Service Quality in healthcare service contexts as discussed in Chapter 2 and shown in Tables 2.2 and 2.3. However, the SERVQUAL scales have not been integrated as measure of Service Quality in the model consisting of four and more constructs. The existing body of knowledge can be extended by adopting the SERVQUAL scales and investigating them holistically. This thesis adopts the five-dimension of SERVQUAL or RATER scales originated by Parasuraman et al. (1988) to investigate Service Quality.

Despite the SERVQUAL dimensions having been extensively used to assess the quality of healthcare services in many settings, a number of authors and researchers have modified and adapted them to suit the context of their study (Laohasrichaikul, Chaipooirutana & Combs 2011; Padma, Rajendran & Lokachari 2010). One of the modifications is relevant to the technical quality. There has debate about the appropriateness of including the technical quality in the healthcare service context (See Section 2.8). However, many researchers insist that patients are capable of distinguishing and assessing the technical quality (Dagger & Sweeney 2007; Gallan et al. 2013). Hence, technical quality cannot be overlooked in this context. Testing its applicability as a component of Service Quality in hospitals contributes to the understanding of the field.

Consequently, for a better understanding of how patients perceive the quality of service in hospital, the Service Quality construct of this thesis (the definition of the construct is provided in Section 2.3.1) applies the five dimensions of SERVQUAL and also applies the two dimensions of *Expertise* and *Outcome*, thus covering both functional quality and technical quality aspects. Briefly, *Reliability* refers to the hospital provider's ability to perform the promised service dependably and accurately. *Assurance* refers to the knowledge and courtesy of the hospital staff and their ability to inspire trust and confidence in patients. *Tangibles* refers to the appearance of physical facilities, medical equipment, and hospital staff. *Empathy* refers to the attention that staff provide to the patients, and *Responsiveness* refers to the willingness to support patients and to provide prompt service. *Expertise* refers

to the competence, knowledge and skill in diagnosing and caring for patient. *Outcome* refers to the results of medical treatment. These definitions are adapted from Parasuraman et al. (1988) and Dagger and Sweeney (2007) to suit the context of the study.

The purpose of including SERVQUAL dimensions is to provide a better understanding of the Service Quality construct by using a well-established measure accepted in the service literature and by integrating them into a complex framework.

The five dimensions of SERVQUAL consisted of 22 items commonly used in healthcare empirical studies (Manimaran, Sindhya & Venkateshwaran 2010; Pansiri & Mmereki 2010; Rohini & Mahadevappa 2006). The Expertise and Outcome dimensions were used in the two studies by Dagger, Sweeney and Johnson (2007) and Dagger and Sweeney (2007) for measuring Service Quality in a hospital context. These seven dimensions are *Tangibles*, *Reliability*, *Responsiveness*, *Assurance*, *Empathy*, *Expertise*, and *Outcome*.

The response format used for these seven dimensions with 32 items is the 7point Likert scale ranging from (1) strongly disagree to (7) strongly agree. The variable *Tangibles* was measured using four items, *Reliability* using five items, *Responsiveness* using four items, *Assurance* using four items, *Empathy* using five items, *Expertise* using four items and *Outcome* using six items.

The improvement made in the measuring of Service Quality in this thesis is expected to provide a broader understanding of the determinants of Service Quality in the hospital service industry context and to explain the perceptions of patients better than just relying on an unidimensional approach.

5.3.2 Customer Value

Consensus on how to best operationalise Customer Value has not been reached. Value has been established inconsistently in a broad range of studies (Petrick 2002). Many scholars suggest that the use of unidimensional measures is not adequate to capture the concept (Petrick 2002; Sweeney & Soutar 2001; Sanchez et al. 2009; Ruiz et al. 2008) because customers have a shared meaning of value, and a unidimensional construct does not provide a specific direction on Customer Value and how to improve it (Petrick 2002). Customer Value as a unidimensional construct is not enough to explain the complex nature of the concept (Chien-Hsin,

Sher & Hsin-Yu 2005). The use of the unidimensional measure is also criticised for its methodological limitation (Chien-Hsin, Sher & Hsin-Yu 2005) as it lacks validity (Woodruff 1997). Despite some drawbacks as discussed above, a unidimensional approach is widely used in service industries research such as airline industry by Chen (2008), hotel industry by Hu et al. (2009), telecom industry by Kuo et al. (2009) including healthcare service industry by Choi et al. (2004) and Wu, Liu & Hsu (2008).

A more sophisticated measure of Customer Value is needed to better understand how customers perceive the value of products and services (Sweeney & Soutar 2001). The multidimensionality better explains the perceived customer benefits and sacrifices than unidimensionality (Sigala 2006). However, a generic measure for Customer Value in the healthcare context does not yet exist. Likewise, there is not much research that includes Customer Value in integrative models consisting of four or more constructs. Furthermore, none of the research in the healthcare service industry context have conceptualised Customer Value as a multidimensional construct in integrative models.

This thesis adopts the broader perspective of Customer Value and conceptualises it as a multidimensional construct explained by cognitive perspective. The definition of the construct is provided in Section 3.1.2. This research aims to contribute in this field of study by adopting a five-dimension of the Customer Value construct of Petrick's (2002) (SERV-PERVAL). These five dimensions have been validated in the studies of cruise passengers (Petrick 2002; 2004) and heritage tourists (Chen and Chen 2010) but not yet in the healthcare service context. These five dimensions are *Behavioural price*, *Monetary price*, *Emotional response*, *Quality*, and *Reputation*.

The *Behavioural price* dimension is defined as the (non-monetary) price of obtaining hospital services such as ease of access to the premises, to acquire medical attention, to access the details of available medical and non-medical services offered and to purchase the hospital's services. The *Monetary price* dimension is defined as the price paid for hospital treatment and services received. The *Emotional response* dimension reflects the feeling or emotional response to the service received such as a sense of joy, delight and happiness. The *Quality judgement* dimension is defined as a patient's judgement about the hospital services' overall excellence or superiority such as outstanding, reliable, dependable and consistent. Lastly, *Reputation* is defined as the prestige, status and image of the

hospital provider perceived by patients. These definitions are adapted from Petrick (2002) to suit the context of the study.

Even though this thesis includes the Service Quality construct, the purpose of including Quality dimension of SERV-PERVAL is different. The Service Quality construct is assessed by the several attributes reflecting functional and technical quality whereas the Quality dimension of the Customer Value construct is concerned with the overall aspect of service quality performance, expressed in terms of outstanding, reliable, dependable and consistent. To avoid confusion of terminology, the Quality dimension of Customer Value is renamed as Quality judgement in this thesis.

Behavioural price, *Monetary price* and *Quality judgement* were measured using four items. *Reputation* and *Emotional response* were measured using five items. The scales used for these five variables with 22 items ranged from (1) strongly disagree to (7) strongly agree. This thesis is aimed to gain a better understanding of Customer Value attributes perceived by foreign patients and it is expected that the use of multidimensional measures or SERV-PERVAL will explain the model better than limiting the study to the confines of the unidimensional approach.

5.3.3 Customer Satisfaction

Customer Satisfaction is defined as a patient's fulfilment response to an overall assessment of the service experiences with a hospital provider. This definition is adapted from the definitions proposed by Oliver (2011) and Zeithaml and Bitner (2003) as discussed in Section 3.2.2.1. The definition is based on the cumulative approach as discussed in Section 3.2.2.2. The cumulative approach is suit to the study because one of the aims of the study is to understand the antecedents and consequence of Customer Satisfaction related to Service Quality, Customer Value and Customer Satisfaction. Consequentially, the focus is upon determining overall satisfaction of patients rather than monitoring Customer Satisfaction at the service encounter level.

Customer Satisfaction is generally conceptualised as a unidimensional construct in service research. Some studies use a single item to measure overall satisfaction and start a sentence with 'overall, I am satisfied with...' (Spreng & Mackoy 1996). However, many researchers prefer a multiple-item scale to operationalise Customer Satisfaction because it is able to capture the complexity of the construct better than

a single-item scale (Hu, Kandampully & Juwaheer 2009; Sureshchandar, Rajendran & Anantharaman 2002).

In the healthcare service context, Customer Satisfaction is commonly conceptualised as a unidimensional construct with two to eight measures. For instance, Li et al. (2011), Wu, Liu and Hsu (2008), and Choi et al. (2004) use two measures based on affective response to overall experience with the hospital. Laohasirichaikul, Chaipoo Pirutana and Combs (2011) use four measures to assess Customer Satisfaction. Lee et al. (2010) use eight measures.

Customer Satisfaction in this thesis is conceptualised as a unidimensional construct measured by a multiple-item scale. The combination of the measure items used by Choi et al. (2004), Wu et al. (2008) and Li et al. (2011) is adopted in this thesis. Their measures are adopted in this thesis because their measure items reflect the cumulative approach (overall impressions) and were tested for validity and reliability in the healthcare service industry context. A total of four items were used to measure Customer Satisfaction and the scales ranged from (1) strongly disagree to (7) strongly agree.

5.3.4 Behavioural Intentions

This thesis employs the concept of Behavioural Intentions as a proxy to customer loyalty and it has operationalised as a unidimensional construct (See Section 3.2.2). Based on the definition suggested by Ajzen (1992), Behavioural Intentions is defined as a degree to which a patient has formed intentions to engage in some specific future activities. The measures reflect willingness to recommend, positive word-of-mouth communication and intention to re-patronage, which is appropriate with regard to the context and aim of the study. Whether the respondents used the hospital services by choice or due to emergency, these measures gauge the overall behavioural intentions of future engagement with the hospital and are considered as suitable measures in the current research.

The items proposed by Boshoff and Gray (2004), Bloemer et al. (1999), Choi et al. (2004), Wu et al. (2008) and Li et al. (2011) are selected for the study, a total of four items with the scales ranging from (1) strongly disagree to (7) strongly agree. These combinations of items were used and validated in the healthcare service industry context.

The results of this study are expected to provide useful information for Thai and other healthcare service industries that aim to expand their market to capture the foreign patients segment, and for insurance companies interested in knowing the perceptions of their customers when using medical care abroad. They could use this information as a criterion for selection of hospital networks.

5.3.5 Overall items generated from the literature review

32 statements measuring Service Quality, 22 measuring Customer Value, 4 measuring Customer Satisfaction and 5 measuring Behavioural Intentions were generated from the services literature to answer research questions and hypotheses. The sources of the questionnaire items are provided in Table 5.1. The questionnaire instrument is provided in Appendix 1.

Table 5.1: Sources of the survey instrument

Section A: Service Quality	
Tangible	Sources
The hospital has modern-looking equipment.	Manimaran, Sindhya & Venkateshwaran (2010), Pansiri & Mmereki (2010), Rohini & Mahadevappa (2006)
The physical facilities in the hospital are visually appealing.	
Staff in the hospital are neat in appearance.	
Materials associated with the service (such as pamphlets or statements) are visually appealing.	
Reliability	Sources
When the hospital promises to do something by a certain time, it does so.	Manimaran, Sindhya & Venkateshwaran (2010), Pansiri & Mmereki (2010), Rohini & Mahadevappa (2006)
When I have a problem, the hospital shows a sincere interest in solving it.	
The hospital gets things right the first time without having to repeat.	
The hospital provides its services at the time it promises to do so.	
The hospital insists on error-free records.	
Responsiveness	Sources
Staff in the hospital tell me exactly when services will be performed.	Manimaran, Sindhya & Venkateshwaran (2010), Pansiri & Mmereki (2010), Rohini & Mahadevappa (2006)
Staff in the hospital gives me prompt service.	
Staff in the hospital are always willing to help me.	
Staff in the hospital always respond to my requests.	
Assurance	Sources
Staff in the hospital instil confidence in me.	Manimaran, Sindhya & Venkateshwaran (2010), Pansiri & Mmereki (2010), Rohini & Mahadevappa (2006)
I feel safe in my dealings with the hospital.	
Staff in the hospital are always courteous to me.	
Staff in the hospital have knowledge to answer my questions.	
Empathy	Sources
The hospital gives me individual attention.	Manimaran, Sindhya & Venkateshwaran (2010), Pansiri & Mmereki (2010), Rohini & Mahadevappa (2006)
The hospital has operating hours that is convenient to all its patients.	
The hospital has staff that gives me personal attention.	
The hospital has my best interests at heart.	
The staff in the hospital understand your specific needs.	
Expertise	Sources
The staff at the hospital are well trained and qualified.	Dagger & Sweeney (2007)
The staff at the hospital carry out their tasks competently.	
The staff at the hospital are highly skilled at their jobs.	
I feel good about the quality of the health care given me at the hospital.	
Outcome	Sources
I feel hopeful as a result of having treatment at the hospital.	Dagger & Sweeney (2007)
Coming to this hospital has increased my chances of improving my health.	
I believe my future health will improve as a result of having received medical attention at the hospital.	
I believe having treatment at this hospital has been worthwhile.	
I leave the hospital feeling encouraged about my treatment.	
I believe the results of my treatment will be the best they can be.	

Section B: Customer Value	
Quality	Sources
Quality of service at the hospital is outstanding.	Petrick (2002)
Quality of service at the hospital is reliable.	
Quality of service at the hospital is dependable.	
Quality of service at the hospital is consistent.	
Monetary Price	Sources
The price for medical care is fair.	Petrick (2002)
The price for medical care is reliable.	
The price for medical care is consistent.	
The price for medical care is worth the money.	
Reputation	Sources
The hospital has good reputation.	Petrick (2002)
The hospital is well respected.	
The hospital is well thought of.	
The hospital has status.	
The hospital is reputable.	
Non-Monetary Price	Sources
Easy to access the hospital premise.	Petrick (2002)
Easy to acquire medical attention.	
Easy to access the details of available services the hospital's offered.	
Easy to purchase the hospital's services.	
Emotional response	Sources
makes me feel good.	Petrick (2002)
gives me pleasure.	
gives me a sense of joy.	
makes me feel delighted.	
gives me happiness.	

Section C: Customer Satisfaction	
Satisfaction	Sources
I am satisfied with the treatment I received in the hospital.	Choi et al. (2004)
I am satisfied with the health care services in this hospital.	Wu et al. (2008)
I am satisfied with the decision to use service from this hospital.	Choi et al. (2004)
The overall feeling about the service of care in this hospital is better than what I expected.	Wu et al. (2008)

Section D: Behavioural Intentions	
Behaviour Intentions	Sources
I will recommend this hospital to family and friends.	Boshoff & Gray (2004), Choi et al. (2004)
I will recommend this hospital to anyone who seeks my advice.	Wu et al. (2008), Li et al. (2011)
I will say positive things about this hospital to other people.	Bloemer et al. (1999), Choi et al. (2004)
If I need medical service in the future, I will consider this hospital as my first choice.	Choi et al. (2004), Wu et al. (2008), Li et al. (2011)
I will definitely return to this hospital in the future if necessary.	Boshoff & Gray (2004)

5.3.6 General information

The general information section in the questionnaire was designed to gather demographic data. The questions included gender, age, sex, nationality, reason for using medical service at hospital, insurance coverage, status of patients (tourist, medical tourist, expatriate or migrant), type of patient (in-patient or out-patient) and occupation. There was also an open-ended question regarding recommendations to the hospital. This section was not intentionally designed to answer the research questions and proposed hypotheses. Rather, it aimed to be a supplement to quantitative information and provided an insight into the understanding of the proposed integrative conceptual model. These demographic and open-ended sections were included also for the purpose of the further research in the hospital context.

5.3.7 Data collection method

Data collection methods can be classified by the sources of data collected; primary and secondary sources (Boyce 2005). The secondary data sources are collected for some other purposes rather than the purpose of current research (Malhotra 2006). In contrast to secondary data, primary data are collected for a specific purpose of a study (Aaker 2011). This thesis posits specific research questions and hypotheses regarding the relationships among Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions. More specifically, it aims to understand the perceptions of foreign patients who use private hospitals in Thailand. Thus, for the purpose of verification of the hypotheses proposed, primary data is essential as it provides specific information to the research study.

There are mainly three methods for collecting primary data: survey, observation, and experiment (McDaniel & Gates 2011). However, the most common form of data collection in marketing research is the survey method (Malhotra, Kim & Patil 2006). The survey method as suggested by Aaker (2011) includes personal interviewing, telephone interviewing, self-administration, mail procedures, drop-off questionnaires, and fax surveys.

To obtain the data by survey method, the respondents are asked questions such as attitude, perceptions, lifestyle, characteristics and demographic (Malhotra 2006). Surveys are generally viewed as a quantitative method due to the questions being collected from a large sample of the population of interest. In addition, the data

collected are used for statistical analyses and testing hypotheses (Malhotra 2006). Survey methods have several advantages such as being easy to administer, most questions in a questionnaire are pre-coded (the question has a fixed set of alternative answers), the data obtained are more reliable and are less variable in results in comparison to interview data (Malhotra 2006). Nevertheless, the major drawback of this method is the lack of direct communication with the respondents to explain and clarify the questions when needed, especially open-ended questions (McDaniel & Gates 2011).

This thesis applied a self-administered questionnaire method. It was chosen as the most suitable method due to “its ease of presenting questions requiring visual aids (in contrast to telephone interviews), asking questions with long or complex response categories is facilitated, asking batteries of similar questions is possible, and the respondent does not have to share answers with an interviewer” (Aaker 2011, p. 270). In the healthcare research context, the self-administration method is widely applied (Choi et al. 2004; Hu et al. 2010; Lee et al. 2010).

Despite the disadvantages of this method as discussed above, the issues noted were minimised because the researcher was at the hospital every day from 8 am to 6 pm during the data collection period. The respondents (foreign patients) were informed that the researcher was available to clarify the questions if needed. Most completed the questionnaires on the spot and returned them straightaway to a locked deposit box with the hospital cashier. The details of how questionnaires were distributed and collected are elaborated in Section 5.5.6 (Data collection process).

5.4 Questionnaire design and measurement scaling

5.4.1 Questionnaire design

A questionnaire is a set of questions that are used as a tool to obtain information from respondents (Boyce 2005). A well designed questionnaire gains respondents' cooperation and encourages their interest (Malhotra 2006). Due to the chances of the researcher rarely having a second chance to collect further data, the questionnaire should be carefully designed (Boyce 2005). Therefore, a well-designed questionnaire ensures that the data obtained contains valid information and relates to the purpose of the study (Aaker 2011).

The effectiveness or response rate of questionnaire can be increased by carefully arranging the sequence of questions, grouping them together under the common subject, and having a clear heading (Adams & Cox 2008). Note that the questions should not be too long and the content should be relevant (De Vaus 2002). The other ways to increase the response rate is to tell the respondents why the survey is important and why they should participate. To give them a promise of confidentiality and to ensure no sales follow-up also help to increase the response rate. An informative covering letter along with one or two open-ended questions is recommended. The questionnaire should be printed in a clear typeface which is big enough for easy reading (Boyce 2005).

Questionnaires can be classified as unstructured and structured. Unstructured or open-ended questions are those where the respondents can give the answer in their own words. They are useful in that the respondents are able to express their attitudes and opinions without restrictions. The major disadvantage is that they are costly, time consuming and the quality of data depends on the skills of the interviewers (Malhotra 2006). Compared to unstructured questions, the structured or closed-ended questions are questions where the respondents are provided the alternatives of multiple choice (suitable when the number of alternative are not too many), dichotomous (yes or no question) or a scale (a continuum upon which measured objects are located) that the respondents choose to answer between several given options (Malhotra 2006).

A structured questionnaire is commonly applied for the following reasons: the questions can be asked in the same manner compared to the interview approach (it enables data comparison), the consistency of questioning approach (that is, using a set of survey questionnaires is easier to control than using interviewers), easier to control the questions (to make sure that they meet the research objective) and the data obtained can be administered in a standardised manner (Boyce 2005). In fact, the structured questions benefit both respondents and researchers. It is easier and quicker for respondents to answer the questions and it helps researchers to code and analyse more accurately (Neuman 2011).

Given that this thesis employed the cross-sectional research design requiring quantitative data, the most appropriate approach to obtain data is from a structured questionnaire. The questionnaire was carefully designed following the suggestions of scholars such as Adams and Cox (2008), Boyce (2005), De Vaus (2002), Malhotra (2006) and Neuman (2011). For instance, the questions were grouped by

a common theme with clear separate sections: Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions. The headings with instructions were provided for the respondents as a friendly guideline to complete the survey questionnaire. Each question was kept short but still covered the proposed content.

The demographic questions are placed at the end of the questionnaire for a reason. The respondents may be doubtful about these questions and wonder how they are related to the purpose of the survey and why they should be answered. These make the respondents generally reluctant to provide demographic information. Thus, putting the demographic questions last reduces suspicion and increases openness that helps respondents to be at ease as they answer the questions (Mitchell & Jolley 2013). Another reason to put demographic questions at the end is because the respondents are usually less apprehensive and have already put lots of effort into the questionnaire. Therefore, they are more likely to complete the demographic section (Albert, Tullis & Tedesco 2012). In contrast, demographic questions placed at the beginning are mainly for a screening purpose (Wolpin et al. 2008).

This thesis adopted Mitchell and Jolley's (2013) and Albert et al.'s (2012) recommendation and placed demographic questions at the end of the questionnaire. All efforts were made to ensure that the questionnaire was well designed. A cover letter describing the purpose of the project and why they should participate was attached at the first page.

5.4.2 Measurement scaling

It is the researcher's task to choose an appropriate scale when designing the questionnaire. This determines the measurement used in the question, the level of measurement and, in turn, the ways data can be analysed. Saunders, Lewis & Thornhill (2009, p. 381) suggest that "the scale is represented by a scale score created by combining the scores for each of the rating questions".

Once the researcher determines the scale used, appropriate techniques of data analysis are adopted. This thesis adopted the non-comparative Likert scale. It is basically used to measure the degree of agreement or disagreement that requires respondents to indicate their attitudes or perceptions (Malhotra 2006). The Likert scale is commonly used because it is quick and easy to construct and administer (Malhotra 2006; McDaniel & Gates 2011). The seven point of Likert scale used in this study is ranging from 'strongly disagree' to 'strongly agree'. This study

adopted a Likert scale as it is used by most studies in this field. This aspect was also considered important for the purpose of making comparisons.

5.5 Sampling design and procedure

5.5.1 Defining the population

Population for a survey is defined as the whole group of individuals that have some characteristics in common and are of interest for the study (Malhotra 2006). The researcher uses them to make inferences from the findings, which means the survey will have generalisability (Khan Younis et al. 2012).

Populations in research can be classified into two types (Castillo 2009): target population and accessible population. The target population is known as a theoretical population because it refers to the entire group of individuals from which researchers are generalising the conclusion. The accessible population is a subset of this target population from which the researchers draw their sample; it is also known as the study population.

The population can be defined in terms of an element (the objects from which the information is obtained such as the respondent), a sampling unit (a unit containing the element that is available for selection), and an extent (the geographical boundaries) and a time (a period under the sampling process) (Malhotra 2006; Mylavarapu 2012).

5.5.2 Population of the study

As stated in Chapter 1, the purpose of this study is to examine the foreign patients' perceptions of Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions in the private hospitals sector in Thailand. Hence, the study population are foreign patients who use medical services from Thai private hospitals.

It is estimated that 1.4 million foreigners sought medical services in Thailand in 2008 (Oxford Business Group 2009). Some forecasts suggest that the number increased to 1.45 million in 2010 (James 2012). Of the two main players in Thai private hospitals, Bumrungrad reported that they treated 460,000 foreign patients in 2011 (Bumrungrad Hospital Public Company Limited 2011) and Bangkok Dusit Medical Services (Bangkok Hospital) treated 659,070 in 2008 (Bangkok Dusit

Medical Services 2009). Nevertheless, it would be difficult to know precisely how many foreign patients used medical services in Thailand as the government has no records on this specific economic activity (James 2012). Thus, the accessible population or the study population according to Castillo's (2009) definition is suitable for the study.

The accessible population of the study are foreign patients who used medical services from one of the leading private hospitals, located in Koh Samui, the southern part of Thailand. Koh Samui is renowned as a premier island destination in the Gulf of Thailand; it is the third largest island of Thailand after Phuket and Koh Chang and is the second most famous island destination in Thailand.

The Ministry of Tourism and Sports (2012) reports that more than 19 million foreigners visited Thailand in 2011 and Koh Samui attracted 698,878 foreigners in the same year. It is a successful tourist destination based primarily on the spectacular beaches retaining much of their natural beauty, outstanding dining, and a comprehensive array of nearly every activity that caters to visitors on any budget including its airport that connects Koh Samui to various international destinations (Thailand 2010).

5.5.3 Defining the unit of study and sample frame

The unit of analysis represents the level of investigation of the study; it can be individual level, group level or organisational level (Malhotra 2006). This research is interested in the determinants of Service Quality, Customer Value and Customer Satisfaction influences and Behavioural Intentions of foreign patients who used medical services from Thai private hospitals. Therefore, the unit of analysis is foreign patients at individual level. More specifically, it is foreigners aged between 18 and 60 years who use medical services from a selected private hospital. This hospital was selected for a number of reasons. Firstly, it is a branch of one of the two main players in Thailand. Its reputation is widely accepted among Thais and non-Thai citizens (James 2012). Secondly, this hospital is located in Thailand's second most popular island destination, with many visitors each year. Consequently, there are high numbers of foreigners who need medical services for various reasons. Next, this hospital targets foreign patients and the proportion of foreign patients treated is higher than Thais (Leungrittawut 2012). For these reasons, this hospital was selected as a sample frame of the study.

The sample frame refers to a list of the population members from the location from which the sample is drawn (Malhotra 2006). According to this definition, the sample frame of this study is the number of foreign patients who use medical services from the participant hospital. In an email dated 20 February 2012, Mrs Leungrittawut (2012) (Nursing and customer liaison director) reported that 26,045 foreign patients out of the total 44,728 patients in 2010 and 27,372 foreign patients out of 46,608 patients in 2011 visited the hospital. These mean approximately 58 per cent of the total patients were foreign patients. More specifically, approximately 2,170 and 2,280 foreign patients visited the hospital monthly in 2010 and 2011.

5.5.4 Determining the sample size

The number of elements included in the study is termed a sample size. In general, issues considered when determining sample size are the nature of the research, the data analysis technique used, the average size of samples in similar studies and the resource constraints (Malhotra 2006).

With regard to the nature of the research, an exploratory design using qualitative research usually accepts a small sample size, whereas a conclusive design using quantitative research generally demands a larger sample size (Boyce 2005). Multivariate data analysis techniques usually require a large sample size especially if the data is to be analysed in detail such as at subgroup or segment level rather than at aggregate or total level (Neuman 2011). The sample size in similar studies not only has an influence on determining the sample size but also is used as a guideline for the study (Aaker 2011). Constraints such as time and money have an influence on the sample size decision (Malhotra 2006).

This thesis adopts the causal research design which is quantitative in nature. Therefore, the sample size needs to be larger than in qualitative research. The sample size in similar studies relating to patients' perceptions regarding Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions ranged between 1,046 (Hu et al. 2010), 537 (Choi et al. 2004), 322 (Wu et al. 2008), 318 (Lee et al. 2010), and 201 (Omar et al. 2010) as usable responses. With respect to the importance of sample size influencing the data analysis technique used, the appropriate sample size used in this study will be discussed in detail in Section 5.8.2 as a part of the Structural Equation Modelling (SEM) analysis technique.

5.5.5 Sampling technique

A sample is a subgroup of a population that is selected for the study. Sampling is a selection process concerned with selecting a subgroup of population (sample) for data collection (Malhotra 2006). In general, sampling is needed when it is impossible to include all a population in a survey because of constraints such as time and budget (Gary 2009). The result of the sample is used to generalise and estimate the characteristics of the whole population (Neuman 2011).

Sampling techniques are generally classified into two categories: probability sampling and non-probability sampling (Malhotra 2006). Probability sampling technique is based on the concept of random selection, which means the respondent is randomly selected by chance. That is, each member of the population has an equal and a known non-zero probability of being chosen under a given sampling method utilising some form of random selection (Boyce 2005). The benefit of this technique is to eliminate human judgements in the selection process, which means the sampling error can be calculated (Gary 2009).

On the other hand, “non-probability sampling technique allows human judgements in a selection process either purposefully or unintentionally, to influence which individuals or units are selected for a study” (Gary 2009, p. 78). Non-probability sampling techniques usually involve the researcher’s judgement rather than chance regarding what elements are to be included in the sample (Malhotra 2006). Those techniques commonly refer to convenience sampling, judgement sampling, quota sampling and snowball sampling (Malhotra 2006). Non-probability sampling technique is appropriate when the researcher is interested in information regarding the specific cases or members of the study population, as it allows for judgement about the specific characteristics of the sample needed (Gary 2009).

This thesis collected data from foreign patients who used medical services from the hospital. It was determined that the non-probability sampling technique was considered as the most suitable in this context. This is because it was not possible for every foreign patient using the services to have an equal chance of being selected. For example, those who were in the Intensive Care Unit during the period of data collection were excluded.

This thesis applied two non-probability techniques at two different stages due to the limitations and unique characteristics of the industry context. Firstly, the judgement sampling technique was used in a hospital selecting process. As the

study focuses on foreign patients who use medical services in Thailand, the well-known hospitals that have a high proportion of foreign patients were recruited as prospective participant hospitals. Secondly, after the hospital selection process, a combination of convenience sampling technique and judgement sampling technique was applied to the selection process of recruiting respondents or foreign patients. Because the samples were patients at the hospital, the only respondents invited to participate in the survey questionnaire were those who were in good health and willing to participate.

5.5.6 Data collection process

The data collection process is separated into two procedures: a procedure for recruiting prospective hospitals and a procedure for recruiting respondents.

(1) The procedure for recruiting prospective hospitals consisted of three stages which were as follows.

In the initial stage, the criteria were based on 1) the layout and advertisement in their website – those that advertise in two or more languages and at least one of them is in English were listed as a potential hospital to be recruited, 2) the potential hospitals were qualified by accreditations or awards, 3) the potential hospitals targeted foreign patients as one of their market segments and 4) the potential hospitals must have well spoken English staff presenting at the information service counter or answering when requested by foreign patients. The student researcher listed the names of potential participating hospitals along with the names of their directors and telephone numbers. Fifteen private hospitals in Thailand were on the list at this stage.

In the second stage, the researcher contacted these fifteen hospitals by telephone to ensure the name of contact person (or hospital director) and email address were correct and to briefly explain the purpose of the call. After that, an invitation letter, information statement and consent form with a brief description of the project were sent by email to the hospital directors and/or secretaries. This was to seek authorisation to enter the premises for the purpose of conducting research. Four hospitals agreed to participate and confirmed their participation by responding to the student researcher's email.

In the last stage, the researcher visited each of four hospitals to express appreciation of their willingness to participate in the research and reconfirmed the

requests to the hospital directors and/or secretaries. The participating hospitals were requested by the student researcher 1) to assign a nurse or medical professional as a contact person during the period of data collection, 2) the contact person would assist in evaluating the health readiness of individuals to participate in the survey of both in-patients and out-patients and 3) the contact person would approach the patients to seek permission to participate in the research before the student researcher approaches them. These requests complied with the Ethics considerations. After the visit, two of the four hospitals withdrew from participating because they felt that the requests from the student researcher increased their workload and thus were unable to support it.

(2) Procedure for recruiting prospective foreign patients.

Prior to the student researcher approaching the respondents (foreign patients), an authorised medical professional of the hospital screened their health readiness to determine whether they were fit to participate in the research project. It was only if the authorised medical professional agreed that the patient was ready, the nurse in charge or medical professional could approach the patient to seek permission for the student researcher to conduct the research. After the patients agreed to participate, the student researcher approached the patient and briefly explained the research project, informed them regarding the anonymity and confidentiality of the individual, and advised them to return the completed questionnaire to a secure locked box in the cashier's office.

Most of the out-patients were recruited in the cashier's waiting area to ensure that they had already used the hospital's services and had enough knowledge and experiences to answer the questionnaires. While briefing the patients, they were informed by the student researcher that the student researcher would be around the area. This was to ensure that the patients were able to ask questions regarding the questionnaire to the student researcher directly if needed.

Approximately 20 to 30 minutes were required to complete the survey. The patients were informed about the methods of returning the completed questionnaire. They had choices of returning an envelope (provided by the student researcher along with the questionnaire, invitation letter and consent form) containing the completed questionnaire directly to the secure locked box in the cashier's office or to pass the envelope containing the completed questionnaire to a nurse or medical professional. The nurse or medical professional then deposited the envelope in the box which only the student researcher was able to access.

After the student researcher finished collecting data from the first hospital and was about to go to the second hospital in another province, there was an earthquake where the second hospital was located. The researcher was instructed by the hospital to postpone the project for at least one month and was asked to wait for the confirmation of the exact time for conducting the research at the premises. Considering the time constraint and expense, the student researcher decided not to pursue conducting the research at the second hospital. Due to these eventualities, the data for this thesis was collected from one private hospital.

5.6 Ethical considerations

Ethics is a set of concepts or moral principles and process of evaluation that guides the researcher's conduct by addressing whether a particular action is right or wrong. It is a researcher's responsibility to respect the principles in accordance with high ethical standards (Aaker 2011; Malhotra 2006). Ethics involves the rights of respondents to decide whether to voluntarily participate in a research project, to withdraw their consent at any time, to be safe from potential physical and mental harm, and to be informed of privacy including all aspects of research tasks (McDaniel & Gates 2011). The researcher is obliged to be honest and to ensure that the confidential data provided by respondents is protected with respect to its secure use, retention and disposal.

This research was approved by Swinburne University's Human Research Ethics Committee (SUHREC) on 5 April 2012, as SUHREC Project No. 2012/025 (Appendix 2). The ethics approval covered issues such as the procedures and instruments used in the project, the risk to researcher and participants, the process for confidentiality, the secure storage of data and the future use of data.

5.7 Chapter summary

This chapter outlined the methodology used in the study starting from the research paradigm. The research paradigm used was the positivist paradigm with deductive approach. A cross-sectional research design was chosen because the aim of this thesis is to examine the relationships among constructs, namely Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions. The construct development and operationalisation were addressed followed by the data collection method used which was a self-administered survey questionnaire.

Questionnaire design, measurement and scaling were described. A structured questionnaire was developed with a 7point Likert scale was used and this way treated as interval scale for the data analysis. Sampling design and procedure were explained such as the defining of population, unit of study and sample frame. The combination of non-probability sampling techniques, namely convenience and judgement sampling techniques, were applied for the recruitment of hospitals and respondents. Data collection processes were addressed clearly. The last section presented the ethical considerations of this thesis.

CHAPTER 6: DATA ANALYSIS STRATEGY

The previous chapter discussed the research method including the construct development, questionnaire design and data collection process. This chapter discusses mainly the data analysis strategy. The chapter starts with Section 6.1 Preparing for multivariate analysis. In this section, missing data analysis and data screening for assumptions of the Structural Equation Modelling (SEM) analysis technique are conducted. Section 6.2 discusses the scale refinement using exploratory factor analysis. Section 6.3 discusses the topics in relation to structural equation modelling, specifically to SEM approach, sample size, and the assessment of the goodness-of-fit (GOF). Section 6.4 discusses the measurement model confirmation and the structural model. Section 6.5 discusses the rationale of the approach taken in this thesis where both EFA and CFA have been used. The rationale for this approach is explained. Section 6.6 discusses the critique in the literature for using the same data set for EFA and CFA. Section 6.5 is the chapter summary.

6.1 Preparing for multivariate analysis

Preparing data for multivariate analysis is a process of data examination, it is time-consuming and it is a necessary step for researchers. This section discusses the missing data analysis such as the patterns and the extent of missing data, and the missing data imputation prior to the discussion of data screening for assumptions of SEM.

6.1.1. Missing data analysis

Missing data is one of the problems in data analysis that every researcher has to face some form of these problems (Hair et al. 2011). To understand the patterns and relationships underlying the missing data is important as it is related to a remedy and imputation process which aims to maintain as closely as possible to the original distribution of the data (Kline 2011). The extent of missing data also affects the type of remedy applied (Hair et al. 2011). The following sections will discuss the extent of missing data, the patterns of missing data and the missing data imputation.

6.1.1.1 The extent of missing data

To examine the extent of missing data (for individual variables, individual cases, and overall) is to determine whether the extent or amount is low enough to not affect the results (Hair et al. 2011). It can be checked by tabulating the missing data according to the percentage of variables with missing data for each case (Kline 2011). There is no general agreement regarding the cut-off level of missing data. However, Hair et al. (2011) suggest rules of thumb that missing data under 10 per cent for an individual case can be ignored while missing data between 10 and 15 per cent are candidates for removal. Nevertheless, higher levels such as between 20 and 30 per cent can often be remedied. The simulation studies have demonstrated that in excess of 50 per cent of data may be missing and, in such circumstances, Full Information Maximum Likelihood (FIML) or the expectation-maximisation (EM) algorithm may be used to deal with missing values satisfactorily (Cunningham 2012). According to Hair et al.'s (2011) suggestion, cases with missing data above 30 per cent were removed from the analysis of this study.

6.1.1.2. The patterns of missing data

The degree of randomness presented in missing data is a factor to determine the suitable remedies available. The degree of randomness presented can be classified the missing data, as missing at random, missing completely at random, and not missing at random (Hair et al. 2011). The 'missing at random' (MAR) data occurs when missing observations on variable X differ from observed values on that variable only by chance and the missing values can be predicted from other variables in the data set. The 'missing completely at random' (MCAR) data happens when missing observations on variable X differ from observed values on that variable only by chance plus the presence/absence of data on X is unrelated to any other variable. The 'not missing at random' (NMAR) data refers to the missing observation being due to the value of some unobserved variable, it is problematic and cannot be ignored (Kline 2011).

6.1.1.3 Handling the missing data

There are choices of method of handling missing data which can be classified into four categories: 1) Available case methods (listwise and pairwise deletion, 2) Single-imputation methods, 3) Model-based imputation methods and 4) Maximum Likelihood (ML) (Kline 2011).

Basically the available case methods analyse only the data available through a deletion of incomplete cases. Unless the number of missing data is small, this method is not generally accepted for use in SEM techniques (Kline 2011). Single-imputation methods comprise mean substitution, group-mean substitution and regression-based imputation. Vriens and Melton (2002) suggest that these are not recommended for SEM because they tend to underestimate error variance especially when the extent of missing scores is relatively high.

With the model-based imputation method, the means and variances are estimated in the whole sample that favours a statistical criterion. One of the most common model-based imputation methods is an Expectation Maximisation (EM) algorithm which is available in SPSS software packages (Kline 2011). The EM estimates the means, covariance and Pearson correlations which involve a two-step iterative process: the E and the M steps. The E step computes expected values conditional given the observed value and the current estimates of the parameters while the M step uses the results from the E step to calculate the maximum-likelihood estimates of the parameters. When the parameters estimates converge to some pre-established criterion, the iteration process is stopped (Gold, Bentler & Kim 2003).

There is a function of SPSS called Missing Value Analysis (MVA). This function is used to examine the nature and patterns of missing data. The EM estimation in MVA analysis has an added benefit of generating Little's MCAR χ^2 statistic test that is used to indicate the nature of missing data whether they are completely at random (MCAR).

If the Little's MCAR χ^2 is not significant at alpha level of .001 ($p < .001$), the missing data may be assumed to be MCAR. If the p value is less than .05, the data is NMAR. Because the test is for MCAR, a conservative alpha level at $p < 0.001$ as a rigid requirement is chosen for distinguishing MCAR from MAR. This is because the EM imputation is valid for MAR, a less rigid requirement (Cunningham 2012).

The EM imputation method assumes that the data is normal distribution and the other variables related to the construct of interest are used to predict the values for the missing variables (Cunningham 2012). The EM outperforms other methods of handling missing data such as list-wise and pair-wise as it is more consistent and accurate in predicting parameter estimates, useful data is not deleted and it is regarded as relatively robust to lower departure from normal distribution of data (Graham et al. 1997).

6.1.2 Data screening for assumptions of SEM

This section discusses the techniques used to screen the data and test the assumptions. Data screening for assumptions of SEM is involved in two assessments: the examination of normality and outliers.

6.1.2.1 Examination of normality

The normality of data enhances the result of SEM testing compared to when the data violates the assumption of normality (Tabachnick & Fidell 2013). Normality of data can be assessed either by statistics such as skewness and kurtosis, or by graphical methods such as histograms and box-plots (Hair et al. 2011; Kline 2011). Tabachnick and Fidell (2013) suggest that “when a distribution is normal, the values of skewness and kurtosis are zero” (p. 79).

Skewness implies the balance of the distribution about its mean. Positive skew represents a distribution shifted to the left and indicates that most of the scores are below the mean, whereas negative skew denotes a shift to the right and implies that most of the scores are above the mean. Kurtosis indicates the peakedness/flatness or the height of the distribution. A positive kurtosis (peakedness) is termed leptokurtic and is represented by a peak greater than a normal distribution while a negative kurtosis (flatness) is termed platykurtic and is represented by a peak lower than that for a normal distribution (Hair et al. 2011; Kline 2011).

Skewness and kurtosis absolute value is used to test for univariate normality. The absolute value derives from dividing the critical ratio by its standard error. The absolute value of skewness within a range of 2 is acceptable for assumption of normality of data distribution whereas the absolute value greater than 3 is considered as extremely skewed (Kline 2011). There are fewer consensus about kurtosis. However, a conservative rule of thumb suggests that absolute values from 8 to over 20 are classified as extremely kurtosis. While the absolute value of kurtosis exceeding 10 indicates a problem, value greater than 20 suggests a serious one (Kline 2011).

Multivariate normality is the most fundamental assumption in multivariate analysis, especially multivariate kurtosis (Tabachnick & Fidell 2007). Multivariate normality is the assumption that 1) all the individual univariate distributions are normal, 2) the joint distribution of any pair of the variables is bivariate normal, that is, each variable is normally distributed for each value of every other variable and

3) all bivariate scatterplots are linear, and the distribution of residuals is homoscedastic (Kline 2011, p 60). Univariate normality is essential but it is not a sufficient condition for multivariate normality (Meyers, Gamst & Guarino 2006). However, as it is less practical to examine all joint distributions and difficult to assess all aspects of multivariate normality, the statistical test such as Mardia's coefficient (Mardia 1985) is used to detect violation of multivariate normality.

6.1.2.2 Outliers

Outliers are cases that have unusually high or low values that stand out from the others and have an impact on the results. More precisely, it refers to cases with an extreme value (high or low) on one variable (univariate outlier) or a unique combination of strange values on two or more variables (multivariate outlier) that distinguish the observation from the others (Hair et al. 2011).

To detect the univariate outliers, frequency distributions of z-scores > 3.29 and graphical methods such as histograms, box plots and normal probability plots are used to indicate the representativeness of univariate outliers (Tabacknick & Fidell 2013). Mahalanobis distance is used to indicate the multivariate outliers. This measures the distance of each observation from the mean centre of all observations across a set of variables (Hair et al. 2011). A Mahalanobis distance (D^2) statistic with $p > 0.001$ indicates the existence of multivariate outliers (Kline 2011).

It is suggested that outliers are removed or modified if they influence or distort the outcome of multivariate analysis (Tabacknick & Fidell 2013). Their impact can be assessed from a practical standpoint and a substantive standpoint (Hair et al. 2011). A practical standpoint is to consider whether the outliers have a marked effect on the analysis. For instance, in calculating the average income of a range between \$10,000 and \$100,000 from a sample of 100 individuals, a response reporting an income of \$1 million has a marked effect on the result and should be eliminated as an outlier. A substantive standpoint is to consider whether they are representative of the population. For instance, if the sample includes responses of other levels of wealth even if in small numbers, those values should be retained as they are representative of the population of the study.

There are ways to handle outliers: to convert extreme scores to a value that equals the next most extreme score within three standard deviations of the mean, and to add three times the standard deviation to the mean and replace outliers with that score are two of them (Field 2009; Kline 2011). Hair et al. (2011) suggest that for

large sample size or more than 80 observations, increasing the threshold value of standard scores up to 4 is practical. Nevertheless, “the outliers should be retained unless demonstrable proof indicates that they are truly aberrant and not representative of any observations in the population. If outliers are problematic in a particular technique, many times they can be accommodated in the analysis in a manner in which they do not seriously distort the analysis” (Hair et al. 2011, p. 67).

6.2 Scale refinement by exploratory factor analysis

Exploratory factor analysis (EFA) is a statistic interdependence technique designed to identify the dimensions that underlie the relationship among a set of observed variables that may not be apparent in the patterns of correlations (Pedhazur & Pedhazur 1991). EFA basically refines the underlying structure among the observed variables which might have overlapped when more variables were added to the analysis (Hair et al. 2011). Therefore, the variables can be managed by grouping those with highly intercorrelated variables together and assumed to represent dimensions within the data set (Hair et al. 2011).

EFA can be used to reduce the number of variables where the underlying structure is unclear (Kline 2011). On the other hand, where there is a conceptual basis explaining the relationships between variables, it can be used to confirm the meaning for what they collectively represent (Hair et al. 2011).

EFA is used to refine the structures among a set of variables (Tabachnick & Fidell 2013) in this study. More specifically, EFA is an instrument for analysing the correlation (a structure of interrelationships among various types of variables resulting from test scores, items, and questionnaire responses) by identifying factors (sets of variables that are highly interrelated) which are assumed to represent dimensions within a data set (Hair et al. 2011). EFA is beneficial especially when the relationship between the observed variables and latent variables is not clearly apparent due to the introduction of research models or applying the research models in different environments (Byrne 2010).

In the EFA process, the items are examined and satisfied when they have high correlation with each other within the same factor and relatively low correlation with other sets of data in the analysis (McIntyre 2005). The correlation of each item to the factor is called factor loading. The factor loading was identified at this

stage. There are two main assumptions of factor analysis which need to be assessed when applying EFA: a conceptual assumption and a statistic assumption (Hair et al. 2011). The conceptual assumption is important because even though the factor analysis defines the interrelations between items, the pattern of collective items should have conceptual validity and be appropriate for applying to factor analysis (Byrne 2010). The conceptual assumption is met due to all of the items in this research being adopted from previous studies based on theoretical foundations and through a methodologically sound process (Hair et al. 2011; Lewis-Beck, Bryman & Liao 2004). The statistic assumption for factor analysis refers to the factorability of the collective items, meaning that some underlying structure exists between the items (Hair et al. 2011). The factorability is determined by the intercorrelations of the entire correlation matrix (Hair et al. 2011). The intercorrelations of the entire correlation matrix are determined by Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) test.

Bartlett's test of sphericity tests the strength of the relationship among items by examining whether the correlation matrix is an identity matrix, which indicates that the factor model is inappropriate. The strength of the relationship among items is strong when the chi-square significant level is at $p < .000$. When the chi-square is significant below 0.05, it indicates that sufficient correlations exist among the items and suggests the presence of a factor (Cunningham 2012; Hair et al. 2011; Kline 2011; Lewis-Beck, Bryman & Liao 2004). This thesis adopts the concept of chi-square being significant below 0.05 as an indicator of factorability.

KMO test measures the sampling adequacy (MSA) by examining whether the partial correlation among items is small. The general guideline indicates that a value greater than 0.80 is meritorious, greater than 0.70 is middling, greater than 0.60 is mediocre, greater than 0.50 is miserable and below 0.50 is unacceptable (Hair et al. 2011). This thesis considers the KMO value of greater than 0.70 as an indicator for a satisfactory factor analysis to proceed.

There are statistical and analytical issues concerning the application of EFA such as the factor extraction and rotation methods, the number of factors to be extracted, the factor loading, the interpretation of a pattern matrix and the validation of the factor. These issues are discussed in the next sections.

6.2.1 Factor extraction and rotation methods

The decision on the choice of factor extraction method is important. There are two popular methods of EFA extraction: maximum likelihood (ML) and principal axis factoring (PAF) (Costello & Osborne 2005). Both methods have pros and cons. ML is popular because it has an advantage over PAF: it provides the chi-square statistic. Despite its advantage, the ML method is suitable when the data is relatively normally distributed. In contrast, PAF does not require the normality of data and is the best method if the data severely violates the multivariate normality (Costello & Osborne 2005; Kline 2011). Nevertheless, parameter estimates either by ML or PAF are not much different when the non-normality of data distribution is not too severe (Cunningham 2012). The data of this study was tested for normality and the results showed that the data was not a normal distribution but in a range of acceptable and not too severe (see Section 7.1.2). Therefore, this thesis employed the ML extraction method because it has benefits over PAF and offers greater potential for statistical inference.

The decision on the rotation method is also critical. Factor rotation provides simpler structure of factors and it is easier to interpret the variables under investigation than unrotated factor (Hair et al. 2011). There are two methods of rotation factors: orthogonal and oblique rotation. Oblique rotation gains more attention from researchers not only because it is more flexible as the factor axes need not to be orthogonal but also it is more realistic because theoretically the underlying dimensions are not assumed to be uncorrelated with each other (Hair et al. 2011). Hair et al. (2011) suggest the rules of thumb that the orthogonal rotation method is best applied when the purpose of research is data reduction, whereas oblique rotation is most suitable when the researcher aims to obtain several theoretically meaningful factors or structures as there are few constructs uncorrelated in the real world.

To make a decision, the researcher needs to consider whether the factors obtained are assumed to be correlated or not (Hair et al. 2011). Theoretically, the orthogonal rotation method such as varimax rotation is employed when the factors obtained are assumed to be uncorrelated, while oblique rotation method such as oblimin rotation is used when the factors obtained are allowed to be correlated (Costello & Osborne 2005). Orthogonal rotation is believed to produce a more easily interpretable solution but in fact it results in a loss of valuable information if the latent variables are correlated (Costello & Osborne 2005). Realistically, especially

in social science, it is rare that latent variables are not correlated (Hair et al. 2011; Mostafa 2005).

This thesis adopted the oblique rotation method: an oblimin rotation. The oblique rotation method provides theoretically meaningful factors and also the purpose of this thesis is not the data deduction but the refinement of the scales. The constructs are assumed to be correlated (Hair et al. 2011). The pattern matrix as an output of SPSS is used to examine the factor and item loadings whereas the factor correlation matrix is used to check how the factors are correlated (Costello & Osborne 2005).

6.2.2 Number of factors to be extracted

There are criteria for helping to decide the number of factors to be extracted. Four common criteria are applied in research: latent root criterion (eigenvalue), a priori criterion, percentage of variance criterion and scree plot test criterion (Hair et al. 2011).

A latent root criterion or eigenvalue is the most commonly used technique. It is suggested that only the factors that have an eigenvalue greater than one are counted significant (Cunningham 2012). If the researcher already knows how many factors there should be, the researcher commands the computer to stop at the priori desired number. This technique is called an a priori criterion and it is useful when testing the number of factors to be extracted against the previous studies (Hair et al. 2011).

Percentage of variance explained can be used as a criterion to decide the number of factors. However, there is no common cut-off value but it is dependent on the research field. For example, the cut-off value at above 95% of variation is applied in natural sciences whereas a cut-off value at 60% of the variation is counted in social sciences research (Hair et al. 2011).

When plotting the components responding to the eigenvalues against the number of factors, the shape of curve is dropped sharply and slowly becomes a nearly horizontal line, that change of the dropped point is called an elbow. A scree test criterion suggests that the elbow should be used to evaluate the cut-off point. The number of factors above elbow point indicates the appropriate number of factors presented (Hair et al. 2011).

However, there is no single criterion for making decisions as to how many factors are to be extracted. Practically, researchers apply a combination of criteria to justify the number of factors interrelated with an assessment of structure in the

interpretation (Hair et al. 2011). This thesis applies a combination of techniques, including eigenvalue, percentage of variance explained and scree plot, to interpret and justify the suitable number of factors.

6.2.3 Factor loadings

In a pattern matrix, a factor loading represents the degree to which each variable is correlated to the factor; a higher factor loading indicates a higher correlation between the variable and the factor (Hair et al. 2011). Factor loading and square loading are important in the interpretation of the pattern matrix because “factor loading is the correlation of the variable and the factor, the squared loading is the amount of the variable’s total variance accounted for by the factor” (Hair et al. 2011, p. 127). For example, a 0.30 loading represents a 9 per cent of variance accounted for by a factor ($0.30^2 = 9\%$). Generally, a factor loading between $|0.30|$ and $|0.40|$ is accepted as the minimum level for interpretation of the structure while a factor loading of $|0.50|$ or greater is significant.

Nevertheless, the interpretation of a significance level of factor loading varies according to the size of samples. Hair et al. (2011) suggest the guideline for identifying the significant factor loading based on sample size. If the sample size is 250, the factor loading at 0.35 is required and if the sample size is 350, the factor loading at 0.30 is needed. They recommend that the researcher should evaluate the factor loading at a stricter level. Tabachnick and Fidell (2007) propose a rule of thumb for the minimum factor loading of 0.32 for interpretation and suggest that a greater loading is a purer measure of the factor.

This thesis employs the concept of statistical power in considering the minimum level of factor loading. The factor loading at 0.40 as a stricter level is considered acceptable for interpretation of the structure (Hair et al. 2011).

6.2.4 Interpreting a pattern matrix

Besides a factor loading as discussed in Section 6.2.3, there are another two techniques used to interpret a pattern matrix: identifying cross-loading and assessing communality of the variables (Tabachnick & Fidell 2013). Based on the notion that the factors are distinct and represent separate concepts, cross-loading is used to indicate the problem. Cross-loading refers to the situation when a variable is found to have more than one significant loading on more than one factor. The variable which has cross-loading can be eligible for deletion (Hair et al. 2011).

Communality represents an amount of variance accounted for by the factor solution for each variable. In other words, it indicates the total amount of variance an original variable shares with all other variables or it is the row sum of squared factor loadings (Tabachnick & Fidell 2007). A higher communality value specifies a larger amount of the variance in a variable extracted by the factor solution. Variables with communality less than 0.50 are considered as not having enough explanation (Hair et al. 2011; Tabachnick & Fidell 2007). This thesis excludes these variables from the analysis as they do not have enough explanation or interpretation power. In addition, those variables with high cross-loadings are considered problematic.

6.2.5 Validity, reliability and scale refinement

6.2.5.1 Content validity

To ensure that the measures cover the previous empirical issues such as the theoretical and practical concerns is the objective of content validity testing (Hair et al. 2011). The measure has a content validity when it covers adequate aspects and represents a set of items of the concepts being measured (Niels 2008). It is a subjective measurement as it assesses the correlation between the items and the concept evaluated by the experts in the field of interest or other reliable means. Expert opinion is used to establish a basic content validity if the item content is representative of the definition of the concept, not statistical analysis (Kline 2011). Content validity is also called face validity. It can be determined by the existing measures through their acceptance and use in the literature review and empirical studies (Yaghmale 2003). Nevertheless, it is difficult to assess as there is no consensus on agreed validity (De Vaus 2002).

In this research, the content validity was confirmed through the literature review and application of measures from previous studies.

6.2.5.2 Reliability

Having good psychometric properties is an important aspect of a selected measure; that is, the measures are both reliable and valid (Tabachnick & Fidell 2013). A reliable measure is consistent and provides repeatable results (Byrne 2010). One type of reliability is test-retest, with a measurement taken at any point in time and results are not too varied across time periods (Hair et al. 2011). Another commonly used measure of reliability is based on internal consistency. This refers to “the

degree to which responses are consistent across the times within a measure” (Kline 2011, p. 69).

Coefficient alpha or Cronbach’s alpha is used as a report of internal consistency reliability, to evaluate the consistency of the entire scale (Hair et al. 2011; Kline 2011). A high value can be interpreted that the set of items used in analysis performs well in describing the construct (Tabachnick & Fidell 2013).

There are a variety of views on the acceptable values of Cronbach’s alpha for assessing internal consistency. The value of 0.7 is generally accepted (Hair et al. 2011). The rule of thumb proposed by George and Mallery (2009) suggests that $\alpha > 0.9$ is excellent, > 0.8 is good, > 0.7 is acceptable, > 0.6 is questionable, > 0.5 is poor and $\alpha < 0.5$ is considered unacceptable.

However, Cronbach’s alpha value has a positive relationship to the number of items in the scale. More precisely, when the number of items in a scale increase, the Cronbach’s alpha value also increases and vice versa (Hair et al. 2011). Therefore, it is common to find low Cronbach’s alpha such as 0.5 when the number of items in the scale is low (Fornell & Larcker 1981). This thesis follows recommendations from Hair et al. (2011) and George and Mallery (2009) that the Cronbach’s alpha greater than 0.7 is acceptable.

The item-to-total correlation and the inter-item correlation are also used to consider the scale reliability. The generally accepted rules of thumb suggest that the scale has reliability when the item-to-total correlation exceeds 0.50 and when the inter-item correlation exceeds 0.30 (Hair et al. 2011). This thesis also applies the item-to-total correlation and the inter-item correlation in assessing the reliability of the measures of a factor.

6.2.5.3 Scale validity

Validity refers to a set of measures precisely representing the concept they are supposed to measure (Hair et al. 2011). It can be measured in two ways: convergent validity and discriminant validity.

Convergent validity and discriminant validity involve the evaluation on convergence or a shared proportion of variance among items that measure the construct (Hair et al. 2011). When items that are assumed to measure the same construct are at least moderate in magnitude of their inter-correlations, they have convergent validity (Cunningham 2012). On the other hand, discriminant validity presents when items that are assumed to measure the same constructs have not too

high inter-correlations with other constructs (Kline 2011). Convergent validity happens when the items that measure the construct are highly correlated within the measured construct, and discriminant validity happens when the items that measure the construct are highly correlated with one construct and weakly correlated with others. Discriminant validity is used to examine whether the constructs in the model are different from each other. Generally, correlations between latent constructs greater than 0.80 or 0.90 indicate a discriminant validity problem (Cunningham 2012). However, Siedlecki et al. 2009 suggest less than one is acceptable. The presence of cross-loading is a good indicator of low convergent validity and high discriminant validity (Hair et al. 2011). Convergent validity is also essential in a confirmatory factor analysis state. The further discussion regarding convergent validity will be outlined in Section 6.4.1 (The construct validity of SEM).

6.3 Structural equation modelling

One statistical model is structural equation modelling (SEM). This explains a series of interrelationships among multiple variables by expressing them in a series of multiple regression equations (Byrne 2010). In other words, it examines a series of relationships of dependent variables concurrently (Hair et al. 2011; Kline 2011). SEM is used to investigate the interrelationships among constructs or latent variables such as the use of SEM to predict the Service Quality construct and then use the Service Quality construct to predict Customer Value, both of which in turn are used to predict Customer Satisfaction and Behavioural Intentions. That means SEM is useful in identifying the relationships especially when a dependent variable becomes an independent variable in a subsequent relationships (Byrne 2010). In this thesis, Customer Value and Customer Satisfaction are a good sample. In SEM, the multi-item independent variables are termed exogenous constructs while multi-item dependent variables are called endogenous constructs (Hair et al. 2011). SEM identifies the exogenous and endogenous constructs and exhibits the interrelationships among them by path diagram (Kline 2011).

More precisely, SEM is used to test the theoretical model and hypotheses. To do this, SEM processes in two steps: measurement model and structural model. Measurement model refers to a specification of measured variables to the factors/structures and then testing the factors/structures that will later form the full measurement model. The measurement model enables the researcher to access the

contribution of each item and examine how well the items represent the concept (Hair et al. 2011).

The structural model then takes the information about the measurement models and integrates them into the estimation of relationships among constructs or latent variables. It specifically refers to the test of hypotheses and the causal relationships among the constructs that were developed from the measurement model step (Kline 2011). The details of these two-step approaches will be discussed in detail in the Measurement model confirmation and the structural model analysis section (Section 6.4).

6.3.1 SEM approach

Even though the purpose of SEM is mainly for a confirmation of a proposed conceptual model rather than an exploratory process, SEM is used by one of any three approaches (Reisinger & Mavondo 2006). Firstly, a *strictly confirmatory approach* – a series of the goodness-of-fit test is used to determine whether the pattern of variances and covariance in the empirical data are consistent with a hypothesised model. Thus, the goodness-of-fit tests are used as indicatives of acceptance or rejection of the model. Secondly, a *model development approach* – a combination of exploratory and confirmatory analysis is used to test a model. The changes suggested by modification indices, standardised residual covariance and specification searches result in an alternative model. Finally, in the *alternative model approach*, several models are tested to determine which one comes up with the best fit (Reisinger & Mavondo 2006).

When the proposed CFA model has been rejected by the goodness-of-fit indices, it is a dead-end of the strictly confirmatory approach (Byrne 2010). On the other hand, if the model is re-specified (by the assessment of modification indices, standardised residual covariance and specification searches) and focused on the investigation of misfit in the hypothesised model, these analyses are exploratory in term of the adjustments for model improvement and is, therefore, within the terminology of model development approach (Byrne 2010).

SEM is used in this study to explain the interrelationships among constructs as proposed in the integrative model based on foreign patients' perceptions of Service Quality, Customer Value, Customer Satisfaction and Behavioural Intention. The proposed integrative model of this thesis is not newly developed but it is an extension of previous studies. The model is designed to confirm the proposed

integrative model by using the samples from the population in a new environment (foreign patients) and to study the integrity of the model regarding how well the data fit the model. Hence, it is possible that the model is accepted. However, there is also a chance the model is rejected and probably needed to drop some items in order to obtain a better solution by using statistical fit indices as indicative of a good fit model. Consequently, either a strictly confirmation approach or model development approach is applied to this study depended on the results of the CFA analysis.

6.3.2 Sample size for SEM analysis

In general, SEM techniques require large sample sizes to obtain reasonable stability and unbiased test for statistics in the parameter estimates. There are recommendations on the sample size as it plays a critical role in the estimation and interpretation of the results (Kline 2011). The suitable sample size for SEM techniques is subject to factors such as the complexity of model and the type of estimation method (Hair et al. 2011). The more complex the model, the more analysis requires parameters and the more cases required. The type of estimation method is another factor determining the sample size (Byrne 2010). Different estimation methods require different sample size because each method makes different assumptions about the data and parameters (Jackson 2003).

Maximum Likelihood Estimation (MLE) is the most common estimation procedure used for SEM analysis. The studies suggested that MLE exhibits a valid and stable result with a sample size as small as 50 providing a perfect condition. However, with the sample size greater than 400, MLE is tentatively sensitive and makes a poor fit result tested by the goodness-of-fit. The ideal sample size for MLE is between 100 and 400 (Hair et al. 2011).

Literature suggests various suitable sample sizes and results in dissimilar sizes of sample. The absolute sample sizes recommended by Kline (2011) are classified into three groups: small (less than 100), medium (between 100 and 200) and large (more than 200). However, to ensure stability of solutions, it is recommended that the minimum sample sizes between 100 and 150 are acceptable while the sample size of greater than 200 is mentioned for providing a sound basic for estimation (Hair et al. 2011).

Sample size relates to the estimation of sampling error. To increase the sample size is to increase the statistical power by decreasing sampling error (Hair et al. 2011).

The significant departures from normality can have considerable effects on the results if the sample size is small (Hair et al. 2011). The larger sample sizes can lower the harmful impacts on non-normality (Cunningham 2012). In addition, the covariance of SEM is less stable when estimated from small sample size whilst these same effects may be small if the sample sizes are 200 or more (Hair et al. 2011).

Even though there is no absolute cut-off about the sample size in relation to the number of parameter estimates in the SEM techniques, Kline (2011) introduces the ratio of the number of cases to the number of free parameters as a criterion (subject to item ratio). The desirable ratio should be 20:1 accompanied with the minimum sample size of 200 cases while the ratio of 10:1 may be more realistic and the ratio of 5:1 would usually yield stable parameter estimates. The study by Ford et al. (1986), out of 152 studies using EFA during the period from 1974-1984, reveals that 27.3 per cent of the studies had a ratio of less than 5:1 and 56 per cent had a ratio of less than 10:1 (Jason 2008). In addition, 14.7% had a ratio of 2:1 or less (Costello & Osborne 2005). That means, practically, the ratio of less than 5:1 was tentatively accepted by researchers and the ratio of less than 10:1 was widely applied in research.

This thesis aimed to distribute 500 questionnaires, given the recommended sample size of 200 or more ensures the stability of solution and lowers the harmful impacts on non-normality (Cunningham 2012; Hair et al. 2011). Even though it is unable to know exactly the number of usable data, it is likely to be more than 200 and considered adequate to perform SEM analysis. It exceeds the minimum of 100 suggested by Hair et al. (2011) and at the size of 200 or more is suggested for a very complicated path model (Kline 2011).

6.3.3 Statistics software

IBM SPSS statistic package accompanied with SPSS version 20 and AMOS version 20 is selected as software for conducting data analysis and structural equation modelling to test the relationships among variables in the proposed integrative model. AMOS is used for analysis of moment structure; it is a module in SPSS that use a graphic interface for all equations/functions, which means it is relatively user friendly as there is no need for syntax commands or computer code.

6.3.4 Assessment of goodness-of-fit

At each stage of SEM or the two-step approach (both measurement model and structural model), it is important to test whether models are valid. To assess the validity of the measurement model, it is necessary to examine it in two ways: to assess the goodness-of-fit (GOF) and to examine construct validity. However, to assess the validity of structural model, only assessing GOF is needed (Hair et al. 2011). This section will discuss the assessment of the GOF. The construct validity will be discussed in the next section regarding the measurement model confirmation (Section 6.4.1).

The GOF is used as a criterion or indicator to state the wellness of fit model (Kline 2011). It is classified as absolute measures and incremental measures (Hu & Bentler 1999). Besides these fit measures, to examine chi-square (χ^2) is where to start.

Chi-square (χ^2) measures the differences between estimated covariance matrices to the observed covariance matrix (estimation of theory to sample data) by p-value. While a small p-value less than 0.05 is expected as it indicates that a significant relationship existed, a small χ^2 indicates that there is a small difference between estimated covariance matrices to the observed covariance matrices. However, chi-square (χ^2) has significant disadvantages. The covariance matrices are influenced by the numbers of parameters specified (degrees of freedom), the χ^2 is increased when sample size increases even when the differences in covariance matrices remained the same. In other words, χ^2 is likely to be inflated when the sample size is large and results in a poor fit. In addition, χ^2 is sensitive to misspecification (Hair et al. 2011). It is not appropriate when data deviates from normality and multivariate normality (Cunningham 2012). For these reasons, chi-square (χ^2) is not the only way to assess the GOF but alternatives such as absolute and incremental measures are taken into consideration.

With non-normality of data, the chi-square is likely to be inflated because chi-square (χ^2) is sensitive to departures from multivariate normality (Kline 2011), the Bollen-Stine bootstrapped p value is a post-hoc adjustment that correct for departures from multivariate normality. It is suggested as an alternative approach to generate a chi-square distribution with the correct p value that adjusts for distributional misspecification of the model (Cunningham 2012). Instead of the p value of chi-square, the adjusted p value of Bollen-Stine bootstrapped with the

number of bootstrap samples in the range of 1,000 to 2,000 at a significant level of greater than 0.05 is recommended to report the model fits data well (Cunningham 2012). Therefore, the adjusted p value of Bollen-Stine bootstrapped with 1,000 bootstrap samples was reported in this study (Tabachnick & Fidell 2013).

6.3.4.1 Absolute fit indices

Chi-square (χ^2) and goodness-of-fit index (GFI) are classified as absolute fit indices that measure how well the model specified reproduces the observed data or how well a theory fit the sample data. Unfortunately, both chi-square (χ^2) and GFI are sensitive to sample size: when the sample size and number of observed variables increase, chi-square (χ^2) increases and GFI decreases. Consequently, it is easy to see that the test statistic rejects models with large sample size or large number of observed variables (Hair et al. 2011). Due to the mathematical properties problems, the GFI is not recommended to use as it is not only insufficiently and inconsistently sensitive to model misspecification but also it is sensitive to sample size (Hu & Bentler 1998; MacCallum & Austin 2000; Sharma et al. 2005). The chi-square (χ^2) is also a less useful indicator when the data is non-normal as the chi-square (χ^2) tends to produce a significant value even though only a slight discrepancy exists between the data and model resulted in the rejection of the model (Hair et al. 2011). Thus, this thesis employed the adjusted p value of Bollen-Stine bootstrapped at the significant level of greater than 0.05 as one of the absolute fit indices along with chi-square (χ^2) (Cunningham 2012).

Root mean square error of approximation (RMSEA) is classified as one of absolute fit indices and is widely used as an alternative option to χ^2 and GFI as it is not sensitive to sample size, number of observed variables, and model misspecification (Hair et al. 2011). In addition, RMSEA assesses the lack of fit in a model compared to a saturated model and is sensitive to model misspecification. Values of 0.06 or less indicate a good fit, values of more than 0.06 but less than 1 indicate a reasonable fit and values of greater than 1 indicate poor fit (Tabachnick & Fidell 2013). RMSEA is recommended to use when the sample size is large, or more than 500 respondents (Hair et al. 2011). This thesis used RMSEA at a cut-off value of less than 0.08 as an indicator that the data fits the model well (Hair et al. 2011; Tabachnick & Fidell 2013).

Root mean square residual (RMR) and standardised root mean residual (SRMR) use a concept of residual that states in terms of covariance. RMR refers to an

average of the residuals derived by the square root of the mean of these squared residuals. RMR has a problem of residuals related to the scale of the covariance; thus, the SRMR is an alternative statistic to assess the good fit across models. Both RMR and SRMR are known as badness-of-fit measures because lower values of RMR and SRMR indicate the better a good fit model and vice versa (Kline 2011). Even though a value of less than 0.10 is acceptable as a good fit (Ho 2006; Hu & Bentler 1998), this thesis employed RMR and SRMR cut-off value at less than 0.08 as it is a better indicator of good fit models (Anderson & Gerbing 1988; Kline 2011).

6.3.4.2 Incremental fit indices

In contrast to the absolute fit indices, the incremental fit indices are used to indicate the relative improvement of fit of the hypothesised model with a baseline model or null model (Hair et al. 2011).

The normed fit index (NFI) is a ratio of the difference in the chi-square value for the hypothesised model and the baseline model divided by the chi-square value for the baseline model. NFI is sensitive to the model complexity. In other words, the complex model will have greater index values and falsely inflate the estimate of model fit. The value of close to 1 indicates a good fit whereas the values of greater than 0.90 are acceptable (Hair et al. 2011).

The Tucker-Lewis index (TLI) has the advantage of taking the model complexity into account. It is a comparison of the normed chi-square values for the baseline model and the hypothesised model (Hair et al. 2011). Generally, the higher value approaching to 1 suggests a better fit whereas a value of greater than 0.90 indicates an acceptable fit.

Comparative fit index (CFI) is one of the most widely used indices as it has several preferable properties. For example, CFI is relatively insensitive to the complexity of model; it is an improved version of the NFI (Hair et al. 2011). Also, CFI examines the non-centrality of chi-square distribution with its parameters; that is, the smaller the non-centrality of parameter, the larger the CFI and it indicates a better fit (Tabachnick & Fidell 2013). The values of greater than 0.90 are generally accepted as indicating that a model fits well (Hair et al. 2011).

This thesis employs a cut-off value of 0.90 for NFI, TLI and CFI as suggested by Hair et al. (2011).

6.3.4.3 The benchmark of fit indices used in this study

A combination of absolute fit indices and incremental fit indices is recommended to use as an assessment of the goodness-of-fit (GOF) by many researchers (Cunningham 2012; Hu & Bentler 1998). Hair et al. (2011) suggest a combination of three or four fit indices is appropriate provided that at least one of each is an incremental fit index and absolute fit index. This is because each index has its own advantages and disadvantages. For example, chi-square (χ^2) is sensitive to sample size while TLI and CFI are sensitive to model misspecifications but less sensitive to sample size, violation of normality and complexity of model (Hair et al. 2011; Kline 2011). NFI is sensitive to model complexity (Kline 2011). RMSEA is recommended when the sample size is relatively large (Hair et al. 2011) whereas RMR has a problem of residuals related to the scale of the covariance (Kline 2011). This thesis applies a combination of indices as a guideline to assess the model fit. Table 6.1 presents the cut-off value of each index selected for the thesis.

Table 6.1: Goodness-of-fit indices

Name	Accepted value	Comments
Absolute fit indices		
Chi-square (χ^2) or Bollen-Stine bootstrap	$p > 0.05$	The estimated likelihood chi-square statistic is to assess the exact fit of the model; a non-significant p value indicates an adequate representation of the data. The Bollen-Stine bootstrap p is calculated when the χ^2 is significant (Cunningham 2012; Hair et al. 2011).
Standard Root Mean-Square Residual (SRMR)	SRMR < 0.08	The SRMR is the average difference equivalent elements of the sample and model-implied correlation matrices; a smaller average of differences indicates a better fit (Hu & Bentler 1998; Tabachnick & Fidell 2013).
Root Mean-Square Residual (RMR)	RMR < 0.08	The RMR is the mean absolute value of the covariance residuals, values less than 0.10 are generally accepted as a reasonable fit. Values close to zero reflect good fit (Kline 2011)
Root Mean-Square Error of Approximation (RMSEA)	RMSEA < 0.08	RMSEA is used to assess how poorly the model fits the data and measure the discrepancy per degree of freedom; this index is very sensitive to model misspecification. Values less than 0.10 generally indicate a reasonable fit while values less than 0.05 reflect good fit (Hair et al. 2011; Tabachnick & Fidell 2013).
Incremental fit indices		
Comparative Fit Index (CFI)	CFI > 0.90	The CFI is based on the comparison of the hypothesised model with the independence model (such as a model in which all variables are uncorrelated and only error variances are estimated); values of greater than 0.90 indicate an acceptable fit (Hair et al. 2011; Kline 2011).
Tucker-Lewis Index (TLI)	TLI > 0.90	The TLI is dependent on the average size of the correlations in the data which reflects the sampling error. It ranges between 0 and 1, of which the value close to 1 indicates a good fit; values of greater than 0.90 indicate an acceptable fit (Hair et al. 2011; Kline 2011).
Normed fit index (NFI)	NFI > 0.90	The NFI is a ratio of difference in the χ^2 value for the hypothesised model and a baseline model divided by the χ^2 value for the baseline model. It ranges between 0 and 1, of which the value close to 1 indicates a good fit; values of greater than 0.90 indicate an acceptable fit (Hair et al. 2011; Kline 2011).

6.3.4.4 Diagnosing problems (standardised residuals, modification indices and specification searches) and model re-specification

The purpose of SEM is to confirm whether the hypothesised model supports the theory and its generalisability (Kline 2011). When the models do not meet the goodness-of-fit criteria, modification may be needed for improvement.

In the process of testing the proposed integrative model by using SEM, AMOS has a feature of diagnostic for misspecification in the model such as modification indices (MIs), standardised residual covariance and specification searches that can be used as sources of diagnosing problems. MIs value indicates the expected reduction in overall χ^2 value when the fixed parameters shown were freed up and estimated in the subsequent run in comparison to the situation where the parameters remained fixed or constrained. As the χ^2 value is sensitive to large sample size and non-normality of data distribution, another value associated with each MI in the next column, parameter change (par change) should be looked at. Both of MIs and par change are presented for covariance and regression weights (Byrne 2010). The par change is associated to the predicted estimated changes for each fixed parameter in either negative or positive direction. Even though it is suggested that MIs value of 4 or greater indicates that the fit could be improved by freeing up the corresponding parameter estimated (Hair et al. 2011), it is true only if the par change is significant (Byrne 2010). There is no threshold of how much change is significant. However, one example of Byrne's (2010) cases suggests that the par change of 0.285 is considered to be of little concern. Therefore, the consideration of both MIs and par change should be taken into account when making any change of the parameter in an expectation of improving model fit. The decision should be based on the extent of how meaningful they are, whether the existing model displays adequate fit, and whether the par change value is significant (Byrne 2010). Modification indices (MIs) provide the information of fit problems in terms of cross-loading and diagnosing error term correlations and correlational relationships between constructs that may not appear in the initial process of conducting the measurement model confirmation.

Standardised residual covariance represents the differences between observed and estimated covariance variables divided by the standard error of the residual of individual variable; therefore, it can be either positive or negative, and smaller

residuals indicate a better fit (Hair et al. 2011; Tabachnick & Fidell 2013). It is suggested that the standardised residuals at absolute value less than 2.5 do not state a problem while the absolute value between 2.5 and 4 suggests some attention. The consideration should be at the pattern of its occurrences: the residuals associated one single variable with a number of other variables and the residuals associated several variables within a construct. These patterns indicate a problem (Hair et al. 2011). In this case, if there is no other problem associated with these two variables, any change modifications to the model may not be recommended (Hair et al. 2011).

Specific searches or post-hoc analyses searches refer to an empirical trial-and-error approach that is used when making any change based on any diagnostic indicator in order to identify a plausible solution and better fit (Byrne 2010; Hair et al. 2011).

6.4 The two-step approach of measurement model confirmation and the structural model

The two-step approach of the SEM has been introduced in Section 5.8. This refers to a measurement model and a structural model. A confirmation factor analysis (CFA) is used to confirm a measurement model. The confirmed measurement models are used in a structural model to investigate the relationships between constructs, not to confirm whether the scales represent the concept as in the measurement model (Hair et al. 2011). Before further discussion on the measurement model confirmation, the type of measurement model should be addressed.

Measurement models can be classified as a first-order measurement model and a second-order measurement model or higher-factor model (Hair et al. 2011). The first-order measurement model comprises one-factor congeneric models. The one-factor congeneric model represents items measuring the underlying latent variable. The second-order measurement (or a higher-order measurement model) comprises the first-order measurement model. The only difference between the first-order and second-order measurement models is that the latent variables of the first-order measurement model become indicators of a higher-order latent construct (Hair et al. 2011). Similar to the Service Quality and Customer Value constructs of this thesis, these two constructs are higher-order factor models provided that the latent

variables (dimensions) of these constructs become indicators of the main constructs (Service Quality and Customer Value).

Prior to the first-order measurement model, a one-factor congeneric model is employed to test the unidimensionality by examining whether the observed items were measuring the same latent variable or factor (Joreskog & Sorbom 1996). Unidimensionality is present when a set of measures, variables or items are associated with only one underlying construct and represent a single concept. The unidimensionality assessed by the goodness-of-fit (GOF), convergent validity (factor loading greater than 0.50) and the Cronbach's alpha values of greater than 0.7 represents a good measurement model (Byrne 2010; George & Mallery 2009; Hair et al. 2011; Kline 2011). In this thesis, the one-factor congeneric models are assessed and the modifications are applied if needed in order to achieve model fit. The benefit of using one-factor congeneric models is that it purifies the reliability and validity of latent variables for the measurement model and structural model (Meuleners et al. 2003).

When the one-factor-congeneric models are deemed acceptable and convergent validity is assessed, the first-order measurement model is investigated. The first-order measurement model comprising one-factor congeneric models is now checked for discriminant validity, convergent validity and GOF prior to an assessment of the second-order measurement model. After the first-measurement model is deemed satisfactory, the second-measurement model is assessed by the GOF before being incorporated into the structural model. Then, the structural model is assessed for the construct validity or the GOF. Nevertheless, the measurement confirmation model is based on a strong theoretical basis; it is recommended that the researcher should be aware of making changes based solely on statistical criteria and rather consider the theoretical integrity/justification of the constructs and empirical assumptions (Hair et al. 2011).

The structural model provides the information regarding the causal relationships (the causal relationships are hypothesised according to the theory) among latent variables such as direct, indirect and total effects of one latent variable on the others in the proposed model (Hair et al. 2011). A good fit suggests that a proposed model is valid and the sample data support the hypothesised model (Cunningham 2012).

6.4.1 The construct validity of SEM

Construct validity is an assessment of the validity of the measurement model. It is presented when the scores measure the hypothetical construct as theories (Kline 2011). In other words, construct validity is the extent to which the particular construct consists of certain measurement items which are made up of designated items that are supposed to measure that particular construct, not others (Agarwal 2011). Construct validity occurs when the measurement items correlate strongly with the construct it is related to, at the same time correlating weakly with the other constructs. The process of this evaluation is called *path estimates* (Hair et al. 2011). The size of path estimates or the standardised loadings of greater than 0.50 is used to confirm the validity of construct. The variable which has a standardised loading lower than 0.50 even if with a statistically significant at $p < 0.01$, is a candidate for deletion from the model (Hair et al. 2011). Besides path estimates, construct validity comprises components such as convergent validity and discriminant validity.

Convergent validity and *discriminant validity* have been partially discussed in Section 6.2.5.3, the scale validity. This section will extend the concept of convergent and discriminant validity in an aspect of measurement model confirmation.

Convergent validity is presented when a shared proportion of variance of items that are supposed to represent the construct is high (Kline 2011). A standardised factor loading greater than 0.50, indicates a statistically significant convergent validity. However, a standardised factor loading greater than 0.70 is ideal because a square of standardised factor loading presented the degree of variance explained by the latent variable (variance extracted) will approximately equal to 0.50. That means it explains the variance by half, and another half being error variance (Hair et al. 2011). Coefficient alpha or Cronbach's alpha which is mainly used to estimate the reliability of the construct is one indicator of convergent validity (Hair et al. 2011). High construct validity with Cronbach's alpha values greater than 0.7 indicates the existence of internal consistency and represents the consistency of the same latent construct being measured (Hair et al. 2011). The average variance extracted (AVE) of each construct greater than 0.05 is an adequate demonstration of convergent validity (Fornell & Larcker (1981).

Discriminant validity is used to examine whether the constructs in the model are different from each other. Generally, correlations between latent constructs greater than 0.80 or 0.90 indicate a discriminant validity problem (Cunningham 2012) whereas Siedlecki et al. (2009) suggest that less than 1 is acceptable. To determine whether the constructs in measurement models are empirically distinguishable, Thompson (1997) suggested the use of pattern and structure coefficients. The presence of the factor loadings of the items reflecting a particular latent variable greater than the structure coefficients of the other items in the measurement model demonstrates the discriminant validity. In addition, Fornell and Larcker (1981) suggest that discriminant validity is demonstrated where the square root of AVE is greater than the variance shared between latent constructs (the correlation between the two respective constructs) in the model.

This thesis adopts the standardised factor loading of greater than 0.50, the Cronbach's alpha values of greater than 0.7 and the AVE value of greater than 0.05 as an acceptable level showing convergent validity. The discriminant validity is examined by the correlations between latent constructs of less than 0.80 as suggested by Cunningham (2012), the pattern and structure coefficients as suggested by Thompson (1997) and the square root of AVE greater than the variance shared between the two respective constructs as suggested by Fornell and Larcker (1981).

6.5 Rationale for using EFA and CFA

EFA and CFA have been discussed in Sections 6.2 and 6.3. However, EFA and CFA are different in many aspects. Firstly, EFA is a generating procedure for hypothesis while CFA is a confirming procedure for hypothesis. Secondly, while EFA determines the patterns in the correlations of items, CFA tests the conformity of the correlations of the scale structure given in a hypothesis (Andrew et al. 2013). EFA is used for identifying the factor structure for a set of variable where the number of factors and the variables of each factor are ambiguous. In contrast, CFA is used for testing the theory where there is sufficiently strong rationale in relation to what factors are in the data and what variables define each factor (Henson and Roberts 2006). Therefore, EFA is a data-driven procedure whereas CFA is a theory-driven examination of factor structures based on adequate theoretical and empirical basis (Fabrigar et al. 1999; Henson and Roberts 2006). Farrell and Rudd (2009) have provided sufficient evidence and support using EFA and CFA. They

have identified the benefit of conducting EFA followed by CFA. EFA is used to detect high cross-loading items that might be potentially problematic before being confirmed by discriminant validity in the CFA model.

Researchers such as Fabrigar et al. (1999) and Henson and Roberts (2006) have also supported the use of EFA and CFA where they view EFA as serving theory refinement while CFA is a direct approach to theory confirmation or testing of hypotheses about the data. Therefore, EFA can be used initially in a confirmatory way when researcher have some theoretical background of what factors should be present in the data and what items should be present in each factor. Henson and Roberts (2006) report that it is common for EFA and CFA to be used in the same study. Of the 60 studies that they investigated, two-thirds have used EFA prior to CFA, especially when they had theoretical expectations. This demonstrates that the approach of EFA followed by CFA is a generally accepted practice and suitable when the researcher needs to refine the theory before confirming hypothesis.

In this thesis, CFA is used to test the hypotheses about the data. Prior to CFA, EFA is used for a scale refinement as suggested by literature. More explicitly, EFA is used to refine an underlying factor pattern explaining the interrelationships among a set of items under investigation, refine the factor solution and summarise the information contained in the observed variables (Kline 2011; Hair et al. 2011; Tabachnick & Fidell 2013; Byrne 2010; Tao, Purzer & Cardella 2011).

With regard to the necessity of applying EFA in this thesis, there are a number of reasons supporting the need for scale refinement. Firstly, even though the seven dimensions of Service Quality in this study are not newly developed scales, they are a combination of a five-dimension of SERVQUAL, Expertise and Outcome scales used and validated in empirical studies in different environments. Secondly, Customer Value adopted in this study was tested in different service sectors, not in the healthcare service industry. Thirdly, even though Customer Satisfaction and Behavioural Intentions were measured by combinations of items from empirical studies in the hospital contexts, they are from different environments. Fourthly, the measures of these constructs were modified and adjusted to ensure that they suited the context of a hospital setting. Fifthly, the empirical studies regarding the perceptions of foreign patients in a private hospital in Thailand towards Service Quality, Customer Satisfaction, Customer Value and Behavioural Intentions are rare. Finally, Thailand is a new environment for this research involving ‘the

perceptions of foreign patients', 'private hospital industry' and 'the constructs under investigation'.

Therefore, the use of EFA for scale refinement is an appropriate and valuable process to summarise the information and refine the factors that underlie the relationships among a set of observed variables that may overlap with the addition of more variables (Hair et al. 2011) prior to CFA.

6.6 Critique of using the same data set for EFA and CFA

In a typical cross-validation study, researchers are of the view that EFA and CFA should be carried out on different data sets. Joreskog and Sorbom (1996) and Hatcher (1994) suggest that when CFA is used to test hypothesis generated by EFA, EFA and CFA should use different data sets for a more rigorous statistical technique, otherwise the final model may be limited in generalizability. The results of analysis may be less informative (Tavakol, Dennick & Tavakol 2011) even though it enhances the fit of CFA models when using the same data set (Dickinson et al. 2011).

However, van Prooijen and van der Kloot (2001), in their article titled "Confirmatory analysis of exploratively obtained factor structures" forwarded arguments where results obtained by EFA can be replicated by CFA in the same sample. Especially, where the results obtained in EFA studies were of poor fit in confirmative follow-up studies. That is, CFA failed to replicate results of EFA on different data set. This is because the different data sets contain different participant populations and the variables may have different meanings in these populations. Therefore, to overcome the substantive explanations for the different results in these two techniques (EFA and CFA), the analyses should involve the same data set. This means EFA and CFA should lead to the same conclusions when the analysis is run on the same data set. This is important because "if CFA cannot confirm results of EFA on the same data set, one cannot expect that CFA will confirm results of EFA in a different sample or population. To judge the (lack of) fit of CFA on new data, it would be useful to know more about the (lack of) fit of CFA on the same data from which the factor model was derived" (van Prooijen & van der Kloot 2001, p. 780).

Therefore, a number of researchers use the same data set on the EFA followed by CFA (Dickinson et al. 2011; Jordan et al. 2013; Knutson et al. 2009; Radder et al. 2010; Tavakol et al. 2011). This includes the service quality researchers such as Dagger and Sweeney (2007), Choi et al. (2004), Butt and Run (2010), Olorunniwo and Hsu (2006), Badri et al. (2005) and Comgoz-Akdag and Zaim (2012).

In keeping with researchers who support the use of EFA and CFA in the same data set, CFA is used to confirm the results of EFA on the same data set in this thesis. If CFA confirms results of EFA, one can expect the fit of CFA on different data set in future research. Even though this approach might lead to the lack of generalizability and the results are less informative, this is a rigorous method to warrant the model developed from using EFA and CFA in the same data set is appropriate to be replicated in a different environment.

6.7 Chapter summary

The statistical data analysis discussed the details of preparing data for multivariate analysis, scale refinement, structural equation modelling, the two-step approach of measurement model confirmation and structural model.

Preparing data for multivariate is an initial step of data analysis process. This includes 1) missing data analysis: examining the extent and patterns of missing data before imputation and 2) data screening for assumptions of SEM: examining the normality of data and outliers. EFA is used to refine the underlying structure by grouping those with highly intercorrelated variables to represent dimensions within the data set. CFA is used to confirm the theoretical hypotheses. Structural equation modelling is used to investigate the relationships between constructs and to test the theoretical model and hypotheses.

The approach of EFA followed by CFA is an appropriate method supported by literature. In addition, both EFA and CFA are run on the same data set to increase the rigor of the final structural model and supports comparability in further research.

The discussion on the results of descriptive analysis and the scale refinement will be presented in detail in the following chapter.

PART FOUR

ANALYSIS

- | | |
|-----------|---|
| Chapter 7 | Demographic analysis and scale refinement |
| Chapter 8 | Measurement model confirmation and structural model |

Part Four has two chapters. Chapter 7 discusses the demographic analysis and scale refinement. Chapter 8 discusses the measurement model confirmation and the structural model.

CHAPTER 7: DEMOGRAPHIC ANALYSIS AND SCALE REFINEMENT

This chapter presents the demographic analysis and scale refinement of the study. Section 7.1 presents the data screening and the assessment of normality and outliers as an assumption of multivariate analysis. The assessment of normality and outliers is conducted to ensure the data does not violate the assumption of the multivariate data analysis technique. Section 7.2 consists of the descriptive analyses of the respondents' profiles covering age, nationality, patient type, treatment type, occupation, insurance coverage, and number of days visiting the hospital. Section 7.3 is the scale refinement using exploratory factor analysis (EFA). It is undertaken for the Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions constructs. The criteria for interpreting the EFA results are explained before the analysis. Finally, Section 7.4 is the chapter summary.

7.1 Data screening

The details of recruiting participants were discussed in Chapter 5 (Section 5.5.6). The questionnaires were distributed to 500 foreign patients at the participating hospital, of which 341 were returned. Prior to the statistical analysis, preparing data for multivariate analysis is an important step as discussed in Chapter 6 (Section 6.1). This involves two main issues: missing data analysis (Section 6.1.1) and data screening for assumptions of SEM (Section 6.1.2). IBM SPSS version 20 and AMOS version 20 were used to undertake a missing value analysis and to test the assumptions underlying multivariate techniques such as the normality of data distribution and outliers.

7.1.1 Missing data analysis

Missing data analysis involves the examination of the extent and patterns of missing data. Hair et al. (2011) suggest that cases with a missing ratio of less than 30 per cent can be retained. 11 cases were deleted from further analysis due to there being more than 30 per cent of missing values. Consequently, the final

sample consisted of 330 usable cases which were deemed sufficient as a sample size for SEM analysis (Kline 2011).

IBM SPSS version 20 with a function of EM (Expectation Maximisation) estimation in Missing Value Analysis was employed to analyse the patterns of missing data or the degree of randomness in the missing data. The Little's MCAR χ^2 statistic test to the sample was applied (see Section 6.1.1). *The result indicated that the data was valid for EM imputation as the Little's MCAR χ^2 statistic test = 108.638(66), significant at $p < 0.001$.*

7.1.2 Assessment of data normality and outliers

Normality is a preferable condition for SEM. Examining normality of data distribution is important in the initial stages of the multivariate analysis employed in this study (Tabachnick & Fidell 2013). Variables with absolute values of skewness greater than 3 are considered extremely skewed, and variables with absolute values of kurtosis between 8 and 20 are classified as of extreme kurtosis (Kline 2011). However, the rule of thumb suggests that any absolute values of kurtosis greater than 10 indicates a problem, and values greater than 20 represent a severe problem (Kline 2011) (see Section 6.1.2.1).

An analysis of normality by skewness and kurtosis of the variables within the study found that none of the variables had the zero values of skewness and kurtosis; the data was not a normal distribution. In addition, none of the variables had absolute values of skewness greater than 3 and absolute values of kurtosis greater than 10 (Appendix 3.1). *Therefore, it was concluded that the data was of non-normal distribution, but the violation of normality was not severe.* Variable v41 (construct: Customer Value, dimension: Behavioural price, item: easy to access the hospital premise) has shown the highest value of skewness at -2.34 and the highest value of kurtosis at 9.405. This is followed by variable sq43 (construct: Service Quality, dimension: Assurance, item: staff in the hospital instil confidence in me), which has a negative skewness value of -2.082 and a positive kurtosis value of 6.508 (Appendix 3.1). In addition, all of the variables have negative skewness and most (60 out of 63 variables) have positive kurtosis (Appendix 3.1). This indicates that most of the scores are above the scale centre point, have heavier tails and higher peaks (Kline 2011). This is not surprising as the participating hospital is one of the leading hospitals in Thailand; it is expected that the foreign patients rated relatively high scores on most of the variables.

Outliers are those cases with extreme scores that differ greatly from the other cases in the data (Kline 2011) and may distort the outcome of the analysis (Tabachnick & Fidell 2013). After conducting a thorough examination, the results revealed the existence of both univariate and multivariate outliers (Appendix 3.2 and 3.3). In addition, after testing the model with and without the cases identified as outliers, the results of analysis were not much different; there were no impact on the results. This mean the outliers were not influential. Therefore, from both practical and substantive standpoints, they were considered as representative of observations in the population (Hair et al. 2011). Thus, all cases with outlier values were retained.

7.2 Profile of respondents

This thesis employed non-probability sampling techniques, including the combinations of judgement sampling and convenience sampling methods as discussed in Chapter 5 (Section 5.5.5). All respondents were recruited from one private hospital in Thailand between 8 April and 7 May 2012. The demographic analysis is presented as follows.

7.2.1 Distribution method and response quality

The average number of foreign patients visiting the hospital monthly in 2010 and 2011 was approximately 2,170 and 2,280 respectively (Section 5.5.3). As the total number of returned questionnaires (collected within a month) was 341, the sample is counted as 15 per cent of the population based on monthly figures, and 1.3 per cent based on yearly figures approximately.

Owing to the constraints of the research as discussed in Section 5.5.6, 500 questionnaires were distributed, with 341 being returned, a response rate at 68 per cent. 11 out of 341 cases were removed in the data screening process as discussed in Section 7.1.1. The usable sample of 330 was deemed sufficient for further multivariate analysis.

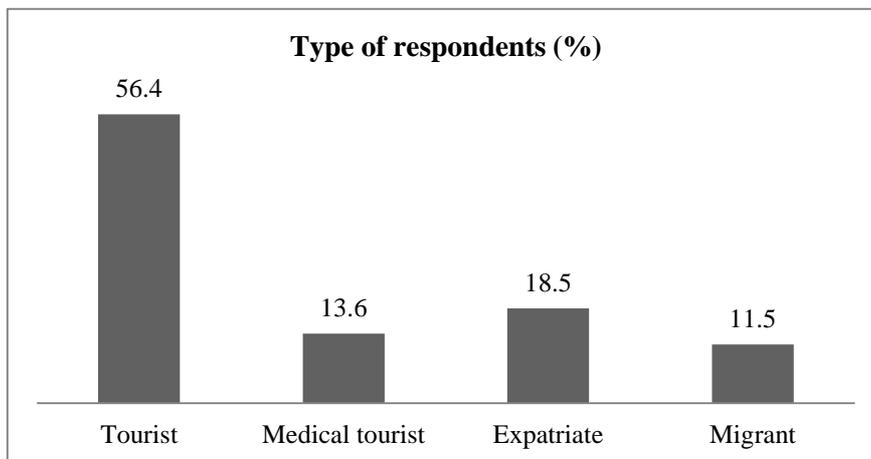
The response rate of 68 per cent is considered relatively low compared to other studies in the hospital context. For example, Wu, Liu and Hsu (2008) reported 92 per cent, Hu et al. (2010) reported 87 per cent, and Lee et al. (2010) and Chen and Chen (2010) reported 79.5 per cent response rates. However, Choi et al. (2004) reported 69 per cent which is about the same response rate as this study. It is highly probable that the patients (who were invited to participate and took the surveys)

neither returned to the hospital nor did they post the completed questionnaire back to the researcher even though a postage paid envelope was provided.

7.2.2 Representativeness of respondents

Type of respondents: It is important to understand who the foreign patients are. The foreign patients were categorised based on the demographic question contained in the questionnaire (Appendix 1.5) as follows: tourists, medical tourists, expatriates and migrants. The tourist responded to the categorisation 'I use the medical service because of some urgent need'. The medical tourist responded to the categorisation 'I use the medical service because it is one of my purposes of visiting Thailand'. The expatriate responded to the categorisation 'I temporary work/live in Thailand and have no plan to live here the rest of my life', and the migrant responded to the categorisation 'I permanently moved to Thailand and I will live here the rest of my life'. Figure 7.1 illustrates the distribution of the type of respondents.

Figure 7.1: Type of respondents

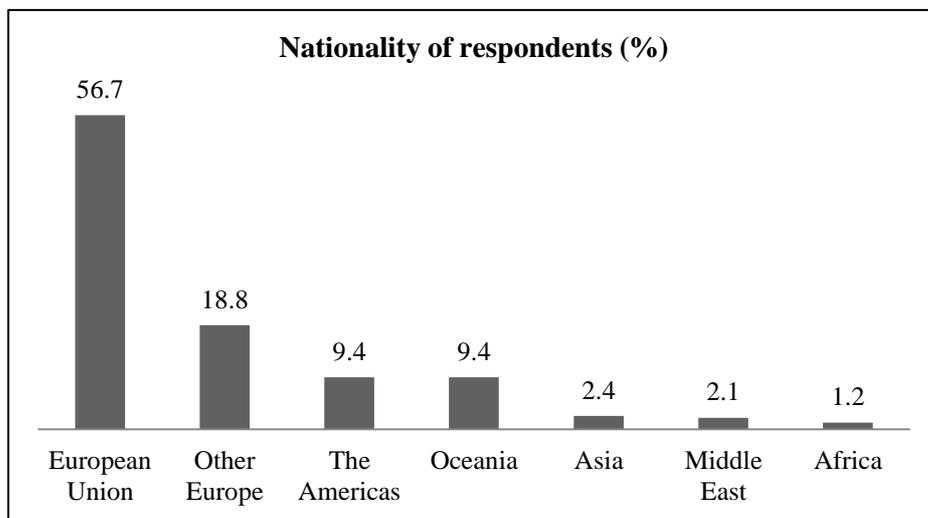


The results showed that more than half of the respondents (56.4%) were tourists, 18.5 per cent considered themselves as expatriates, 13.6 per cent categorised themselves as medical tourists. Lastly, 11.5 per cent defined themselves as migrants. The proportion of the type of respondents in this study was 30:14:56 (expatriate and migrant: medical tourists: tourists) whereas the studies related to medical tourism in Thailand such as Wongkit and McKercher (2013) and NaRanong and NaRanong (2011) suggested the proportion differently as 41:27:32 and 60:30:10 respectively (see Section 1.1.3.3). Therefore, the mix of respondent categories has been used in studies to study medical tourism, depending on the

availability of data, thus providing reassurance of the usability of data in this project.

Nationality of respondents: The questionnaire asked patients their nationalities as shown in their passports. These were grouped by the following regions (*Country lists based on United Nations country grouping 2013*): European Union (EU), other Europe, the Americas, Oceania, Asia, the Middle East and Africa, as outlined in Figure 7.2.

Figure 7.2: Nationality of respondents

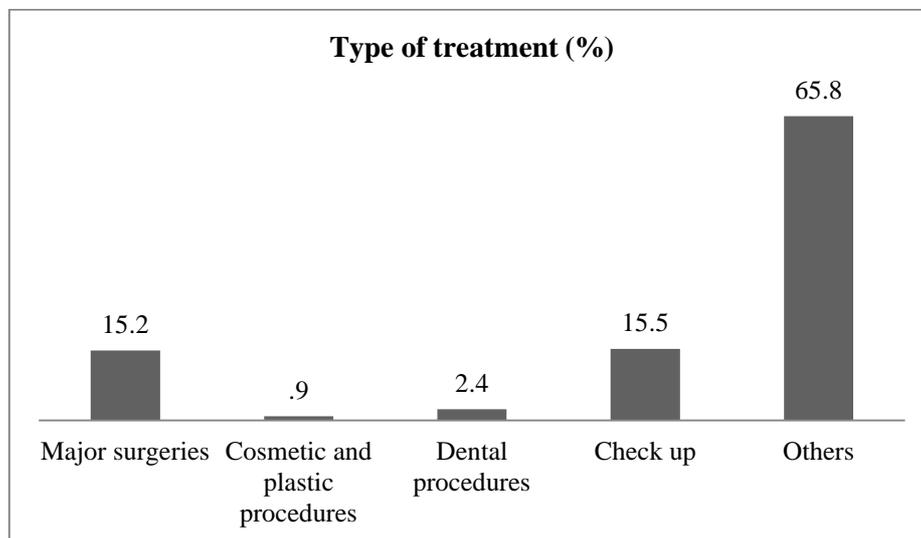


56.7 per cent of patients held EU passports and most were from the United Kingdom, Germany, France and the Netherlands. 18.8 per cent were from Other European countries, mostly from Russia and Switzerland. The Americas and Oceania were similar at 9.4 per cent of respondents. All the patients from Oceania were from Australia. The respondents from Asia, the Middle East and Africa were small and accounted for 2.4 per cent, 2.1 per cent and 1.2 per cent respectively. In brief, 75.5 per cent of the foreign patients were from Europe.

Type of treatment: Treatment was classified into five categories: 1) major surgery (such as cardiac procedures, orthopaedic surgery, infertility treatment, and bariatric surgery), 2) cosmetic and plastic procedures, 3) dental procedures, 4) check-ups and 5) other purposes as shown in the questionnaire (Appendix 1.5). Figure 7.3 shows that 65.8 per cent of the patients came to the hospital for other purposes, possibly requiring medical treatment due to accidents. Importantly, the data collection period coincided with a well-known water festival (Songkran festival) which is very popular amongst both locals and foreigners. This festival celebrates

the New Year and is one of Thailand’s longest holidays. Invariably, lots of road accidents occur during this period (Siviroj et al. 2012).

Figure 7.3: Type of treatments



Unity of the sample: The Pearson Chi square was conducted to test for unity of the sample in the demography. This was to confirm whether the sample represented ‘foreign patients’ as a cohesive group. The tests revealed that the sample did not differ in terms of 1) respondents’ nationality and type of respondents, 2) respondents’ nationality and type of treatment, 3) respondents’ nationality and gender and 4) respondents’ nationality and age. The values of chi square were 0.067, 0.566, 0.130 and 0.384 respectively. Therefore, it was sufficient to conclude that the sample represented ‘foreign patients’ as a cohesive group.

Gender and age: The demographics of the sample showed that 58.8 per cent were male and 41.2 per cent were female, with ages ranging from 18 to 65. Most were aged between 26 and 35 (31.5%) followed by those aged between 36 and 45 (28.5%). Of the remainder, 16.1 per cent were aged between 18 and 25, 12.1 per cent between 46 and 55, and 11.8 per cent between 56 and 65 (Table 7.1).

Type of patient: 23 per cent of the patients were ‘in-patients’ (a patient who occupies a bed for at least one night in a course of treatment, examination or observation) and 77 per cent were ‘out-patients’ (non-resident patients) (Table 7.1).

Occupation status: Three-quarters of all patients were employed: 65.8 per cent full-time and 11.2 per cent part-time. The remainder were either unemployed (12.4%) or retired (10.6%) (Table 7.1).

Insurance coverage: 69.1 per cent of patients had full insurance coverage and 10.9 per cent had only partial coverage. 17.9 per cent had no insurance and 2.1 per cent did not report their insurance status (Table 7.1).

Number of days visiting hospital: Approximately half of the patients visited the hospital for one day (49.1%), one-fifth visited for 2 days (18.8%) and 16.4 per cent visited between 3 and 5 days. These were most likely those who visited the hospital for minor cases such as accidents or cleaning wounds. However, 5.5 per cent visited the hospital between 6 and 10 days and 3.9 per cent visited between 11 and 30 days. 6.4 per cent of patients did not report length of stay (Table 7.1).

Companion: It was not surprising that three-quarters of patients came to Thailand with companions: 52.2 per cent came with partner, spouse, boyfriend, girlfriend or family while 25.5 per cent came with friends. Less than a quarter came alone (22.1%) and 0.3 per cent did not report (Table 7.1).

Travelling to other parts of Thailand: Nearly three-quarters of patients travelled to other parts of Thailand (71.8%) and just over a quarter (26.7%) travelled only to Koh Samui Island. 1.5 per cent did not report (Table 7.1).

Number of days staying in Thailand: 8.2 per cent of the patients stayed in Thailand for up to one week. 22.1 per cent stayed up to two weeks. 17 per cent stayed up to three weeks. 10 per cent stayed up to one month. 7 per cent stayed up to three months. 7.5 per cent stayed up to six months. 4.8 per cent stayed up to one year. Finally, those who stayed longer than one year made up 10.6 per cent of the patients at the hospital (Table 7.1).

Table 7.1: Respondent profiles

Profiles	Categories	Per cent
Gender	Male	58.8
	Female	41.2
Age	18-25	16.1
	26-35	31.5
	36-45	28.5
	46-55	12.1
	56-65	11.8
Type of patients	In-patient	23.0
	Out-patient	77.0
Occupation status	Unemployed	12.4
	Employed part-time	11.2
	Employed full-time	65.8
	Retired	10.6
Insurance status	Full cover	69.1
	Partial cover	10.9
	No insurance	17.9
	Missing data	2.1
No. of days visiting /staying at the hospital	1 day	49.1
	2 days	18.8
	3-5 days	16.4
	6-10 days	5.5
	11-30 days	3.9
	Missing data	6.4
Companion	Come to Thailand alone	22.1
	Come to Thailand with partner/spouse/boyfriend /girlfriend/family	52.1
	Come to Thailand with friend(s)	25.5
	Missing data	0.3
Travelling other part of Thailand	Visit other part of Thailand	71.8
	Not visit other part of Thailand	26.7
	Missing data	1.5
No. of days staying in Thailand	Less than one week (1-7 days)	8.2
	8-14 days	22.1
	15-21 days	17.0
	22-31 days	10.0
	32-90 days	7.0
	91-180 days	7.5
	181-365 days	4.8
	More than a year	10.6
Missing data	12.7	

Type of respondents across geographical regions: All of the patients from Africa and the Middle East were tourists. Of those from the Americas, almost half (48.4%) were tourists, almost one-third (29%) were expatriates, one-fifth (19.4%) were medical tourists, and a small number (3.2%) were migrants. It was interesting that the distribution of patients from Asia was more evenly spread: 25 per cent were tourists, another 25 per cent were medical tourists, 37.5 per cent were expatriates, and 12.5 per cent were migrants (Table 7.2).

The patients from Other Europe and the EU had similar patterns of distribution. 54.8 and 54 per cent were tourists, 21 and 11.2 per cent were medical tourists, 12.9

and 21.9 per cent were expatriates, and 11.3 and 13.9 per cent were migrants from Other Europe and the EU respectively.

Table 7.2: Distribution of the type of respondents across geographical regions

Respondents' Nationality (N=330)	Type of respondent (%)				Total (N=330)
	Tourist (N=186)	Medical tourist (N=45)	Expatriate (N=61)	Migrant (N=38)	
Africa	100.00%				100.00%
The Americas	48.40%	19.40%	29.00%	3.20%	100.00%
Asia	25.00%	25.00%	37.50%	12.50%	100.00%
Other Europe	54.80%	21.00%	12.90%	11.30%	100.00%
European Union	54.00%	11.20%	20.90%	13.90%	100.00%
Middle East	100.00%				100.00%
Oceania	74.20%	9.70%	6.50%	9.70%	100.00%
Total	56.40%	13.60%	18.50%	11.50%	100.00%

Type of treatments across the types of respondents: Disregarding the 'other' purposes for visiting the hospital, the statistics (Table 7.3 (a)) highlight that of the patients categorised as tourists, 17.2 per cent came for major surgery, 8.1 per cent for check-ups, and 1.6 per cent for cosmetic and cosmetic procedures. Medical tourists mostly came for check-ups (37.8%) and for major surgery (20%). Expatriates mostly came for check-ups (20%), whilst smaller numbers came for major surgery (8.3%) and dental procedures (6.7%). Similarly, migrants came to the hospital mostly for check-ups (21.1%) and major surgery (10.5%). Dental procedures (2.6%) accounted for fewer reports.

It is interesting to note that all of the patients who came for cosmetic and plastic procedures classified themselves as tourists (Table 7.3 (b)); this might be due to either the consequences of accidents or the self-classification was inaccurate (Table 7.2). Most who came for dental procedures were medical tourists (37.5%) and expatriates (50%). Those who reported coming for check-ups were from all types of respondents in relatively even numbers.

Table 7.3 (a): Distribution of the type of treatments across types of respondents

Type of respondents	Type of treatment					Total (N=329)
	Major surgeries (N=50)	Cosmetic and plastic procedures (N=3)	Dental procedures (N=8)	Checkup (N=51)	Others (N=217)	
Tourist	17.2%	1.6%		8.1%	73.1%	100.0%
Medical tourist	20.0%		6.7%	35.6%	37.8%	100.0%
Expatriate	8.3%		6.7%	20.0%	65.0%	100.0%
Migrant	10.5%		2.6%	21.1%	65.8%	100.0%
Total	15.2%	0.9%	2.4%	15.5%	66.0%	100.0%

Table 7.3 (b): Distribution of the type of respondents across types of treatments

Type of respondents	Type of treatment					Total (N=329)
	Major surgeries (N=50)	Cosmetic and plastic procedures (N=3)	Dental procedures (N=8)	Checkup (N=51)	Others (N=217)	
Tourist	64.0%	100.0%		29.4%	62.7%	56.5%
Medical tourist	18.0%		37.5%	31.4%	7.8%	13.7%
Expatriate	10.0%		50.0%	23.5%	18.0%	18.2%
Migrant	8.0%		12.5%	15.7%	11.5%	11.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Age across the type of treatments: Regardless of the 'other' purposes for visiting the hospital, of the patients aged between 18 and 25, 22.6 per cent went for major surgery, 15.1 per cent for check-ups, and 1.9 per cent for cosmetic and plastic procedures. Of the patients aged between 26 and 35, 18.3 per cent went for major surgery, 15.4 per cent for check-ups, 2.9 per cent for dental procedures, and 1 per cent for cosmetic and plastic procedures. Of those aged between 36 and 45, 16.1 per cent went for check-ups, 6.5 per cent for major surgery, 4.3 per cent for dental procedures, and 1.1 per cent for cosmetic and plastic procedures. Patients aged between 46 and 55 went mostly for check-ups (20%) and major surgery (17.5%). Lastly, the patients aged between 56 and 65 went mostly for major surgery (15.4%) and check-ups (10.3%) (Table 7.4).

Table 7.4: Distribution of age across the type of treatments

Age	Type of treatment					Total (N=329)
	Major surgeries (N=50)	Cosmetic and plastic procedures (N=3)	Dental procedures (N=8)	Checkup (N=51)	Others (N=217)	
18 - 25	22.6%	1.9%		15.1%	60.4%	100.0%
26 - 35	18.3%	1.0%	2.9%	15.4%	62.5%	100.0%
36 - 45	6.5%	1.1%	4.3%	16.1%	72.0%	100.0%
46 - 55	17.5%			20.0%	62.5%	100.0%
56 - 65	15.4%		2.6%	10.3%	71.8%	100.0%
Total	15.2%	0.9%	2.4%	15.5%	66.0%	100.0%

Type of respondents across the type of patients: 69.7 per cent of in-patients were tourists, 10.5 per cent were medical tourists, another 10.5 per cent were expatriates, and 9.2 per cent were migrants. 52.4 per cent of out-patients were tourists, 20.9 per cent were expatriates, 14.6 per cent were medical tourists, and 12.2 per cent were migrants (Table 7.5).

Table 7.5: Distribution of the type of respondents across types of patients

Type of respondents	Type of patients		Total (N=330)
	In-patient (N=76)	Out-patient (N=254)	
Tourist (N=186)	69.7%	52.4%	56.4%
Medical tourist (N=45)	10.5%	14.6%	13.6%
Expatriate (N=61)	10.5%	20.9%	18.5%
Migrant (N=38)	9.2%	12.2%	11.5%
Total (N=330)	100.0%	100.0%	100.0%

Type of respondents across the type of insurance status: Of the patients with full insurance coverage, 65.4 per cent were tourists, 13.2 per cent were expatriates, 12.7 per cent were medical tourists and 8.8 per cent were migrants. 36.1 per cent of tourists and 33.3 per cent of expatriates had partial insurance coverage. 22.2 per cent of medical tourists and 8.3 per cent of migrants also had partial insurance coverage. Expatriates (32.2%) and tourists (28.8%) were the biggest groups that did not have insurance, followed by migrants (25.4%) and medical tourists (13.6%) (Table 7.6).

Table 7.6: Distribution of the type of respondents across types of insurance status

Type of respondents	Insurance status			Total (N=323)
	Full cover (N=228)	Partial cover (N=36)	No insurance (N=59)	
Tourist (N=179)	65.4%	36.1%	28.8%	55.4%
Medical tourist (N=45)	12.7%	22.2%	13.6%	13.9%
Expatriate (N=61)	13.2%	33.3%	32.2%	18.9%
Migrant (N=38)	8.8%	8.3%	25.4%	11.8%
Total (N=323)	100.0%	100.0%	100.0%	100.0%

7.3 Scale refinement by exploratory factor analysis (EFA)

Exploratory factor analysis (EFA) was previously discussed in Chapter 6, Section 6.2. Its main purpose is to refine the number of interpretable factors that explain the covariance among a larger set of measured variables (Hair et al. 2011) and to reveal the latent variables that cause the manifest variables under study (Costello & Osborne 2005).

7.3.1 Criteria for interpreting the scale refinement by EFA

Service Quality and Customer Value were proposed as multidimensional constructs involving first-order and second-order measurement models. The Service Quality construct was the extension of SERVQUAL with the introduction of two additional dimensions. The Customer Value construct was based on Petrick's (2002) five dimensions of SERV-PERVAL developed for assessing Customer Value in the service industry. The four items measuring Customer Satisfaction and the five items measuring Behavioural Intentions were based on empirical studies, and conceptualised as unidimensional constructs. Therefore, it is important to ensure the rigour of the research by testing the validity and reliability of the instruments and ascertaining that the proposed measurements meet the acceptable psychometric properties (Hair et al. 2011).

There are several criteria regarding the acceptable psychometric properties of factors and the requirements for validity and reliability of the measurements (as discussed in Chapter 6, Section 6.2). Table 7.7 provides information on the criteria used as guidelines in this study to ensure that the measurements have factorability, interpretability and reliability.

Table 7.7: Criteria used as guidelines for scale refinement

Criteria		Sources
Factorability	Number of factors to be extracted A latent root or eigenvalue greater than 1 in conjunction with a scree test (the factor appears above elbow point indicates the appropriate number of factors)	Cunningham (2012) Hair et al. (2011)
	Percentage of variance explained > 0.60%	Hair et al. (2011)
	Intercorrelation Bartlett's test of sphericity, $p < 0.05$ Kaiser-Meyer-Olkin (KMO) test > 0.8 is meritorious > 0.7 is middling > 0.6 is mediocre > 0.5 is miserable < 0.5 is unacceptable	Cunningham (2012), Kline (2011) Hair et al. (2011)
Interpretability	Factor loading > 0.40	Hair et al. (2011)
	Communality > 0.50	Tabachnick & Fidell (2013)
	High cross-loading is suggested to become a candidate for deletion	Hair et al. (2011)
Reliability	Internal consistency: Cronbach's alpha > 0.70	Hair et al. (2011), George & Mallery (2009)
	Item-to-total correlation > 0.50	Hair et al. (2011)
	Inter-item correlation > 0.30	Hair et al. (2011)

The initial assessment is conducted separately according to constructs, beginning with Service Quality, and following with Customer Value, Customer Satisfaction, and Behavioural Intentions as presented in the following sections.

7.3.2 Scale refinement: The Service Quality construct

Firstly, the EFA examined the initial 32 items as they were presented in the survey instrument section (A) Service Quality (Appendix 1.5). The IBM SPSS version 20 outputs from EFA analysis showed the KMO value of 0.953. Over 95.3 per cent of variance in the measured variables was common variance and the dataset was noteworthy for factor analysis. Bartlett's test of sphericity used to assess a identify matrix of the correlation matrix was rejected; $\chi^2 (496) = 8818.820$, $p = 0.000$

(Appendix 4.1). This indicated that the correlation matrix of data did not produce an identity matrix and, therefore, was meaningful to factor analysis.

Based on ML extraction method, the total variance showed that five of the initial eigenvalues were above one. This means five factors were extracted even though it was determined prior that there were seven factors. The five components explained 69.6 per cent of the total variance. The rotated factor loading with ML extraction showed that the variance explained 64.3 per cent even though the scree plot test showed one factor above a steep curve (elbow point) (Appendix 4.1).

Five of 32 variables (sq13, sq54, sq55, sq42, and sq52) had factor loading less than 0.40. Three variables (isq13, sq14 and sq52) had a communality of less than 0.5. Two variables (sq13 and sq32) were considered to have high cross-loadings.

The factor loadings and communalities of each item were re-arranged according to seven dimensions as in the proposed integrative model (Appendix 4.1.4); this was to show how the items were combined into variables (factors). It was shown that three of seven dimensions loaded onto the same factor, resulting in five factors altogether. These three dimensions were Responsiveness (sq31-sq34), Assurance (sq41, sq43, sq44) and Empathy (sq51-sq55). Furthermore, sq42 of Assurance dimension loaded weakly onto the Expertise factor. Thus, the seven dimensions were refined into five factors as suggested by the eigenvalues and variance explained (Appendix 4.1.5). All factor loadings less than 0.30 have been suppressed as suggested by Hair et al. (2011). The final result of the EFA is illustrated in Table 7.8.

Table 7.8: Final result of EFA – the Service Quality construct

Factor	Item	Factor					Communalities	Reasons for removal	Cronbach's Alpha	
		1	2	3	4	5				
KMO: 0.953, Bartlett's Significant: 0.000, Initial Eigenvalues: 16.339+2.076+1.552+1.294+1.005; Varaince explained: 69.579% Extracted Eigenvalues: 15.912+1.772+1.211+0.792+0.899; Variance explained: 64.331%										
Personal skills (Factor 1)	sq31	Staff tell me exactly when services will be performed	.439			.345		.598		0.931
	sq32	Staff give prompt service	.479			.408		.703	c	8 items
	sq33	Staff are always willing to help	.564					.684		
	sq34	Staff always respond to	.557			.311		.741		
	sq41	Staff instil confidence in me	.461				-.332	.737		
	sq43	Staff are always courteous to	.511					.580		
	sq44	Staff have knowledge to answer	.435					.690		
	sq51	Hospital gives individual	.680					.700		
	sq53	Hospital has staff giving me	.701					.712		
	sq54	Hospital has my best interest at	.344					.620	a	
sq55	Staff understand my specific	.347					.672	a		
Outcome (Factor 2)	sq71	Staff understand my specific		-.577				.662		0.927
	sq72	Coming to hospital has increased my chances of		-.784				.751		6 items
	sq73	I believe my future health improving from the result of		-.779				.717		
	sq74	I believe having treatment has been worthwhile		-.837				.740		
	sq75	I leave the hospital feeling encouraged about my treatment		-.856				.820		
	sq76	I believe the results of treatment will be at the best they can be		-.732				.754		
Tangible (Factor 3)	sq11	Modern looking equipment			.894			.659		0.816
	sq12	Facilities visually appealing			.842			.659		3 items
	sq13	Staff neat in appearance	.309		.324			.454	a, b, c	
	sq14	Materials visually appealing			.471			.461		
Reliability (Factor 4)	sq21	Hospital promises to do something by certain time				.878		.688		0.896
	sq22	Hospital shows sincere interest in solving problem				.617		.690		5 items
	sq23	Hospital gets things right first				.554		.656		
	sq24	Hospital provides its services at the time it promises to do so				.806		.699		
	sq25	Hospital insists on error-free				.603		.542		
Expertise (Factor 5)	sq42	I feel safe in dealing with					-.377	.698	a	0.937
	sq52	Hospital has operating hours						.383	a, b	4 items
	sq61	Staff are well trained and					-.699	.787		
	sq62	Staff carry out their tasks					-.814	.810		
	sq63	Staff are highly skilled at their					-.867	.824		
sq64	I feel good about the quality of care given me at the hospital					-.709	.744			
Extraction Method: Maximum Likelihood.						Initial items		32		
a. Rotation converged in 13 iterations.						Removed		6		
Note: 1. Factor loading less than 0.30 are omitted for the purpose of easy reading						Final items		26		
2. (a) = factor loading less than 0.40										
3. (b) = Communality less than 0.50										
4. (c) = high cross loading										

Based on eigenvalues (greater than one), the final result of the EFA confirmed five factors and the variance explained was more than 60 per cent, which is a threshold commonly used in social sciences (Hair et al. 2011). Despite the scree plot showing

one steep break and several small elbow points, in this case the scree plot test was not taken into consideration because it showed only one very steep line while the other intersection between two lines was not clear. Tabachnick and Fidell (2013) commented that the scree plot test is not exact and it involves the researcher exercising judgement about where the discontinuity in eigenvalues occurs. Considering the eigenvalues being greater than one and variance explained more than 60 per cent, this construct was supported for factorability.

The original five dimensions of SERVQUAL (RATER) were merged into three dimensions. The three dimensions similar in nature (Responsiveness, Assurance and Empathy) were combined into one factor and labelled 'Personal skills' because the items of these dimensions related to the skills of staff. Naceur and Azaddin (2005) also found that these three dimensions merged into one factor which they also named as Personal skills.

The other two original dimensions proposed to this thesis (Expertise and Outcome) kept the items as initially proposed. Consequently, the five final factors refined from the EFA were: Personal skills, Outcome, Tangibles, Reliability and Expertise. These are discussed in the following sections.

Factor 1 (Personal skills): Factor 1 had the highest explained variance of 51.1 per cent to the factor (Appendix 4.2). There were eleven items loading onto Factor 1 as a result of the EFA (see Table 7.8). Factor 1 comprised items initially designed to measure Responsiveness, Assurance and Empathy dimensions as proposed in the integrative conceptual model; it was labelled as Personal skills. One of the items loaded with values higher than 0.7 (sq53); another loaded with values higher than 0.6 (sq51); three loaded with values higher than 0.50 (sq33, sq34, sq43); and four loaded with values higher than 0.40 (sq31, sq32, sq41, sq44). However, two of the items loaded with values less than 0.40 (sq54, sq55). These two items, therefore, were removed as the criterion requires keeping only the items with loading greater than 0.40. These two items were initially designed to measure Empathy.

Despite item sq32 having a significant loading 0.479, it contained a high cross-loading of 0.408 with Factor 4 (Reliability), indicating a problem of interpretability. Consequently, this item was removed. Hence, eight items remained in Factor 1 (Personal skills).

Personal skills with its eight items (sq31, sq33, sq34, sq41, sq43, sq44, sq51 and sq53) presented a very strong internal consistency as identified by significant

Cronbach's alpha value of 0.913, the values of the item-to-total correlations of all items were higher than 0.50 and the values of inter-item correlation were higher than 0.30 (Appendix 4.2). In addition, none of these eight items had communality values lower than 0.50. Therefore, the measurements of the Personal skills factor had a strong interpretability and reliability as they met the criteria as stated in Table 7.7.

Factor 2 (Outcome): All of the initial items designed to measure this factor loaded as proposed (Table 7.8). The total of six items (sq71, sq72, sq73, sq74, sq75 and sq76) had significant loadings between 0.577 and 0.856. None showed cross-loading greater than 0.30 with other factors. The communality values of the items were high and ranged between 0.662 and 0.820. The reliability of this factor was deemed acceptable by displaying a high value of Cronbach's alpha 0.927; no item-to-total values of less than 0.50 and no inter-item correlation values of less than 0.30 were identified (Appendix 4.3). Therefore, Outcome had a satisfactory level of reliability and interpretability.

Factor 3 (Tangibles): Three of the four initial items (sq11, sq12, and sq14) designed to measure Factor 3 loaded strongly onto the same factor as proposed in the integrative conceptual model. One of the items (sq13) had a cross-loading with Factors 3 (0.324) and 1 (0.309). Even though sq13 had a higher loading onto Factor 3 than onto Factor 1, the value of the primary factor loading was below the acceptable criterion of 0.40. Moreover, the communality value of this item was below 0.50. After thorough consideration, it was decided that this item (sq13) was to be removed due to high cross-loading, low loading and low communality. At this stage, this factor contained sq11, sq12 and sq14 (Table 7.8).

Despite item sq14 having less communality (0.461) than the desirable value of 0.50, it was decided that it be kept for subsequent analyses in the measurement model confirmation stage. Communality provides information with regard to the amount of variance in each indicator explained by the factors in the factor solution (Tabachnick & Fidell 2013). When the communality is low, it implies that the item/variable does not have sufficient explanatory power and does not fit well with the factor solution. Nevertheless, Hair et al. (2011) mention that when the communality is not too high (between 0.45 and 0.50), it is acceptable providing the minimum sample size exceeds 300.

There are several meaningful indicators for supporting and retaining sq14 with communality at 0.461. Firstly, the factor loading of 0.471 exceeded the criterion of 0.40 and was considered a significant loading. Secondly, despite the value of communality being 0.461 is less than the ordinarily acceptable value of 0.50, the communality value of higher than 0.45 is acceptable for interpretability and reliability as the sample size is more than 300 (Hair et al. 2011). Next, there was no significant cross-loading of this item (Hair et al. 2011).

Furthermore, the number of variables per factor, as discussed by several authors, was taken into consideration. For instance, Conway and Huffcutt (2003) recommend four variables as appropriate for factor analysis. Hair et al. (2011) advocate that five variables are desirable to reveal factor structure whereas one variable is of little use. Hinkin (1995) states that at least two variables per factor are needed. This factor (Tangibles) would have had only two remaining items (sq11 and sq12), if sq14 had not been retained.

Tangibles dimension is defined as the appeal of physical facilities, equipment and tools (Parasuraman et al. 1988). Sq14 was described in the questionnaire as 'materials associated with the service (such as pamphlets or statements) are visually appealing'. It possesses the face validity as it is supported in the literature. Therefore, sq14 is a meaningful indicator, supported by extant literature, for inclusion. Based on the reasons mentioned above, it was decided that sq14 would be kept for further analyses.

Cronbach's alpha value of 0.816 with three items (sq11, sq12 and sq14) provided substantial evidence of the factor's reliability. The communality values suggested sufficient interpretability. The results of analysis did not find any items with item-to-total correlation values of less than 0.50 and inter-item correlation values of less than 0.30 (Appendix 4.4). Therefore, the Tangibles factor had a satisfactory level of reliability and interpretability.

Factor 4 (Reliability): All of the five items (sq21, sq22, sq23, sq24 and sq25) loaded into a single factor as initially designed (Table 7.8). Every item had significant loadings of between 0.554 and 0.876. There was no evidence of cross-loading. None of the communality values were lower than 0.50 (ranging from 0.542 to 0.699). Consequently, the interpretability of the Reliability factor was acceptable. The value of Cronbach's alpha was sufficient at 0.896. All items met the criteria of both item-to-total and inter-item correlation (Appendix 4.5).

Therefore, the Reliability factor had a satisfactory level of reliability and interpretability.

Factor 5 (Expertise): There were four items (sq61, sq62, sq63, sq64) initially designated to this factor. Further to these, sq42 and sq52 designed for the Assurance and Empathy factors as proposed in the integrative conceptual model would also be loading with Factor 5. These two items supposed to load onto Factor 1 (Personal skills - Responsiveness, Assurance, and Empathy) as their original dimensions rather than onto this factor. However, these two items only weakly loaded onto this Factor 5. Item sq42 had a factor loading 0.377, and item sq52 not only had a factor loading less than 0.30, but also had a low communality value of 0.383. Consequently, it was decided that these two items were to be removed at this stage (Table 7.8).

The remaining four items (sq61, sq62, sq63, sq64) had high significant factor loadings of between 0.699 and 0.867. There was no evidence of cross-loading. The communality values were also sufficient as they exceeded 0.50 and ranged between 0.744 and 0.824. The values of item-to-total and inter-item correlation met the required criteria (Table 7.7). Cronbach's alpha value with the four items was 0.937 (Appendix 4.6). Therefore, Factor 5 (Expertise) had a satisfactory level of reliability and interpretability.

Summary of Service Quality construct: The results showed that the original five-factor SERVQUAL scale, as proposed by Parasuraman et al. (1988), was not supported as it was able to be collapsed into three factors. Factor 1, comprising Responsiveness, Assurance and Empathy, was labelled as Personal skills. Factor 2 was Tangibles and Factor 3 was Reliability. The two additional factors (Expertise and Outcome) were supported by the results of the scale refinement. These two additional factors were adopted from Dagger and Sweeney (2007) to capture the technical quality.

The non-generic SERVQUAL scale is in line with several studies in the hospital context. For example, the findings of Mostafa's (2005) study on patients' expectation and satisfaction in Egyptian hospitals based on seven factors of the SERVQUAL scale revealed three factors instead of seven (Responsiveness and Empathy loaded on the same factor). The study of Health Care Service Quality in Turkey by Yesilada and Direktor (2010) measured the Service Quality construct based on the original five dimensions of SERVQUAL, yet the results of the EFA

similarly produced three factors (Reliability, Responsiveness and Assurance collapsed into the same factor).

In this study, six items (sq32, sq54, sq55, sq13, sq43, sq52) were removed due to the following reasons: (a) a factor loading of less than 0.40; (b) a communality value of less than 0.50; and (c) high cross-loading (Table 7.7). Of the initial 32 items with seven factors, 26 items were retained with five factors, and six items were removed from further analysis.

7.3.3 Scale refinement: The Customer Value construct

The measurement of the Customer Value construct in this study was developed by Petrick (2002). The original statements were adjusted and modified to suit the context of the study. The initial 22 items, as presented in the survey instrument section B, Customer Value, consisted of items between b1 and b22 (Appendix 1). The IBM SPSS output for EFA provided the KMO value of 0.930 which demonstrated that the variance of the data set was common variance and therefore meaningful for factor analysis. Bartlett's test of sphericity was rejected as it showed that non-zero correlations existed at the significant level of 0.000 (χ^2 (231) = 8380.281, $p = 0.000$) (Appendix 5.1). This indicated that the data was suitable for factor analysis.

Based on the ML extraction method, the total variance explained that the output presented five components with eigenvalues of greater than one. The total variance explained by the five components was 83.6 per cent. The rotated factor loading with ML extraction showed a total explained variance of 79.1 per cent. The scree plot test strongly supported the five components as they were obviously five factors above the steepest elbow point (Appendix 5.1). Therefore, not only did this construct have a satisfactory level of factorability, but the results of the scale refinement also supported the number of factors as proposed by this study; note that all factor loadings less than 0.30 were suppressed (Hair et al. 2011). Table 7.9 illustrates the EFA results of the Customer Value construct. These five factors are discussed in detail in the following sections.

Table 7.9: Final result of EFA – the Customer Value construct

Factor	Item		Factor					Communalities	Cronbach's Alpha
			1	2	3	4	5		
KMO: 0.930, Bartlett's Significant: 0.000,									
Initial Eigenvalues: 11.235, 2.523, 1.786, 1.519, 1.323; Varaince explained: 83.571%									
Extracted Eigenvalues: 10.846+2.331+1.673+1.372+1.170; Variance explained: 79.052%									
Reputation (V3)	v31	Hospital has good reputation	.922					.847	0.973 5 items
	v32	Hospital is well respected	.978					.911	
	v33	Hospital is well thought of	.938					.904	
	v34	Hospital has status	.867					.838	
	v35	Hospital is reputable	.910					.866	
Emotional (V5)	v51	Receiving treatment makes me feel good		-.500				.582	0.950 5 items
	v52	Receiving treatment gives me pleasure		-.863				.837	
	v53	Receiving treatment gives me a sense of joy		-.998				.922	
	v54	Receiving treatment makes me feel delighted		-.996				.913	
	v55	Receiving treatment gives me happiness		-.919				.863	
Monetary Price (V2)	v21	Price is fair			.935			.833	0.942 4 items
	v22	Price is reliable			.992			.894	
	v23	Price is consistent			.884			.839	
	v24	Price is worth the money			.731			.705	
Quality Judgement (V1)	v11	Quality is outstanding				.624		.688	0.929 4 items
	v12	Quality is reliable				.932		.837	
	v13	Quality is dependable				.971		.849	
	v14	Quality is consistent				.794		.702	
Behaviour Price (V4)	v41	Easy to access the hospital premise					.735	.485	0.860 4 items
	v42	Easy to acquire medical attention					.801	.597	
	v43	Easy to access the details of available services the hospital's offer					.774	.630	
	v44	Easy to purchase the hospital's services					.730	.594	
Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. a. Rotation converged in 5 iterations.							Initial items	22	
							Removed	0	
							Final items	22	

Factor 1 (Reputation): Factor 1 had the highest explained variance of 51.1 per cent to the factor (Appendix 5.2). The original five items designated for this factor loaded as designed in the proposed integrative model. All five items (v31, v32, v33, v34, v35) had strong factor loadings of above 0.90 except item v34 had a high loading of 0.867. These were indicative of a well-defined structure. Not only did the items have a high factor loading, none of them contained a cross-loading of higher than 0.30. The communality values were all substantial and ranged between 0.84 and 0.91. The factor loading and communality values supported the interpretability of the factors (Table 7.9).

Furthermore, the value of Cronbach's alpha across the five items was very high: 0.973. The item-to-total correlation values of all the items were also very high and ranged between 0.900 and 0.942. Similarly, the inter-item correlation values were substantial and ranged between 0.821 and 0.921 (Appendix 5.2). These values indicated high reliability of the measurements.

Factor 2 (Emotional response): Similar to Factor 1, all of the items of Factor 2 (Emotional response) loaded onto the factor as originally designed. Most items (v52, v53, v54 and v55) had substantial loadings of between 0.863 and 0.998 except item v51 that had a loading 0.50. However, this was still higher than the threshold value of 0.40. These values indicated that all items were meaningful for factor analysis. The communality values of four items (v52, v53, v54 and v55) were also high and ranged between 0.837 and 0.922; also the communality value of v51 was 0.582. In addition, none of the items had cross-loading. An inspection of the item-to-total correlation and inter-item correlation of the five items measuring the Emotional response factor showed that all items satisfied the criteria of factor measurement. The Cronbach's alpha value of 0.950 was generated from all five items (v51, v52, v53, v54 and v55) (Table 7.9). Although the item-total statistics suggested deleting item v51 would have improved the Cronbach's alpha from 0.950 to 0.970 (Appendix 5.3), it was decided that it be retained. This was because all the other indicators demonstrated the interpretability and reliability of the measurements and the theory underpinned its inclusion in the model.

Factor 3 (Monetary price): The four items of Factor 3 (v21, v22, v23 and v24) loaded as originally proposed. All loaded very strong with values ranging from 0.731 to 0.992. These showed that all items were associated with the factor strongly. These four items had an explanatory power (Section 6.2.4) to the factor as the values of communality were immense with values ranging between 0.705 and

0.894. Besides, there was no cross-loading of more than 0.30 of any of the items. The Cronbach's alpha value was 0.942 across the four items (Table 7.9).

Despite the item-total statistics suggested deleting item v24 would improve the Cronbach's alpha from 0.942 to 0.950 (Appendix 5.4), it was decided that this item be retained as it had a high factor loading (0.731) and high communality (0.705). Also, all the other indicators suggested the interpretability and reliability of the measure. The inter-item correlation found that no items had a problem of the correlation less than 0.30. Considering the values of factor loading, communality, cross-loading, Cronbach's alpha, and inter-item correlation, the validity and reliability of the four measures (v21, v22, v23 and v24) were supported (Appendix 5.4).

Factor 4 (Quality judgement): Factor 4 consisted of items v11, v12, v13 and v14. Similar to the other factors, all items loaded as designed in the proposed integrative model. All had a factor loading of greater than 0.4 and ranged between 0.624 and 0.971. All communality values were also higher than 0.50 and ranged between 0.688 and 0.849. There was no evidence of cross-loading greater than 0.30 (Table 7.9). A Cronbach's alpha value of 0.929 across the four items (v11, v12, v13 and v14) was generated for this factor (Appendix 5.5). As seen with other factors, although the item-total statistics suggested deleting item v11 would have improved the Cronbach's alpha value from 0.929 to 0.931, it was decided that the item be retained as its factor loading and communality values exceeded the threshold. Therefore, the interpretability and reliability of this factor were accepted.

Factor 5 (Behavioural price): Factor 5 was initially designed with four measures. Even though this was the factor with the least explained variance, all four items were loaded well. The items (v41, v42, v43 and v44) had high factor loadings ranging between 0.730 and 0.801. There was no cross-loading greater than 0.30. Although item v41 had a factor loading value of 0.735, its communality value was less than the desirable value of 0.50 (0.485), which can indicate an interpretability problem (Tables 7.7 and 7.9). However, after the inspection of item-total statistics, its deletion did not improve the Cronbach's alpha value. Also the reliability of the factor (Tables 7.7 and 7.9) presented by the values of the item-to-total correlation and inter-item correlation were above 0.50 and 0.30 respectively. The communality value of above 0.45 was acceptable for this study, as discussed previously. The Cronbach's alpha value of 0.860 across the four items

was above 0.70 (Appendix 5.6). Hence, the measurements of this factor were considered as having satisfactory levels of interpretability and reliability.

Summary of Customer Value construct: The results of the EFA were deemed satisfactory as all the initial items loaded onto the respective factors as proposed in the integrative model. Furthermore, none had significant cross-loading of higher than 0.30. Half of the measurements (eleven items) had excellent factor loadings of above 0.90, and four had good factor loadings of above 0.80. A further four had fair factor loadings of above 0.70. Only two of the 22 items (v11 and v51) had factor loadings of less than 0.70 but they were still much higher than the acceptable level of 0.40.

Although the communality value of item v41 was slightly low, its potential deletion would not have improved Cronbach's alpha value, therefore it was considered a valuable item and retained in this study. The Cronbach's alpha value of four out of five factors was greater than 0.90 (Reputation, Emotional response, Monetary Price, and Quality judgement), the remaining factor (Behavioural Price) had a Cronbach's alpha value of 0.860. As a result, these five factors had strong levels of Reliability. None were removed from the study and they were all kept for subsequent analyses.

7.3.4 Scale refinement: The Customer Satisfaction construct

Customer Satisfaction was conceptualised as a unidimensional construct. The combinations of instruments used to measure the construct were used in the hospital context and based on the studies by Choi et al. (2004) and Wu et al. (2008). A total of four items, namely sat1, sat2, sat3 and sat4, were presented in survey questionnaire section C: Customer Satisfaction (Appendix 1). Even though the measurements of the Customer Satisfaction construct in this thesis had been used in the hospital contexts, the combinations in previous measurements were used with the local patients. Consequently, these measures were subjected to the scale refinement. Table 7.10 illustrates the EFA results of the Customer Satisfaction construct. Note that all factor loadings less than 0.30 have been suppressed (Hair et al. 2011).

Table 7.10: Final results of EFA – the Customer Satisfaction construct

Factor	Item		Factor loading	Communalities	Cronbach's Alpha
KMO: 0.840, Bartlett's Significant: 0.000, Initial Eigenvalues: 3.290 ; Varaince explained: 82.255% Extracted Eigenvalues: 3.073 ; Variance explained: 76.814%					
Customer Satisfaction (sat)	sat1	I am satisfied with the treatment I received in the hospital	.901	.813	4 items
	sat2	I am satisfied with the health care services in this hospital	.945	.893	
	sat3	I am satisfied with the the decision to use service from this hospital	.904	.818	
	sat4	The overall feeling about the service of care in this hospital is better than what I expected	.741	.549	

The ML extraction method with oblimin rotation generated one factor supported by eigenvalue. This was confirmed as a unidimensional construct that had an initial eigenvalue of 3.290 and an explained variance of 82.2 per cent. The extracted eigenvalue was 3.073 with the explained variance of 76.9 per cent. The scree plot test suggested one factor as there was only one factor above the elbow point. The value of Bartlett's test of sphericity was rejected as $\chi^2(6) = 1136.606$, $p = 0.000$; it was indicative of factorability as the correlation matrix of data did not produce an identity matrix. Also the KMO value of 0.840 was considered significant and it demonstrated that the dataset was appropriate for factor analysis. Therefore, this factor was well represented in terms of factorability (Appendix 6).

Customer Satisfaction as a unidimensional construct consisted of items sat1, sat2, sat3 and sat4 as they appeared in the survey questionnaire (Appendix 1). All items were loaded strongly onto a single factor with the values ranging between 0.741 and 0.945. Three of the four items (sat1, sat2, and sat3) had strong values of communality that ranged between 0.813 and 0.893. Although item sat4 had a relatively low communality value (0.549) when compared to the others, it still exceeded the recommended value of 0.50. Hence, the interpretability of the factor was well presented.

The Cronbach's alpha of the four items, measuring the internal consistency, provided a great value of 0.921. Although the value of Cronbach's alpha would have increased from 0.921 to 0.940 if item sat4 had been deleted, a thorough inspection of item-to-total correlation and inter-item correlation showed the criteria of values greater than 0.50 and 0.30 respectively was satisfied (Appendix 6). Consequently, item sat4 was treated as a valuable indicator and kept for further

analysis. The four items measuring the Customer Satisfaction construct held a satisfactory level of reliability and validity.

7.3.5 Scale refinement: The Behavioural Intentions construct

The Behavioural Intentions construct of this thesis was conceptualised as a unidimensional construct. The combination of items was previously used in studies by Boshoff and Gray (2004), Bloemer et al. (1999), Choi et al. (2004) and Wu et al. (2008). The selected items reflected word-of-mouth communication, intention to repurchase, and willingness to recommend. Therefore, the combination of items was subjected to conduct the scale refinement by exploratory factor analysis. Table 7.11 displays the EFA results of the Behavioural Intentions construct. Note that all factor loadings less than 0.30 have been suppressed (Hair et al. 2011).

Table 7.11: Final results of EFA – the Behavioural Intentions construct

Factor	Item	Factor loading	Communalities	Cronbach's Alpha	
KMO: 0.876, Bartlett's Significant: 0.000, Initial Eigenvalues: 4.273 ; Varaince explained: 85.461% Extracted Eigenvalues: 4.068 ; Variance explained: 81.357%			.891	0.955	
Behavioural Intentions (BI)	b1	I will recommend this hospital to family and friends			.944
	b2	I will recommend this hospital to anyone who seeks my advice			.965
	b3	I will say positive things about this hospital to other people			.899
	b4	If I need medical service in the future, I will consider this hospital as my first choice			.840
	b5	I will definitely return to this hospital in the future if necessary			.856
			.733	5 items	

This construct consisted of five items, b1, b2, b3, b4 and b5, as shown in the survey questionnaire Section D: Behavioural Intentions (Appendix 1). The results showed only one component that had an eigenvalue greater than one. The initial eigenvalue of 4.273 had a significant explained variance of 85.5 per cent. The extracted eigenvalue of 4.068 had a strong explained variance of 81.4 per cent. Not surprisingly, the scree plot test provided the result of one factor above the elbow point. Bartlett's test of sphericity was also rejected as $\chi^2(10) = 1927.946$, $p = 0.000$ which indicated that the factor was appropriate for the factor analysis. The KMO measure of sampling adequacy provided an excellent value of 0.876 to present a

factor (Appendix 7). As discussed above, this factor satisfied the requirements of factorability as it met the criteria presented in Table 7.7.

All five items had high significant factor loadings as the values ranged between 0.840 and 0.965. In addition, the communality values ranged between 0.706 and 0.931. These indicated that this construct met the interpretability requirements. The inspection of item-to-total correlations and inter-item correlations were within the criteria range. The item-to-total statistics suggested no item would be deleted to improve the Cronbach's alpha value (Appendix 7). The Cronbach's alpha of 0.955 was considered exceptional for internal consistency, and represented a high level of measurement reliability.

7.3.6 Conclusion of the scale refinement

As mentioned, the exploratory factor analysis used in this study was for refining the underlying factor patterns explaining the interrelationships among a set of items, and summarising the information contained in a large number of observed variables for a clearer understanding of the items that made up the scale or dimension; it was not used for data deduction. The process of the EFA revealed some problems in relation to the areas such as low factor loadings, low communality values and cross-loadings. Theoretically, the presence of strong factor loadings of the items is indicative of unidimensionality, whereas the cross-loading items are indicative of discriminant validity problems. These three kinds of problems (low factor loading, low communality value, and cross-loading) reflect on the interpretability, unidimensionality and discriminant validity of the factors, justifying the removal of some items. Furthermore, the investigation of Cronbach's alpha, item-to-total correlations and inter-item correlations identified the level of the measurement Reliability.

The EFA generated five factors of the Service Quality constructs (Personal skills, Outcome, Tangibles, Reliability, and Expertise) instead of seven as initially proposed. Six items were removed to increase the interpretability of the factors. Consequently, 26 out of 32 items were retained. For the Customer Value construct, the EFA result supported the proposed model of five factors: Reputation, Emotional response, Monetary Price, Quality Judgement, and Behavioural Price. None of the items was removed from the construct. Customer Satisfaction and Behavioural Intentions were conceptualised as unidimensional constructs and none

of the items were removed. The interpretability and reliability of the factors was supported in each case.

The result of the EFA was a preliminary assessment of factorability, interpretability and reliability of factors/dimensions in order to refine a more concise measurement model for progression in the next stage of analyses. To confirm the validity and reliability of the items and dimensions, SEM analysis was conducted in a two-step approach that involved measurement model confirmation and structural model.

7.4 Chapter summary

This chapter discussed the data screening, the assumptions of the multivariate analysis and the demographic characteristics. Furthermore, it presented the scale refinement resulted by using the exploratory factor analysis (EFA).

The chapter commenced with the data screening which included the analysis of missing values, assessing normality and outliers. In terms of missing values, the cases that exceeded 30 per cent of missing data were removed from further analysis before testing the type of missing data with Little's MCAR χ^2 . The results of testing the Little's MCAR χ^2 indicated that the data was MCAR and valid for EM imputation. Assessing the normality revealed that the data was not of normal distribution; however, it was not severe as none of the absolute values of skewness exceeded 3, and none of the absolute values of kurtosis were greater than 10. Outliers were assessed based on a practical and substantive standpoint. The cases with outliers were retained as they were deemed representative of the population.

The response rate of the questionnaire for this thesis was 68 per cent. Of these returned questionnaires, there were 330 usable cases, or 66 per cent of the total distributed. More than half of the respondents were tourists (56%), 30 per cent were a combination of expatriates (18%) and migrants (12%); and 14 per cent were medical tourists. 75.5 per cent of the respondents were Europeans.

The exploratory factor analysis (EFA) was based on the three main criteria: factorability, interpretability and reliability (Table 7.7). This was to refine the factor patterns and uncover the underlying structure of the variables of the study. The EFA uncovered some problems with the measurements such as low factor loading, low communality, and cross-loading. These problems reflected the interpretability and discriminant validity of the constructs.

The findings from the EFA suggested that the five-factor SERVQUAL (RATER) was not supported as the original five factors collapsed into a total of three. However, an additional two factors, reflecting Expertise and Outcomes, were supported by the results of the EFA. Consequently, the Service Quality construct, originally proposed as seven factors with 32 items, ultimately became five factors with 26 items. Six items were removed to obtain a better solution due to low factor loading, low communality and cross-loading.

The Customer Value construct exhibited strong factorability with five factors retained as originally proposed and no items removed from the study. The Customer Satisfaction and Behavioural Intentions constructs represented factorability and none of the items were removed during the EFA process.

The next chapter, Chapter 8, presents the structural equation modelling (SEM) consisting of a two-step approach: the measurement model and the structural model. The interrelationships of the constructs are assessed. The analysis of direct, indirect and total effect is discussed and the analyses of the mediating effects are presented.

CHAPTER 8: MEASUREMENT MODEL CONFIRMATION AND STRUCTURAL MODELLING

This chapter consists of five sections. The structural equation modelling (SEM) involves a two-step approach: the measurement model confirmation and the structural model. The chapter begins with the analysis of the measurement model in Section 8.1. This section describes the criteria of the confirmatory factor analysis. One-factor congeneric models and first-order measurement models are assessed prior to conducting the second-order measurement model. The summary of the measurement model confirmation is presented in Section 8.2. Section 8.3 presents the structural model analysis including the results of the proposed integrative model and the analysis of direct, indirect and total effects. Section 8.4 consists of the analysis of mediating effects. Finally, Section 8.5 is the chapter summary.

8.1 Measurement model confirmation

The two-step approach of the SEM is applied in this thesis to assess the construct validity through model fit indices (Tabachnick & Fidell 2013). For the measurement model, a confirmatory factor analysis (CFA) is used to investigate the link between factors and their measured variables (Byrne 2011). By a series of CFAs on one-factor congeneric models, a set of items is checked to see whether they have a unique relationship to the latent variable they represent. Unidimensionality is tested by assessing the goodness-of-fit (GOF), the convergent validity of the model (the standardised coefficient factor loading > 0.50), the reliability of the measures (Cronbach's alpha > 0.70), and the item reliability (SMC > 0.30) (Hair et al. 2011).

After the one-factor congeneric models are deemed satisfactory, the first-order measurement model is examined. A series of tests such as the GOF, the convergent validity, the discriminant validity (correlation between Factors < 0.90), and the reliability are applied to evaluate the model.

Next is the second-order measurement model. It is assessed by the GOF before being incorporated into the structural model. Although the CFA is used to test a

measurement theory, the model should be changed only after careful consideration and the item that does not perform well with respect to model fit and construct validity should be deleted (Hair et al. 2011).

The structural model is then employed to investigate the relationships among constructs as depicted in the proposed integrative model. The GOF assessment of the structural model is used as an indicator of how well the theoretical specification of the factors in the proposed integrative model matches the actual data (Hair et al. 2011; Parker et al. 2005).

In this thesis, the assessment of the CFA was executed in three stages: the one-factor congeneric model, the first-order measurement model and the second-order measurement model. The CFA was employed to each construct separately beginning with Service Quality, followed by Customer Value, Customer Satisfaction and Behavioural Intentions. The GOF of the one-factor congeneric models of all constructs was examined, followed by the first-order model and the second-order model analyses. The structural model was analysed as the last step. The output from the scale refinement stage (Section 7.3 in Chapter 7) was used as an input to the measurement model confirmation. The output of the measurement model confirmation was used as an input to the structural model.

As suggested by Byrne (2010), a determined criterion that reflects a minimum fit should be addressed. The one-factor congeneric models were testified and checked for the GOF, Cronbach's alpha coefficients, standardised coefficient factor loading, squared multiple correlation (SMC) and significant p-value ($p < 0.05$) of regression weights estimates. As each index of the GOF has its own advantages and disadvantages as discussed in Section 6.3.4.3, Hair et al. (2011) suggest a combination of three to four fit indices is appropriate, provided that at least one of each an incremental fit index and absolute fit index.

Table 8.1 illustrates the recommended threshold values in assessing the one-factor congeneric model. Table 8.2 illustrates the recommended threshold values in assessing the first-order measurement model. The second-order measurement model and the structural model were tested for the GOF with the recommended thresholds as discussed in Chapter 6, Section 6.3.4, presented in Table 6.1.

Table 8.1: Recommended threshold values in assessing the one-factor congeneric model

Criterion	Threshold value
Goodness-of-fit (GOF)	See Chapter 6, Table 6.1
Cronbach's alpha	> 0.70
Standardised coefficient factor loading	> 0.50
Squared multiple correlation (SMC)	> 0.30
Regression weights estimate	Significant at p-value < 0.05

Source: Based on Hair et al. (2011)

Table 8.2: Recommended threshold values in assessing the first-order measurement model

Criterion	Threshold value
Goodness-of-fit (GOF)	See Chapter 6, Table 6.1
Cronbach's alpha	> 0.70 (Hair et al. 2011)
Discriminant validity: - Correlation between factors - Pattern and structure coefficients - The square root of AVE is greater than the variance shared between latent constructs	< 0.80 (Cunningham 2012) See Section 6.4.1 (Thompson 1997) (Fornell & Larcker 1981)
Convergent validity: - Standardised factor loading - AVE	> 0.50 (Hair et al. 2011) > 0.05 (Fornell & Larcker 1981)

The models were re-specified and improved by investigating the Modification Indices (MIs), standardised residual covariance (SRC) and specific search as discussed in Chapter 6, Section 6.3.4.4.

8.1.1 Service Quality

8.1.1.1 One-factor congeneric models of Service Quality

Service Quality was conceptualised as a multidimensional construct consisting of five dimensions with 26 items resulting from the scale refinement stage. The one-factor congeneric models were examined prior to the first-order model and the second-order measurement models.

Factor 1 (Personal skills): The one-factor congeneric model of latent variable representing Personal skills initially comprised eight items. However, the data did not fit the model. The eigenvalues listed under the sample correlations suggested a single factor as only one had an eigenvalue of above one. The model was re-specified by removing two items (sq33 and sq53) in order to obtain a good model fit (Table 8.3).

The reliability of this factor assessed by the Cronbach's alpha coefficient across six items was 0.887, exceeding the recommended threshold value of 0.70 (Hair et al. 2011). The standardised factor coefficient values of the final six items ranged from 0.69 (sq31) at its lowest, to 0.83 (sq44) at its highest. These values all exceeded the threshold of 0.50 (Hair et al. 2011).

In addition, the squared multiple correlations (SMC) used as an indication of item reliability were all higher than the threshold value of 0.30 (Hair et al. 2011). The values ranged from its lowest point of 0.43 (sq43) to its highest point of 0.69 (sq44). These were indicative of meaningful factorability, reliability and convergent validity.

Furthermore, all of the items loaded significantly onto the Personal skills factor with p-value < 0.001. Item sq51 was assigned a regression weight to one in order to obtain a solution. All items except sq43 had significant regression weight estimate values of above one. Therefore, the Personal skills factor is deemed an acceptable one-factor congeneric model (see Table 8.3).

Factor 2 (Outcome): Factor 2 initially consisted of six items. However, testing of the one-factor congeneric model resulted in a bad fit. Even though the eigenvalues listed under the sample correlations suggested one factor, the model needed to be re-specified to obtain a good fit. Item sq73 was dropped to achieve a fitted model (Table 8.3).

The reliability test of Cronbach's alpha with five items yielded a value of 0.922, which indicated a reliability of the measurements. The standardised coefficient values were all significant and the values ranged from the lowest of 0.75 (sq72) to the highest of 0.93 (sq75). The squared multiple correlation values, of which the lowest value was 0.57 and the highest value was 0.86, all exceeded the threshold value of 0.30. These represented the convergent validity of the items (see Table 8.3)

Item sq75 was assigned a regression weight to one in order to obtain a solution. The regression weight estimate values of all items were significant at p-value less than 0.001.

Factor 3 (Tangibles): Factor 3 (Tangibles) consisted of three indicators. The one-factor congeneric models require at least four indicators to be tested (Hair et al. 2011). The three indicator model is saturated with no degrees of freedom for estimations. This is because it is a 'just-identified' model, which means that the

number of free parameters is equal to the number of known values indicating a zero degree of freedom. Therefore, being a 'just-identified' model, it is not possible to calculate the significance of the goodness-of-fit statistics (Kline 2011). Although this factor could not be tested in this section as there was no positive degree of freedom, it was tested as part of the first-order measurement model.

Fortunately, with a factor consisting of three indicators, there were still some tests that could be performed, such as reliability, standardised factor coefficient and squared multiple correlation. The Cronbach's alpha value of 0.816 suggested reliability of the scale. The standardised factor coefficient values were all higher than the acceptable value of 0.50, ranging from 0.61 (sq14) at the lowest to 0.87 (sq11) at the highest. The squared multiple correlation values were all significant as the value ranged from 0.38 at the lowest to 0.76 at the highest. These figures were an indication of convergent validity and reliability of the scale (see Table 8.3).

Factor 4 (Reliability): Factor 4 (Reliability) consisted of five items. The eigenvalues listed under the sample correlation suggested one factor. The initial five items were tested for one-factor congeneric model. The results showed that the standardised coefficient values were all deemed significant as the value ranged from its lowest of 0.70 (sq25) to its highest of 0.86 (sq24). The squared multiple correlations were all significant with the lowest value being 0.49 and the highest value being 0.75 (Table 8.3).

The Cronbach's alpha of the five items of this factor was 0.896, which exceeded the threshold of 0.70. Item sq24 was assigned a regression weight to one in order to obtain a solution. All item loadings were significant as the p values were all less than 0.001.

The test of the goodness-of-fit by four absolute fit indices (χ^2 , RMR, SRMA and RMSEA) suggested that two out of four indices (χ^2 and RMSEA) did not fit. Even though the chi-square was rejected, the bootstrapping p-value of 0.081 suggested a good fit of data to the model. Furthermore, five of the fit indices: two absolute fit indices (SRMR and RMR) and three incremental fit indices (CFI, TLI, NFI), suggested a good fit. Taking all fit indices into consideration, this model was accepted. The Cronbach's alpha value of 0.896 with five items suggested a reliability of the scale as shown in Table 8.3.

Factor 5 (Expertise): Factor 5 (Expertise) comprised four indicators. The eigenvalues listed under the sample correlation suggested one factor with the value of 3.369. The standardised coefficient values of these four indicators were substantially high as the values ranged from 0.84 at the lowest (sq64) to 0.93 at the highest (sq63). The squared multiple correlations of all items were satisfactory as they exceeded the threshold value of 0.30; these values ranged from 0.70 at the lowest to 0.87 at the highest (Table 8.3).

The Cronbach’s alpha of the four items of this factor was 0.937, which exceeded the threshold of 0.70. Item sq63 was assigned a regression weight to one in order to obtain a solution. All items were significant and the p-values were all less than 0.001.

Similar to Factor 4 (Reliability), the chi-square and the RMSEA rejected the model fit as it was higher than the recommended threshold value. However, this model was accepted as the other fit indices showed satisfactory fit levels to the model. Furthermore, the bootstrapping was significant with a p-value of 0.096 as shown in Table 8.3.

Table 8.3: GOF of one-factor congeneric models: Service Quality

Construct	Absolute fit				Incremental fit		
	p value*	SRMR	RMR	RMSEA	CFI	TLI	NFI
	> 0.05	< 0.08	< 0.08	< 0.08	> 0.90	> 0.90	> 0.90
Personal skills	0.768	0.0185	0.021	0.044	0.994	0.991	0.986
Outcome	0.983	0.0177	0.013	0.028	0.999	0.998	0.995
Tangibles	0.017	0.0338	0.166	0.187	0.971	0.912	0.986
Reliability	0.081	0.0258	0.036	0.109	0.980	0.959	0.975
Expertise	0.096	0.0159	0.014	0.145	0.988	0.965	0.987
Construct	Absolute fit: χ^2			Standardised coefficient			
Personal skills	14.699 (9), p = 1.000			0.69-0.83			
Outcome	6.329 (5), p = 0.276			0.75-0.93			
Tangibles	12.449 (1), p = 0.000			0.61-0.87			
Reliability	24.591 (5), p = 0.000			0.70-0.86			
Expertise	15.8 (2), p = 0.000			0.84-0.93			
Construct	Cronbach's Alpha	Retained items		Deleted items			
Personal skills	0.887	Sq: 31, 34, 41, 43, 44, 51		Sq: 33, 53			
Outcome	0.922	Sq: 71, 72, 74, 75, 76		Sq: 73			
Tangibles	0.816	Sq: 11, 12, 14		None			
Reliability	0.869	Sq: 21, 22, 23, 24, 25		None			
Expertise	0.937	Sq: 61, 62, 63, 64		None			

Note: * = Bootstrapping p value, all coefficients are significant at p < 0.001

8.1.1.2 First-order measurement model of Service Quality

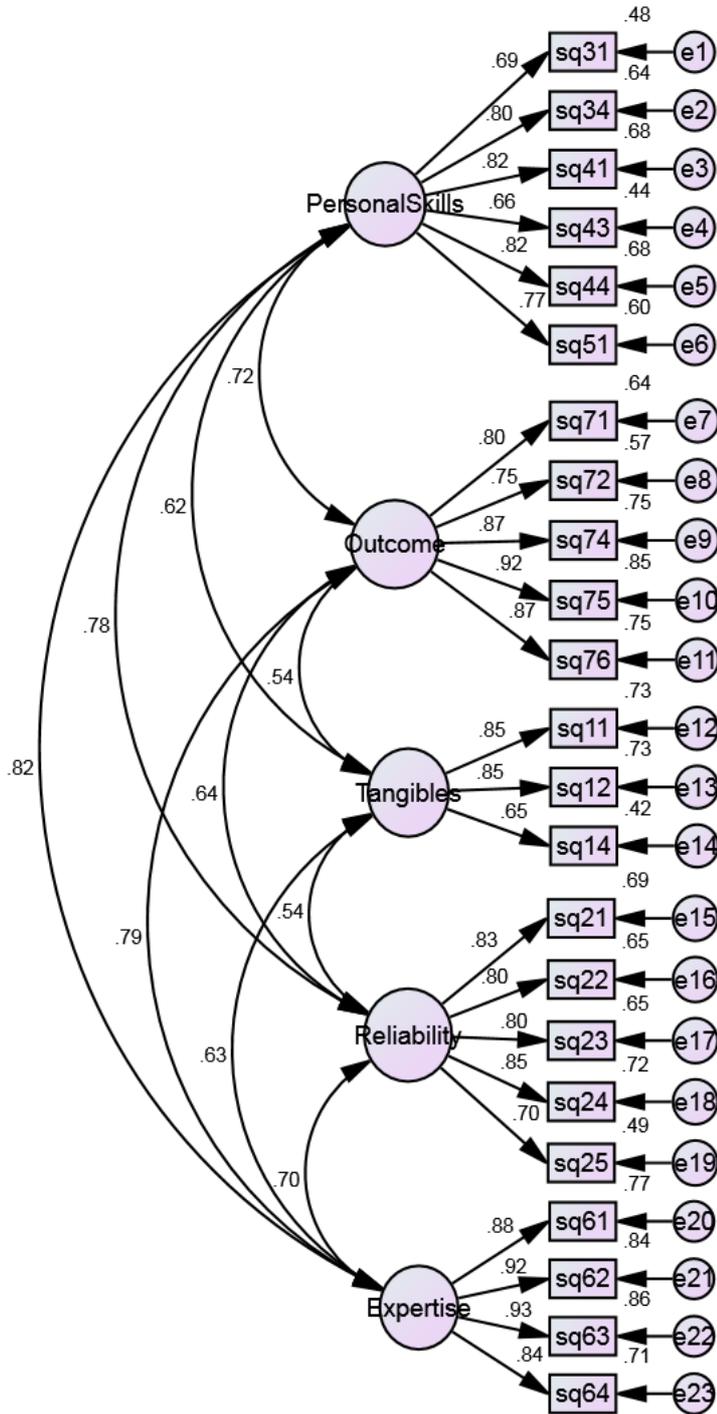
The results from the five one-factor congeneric models suggested removing two items from Factor 1 (Personal skills) and one item from Factor 2 (Outcome) in order to obtain a model fit. The initial 26 items were reduced to 23 items belonging to five factors. Factor 3 (Tangibles) could not be tested for significant one-factor congeneric model because the degree of freedom was not positive. Although Factors 4 (Reliability) and 5 (Expertise) were treated as acceptable with a good fit, they had a problem with RMSEA exceeding the recommended threshold. These factors were put together into a first-order measurement model. The goodness-of-fit and convergent validity were re-tested. The discriminant validity was tested at this stage. Table 8.4 illustrates the GOF of the first-order measurement model. Figure 8.1 illustrates the final first-order measurement model of the Service Quality construct. Table 8.5 illustrates the convergent validity, discriminant validity and reliability of the first-order measurement model.

The hypothesis of the five-factor measurement model of Service Quality was specified and tested for a fit model. The data fitted the model well without the need for any re-specification or modification. Even though the chi-square did not fit, the bootstrapping demonstrated a good fit model. Other fit indices all supported a good fit to the model (Table 8.4).

Table 8.4: GOF of the first-order measurement model: Service Quality

CONSTRUCT	χ^2	CFI	TLI	NFI	SRMR	RMR	RMSEA	Bootstrapping (p value)
		> 0.90	> 0.90	> 0.90	< 0.08	< 0.08	< 0.08	> 0.05
Measurement model - First Order: SERVICE QUALITY CONSTRUCT								
Initial Model (23 items)	443.781(199), p = 0.000	0.960	0.954	0.926	0.0485	0.052	0.057	0.056
Final Model (23 items)	No modification							

Figure 8.1: Final first-order measurement model of Service Quality



Note: All correlations are significant at $p < 0.001$

**Table 8.5: Validity and reliability of the first-order measurement model:
Service Quality**

AVE, correlation matrix and square roof of the AVE											
Construct	AVE	Personal skills		Outcome		Tangibles		Reliability		Expertise	
Personal skills	0.59	0.77									
Outcome	0.71	0.72		0.84							
Tangibles	0.63	0.62		0.54		0.79					
Reliability	0.64	0.78		0.64		0.54		0.80			
Expertise	0.79	0.82		0.79		0.63		0.70		0.89	
Note: the diagonal value represents the square root of the AVE value for corresponding latent constructs. Left of the diagonal is the correlation matrix. All standardised factor loadings were significant at $p < 0.001$											
Pattern and structure coefficients (Thompson 1997)											
Construct	Personal skills		Outcome		Tangibles		Reliability		Expertise		
	P	S	P	S	P	S	P	S	P	S	
Personal skills ($\alpha = 0.887$)											
sq31	0.69	0.69	0 ^a	0.50	0 ^a	0.43	0 ^a	0.54	0 ^a	0.57	
sq34	0.80	0.80	0 ^a	0.57	0 ^a	0.49	0 ^a	0.62	0 ^a	0.66	
sq41	0.82	0.82	0 ^a	0.59	0 ^a	0.51	0 ^a	0.64	0 ^a	0.68	
sq43	0.66	0.66	0 ^a	0.47	0 ^a	0.41	0 ^a	0.52	0 ^a	0.55	
sq44	0.82	0.82	0 ^a	0.59	0 ^a	0.51	0 ^a	0.64	0 ^a	0.68	
sq51	0.78	0.78	0 ^a	0.55	0 ^a	0.48	0 ^a	0.60	0 ^a	0.64	
Outcome ($\alpha = 0.922$)											
sq71	0 ^a	0.57	0.80	0.80	0 ^a	0.43	0 ^a	0.51	0 ^a	0.63	
sq72	0 ^a	0.54	0.76	0.76	0 ^a	0.41	0 ^a	0.48	0 ^a	0.60	
sq74	0 ^a	0.62	0.87	0.87	0 ^a	0.47	0 ^a	0.55	0 ^a	0.69	
sq75	0 ^a	0.66	0.92	0.92	0 ^a	0.50	0 ^a	0.59	0 ^a	0.73	
sq76	0 ^a	0.62	0.87	0.87	0 ^a	0.47	0 ^a	0.55	0 ^a	0.69	
Tangibles ($\alpha = 0.816$)											
sq11	0 ^a	0.53	0 ^a	0.46	0.85	0.85	0 ^a	0.46	0 ^a	0.54	
sq12	0 ^a	0.53	0 ^a	0.46	0.86	0.86	0 ^a	0.46	0 ^a	0.54	
sq14	0 ^a	0.40	0 ^a	0.35	0.65	0.65	0 ^a	0.35	0 ^a	0.41	
Reliability ($\alpha = 0.896$)											
sq21	0 ^a	0.65	0 ^a	0.53	0 ^a	0.45	0.83	0.83	0 ^a	0.59	
sq22	0 ^a	0.63	0 ^a	0.51	0 ^a	0.44	0.80	0.80	0 ^a	0.57	
sq23	0 ^a	0.63	0 ^a	0.51	0 ^a	0.44	0.80	0.80	0 ^a	0.57	
sq24	0 ^a	0.66	0 ^a	0.54	0 ^a	0.46	0.85	0.85	0 ^a	0.60	
sq25	0 ^a	0.55	0 ^a	0.45	0 ^a	0.38	0.70	0.70	0 ^a	0.50	
Expertise ($\alpha = 0.937$)											
sq61	0 ^a	0.72	0 ^a	0.69	0 ^a	0.55	0 ^a	0.62	0.88	0.88	
sq62	0 ^a	0.75	0 ^a	0.72	0 ^a	0.58	0 ^a	0.65	0.92	0.92	
sq63	0 ^a	0.76	0 ^a	0.73	0 ^a	0.59	0 ^a	0.65	0.93	0.93	
sq64	0 ^a	0.69	0 ^a	0.67	0 ^a	0.53	0 ^a	0.59	0.84	0.84	
Note: a = Parameters fixed at reported levels in specifying the model, P = Pattern coefficient, S = Structure coefficient											

The assessment of convergent validity was met the criteria provided in Table 8.2. As AVE of each factor is greater than 0.05, the convergent validity is established (Fornell & Larcker (1981). The standardised coefficient factor loading of each item suggested a convergent validity; the lowest value was 0.649 (item sq14 of Tangibles) and the highest value was 0.928 (item sq63 of Expertise). Furthermore, the squared multiple correlations of all items were above the threshold value of 0.30 and ranged between 0.42 (sq14) and 0.86 (sq63). The reliability test of Cronbach's alpha of Factor 1 (Personal skills) was 0.887; Factor 2 (Outcome) was 0.922; Factor 3 (Tangibles) was 0.816; Factor 4 (Reliability) was 0.896; and Factor 5 (Expertise) was 0.937; all of which were above the recommended threshold value of 0.70. Thus, this first-order measurement model of the Service Quality construct was satisfactory with the goodness-of-fit and convergent validity.

The tests for discriminant validity were conducted and the results suggested discriminant validity problems; 1) the correlation between Personal skills and Expertise was high (0.823) (Figure 8.1 and Table 8.5), 2) the factor loadings of the items reflecting Personal skills (sq31 and sq43) were lower than the structure coefficients of the other items (sq61, 62, 63 and 64) in the measurement model and 3) the square root of AVE (Personal skills) was lower than the variance shared between latent constructs (Reliability and Expertise).

Martínez Caro & Martínez García (2007) contend that the discriminant validity among factors may be less defensible and ambiguous when drawing the line between high and moderate correlations, where the extent of higher-order factors includes common variances of the lower-factor and shared variance of the higher-order factor. Cunningham (2012) suggests that "Beyond the fact that postulating a higher-order factor only makes sense in the presence of moderately correlated lower order factors, there is no additional statistic evidence that supports or does not support the theoretical formulation of a higher-order construct. A particular instance that strengthens the argument to hypothesize the existence of a higher-order model is when the lower order factors do not display discriminant validity" (p. 6-8). The lack of discriminant validity supported the higher-order construct of Service Quality in this study and based on Cunningham (2012) comment, the test of the second-order measurement model was carried on.

8.1.1.3 Second-order measurement model of Service Quality

The first-order measurement model of the Service Quality construct conducted in the previous section suggested that the data fit the model well without the deletion of any item. However, the first-order measurement model allows all factors to be interrelated but not specific correlational relationships (causal relationships) among the constructs (Hair et al. 2011). The second-order measurement model can be employed to reveal the causal relationships among the constructs that impact the first-order factors (Hair et al. 2011). Moreover, it is more parsimonious than the first-order measurement model as it uses lesser degrees of freedom. More specifically, it should result in better performances on indices (Hair et al. 2011). In addition, there was a problem of discriminant validity of the first-order measurement model suggesting that Service Quality was a higher-order construct. Therefore, it was of interest to examine the construct at a higher level.

Testing the initial second-order measurement model, it reveals that the standardised loading estimates were all higher than the threshold of 0.50. Only three of the initial 23 items had standardised loading estimates lower than 0.7: item sq14 (0.65), sq43 (0.67) and sq31 (0.69). Furthermore, the squared multiple correlations exhibited the convergent validity as they exceeded the recommended value of 0.30. Two of the fit indices (χ^2 and Bollen-Stine bootstrap) rejected the model as the values were less than the acceptable level.

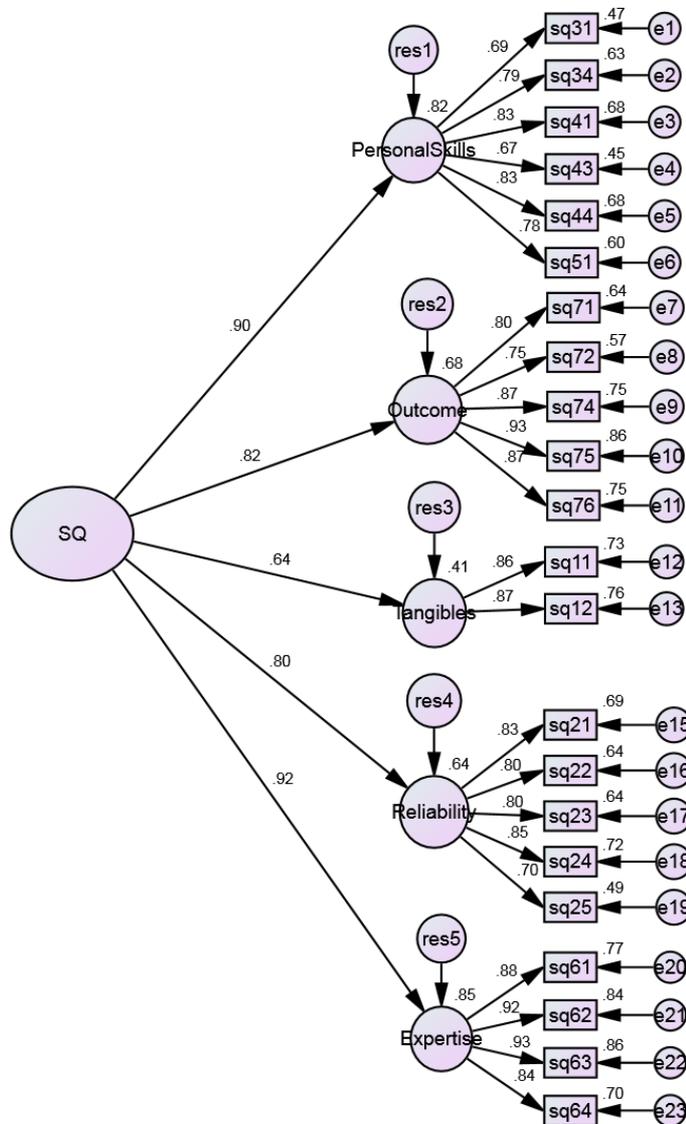
Consequently, the model needed to be re-specified. It was decided that item sq14 be removed for various reasons. First, it had the lowest standardised loading estimate and the lowest squared multiple correlations. Secondly, the standardised residual covariances of this item associated to others were very high. There were 14 of the standardised residual covariance values ranged between 1.00 and 2.50, and another 4 of the values were above the threshold of 2.50. Only 4 of the values had a standardised residual covariance of less than 1.00. Lastly, the MI suggested 9 out of 13 regression weights were associated with the item. After the deletion of sq14, the fit indices performed better and they demonstrated that the data fitted the model well. Although the χ^2 value rejected the model as $\chi^2(204) = 427.260, p = 0.000$, the Bollen-Stine bootstrap was used to report with the chi-square when the data was non-normal. The Bollen-Stine bootstrap was significant at $p = 0.051$ (Table 8.6).

Table 8.6: GOF of the second-order measurement model: Service Quality

CONSTRUCT	χ^2	CFI	TLI	NFI	SRMR	RMR	RMSEA	Bootstrapping
								(p value)
		> 0.90	> 0.90	> 0.90	< 0.08	< 0.08	< 0.08	> 0.05
Measurement model - Second Order: SERVICE QUALITY CONSTRUCT (Removed sq14)								
Initial Model (23 items)	474.751(225), p = 0.000	0.958	0.953	0.924	0.0517	0.057	0.058	0.046
Final Model (22 items)	427.260(204), p = 0.000	0.961	0.956	0.929	0.0434	0.049	0.058	0.051

In addition, the regression weights estimates were all significant with $p < 0.001$. Items sq44, sq75, sq11, sq24 and sq63 were assigned a regression weight to one in order to obtain a solution. Of the initial 23 items, item sq14 was removed and there were 22 items retained for the structural model analysis (Figure 8.2).

Figure 8.2: Final second-order measurement model of Service Quality



Note: All correlations are significant at $p < 0.001$

8.1.2 Customer Value

8.1.2.1 One-factor congeneric models of Customer Value

Similar to the Service Quality construct, the Customer Value construct was hypothesised as a multidimensional construct consisting of five dimensions: Factor 1 – Quality judgement, Factor 2 – Monetary price, Factor 3 – Reputation, Factor 4 – Behavioural price, and Factor 5 – Emotional response; in total, 22 items. This section examines the one-factor congeneric models of each factor prior to the first-order measurement model and the second-order measurement model. The testing details of one-factor congeneric models of the Customer Value construct are discussed in the following sections.

Factor 1: Quality judgement

Factor 1 (Quality judgement) consisted of four items. The goodness-of-fit indices suggested the data fitted the model well without re-specification. All items loaded significantly onto the factor with the values ranging from 0.79 at the lowest (v11) to 0.96 at the highest (v13). The squared multiple correlations values ranged between 0.63 and 0.91 which suggested convergent validity (Table 8.7).

The Cronbach's alpha of the four items of this factor was 0.942, which exceeded the threshold of 0.70. Item v12 was assigned a regression weight to one in order to obtain a solution. All items had significant regression weights with $p < 0.001$. Therefore, this factor was deemed acceptable as a one-factor congeneric model as shown in Table 8.7.

Factor 2: Monetary price

Factor 2 (Monetary price) consisted of four items. The goodness-of-fit indices suggested the data fitted the model well without re-specification. To assess the goodness-of-fit, Hair et al. (2011) suggested that combinations of three or four fit indices are appropriate to evaluate the model provided that at least one is an absolute fit and one is an incremental fit index. Even though the RMSEA, χ^2 and Bollen-Stine bootstrap rejected the model, the other five indices satisfied the acceptable level. These five indices include two absolute fit indices and three incremental fit indices (Table 8.7).

Furthermore, the investigation of standardised residual covariance showed that none of the items had covariance values higher than the recommended threshold of

2.5 (the highest value was 0.588). The modification indices suggested no inclusion of further regression paths. The model had strong convergent validity. The standardised factor coefficient values ranged from 0.79 at the lowest (v24) to 0.98 at the highest (v21). Similar to the standardised factor coefficient, the squared multiple correlation values were strong as the values ranged from 0.63 to 0.95.

The reliability of this factor with four items was 0.942, which exceeded the threshold of 0.70 (Table 8.7). Item v22 was assigned the regression weight to one in order to obtain a solution. All items had significant regression weights with the p-value < 0.001.

Factor 3: Reputation

Factor 3 (Reputation) initially consisted of five items. Testing the goodness-of-fit, three indices (the chi-square, RMSEA and Bollen-Stine bootstrap) rejected the model. The other five fit indices supported that the data fitted the model well. Since there were five fit indices that supported a good fit of the model (two of them were absolute fit indices and three of them were incremental fit indices), this model was deemed satisfactory of a one-factor congeneric model (Table 8.7).

Moreover, the investigation of standardised residual covariance showed that none of the items had a value greater than the recommended threshold of 2.5 (the highest value was 0.485). The modification indices suggested nothing on regression weights. The model had strong convergent validity with the standardised factor coefficient values ranging from 0.91 at the lowest (v34) to 0.96 at the highest (v32 and v33). Similar to the standardised factor coefficient, the squared multiple correlation values were strong as the values ranged from 0.83 to 0.92.

The reliability test of Cronbach's alpha with five items yielded an exceptional result of 0.973. Item v33 was assigned the regression weight to one in order to obtain a solution. All items had significant regression weights with the p-value < 0.001. These were an indication of the reliability and convergent ability of the factor as shown in Table 8.7.

Factor 4: Behavioural price

Factor 4 (Behavioural price) initially consisted of five items. Similar to Factor 3 (Reputation), the test of the goodness-of-fit showed that three indices rejected the model: χ^2 , TLI and RMSEA. The other five fit indices supported that the model fitted the data well. In reference to the suggestion of Hair et al. (2011), this model was deemed satisfactory as a one-factor congeneric model.

Although the recommended threshold of standardised residual covariance was 2.5, the investigation showed that the highest value of 1.196 associated with items v41 and v42.

The modification indices also suggested problems associated with items v41 and v42 with the modification indices values on regression weights showing 7.034 and 4.389 respectively. Therefore, it was considered that either item could potentially be a problem for the model. However, this factor consisted of four items and a one-factor congeneric model is allowed to be tested with at least four indicators reflecting the state of an over-identified model. The GOF testing with four items was acceptable and demonstrated that the data fitted the model well (Hair et al. 2011). Therefore, no re-specification was required to improve the fit indices.

The model had strong convergent validity. The standardised factor coefficient values ranged from 0.71 at the lowest (v41) to 0.83 at the highest (v43) as shown in Table 8.7. Similar to the standardised factor coefficient, the squared multiple correlation values were significant as the values ranged between 0.50 and 0.69.

The reliability test of Cronbach's alpha with four items yielded a result of 0.860, which exceeded the threshold of 0.70. Item v43 was assigned the regression weight to one in order to obtain a solution. All items had significant regression weights with the p-value < 0.001. These were an indication of the reliability and convergent ability of the factor as shown in Table 8.7.

Factor 5: Emotional response

Factor 5 (Emotional response) initially consisted of five items. Similar to Factor 2 (Monetary price) and Factor 3 (Reputation), results of the goodness-of-fit suggested three indices rejected the model: χ^2 , RMSEA and Bollen-Stine bootstrap. The other five fit indices supported that the data fitted the model well.

After the investigation of standardised residual covariance, it showed that none of the items had a value of greater than 1.191, yet still less than the recommended threshold of 2.5 (the highest value of 1.196 was associated with items v51 and v52). In addition, the modification indices suggested that there were problems with item v51 associated with the regression weights of items v52 and v53 as their MIs values showed 12.113 and 4.058 respectively. Consequently, it was decided that item v51 be removed which resulted in an excellent data fitted model. After the deletion of item v51, the results of the fit indices demonstrated that the model fitted

the data exceptionally well (Table 8.7). Therefore, there were four items retained to test in the second-order measurement model.

Furthermore, after v51 was removed, the items in the model had very strong convergent validity. The standardised factor coefficient values ranged from 0.91 at the lowest (v52) to 0.97 at the highest (v53 and v54) as shown in Table 8.7. Similar to the standardised factor coefficient, the squared multiple correlation values were strong as the values ranged from 0.82 to 0.93.

The reliability test of Cronbach’s alpha with four items (v52, v53, v54 and v55) yielded a result of 0.970 which exceeded the threshold of 0.70. Item v53 was assigned the regression weight to one in order to obtain a solution. All items had significant regression weights with the p-value < 0.001. These were an indication of the reliability and convergent validity of the factor as shown in Table 8.7.

Table 8.7: GOF of one-factor congeneric models: Customer Value

Construct	Absolute fit				Incremental fit		
	p value*	SRMR	RMR	RMSEA	CFI	TLI	NFI
	> 0.05	< 0.08	< 0.08	< 0.08	> 0.90	> 0.90	> 0.90
Quality judgement	0.857	0.0099	0.009	0.067	0.997	0.992	0.996
Monetary price	0.046	0.0175	0.041	0.155	0.989	0.966	0.987
Reputation	0.018	0.0137	0.014	0.166	0.981	0.962	0.979
Behavioural price	0.055	0.0350	0.027	0.187	0.963	0.888	0.960
Emotional response	1.000	0.0028	0.007	0.031	1.000	0.999	0.999
Construct	Absolute fit: χ^2			Standardised coefficient			
Quality judgement	4.995(2), p = 0.082			0.79-0.96			
Monetary price	17.747(2), p = 0.000			0.79-0.98			
Reputation	50.130(5), p = 0.000			0.91-0.96			
Behavioural price	25.083(2), p = 0.000			0.71-0.83			
Emotional response	2.643(2), P = 0.267			0.91-0.97			
Construct	Cronbach's Alpha	Retained items		Deleted items			
Quality judgement	0.929	v: 11, 12, 13, 14		None			
Monetary price	0.942	v: 21, 22, 23, 24		None			
Reputation	0.973	v: 31, 32, 33, 34, 35		None			
Behavioural price	0.860	v: 41, 42, 43, 44		None			
Emotional response	0.970	v: 52, 53, 54, 55		v51			

Note: * = Bootstrapping p value, all coefficients are significant at p < 0.001

8.1.2.2 First-order measurement model of Customer Value

The results from one-factor congeneric models of the Customer Value construct suggested removing one item (v51) from Factor 5 in order to obtain model fits. The initial 22 items became 21 items that belonged to five factors. Although Factor 2 (Monetary price), Factor 3 (Reputation) and Factor 4 (Behavioural price) had problems with a few of the fit indices, they were accepted as one-factor congeneric models. All of the five factors were then incorporated into the first-order measurement model and re-tested for the GOF, discriminant validity and convergent validity.

The hypothesised five-factor measurement model with the 21 items of the Customer Value construct was specified and tested for a fit at the first-order measurement level. The results of the GOF suggested the data fitted the model even though the chi-square and Bollen-Stine bootstrap did not. The other five fit indices suggested the data fit the model well.

The investigation began with the standardised residual covariance. It was found that item v11 had a problem compared to the other variables. A series of high values associated item v11 with other variables in the model. Specifically, there were 12 standardised residual covariance values ranging between 1 and 2.5; 1 value exceeded the threshold of 2.5; and 7 values was less than 1. Consequently, it was decided that item v11 be removed. Following the removal of item v11, the test of the GOF was conducted again and the results suggested that the data fitted the model well (Table 8.8).

Table 8.8: GOF of the first-order measurement model: Customer Value

CONSTRUCT	χ^2	CFI	TLI	NFI	SRMR	RMR	RMSEA	Bootstrapping (p value)
		> 0.90	> 0.90	> 0.90	< 0.08	< 0.08	< 0.08	> 0.05
Measurement model: First Order: CUSTOMER VALUECONSTRUCT (Removed v11)								
Initial Model (21 items)	453.974(179), p = 0.000	0.966	0.960	0.945	0.0417	0.062	0.068	0.023
Final Model (20 items)	383.814(160), p = 0.000	0.971	0.966	0.952	0.0325	0.054	0.065	0.062

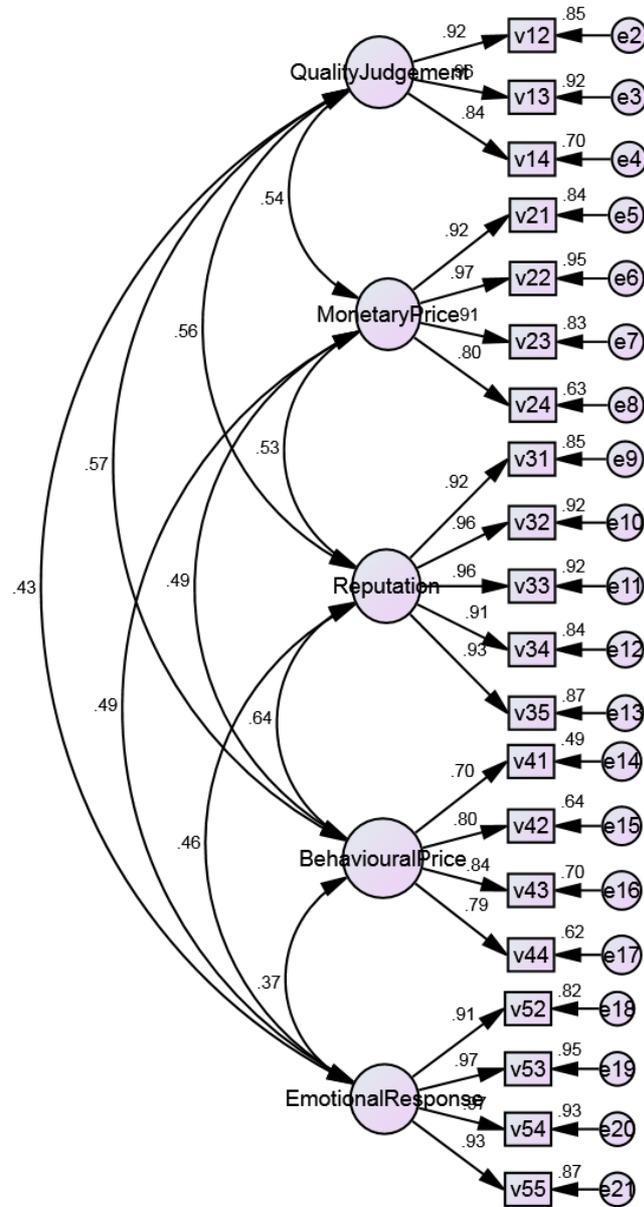
After finding a satisfactory fit of the model, the discriminant validity and convergent validity were assessed. As seen in Figure 8.3 (the final model) and Table 8.9, all items had substantive standardised factor coefficient values greater than the threshold of 0.50. The values ranged from a lowest of 0.70 (v41) to a highest of 0.97 (v22, v53, v54). The squared multiple correlation values all supported the convergent validity where the threshold was 0.30; the values ranged from a lowest of 0.49 to a highest of 0.95. The average variance extracted (AVE)

of each construct greater than 0.05 suggested the convergent validity (Fornell & Larcker (1981).

The factors had discriminant validity; all the correlations between the factors were less than the threshold value of 0.80 and ranged between 0.373 and 0.641 (Table 8.9). However, these correlations between factors are considered moderate (Cunningham 2012). Therefore, based on the arguments forwarded by Cunningham (2012), the correlation between the factors suggested that Customer Value has to be tested at a higher level; the test for the second-order measurement model is carried out in the next section.

The reliability test of Cronbach's alpha of Factor 1 (Quality judgement) was 0.931, Factor 2 (Monetary price) was 0.942, Factor 3 (Reputation) was 0.973, Factor 4 (Behavioural price) was 0.860 and Factor 5 (Emotional response) was 0.950; all of which were above the recommended threshold value of 0.70. Therefore, the Customer Value construct was accepted as satisfactory for the goodness-of-fit, discriminant validity, convergent validity, and reliability.

Figure 8.3: The final first-order measurement model of Customer Value



Final model (20 items, v11 was removed)

Note: All correlations are significant at $p < 0.001$

**Table 8.9: Validity and reliability of the first-order measurement model:
Customer Value**

AVE, correlation matrix and square root of the AVE										
Construct	AVE	Personal skills		Outcome		Tangibles		Reliability		Expertise
Quality Judgement	0.81	0.90								
Monetary Price	0.61	0.54		0.78						
Reputation	0.89	0.56		0.53		0.95				
Behaviour Price	0.88	0.57		0.49		0.64		0.94		
Emotional response	0.83	0.43		0.49		0.46		0.37		0.93
Note: the diagonal value represents the square root of the AVE value for corresponding latent constructs. Left of the diagonal is the correlation matrix. All standardised factor loadings were significant at $p < 0.001$										
Pattern and structure coefficients (Thompson 1997)										
Construct	Quality judgement		Monetary price		Reputation		Behavioural price		Emotional Response	
	P	S	P	S	P	S	P	S	P	S
Quality Judgement ($\alpha = 0.931$)										
v12	0.93	0.93	0 ^a	0.50	0 ^a	0.52	0 ^a	0.53	0 ^a	0.40
v13	0.96	0.96	0 ^a	0.52	0 ^a	0.54	0 ^a	0.55	0 ^a	0.42
v14	0.84	0.84	0 ^a	0.46	0 ^a	0.47	0 ^a	0.48	0 ^a	0.36
Monetary Price ($\alpha = 0.942$)										
v21	0 ^a	0.50	0.92	0.92	0 ^a	0.48	0 ^a	0.45	0 ^a	0.45
v22	0 ^a	0.53	0.97	0.97	0 ^a	0.51	0 ^a	0.47	0 ^a	0.48
v23	0 ^a	0.50	0.91	0.91	0 ^a	0.48	0 ^a	0.44	0 ^a	0.45
v24	0 ^a	0.43	0.80	0.80	0 ^a	0.42	0 ^a	0.39	0 ^a	0.39
Reputation ($\alpha = 0.973$)										
v31	0 ^a	0.52	0 ^a	0.48	0.92	0.92	0 ^a	0.59	0 ^a	0.42
v32	0 ^a	0.54	0 ^a	0.51	0.97	0.97	0 ^a	0.62	0 ^a	0.44
v33	0 ^a	0.54	0 ^a	0.51	0.91	0.91	0 ^a	0.62	0 ^a	0.44
v34	0 ^a	0.52	0 ^a	0.48	0.80	0.80	0 ^a	0.59	0 ^a	0.42
v35	0 ^a	0.53	0 ^a	0.49	0.93	0.93	0 ^a	0.60	0 ^a	0.43
Behaviour Price ($\alpha = 0.860$)										
v41	0 ^a	0.40	0 ^a	0.34	0 ^a	0.45	0.70	0.70	0 ^a	0.26
v42	0 ^a	0.46	0 ^a	0.39	0 ^a	0.51	0.80	0.80	0 ^a	0.30
v43	0 ^a	0.48	0 ^a	0.41	0 ^a	0.54	0.84	0.84	0 ^a	0.31
v44	0 ^a	0.45	0 ^a	0.38	0 ^a	0.50	0.79	0.79	0 ^a	0.29
Emotional ($\alpha = 0.950$)										
v52	0 ^a	0.39	0 ^a	0.44	0 ^a	0.42	0 ^a	0.34	0.91	0.91
v53	0 ^a	0.42	0 ^a	0.48	0 ^a	0.45	0 ^a	0.36	0.97	0.97
v54	0 ^a	0.42	0 ^a	0.47	0 ^a	0.45	0 ^a	0.36	0.97	0.97
v55	0 ^a	0.40	0 ^a	0.46	0 ^a	0.43	0 ^a	0.35	0.93	0.93
Note: a = Parameters fixed at reported levels in specifying the model, P = Pattern coefficient, S = Structure coefficient										

8.1.2.3 Second-order measurement model of Customer Value

The results of the first-order measurement analysis suggested removing one item (v11) to achieve the model fit. It was a step in the model confirmation to examine the second-order measurement model after the first-order measurement model was deemed satisfactory. The second-order measurement model of the Customer Value construct allowed the factors to be interrelated with the specific correlational relationships among constructs. The five factors with 20 items were tested for a series of statistic fit indices. The fit indices indicated that the data fitted the model without any re-specification as all indices except chi-square were in the recommended threshold values (Table 8.10). Since the data was of non-normal distribution, the Bollen-Stine bootstrap was reported as a statistic fit index along with chi-square. However, the recommended threshold value of Bollen-Stine bootstrap required a p-value of greater than 0.50 to be considered satisfactory, and therefore the model was thoroughly investigated one more time.

First, the modification indices were examined. The regression weights suggested there was a problem associated with item v23 as four of its seven pairs had MIs indices between 12.424 and 14.272. Next, the standardised residual covariance was investigated. Not surprisingly, a series of high values associated item v23 with other variables. Specifically, four values were greater than 2 and three values were greater than 1. Thus, it was decided that item v23 be removed.

After the deletion of item v23, the statistic fit indices improved significantly. In particular, the Bollen-Stine bootstrap p-value increased from 0.050 to 0.172. The other fit indices also improved and indicated that the data fitted the model well (Table 8.10).

Table 8.10: GOF of the second-order measurement model: Customer Value

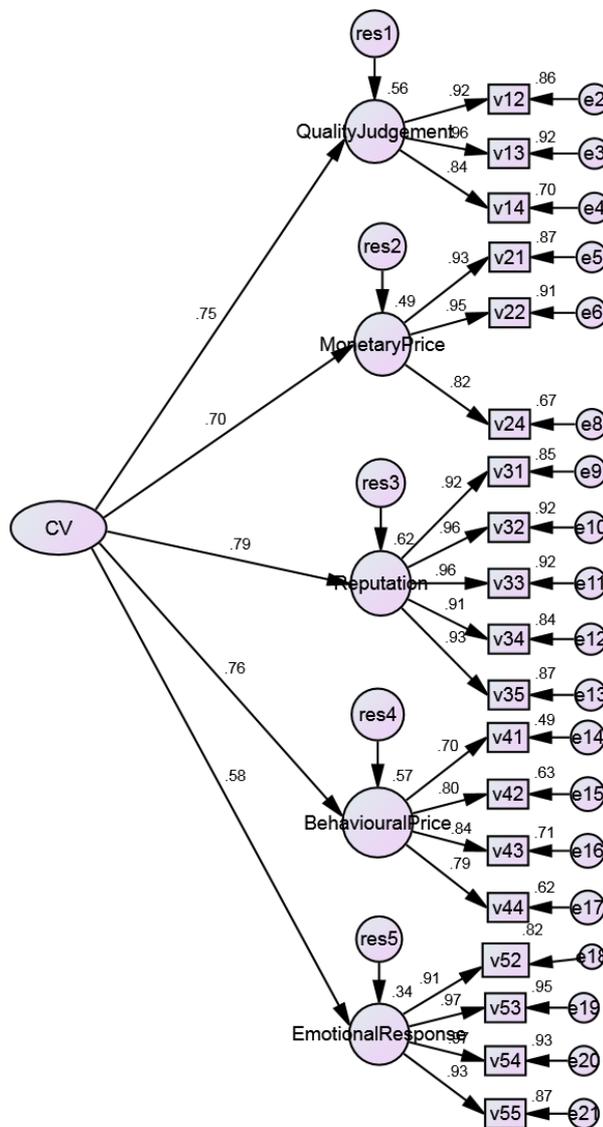
CONSTRUCT	χ^2	CFI	TLI	NFI	SRMR	RMR	RMSEA	Bootstrapping (p value)
		> 0.90	> 0.90	> 0.90	< 0.08	< 0.08	< 0.08	> 0.05
Measurement model - Second Order: CUSTOMER VALUECONSTRUCT (Removed v23)								
Initial Model (20 items)	400.172(165), p = 0.000	0.900	0.965	0.950	0.0464	0.084	0.066	0.050
Final Model (19 items)	316.740 (147), p = 0.000	0.976	0.972	0.957	0.0422	0.072	0.059	0.172

Furthermore, the standardised loading estimate of each item represented a high convergent validity to the respective factors. The lowest standardised loading estimate of this construct was 0.70 (item v41) and the highest was 0.97 (item v53), both of which were above the recommended threshold value of 0.50, as shown in Figure 8.4. Similar to the standardised loading estimate, the squared multiple

correlation values were all significant as the lowest value was 0.49 (v41), and the highest value was 0.95 (v53) (see Figure 8.4); the recommended threshold value in this instance was 0.30.

The regression weights estimates were all significant with the p-value of all items being less than 0.001, as shown in Table 8.28. Items v13, v22, v32, v43 and v53 were assigned regression weights to one in order to obtain a solution. From the initial 20 items, item v23 was removed which left 19 items retained for the structural model analysis.

Figure 8.4: Final second-order measurement model of Customer Value (standardised)



Note: All correlations are significant at $p < 0.001$

8.1.3 Customer Satisfaction

Customer Satisfaction was conceptualised as a unidimensional construct, and consisted of four items. Therefore, this construct was assessed with a similar analysis technique as the one-factor congeneric model. The construct was tested for the goodness-of-fit, factorability (dimensionality), convergent validity, and reliability.

Testing the GOF showed that the data fitted the model well (Table 8.11). Even though the chi-square indicated that the data did not fit the model, the p-value of the Bollen-Stine bootstrap was significantly higher than the recommended threshold value of 0.05. Even though the RMSEA value exceeded the recommended threshold, the other five fit indices supported a model fit.

Table 8.11: GOF of the measurement model: Customer Satisfaction

CONSTRUCT	χ^2	CFI	TLI	NFI	SRMR	RMR	RMSEA	Bootstrapping (p value)
		> 0.90	> 0.90	> 0.90	< 0.08	< 0.08	< 0.08	> 0.05
SATISFACTION CONSTRUCT ($\alpha = 0.921$); Retained items: 11, 12, 13, 14; No removed item								
Initial Model (4 items)	10.789(2), p = 0.005	0.992	0.977	0.991	0.0152	0.017	0.116	0.139
Final Model (4 items)	No modification							

Furthermore, all of the items loaded significantly onto the factor as the standardised coefficient values were greater than 0.5, ranging from 0.74 at the lowest (sat4) to 0.95 at the highest (sat2). The squared multiple correlations values, ranging from a lowest of 0.55 to a highest of 0.89, were all higher than the recommended threshold of 0.30

Item sat2 was assigned a regression weight of one in order to obtain a solution. The values regression weights were significant as the p-values were all less than 0.001. The eigenvalues listed under the sample correlations suggested one factor. The reliability test of Cronbach's alpha with four items yielded a value of 0.921, which reflected that the construct had excellent reliability. Therefore, this construct represented a good model fit, factorability, convergent validity, and reliability.

8.1.4 Behavioural Intentions

Similar to the Customer Satisfaction construct, the Behavioural Intentions construct was conceptualised as unidimensional, consisting of five items. These were subject to a series of examinations including the GOF, convergent validity, and reliability.

The GOF test suggested that three out of the eight indices (χ^2 , RMSEA and Bollen-Stine bootstrap) failed to meet the recommended threshold values. The other five (CFI, TL, NFI, SRMR and RMR) suggested a good fit with the model.

Investigating the problem started with the modification indices. The modification indices suggested two values of 17.346 and 19.311 were associated with items b4 and b5. The standardised residual covariance confirmed the problems of these two items with the value of 1.769. Even though the value was still below the recommended threshold of 2.5, it indicated a problem. Consequently, a decision to delete either item b4 or b5 had to be made. By applying a specification search (an empirical trial-and-error approach, see Section 6.3.4.3), it was discovered that the deletion of item b5 improved all of the fit indices significantly. The fit indices showed that the data fitted the model exceptionally well (Table 8.12).

Table 8.12: GOF of the measurement model: Behavioural Intentions

CONSTRUCT	χ^2	CFI	TLI	NFI	SRMR	RMR	RMSEA	Bootstrapping (p value)
		> 0.90	> 0.90	> 0.90	< 0.08	< 0.08	< 0.08	> 0.05
BEHAVIOURAL INTENTIONS CONSTRUCT ($\alpha = 0.946$); Retained items: b1, b2, b3, b4; Removed item: b5								
Initial Model (5 items)	96.075(5), p = 0.000	0.953	0.906	0.951	0.0338	0.050	0.235	0.002
Final Model (4 items)	2.624(2), p = 0.269	1.000	0.999	0.998	0.0067	0.009	0.031	1.000

The standardised coefficient values endorsed the convergent validity of the construct as all of the items loaded significantly onto the factors, and the values ranged from 0.82 at the lowest (b4) to 0.97 at the highest (b2). The squared multiple correlations values were all higher than the recommended threshold of 0.30 and ranged from a lowest of 0.67 to a highest of 0.95.

Item b2 was assigned a regression weight to one in order to obtain a solution. The values regression weights were significant as the p-values were all less than 0.001. The eigenvalues listed under the sample correlations suggested one factor. The reliability test of Cronbach’s alpha with four items yielded a value of 0.946, which reflected that the construct had excellent reliability. Therefore, this construct represented a good model fit, factorability, convergent validity, and reliability.

8.2 Summary of measurement model confirmation

Table 8.13 summarises the number of indicators in each dimension and construct in the initial stage and final stage of the measurement model. As discussed earlier, the CFA is used to test the measurement theory; if modifications are major (i.e. if more than 20% of the measured variables were excluded with respect to their factor), any further analysis or verification should use the new data set (Hair et al. 2011). Therefore, it is important to monitor the number of items retained in the model as it reflects the justification of the measurement theory.

Table 8.13: Number of items remaining in the model at final stage of the measurement model (CFA)

Construct	Dimensions	Initial Items	Removed	Final Items	% of removal
SQ	SQ1 - Personal skills	8	2	6	
	SQ2 - Outcome	6	1	5	
	SQ3 - Tangible	3	1	2	
	SQ4 - Reliability	5	0	5	
	SQ5 - Expertise	4	0	4	
Total		26	4	22	15%
CV	V1 - Quality	4	1	3	
	V2 - Monetary Price	4	1	3	
	V3- Reputation	5	0	5	
	V4 - Behavioural Price	4	0	4	
	V5 - Emotional response	5	1	4	
Total		22	3	19	14%
SAT	Unidimensional	4	0	4	0%
BI	Unidimensional	5	1	4	20%
Total		57	8	49	14%

The result showed that none of the constructs had more than 20 per cent of their items dropped. As a result, the measurement models were confirmed and eligible to process further analysis of the structural model.

8.3 Structural model

The structural model of the SEM was used to examine the causal relationships among the constructs. The information of the measurement models was integrated and used as an input of the structural model (Tabachnick & Fidell 2013). The structural model then estimated the causal relationships based on validated measures resulting from the measurement models that were guided by the proposed integrative model developed in Chapter 4 (Figure 4.9).

The relationships among constructs were proposed and hypothesised. First, the paths (one-headed arrow) were assigned from Service Quality to Customer Value, Customer Satisfaction and Behavioural Intentions; from Customer Value to Customer Satisfaction and Behavioural Intentions; and from Customer Satisfaction to Behavioural Intentions. These paths were suggested by theoretical literature and empirical studies. In addition, they were suggested by the multi-attribute attitude model; the cognitive components (Service Quality and Customer Value) precede affective response (Customer Satisfaction) which in turn drives the conative behaviour (Behavioural Intentions) (Choi et al. 2004; Giese & Cote 2000; Han, Kim & Kim 2011; Sheu 2010).

The multiple regression equations and paths were simultaneously estimated corresponding to the hypotheses in the proposed integrative model. However, to achieve a good model fit alone is not sufficient to represent a proposed theory structure; the examination of the individual parameter estimates representing each specific hypothesis must be taken into account. Specifically, the path estimates (standardised loading estimates) should be significant at $p < 0.05$ (Hair et al. 2011).

8.3.1 Initial structural model

The software packages IBM SPSS version 20 and AMOS version 20 with maximum likelihood estimation were used to analyse the data for the study. The SEM, as a powerful analysis technique that accommodates multiple interrelated dependence relationships in a single model, was used to examine the nature and magnitude of relationships within the model. Also, SEM is used to assess the direct and indirect relationships of these variables (Reisinger & Mavondo 2006).

The nature of the relationships is indicated by the positive or negative signs of the value on the path estimated, while the magnitude of the relationships is represented by the value on the path estimated. These values are termed a 'structural

coefficient', or a 'path coefficient'. To assess the direct relationships among constructs, the path coefficient was used to indicate the direct effect of change in a dependent variable as a result of a one unit change in an independent variable. On the other hand, an indirect relationship occurs when the independent variable influences the dependent variable indirectly through other path(s) connected to these two variables. The total effect, therefore, is the sum of the direct and indirect effects of an independent variable on a dependent variable (Reisinger & Mavondo 2006).

The initial structural model was tested with the final items (49 items altogether) as shown in Table 8.33. It was found that the data did not fit the model well. The χ^2 , NFI, TLI and Bollen-Stine bootstrap were not satisfactory for a good model fit at this stage (Table 8.14). Therefore, the model needed to be adjusted.

8.3.2 Model adjustment

As discussed in Section 6.3.1 in Chapter 6 regarding the SEM approach, a model development approach suggested by Reisinger and Mavondo (2006) is adopted for this study. This allows for changes suggested by modification indices, standardised residual covariance and specification searches resulting in an alternative model. Since the initial structural model was rejected, the model needed to be adjusted by dropping items. The steps of diagnostic were presented as below:

Step 1: The investigation began with assessing the modification indices (MI). The highest MI value of 31.367 was associated v24 with b1. The decision must be made between these two items. The **v24 was removed** at this stage because it had higher numbers of the standardised residual covariance (SRC) values (higher than 2.5) associated with other items than b1.

Step 2: After the removal of v24, the MI showed the highest value of 23.429 associated b3 with sq23. The SRC suggested to **remove b3** as it had higher numbers of SRC values (higher than 2.5) than sq23.

Step 3: After the removal of b3, the MI had the highest value of 21.512 associated v52 with sq25. The SRC suggested **removing v52** at this stage.

Step 4: After the removal of v52, the MI had the highest value of 21.119 associated sat4 and v55. The SRC suggested **removing sat4** at this stage.

Step 5: After the removal of sat4, the MI had the highest value of 14.826 associated v55 and sq74. The SRC suggested **removing v55** at this stage.

Step 6: After the removal of v55, v54 was imposed the constraint to 1 before running analysis. The MI showed the highest value of 14.486 associated sq43 with v14. At this stage, the SRC suggested to **remove sq43**.

Step 7: After the removal of sq43, the MI had the highest value of 14.514 associated sq34 with sq22. The SRC suggested **removing sq34** at this stage.

Step 8: After the removal of sq34, the MI values had a narrow ranged between 10.153 and 13.742 associated with sat3, v12, sq64, sq72, sq74, sq31, b1, b2, sq23, v53, v54, sq21 and sq24. The GOF reported $\chi^2(806) = 1670.936$, the Bollen-Stine bootstrap $p = 0.005$, CFI = 0.939, TLI = 0.934, NFI = 0.889, SRMR = 0.0456, RMR = 0.056, RMSEA = 0.057. The investigation of SRC found that none of these 13 variables had value more than 2.5. Therefore, the specification search was executed with these 13 variables.

The finding suggested that removing sq72 yielded the best result especially the Bollen-Stine bootstrap p value improved from 0.005 to 0.013. The GOF reported $\chi^2(763) = 1538.359$, CFI = 0.944, TLI = 0.940, NFI = 0.895, SRMR = 0.0450, RMR = 0.055, RMSEA = 0.056. Therefore, **sq72 was deleted** at this stage.

Step 9: After the removal of sq72, the MI values had a narrow ranged between 10.225 and 13.744 associated with sat3, v12, sq64, sq71, sq31, b1, b2, sq23, sq11, sq21 and sq24. The investigation of SRC found that none of these 11 variables had value more than 2.5. Therefore, the specification search was executed with these 11 variables.

The finding suggested that **removing sq21** yielded the best result especially the Bollen-Stine bootstrap p value improved from 0.013 to 0.025. The other indices also had minor increased.

Step 10: After the removal of sq21, the MI value ranged between 10.500 and 13.716, associated with sat3, b1, b2, v12, sq64, sq23, sq71, sq31, and sq24. The investigation of SRC found none of the values exceeded 2.5. Therefore, the specification search was executed with these 9 variables. The findings suggested removing v12 yielded the best results. The GOF indices all improved. Especially, the Bollen-Stine bootstrap p value improved from 0.025 to 0.039. Therefore, **v12 was deleted** at this stage.

Step 11: After the removal of v12, the MI values ranged between 10.210 and 13.759 associated with sat3, b1, sq64, sq71, b2, sq31, sq11, and sq24. None of the SRC values of these variables was more than 2.5. The specification search was

applied to these variables. The finding suggested removing sat3 gave the best output and substantially improved the Bollen-Stine bootstrap p value from 0.039 to 0.058. The other GOF indices reported as the following: χ^2 (649) = 1223.072, CFI = 0.953, TLI = 0.949, NFI = 0.906, SRMR = 0.0433, RMR = 0.053, RMSEA = 0.052. Therefore, **sat3 was deleted** at this stage.

The statistic fit indices (except TLI) indicated that the data fitted the model well; in particular, the Bollen-Stine bootstrap p value increased considerably from 0.039 to 0.058. Even the TLI value was 0.001 less than the recommended threshold of 0.950, it was acceptable. However, the diagnostic was still carried out to check if the next deleted variable would improve the model much.

Step 12: After the removal of sat3, the MI values ranged between 10.208 and 13.561 associated with sq64, b2, sq71, sq31, and sq24. The SRC showed no values greater than 2.5. The specification search was executed with these 5 variables. The finding suggested that **removing sq31** produced the best results and largely improved the Bollen-Stine bootstrap p value from 0.058 to 0.068. Furthermore, the TLI value increased from 0.949 to 0.952. The GOF indices value was presented in Table 8.14.

8.3.3 Final SEM model

After re-specification, the final model (Figure 8.5) supported that the empirical data fitted the model well (Table 8.14). 13 of the variables were dropped from the initial model and the final model showed that the data fitted the model exceptionally well.

Table 8.14: GOF of the structural model

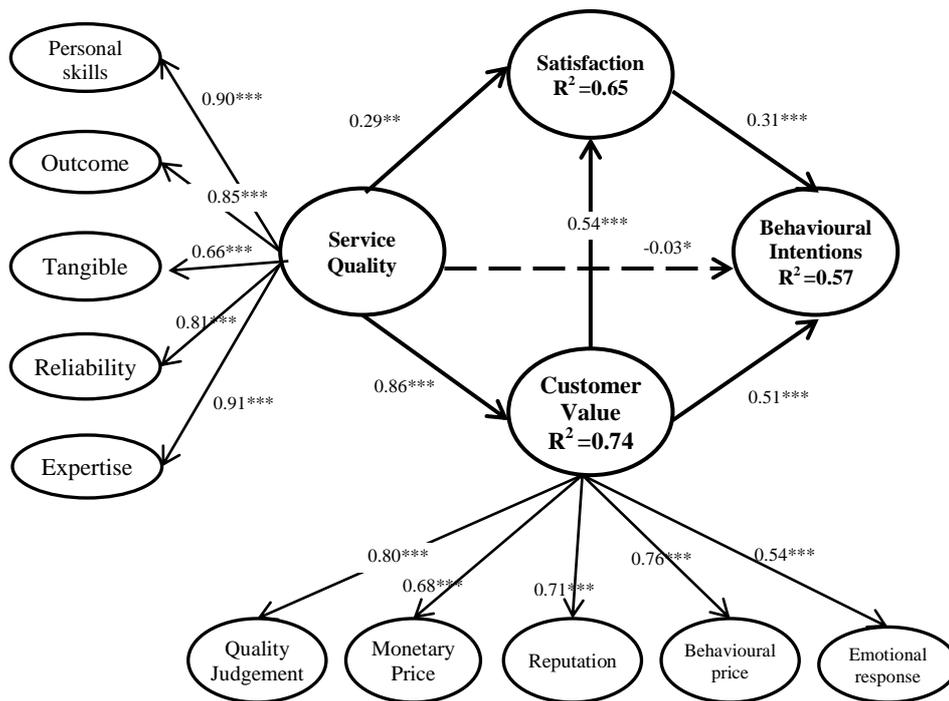
CONSTRUCT	χ^2	CFI	TLI	NFI	SRMR	RMR	RMSEA	Bootstrapping (p value)
		> 0.90	> 0.90	> 0.90	< 0.08	< 0.08	< 0.08	> 0.05
STRUCTURE MODEL								
Initial Model (49 items)	2373.575(1111), p = 0.000	0.927	0.922	0.871	0.0436	0.072	0.059	0.004
Final Model (37 items)	1150.181(613), p = 0.000	0.956	0.952	0.910	0.0424	0.052	0.052	0.068

Even though the chi-square statistic (used to assess the exact fit of the model) was rejected (significant at $p = 0.000$), the Bollen-Stine bootstrap p value of 0.068 was above the recommended threshold of 0.05.

CFI (0.956), based on the comparison of the hypothesised model with the independence model that all variables were allowed to be uncorrelated and only estimated error variances, supported a well-fitting model. TLI (0.952), which used

the average size of the correlations in the data to reflect the sampling error, indicated a good fit. NFI (0.910), as one of the incremental fits that compared the fit of the proposed model to the null model, exceeded the accepted threshold value. RMR (0.052) or the mean absolute value of the covariance residuals was satisfactory. SRMR (0.0424), which suggested the average differences of equivalent elements of the sample and model-implied correlation matrices, was in an acceptable range.

Figure 8.5: Final structural model (standardised)



Note: *** = p < 0.001; ** = p < 0.05; * = p > 0.05

8.3.4 Direct, indirect and total effect

Results from the model confirmed that there were direct relationships and indirect relationship among the constructs. Table 8.15 illustrates the strength of the relationships: direct effect, indirect effect and total effect expressed in terms of correlations among constructs. Table 8.16 illustrates the regression weights and their significance on relationships.

Table 8.15: Strength of the relationships expressed in terms of correlations among constructs

Standardised Effects									
Effect	CV			SAT			BI		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
SQ	0.86***		0.86	0.29**	0.47	0.76	0.03*	0.68	0.65
CV				0.54***		0.54	0.51***	0.17	0.68
SAT							0.31***		0.31

Note: *** = $p < 0.001$; ** = $p < 0.05$; * = $p > 0.05$

Table 8.16: Regression weights (unstandardised) and the significance of relationships

Relationships	Estimate	S.E.	C.R.	P-value
CV <--- SQ	0.781	0.071	11.055	***
SAT <--- SQ	0.349	0.136	2.571	0.01
BI <--- SQ	-0.040	0.171	-0.231	0.817
SAT <--- CV	0.716	0.16	4.487	***
BI <--- CV	0.857	0.225	3.812	***
BI <--- SAT	0.384	0.102	3.782	***

Note: *** is significant at $p < 0.001$

The relationship between Service Quality and Customer Value exhibited the strongest significant direct relationship in this study with a standardised direct effect of 0.86 and significance at $p < 0.001$ (Table 8.15). This was followed by the relationship between Customer Value and Customer Satisfaction with a standardised direct effect of 0.54 and significance at $p < 0.001$. Next was the relationship between Customer Value and Behavioural Intentions with a standardised direct effect of 0.51 and significance at $p < 0.001$. Following this, the relationship between the Customer Satisfaction and Behavioural Intentions constructs had a standardised direct effect of 0.31 and significance at $p < 0.001$. The relationship between Service Quality and Customer Satisfaction existed with a

standardised direct effect of 0.29 and significance at $p < 0.01$ (Tables 8.15 and 8.16). However, a relationship between the Service Quality and Behavioural Intentions constructs did not exist as hypothesised (this had a standardised direct effect of -0.03 and was not significant at $p > 0.05$).

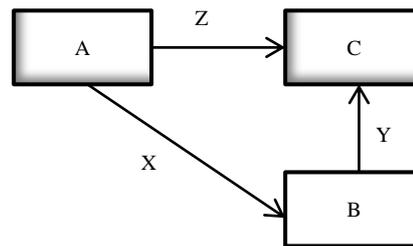
There was some intervention between constructs as shown in Table 8.15. The interventions occurred between the Service Quality and Customer Satisfaction constructs with the indirect effect of 0.47 and the total effect of 0.76. This was similar to the relationships between the Service Quality and Behavioural Intentions constructs, where the indirect effect was 0.68 and the total effect was 0.65. Also, there was some intervention between the Customer Value and Behavioural Intentions constructs with the indirect effect being 0.17 and the total effect 0.68.

Even though the magnitude of the indirect effects was revealed at this stage, their causes and significance of relationships were still unknown. To resolve this issue, the mediating effect analysis was conducted.

8.4 Mediating effects

It was understood that relationships between any two constructs existed by direct and indirect effects, as displayed in Table 8.15. However, it was of interest to know why they existed in such a way. In understanding why, it is important to learn of the mediating effect (Hair et al. 2011). For example, there is a relationship between constructs A and C, and construct B intervenes between the two; construct B is called the 'mediator' (Figure 8.6). Construct B is an intervening variable that operates to take the input from construct A and translate it into the output of construct C. In other words, B is the mediator of A and C. Therefore, the relationships between A and C can be explained by the intervention of B. More specifically, there is an indirect effect between A and C through B, and the relationship between A and C is explained by the significant correlation (x, y, z) of the $A \rightarrow B \rightarrow C$ sequence of relationships (Hair et al. 2011).

Even though a mediating construct (B) embeds the relationships between the other two constructs (A and C), first and foremost, all three constructs (A, B, and C) must have significant correlations amongst each other (i.e. the correlations between A and C (z), A and B (x), and B and C (y) must be significant) (Hair et al. 2011). Figure 8.6 illustrates the mediation relationship.

Figure 8.6: Mediation relationship

The mediation can be expressed as either complete mediation or partial mediation. When the mediating construct (B) completely explains the relationship between A and C, it is termed ‘complete mediation’. However, if there is still some of the relationship between A and C that is not completely explained by B, then B is termed a ‘partial mediator’ (Hair et al. 2011).

To test the mediating effect, two models are established: the initial model represents only the direct effect (z) between A and C, while the second model adds the mediating construct (B) and the two of path estimates (x and y). When the relationship between A and C remains significant and unchanged once B is included, mediation is not supported. When the relationship between A and C (z) decreases but remains significant, a partial mediation is supported. If z is no longer significant after the introduction of B as a mediating construct, a complete mediation is supported (Hair et al. 2011).

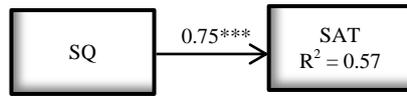
8.4.1 Mediating effect analyses

Referring to Table 8.15, there were indirect effects between 1) the Service Quality and SAT constructs, 2) the Service Quality and Behavioural Intentions constructs, and 3) the Customer Value and BI constructs. These three relationships are examined in the following sections.

8.4.1.1 Service Quality (SQ) and Customer Satisfaction (SAT) – Customer Value (CV) as a mediator

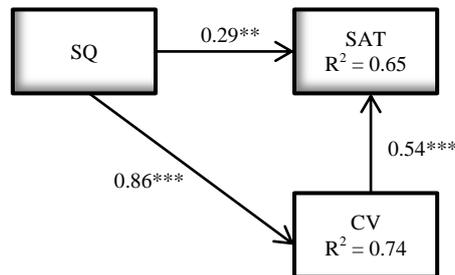
The initial model of the SQ and SAT constructs was established with the standardised correlation of 0.75, significant at $p < 0.001$ (Figure 8.7).

Figure 8.7: Service Quality and Customer Satisfaction



The second model added CV as a mediator. The correlation between SQ and SAT decreased from 0.75 to 0.29 when CV was included as an additional predictor (Figure 8.8).

Figure 8.8: Service Quality and Customer Satisfaction - Customer Value as a mediator

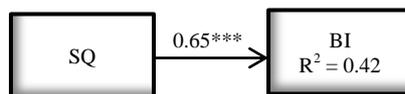


The path estimates SQ→CV and CV→SAT were significant at $p < 0.001$. The path estimates SQ→SAT was significant at $p < 0.01$. The test was able to conclude that CV was a partial mediator between the SQ and SAT constructs. The relationship between SQ and SAT was partially explained by the CV construct.

8.4.1.2 Service Quality (SQ) and Behavioural Intentions (BI)

The initial model of the SQ and SAT constructs was established with the standardised correlation of 0.65, significant at $p < 0.001$ (Figure 8.9). The mediating effects were tested in three ways. First, the CV construct was hypothesised as a mediator. Second, the SAT construct was hypothesised as a mediator. Finally, both the CV and SAT constructs were hypothesised as mediators.

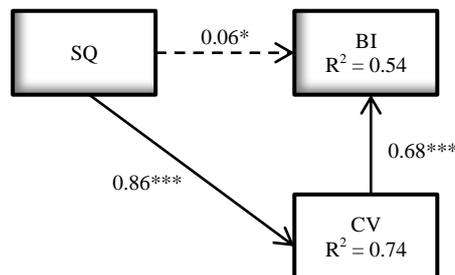
Figure 8.9: Service Quality and Behavioural Intentions



8.4.1.2.1 Customer Value (CV) as a mediator

The second model added CV as a mediator. The correlation between SQ and BI was not significant ($p > 0.05$) when CV was included as an additional predictor (Figure 8.10). It was clear that the CV construct was a complete mediating construct of the effect of SQ on BI. Thus, the relationship between the SQ and BI constructs was completely explained through the CV construct.

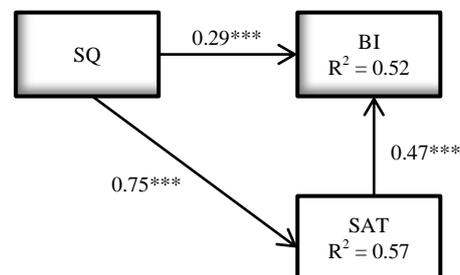
Figure 8.10: Service Quality and Behavioural Intentions - Customer Value as mediator



8.4.1.2.2 Customer Satisfaction (SAT) as a mediator

This model added SAT as a mediating construct instead of CV. The correlation between SQ and BI decreased from 0.65 to 0.29 when SAT was included as an additional predictor (Figure 8.9 and 8.11). All path estimates were significant at $p < 0.001$ (Figure 8.11). Therefore, it was concluded that the SAT construct facilitated partial mediation between the SQ and BI constructs; the relationship between SQ and BI was partially explained by the SAT construct.

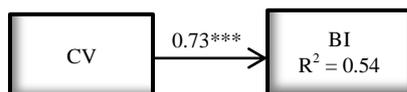
Figure 8.11: Service Quality and Behavioural Intentions - Customer Satisfaction as a mediator



8.4.1.3 Customer Value (CV) and Behavioural Intentions (BI) constructs – Customer Satisfaction (SAT) as a moderator

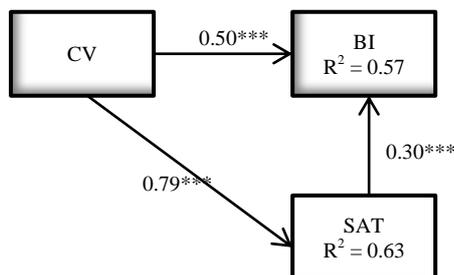
The initial model of the CV and BI constructs was established with the standardised correlation of 0.73, significant at $p < 0.001$ (Figure 8.12).

Figure 8.12: Customer Value and Behavioural intentions



The second model added SAT as a mediator. The correlation between CV and BI decreased from 0.73 to 0.50 when SAT was included as an additional predictor (Figure 8.13). All path estimates were significant at $p < 0.001$. Therefore, the SAT construct intervened as a partial mediator between the CV and BI constructs. The relationship between CV and BI was partially explained by the SAT construct.

Figure 8.13: Customer Value and Behavioural Intentions - Customer Satisfaction as a mediator



8.5 Chapter summary

This thesis aims to justify a proposed integrative model consisting of the Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions constructs within a hospital setting. The model development approach had a combination of scale refinement and SEM analysis (Reisinger & Mavondo 2006). The SEM analysis involved the two-step approach of the measurement and structural models. The SEM was used to assess the construct validity and reliability and to investigate the interrelationships amongst constructs. Furthermore, the mediating effect was investigated to understand the relationships between constructs in greater detail.

The Bollen-Stine bootstrap p-value was reported along with the chi-square due to the data not being of normal distribution.

At the final stage of the measurement model confirmation, the CFA confirmed that both Service Quality and Customer Value were of a higher-order factor indicated by moderate to high correlations between factors. The number of measured variables excluded from the CFA stage was less than 20 per cent, which verified the dataset being appropriate for the structural model analysis. The number of items retained for the analysis was summarised in Table 8.13.

The initial version of the structural model was not considered satisfactory as some of the fit indices – χ^2 , NFI, TLI, and Bollen-Stine bootstrap – rejected the model fit. The model was improved by examining the modification indices (MI), standardised residual covariance (SRC) and specification search. The final model suggested that the path estimate between the Service Quality and Behavioural Intentions constructs was not significant at $p > 0.05$. The strongest standardised correlation was the path between the Service Quality and Customer Value constructs (0.86), followed by the path between the Customer Value and Customer Satisfaction constructs (0.54), and the Customer Value and Behavioural Intentions constructs (0.51) (Figure 8.5).

Analyses of the mediating effect found that while Customer Value was a full mediator, Customer Satisfaction was a partial mediator between Service Quality and Behavioural. The next chapter presents the hypotheses testing and the discussion of the findings.

PART FIVE

RESULTS AND CONCLUSION

Chapter 9	Hypotheses testing, results, and findings
Chapter 10	Conclusion, implications, and limitations

Part Five is the final part, consisting of Chapters 9 and 10. Chapter 9 is a broad context discussion of the overall hypotheses testing, results and a summary of the major research findings. Chapter 10 presents a brief overview of the research process and the overall results. The contributions made by this research, the implications for marketers and scholars, the limitations and the recommendations for future research are discussed.

CHAPTER 9: HYPOTHESES TESTING, RESULTS, AND FINDINGS

Chapter 7 outlined the scale refinement using EFA. This was used to refine the interpretable factors of the Service Quality (SQ), Customer Value (CV), Customer Satisfaction (SAT), and Behavioural Intentions (BI) constructs proposed in the integrative conceptual framework. Chapter 8 presented the measurement model confirmation using CFA. The structural model analysis used the structural equation modelling (SEM) technique to test the relationships among the four constructs (SQ, CV, SAT, and BI).

In this chapter the results from analyses in Chapter 8 will be discussed to answer the research questions and related hypotheses, as outlined in Table 4.3 in Chapter 4. To answer research questions 1 and 2 regarding the multidimensionality of Service Quality and Customer Value constructs, the results of scale refinement (Sections 7.3.2 and 7.3.3 in Chapter 7) and the final model (Section 8.3.3 in Chapter 8) will be taken into account. To answer research question 3 regarding the relationships among the constructs, the results of SEM (Sections 8.3 and 8.4 in Chapter 8) will also be interpreted.

Answers to research questions 1, 2 and 3 are discussed in Sections 9.1, 9.2 and 9.3 respectively. Section 9.4 provides the conclusion to the chapter.

Prior to the discussion, the summary of the scale refinement in Chapter 7, the measurement models and the structural model in Chapter 8 are presented in Tables 9.1 and 9.2 to provide statistical references in terms of reliability and validity to the dimensions and constructs of this study.

Table 9.1: Summary of the scale refinement

SUMMARY OF A SCALE REFINEMENT						
Construct/factor	Factor loadings ranged	Extracted Communalities ranged	Cronbach's Alpha	KMO	Bartlett's Sig.	Extracted Variance explained
Service Quality: 5 factors were extracted (see Table 7.8)						
Personal skills	0.439-0.701	0.580-0.741	0.931 (8 items)	0.953	0.000	64.33%
Outcome	0.577-0.856	0.662-0.820	0.927 (6 items)			
Tangible	0.471-0.894	0.461-0.659	0.816 (3 items)			
Reliability	0.554-0.878	0.542-0.699	0.896 (3 items)			
Expertise	0.699-0.867	0.744-0.824	0.937 (4 items)			
Customer Value: 5 factors were extracted (see Table 7.9)						
Reputation	0.867-0.978	0.838-0.911	0.973 (5 items)	0.930	0.000	79.05%
Emotional response	0.500-0.998	0.582-0.922	0.950 (5 items)			
Monetary price	0.731-0.992	0.705-0.894	0.942 (4 items)			
Quality judgement	0.624-0.971	0.688-0.849	0.929 (4 items)			
Behavioural price	0.730-0.801	0.485-0.630	0.860 (4 items)			
Customer Satisfaction: 1 factor was extracted (see Table 6.11)						
One factor	0.741-0.945	0.549-0.893	0.921 (4 items)	0.840	0.000	76.81%
Behavioural Intentions: 1 factor was extracted (see Table 6.12)						
One factor	0.840-0.965	0.704-0.931	0.955 (5 items)	0.879	0.000	81.36%

Table 9.2: Summary of the CFA and SEM model

SUMMARY OF THE MEASUREMENT MODELS						
SERVICE QUALITY: Measurement model						
Details	Personal skills	Outcome	Tangibles	Reliability	Expertise	
Discriminant validity						
Personal skills ($\alpha = 0.887$)	0.765					
Outcome ($\alpha = 0.922$)	0.715	0.844				
Tangibles ($\alpha = 0.816$)	0.617	0.542	0.791			
Reliability ($\alpha = 0.896$)	0.779	0.638	0.541	0.799		
Expertise ($\alpha = 0.937$)	0.823	0.790	0.631	0.704	0.891	
Note: the diagonal value represents the square root of the AVE value for corresponding latent constructs. Left of the diagonal is the correlation matrix. All standardised factor loadings were significant at $p < 0.001$						
Convergent validity (factor loading > 0.5, Hair et al. 2011)						
Factor loadings ranged		0.663-0.824	0.755-0.924	0.649-0.855	0.702-0.849	0.841-0.928
See Table 8.4	First-order	$\chi^2(199) = 456.854, \rho = 0.000, \chi^2/d.f = 2.07, CFI = 0.96, TLI = 0.95, NFI = 0.93, SRMR = 0.048, RMR = 0.052, Bootstrap p = 0.056$				
See Table 8.6	Second-order (all paths are significant)	$\chi^2(204) = 427.260, \rho = 0.000, \chi^2/d.f = 2.09, CFI = 0.96, TLI = 0.96, NFI = 0.93, SRMR = 0.043, RMR = 0.049, Bootstrap p = 0.051$				
CUSTOMER VALUE: Measurement model						
Details	Quality judgement	Monetary price	Reputation	Behaviour price	Emotional response	
Discriminant validity						
Quality judgement ($\alpha = 0.931$)	0.901					
Monetary price ($\alpha = 0.942$)	0.543	0.783				
Reputation ($\alpha = 0.973$)	0.564	0.526	0.947			
Behaviour price ($\alpha = 0.860$)	0.574	0.486	0.641	0.937		
Emotional response ($\alpha = 0.950$)	0.434	0.490	0.461	0.373	0.908	
Note: the diagonal value represents the square root of the AVE value for corresponding latent constructs. Left of the diagonal is the correlation matrix. All standardised factor loadings were significant at $p < 0.001$						
Convergent validity (factor loading > 0.5, Hair et al. 2011)						
Factor loadings ranged		0.837-0.960	0.796-0.973	0.915-0.959	0.702-0.838	0.907-0.966
See Table 7.25, 7.26	First-order	$\chi^2(160) = 383.814, \rho = 0.000, \chi^2/d.f = 2.39, CFI = 0.97, TLI = 0.97, NFI = 0.95, SRMR = 0.032, RMR = 0.054, Bootstrap p = 0.062$				
See Table 7.27, 7.28	Second-order (all paths are significant)	$\chi^2(147) = 316.740, \rho = 0.000, \chi^2/d.f = 2.15, CFI = 0.98, TLI = 0.97, NFI = 0.96, SRMR = 0.042, RMR = 0.072, Bootstrap p = 0.172$				
CUSTOMER SATISFACTION: Measurement model						
Factor loadings ranged		0.741-0.945				
See Table 7.29, 7.30 (all paths are significant)		$\chi^2(160) = 383.814, \rho = 0.000, \chi^2/d.f = 2.39, CFI = 0.97, TLI = 0.97, NFI = 0.95, SRMR = 0.032, RMR = 0.054, Bootstrap p = 0.062$				
BEHAVIOURAL INTENTIONS: Measurement model						
Factor loadings ranged		0.821-0.974				
See Table 7.31, 7.32 (all paths are significant)		$\chi^2(2) = 2.624, \rho = 0.269, \chi^2/d.f = 1.312, CFI = 1.000, TLI = 0.999, NFI = 0.998, SRMR = 0.006, RMR = 0.009, Bootstrap p = 1.000$				
SUMMARY OF THE STRUCTURAL MODEL						
$\chi^2(613) = 1150.181, \rho = 0.000, \chi^2/d.f = 1.87, CFI = 0.96, TLI = 0.95, NFI = 0.91, SRMR = 0.042, RMR = 0.052, Bootstrap p = 0.068$						

9.1 Service Quality

The dimensionality of the Service Quality construct was introduced in Chapter 2 (Section 2.7) and in Chapter 4 (Section 4.3.1). Although the SERVQUAL dimensions (RATER scales) and their elements have been accepted widely, as a foundation to assess the Service Quality, it was criticised as insufficient to capture Service Quality in the healthcare context (Ladhari 2008). Particularly, the SERVQUAL scale is critiqued for focusing mainly on functional quality and ignoring technical quality. This study fills this gap in literature by adopting two dimensions (Expertise and Outcome) from Dagger and Sweeney (2007) to cover the technical quality. These two dimensions were empirically tested in the healthcare context. These seven dimensions are proposed specifically for the current study and hypothesised as the determinants of the Service Quality construct. The formation of research question 1 and its related hypotheses was explained in Section 4.3.1 in Chapter 4.

To answer research question 1 and its related hypotheses (see Section 4.3.1), the results of the final model are interpreted as it provides a holistic view based on foreign patients. Firstly, the rotated factor loading with ML extraction produced five components with variance explained of 64.331 per cent. The final results of the scale refinement stage (Table 9.1) indicated the factorability, interpretability, reliability, and validity of the construct. The results suggested that the Service Quality construct consisted of five factors.

The convergent validity, discriminant validity and reliability of the construct were confirmed (Table 9.2). More specifically, the factor loadings of *Responsiveness*, *Assurance* and *Empathy* loaded onto the same factor labelled as '*Personal skills*'. The results of the first-order measurement model suggested that these five factors of Service Quality were distinct as identified by the correlations among factors. The result of the second-order measurement model showed that the data fit model well (Table 9.2).

Figure 9.1 illustrates the Service Quality construct with the standardised factor loadings.

Figure 9.1: The Service Quality construct (standardised factor loadings)



Note. *** = $p < 0.001$

The five components of the Service Quality construct are shown in Figure 9.1. *Expertise* is considered to have the highest path estimate (standardised coefficient) among the dimensions of Service Quality, followed by *Personal skills*, *Outcome*, *Reliability*, and *Tangibles*.

Even though the SERVQUAL scales commonly used the expectation-minus-perception scores as a measure of Service Quality (Tables 2.1 and 2.2 in Chapter 2), a number of previous studies use the perception-only score as a measure of the SERVQUAL (RATER) scales, for example, Alrubaiee and Alkaa'ida (2011), Wu (2011), Chaniotakis and Lympelopoulos (2009) and Naceur and Azaddin (2005).

This thesis employed the perception-only score as a measure of Service Quality. Therefore, its findings will be compared to studies that employed the same method. The following studies are selected for comparison as they employed the perception-only score to measure the SERVQUAL (RATER) scales and provided information on path coefficients as a strong basis for this comparison:

- 1) A study by Alrubaiee and Alkaa'ida (2011) from a hospital setting in Jordan.
- 2) A study by Chaniotakis and Lympelopoulos (2009) from a hospital setting in Greece.
- 3) A study by Lonial et al. (2010) from a hospital setting in Turkey. (Note that the path coefficients between items and variables were not disclosed in their study.)

- 4) A study by Wu (2011) from a hospital setting in Taiwan. (Note that the path coefficients between items and variables were not disclosed in the study.)
- 5) A study by Naceur and Azaddin (2005) from the banking industry in the UAE. (Note that this study was selected because the results of their analysis were similar to the results of this study.)

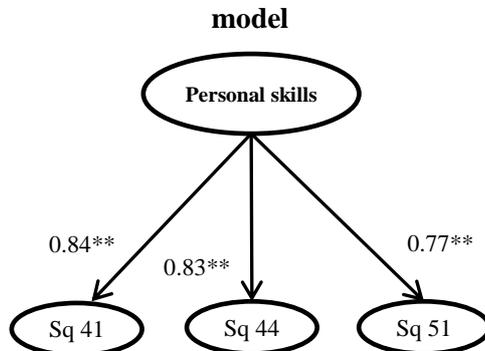
9.1.1 Responsiveness, assurance, and empathy as ‘Personal skills’

The three dimensions of SERVQUAL, namely *Responsiveness*, *Assurance* and *Empathy*, loaded onto the same factor. This factor was labelled as ‘*Personal skills*’ because the items of this factor related to the skills of staff as discussed in Section 7.3.2. Therefore, ‘*Personal skills*’ is defined as the thoughtfulness and care in providing the medical services in relation to inspiring trust in patients, having knowledge to answer patients’ questions, and giving individual attention.

Personal skills (0.90***) is the second most important Service Quality (after *Expertise*, 0.91***). The results of the structural model suggested that the *Personal skills* dimension consisted of three items: two designated to *Assurance* (sq41 and sq44), and one designated to *Empathy* (sq51) (Figure 9.2).

This finding is similar to the study by Naceur and Azaddin (2005) in the banking industry as these three dimensions (*Responsiveness*, *Assurance*, and *Empathy*) were loaded into one factor and also labelled as *Personal skills*. Figure 9.2 illustrates the factor loadings for the *Personal skills* dimension.

Figure 9.2: Standardised factor loadings for Personal skills of the structural model



Note: *** p < 0.001

Based on the results of the scale refinement (Table 9.1), measurement model confirmation and structural model analysis (Table 9.2), **the hypotheses H1.a,**

H1.b, and H1.c, are not supported in this study as *Responsiveness*, *Assurance* and *Empathy* are not distinct dimensions of Service Quality, as presented in Tables 9.1 and 9.2, and Figure 9.2.

Among the determinants of *Personal skills*, the item ‘hospital staff instil confidence in me’ (sq41 designated to *Assurance*) and ‘hospital staff have knowledge to answer my question’ (sq44 designated to *Assurance*) are the most important determinants in this study. These two items are highly related. When hospital staff exhibit knowledge to answer the patients’ questions, patients have more confidence in the hospital. This confidence cannot be transferred by a third party; it is the direct experience of the hospital by patients themselves. The last important item is ‘hospital staff give me individual attention’ (sq51 designated to *Empathy*). This implies that patients perceive the Service Quality in terms of *Personal skills* through receiving individual attention from the staff.

In the following section, the *Personal skills* dimension identified in this study is compared with findings of three studies in order to demonstrate validity of the results. These three studies were selected because they employed the SERVQUAL dimensions in their analyses.

In the Greek hospital context (Chaniotakis & Lympelopoulou 2009), Service quality is a determinant of Overall Satisfaction and Word-of-Mouth (intention to recommend). In the Jordanian hospital context (Alrubaiee & Alkaa’ida 2011), Service Quality is a determinant of Patient Satisfaction and Patient Trust. In the banking contexts (Naceur & Azaddin 2005), the authors develop the Service Quality measure based on SERVQUAL dimensions for UAE and Islamic banking contexts. *Personal skills* is the results of *Responsiveness*, *Assurance* and *Empathy* loaded onto the same factor. Table 9.3 is the summary of the three studies compared to this current study.

Table 9.3: Personal skills as a universal measure

	Current study (Personal skills)	Greece* (Hospital)	Jordan** (Hospital)	UAE (Personal Skill)*** (Banking sector)
Assurance	Staff instil confidence in me (sq41)	Staff explains thoroughly medical condition (AS4)	Maintenance of patient confidentiality	
	Staff have knowledge to answer my questions (sq44)	Knowledgeable and experienced staff (AS1)		Employees have knowledge to answer customer questions
Empathy	Staff give me individual attention (sq51)	Staff offers personalised attention (EM3)	Staff understand your specific need, Staff has your interest at heart	Employees give customer individual attention

Note: * = Chaniotakis and Lymperopoulos’ (2009) study, ** = Alrubaiee and Alkaa’ida’ (2011) study, *** = Naceur and Azaddin’ (2005) study

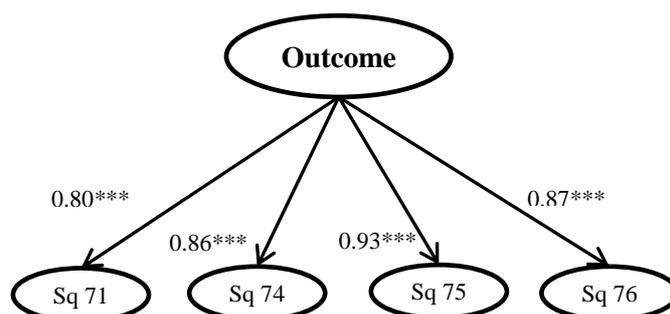
As summarised in Table 9.3, the item ‘Staff instil confidence in me’ is confirmed in two studies from the healthcare service contexts. The item ‘Staff have knowledge to answer my questions’ is confirmed in one from healthcare context and another one in banking context. The item ‘Staff give me individual attention’ is confirmed in all three studies. This shows that *Personal skills* is a valid measure of Service Quality, despite it being amalgamated from three prior dimensions.

This finding also emphasises that hospital staff should be well trained regarding being thoughtful and careful in providing services to patients.

9.1.2 Outcome

Outcome is the third important dimension of Service Quality in this study, and it is the second most important dimension of Service Quality for longer-term patients in Australia (Dagger & Sweeney 2007).

Figure 9.3: Standardised factor loading for Outcome of the structural model



Note: *** $p < 0.001$

Based on the results of the scale refinement (Table 9.1), measurement model confirmation and structural model analysis (Table 9.2), **hypothesis H1.d is supported in this study**, as illustrated in Figure 9.3.

Outcome is measured by four items in this study (Figure 9.3). The highest factor loading of this dimension is ‘I leave the hospital feeling encouraged about my treatment’ (sq75). It is clear that when patients feel positive about the treatment they received, they are happy with the results of medical treatment processes and leave hospital with a good feeling. Although the patients still do not know whether their sickness will be cured properly, they have a strong belief in medical treatment they received. This is supported by ‘I believe the results of my treatment will be the best they can be’ (sq76), ‘I believe having treatment at this hospital has been worthwhile’ (sq74) and ‘I feel hopeful as a result of having treatment at this hospital’ (sq71).

This result is similar to that of Dagger and Sweeney (2007). This finding also points out that even though patients do not know exactly yet whether they have recovered, medical professionals such as doctors and nurses are sources of their trust regarding the outcome of medical treatments.

9.1.3 Tangibles

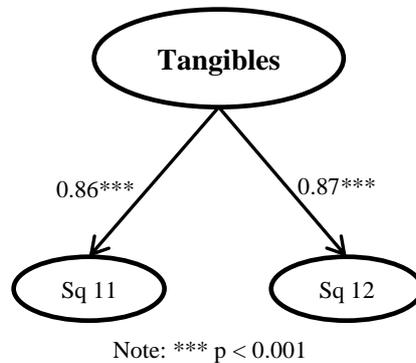
Tangibles is the least important attribute of Service Quality in this study. This finding is similar to other studies in the healthcare service industry context. In the Malaysian healthcare service (Butt & de Run 2010), *Tangibles* is the weakest attribute of the expectation of Service Quality and the second weakest after *Empathy* of the perception of Service Quality. In the Turkish (Lonial et al. 2010), South Korean (Choi et al. 2004), and Taiwanese healthcare service (Wu 2011), *Tangibles* has the lowest path estimates (standardised coefficients) among Service Quality dimensions.

In contrast, *Tangibles* is found to have the strongest direct effect on Patient Trust in the Jordanian healthcare context (Alrubaiee & Alkaa'ida 2011) and has a direct effect on *Reliability* and Satisfaction in the Greek hospital context (Chaniotakis & Lymperopoulos 2009).

Although the *Tangibles* dimension was proposed to be measured by four items in this study, the results from the structural model, as a holistic view based on the integrative model, suggested that the dimension consisted of two items: ‘hospital

has modern looking equipment’ (sq11) and ‘facilities visually appealing’ (sq12) (Figure 8.4). These two items were equally important determinants to the *Tangibles* dimension in this study.

Figure 9.4: Standardised factor loading for Tangibles of the structural model



Based on the results of the scale refinement (Table 9.1), measurement model confirmation and structural model analysis (Table 9.2), **hypothesis H1.e is supported in this study**, as illustrated in Figure 9.4.

Even though *Tangibles* is the least important dimension of Service Quality in this study and in other studies of healthcare service industries, ‘the appeal of facilities’ and ‘the advanced level of medical equipment’ are claimed to be the most important aspects of developing reputation for hospitals (Wongkit & McKercher 2013). Thus, the importance of *Tangibles* cannot be neglected. This measures to what extent foreign patients are impressed with the state-of-the-art the facilities and the advanced technology of medical equipment. The appearance of facilities makes foreign patients feel relaxed and helps to relieve stress. The private healthcare sector in Thailand is renowned for providing advanced and modern medical equipment in comparison to England for example (Ramirez de Arellano 2007). This makes foreign patients feel confident and secure about receiving good quality medical treatment. Patients use these clues (sq11 and sq12) to assess the *Tangibles* dimension of Service Quality. Thus, ‘modern looking equipment’ and ‘facilities visually appealing’ are identified as valuable variables measuring the *Tangibles* dimension for foreign patients in this study.

In the Jordanian hospital context (Alrubaiee & Alkaa’ida 2011), *Tangibles* is measured by six items. The two highest factor loadings are ‘employees are neat in appearance’ and ‘good directional signs’. *Tangibles* has the strongest direct effect on Patient Trust in this context. This can be interpreted as the hospital being able to

gain Patient Trust when the staff look good in appearance and the directional information signs are well organised.

In the Greek hospital context (Chaniotakis & Lympelopoulou 2009), *Tangibles* is measured by four items. The two highest factor loadings are ‘the clean environment’ and ‘the up-to-date equipment’.

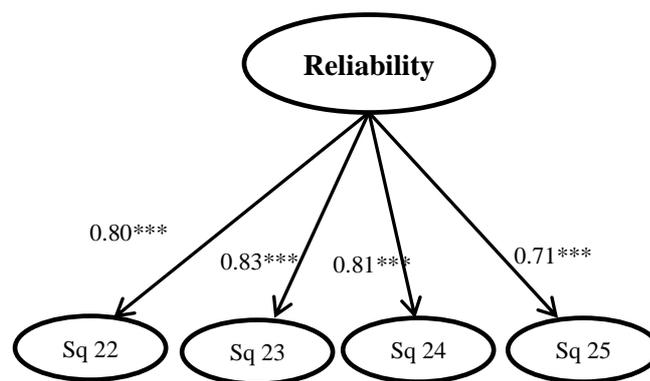
Regarding the above discussion, it can be confirmed that the two items (‘modern looking equipment’ and ‘facilities visually appealing’) of *Tangibles* in this study are in line with past studies (see Chaniotakis & Lympelopoulou (2009), especially the ‘modern looking equipment’ item. Despite *Tangibles* being the least important factor of Service Quality, it is one of the determinants of Service Quality which hospital marketers should not ignore.

9.1.4 Reliability

The *Reliability* dimension is the second least important determinant of Service Quality in this study and in the Turkish healthcare context (Lonial et al. 2010). However, *Reliability* is found to be the most significant dimension of Service Quality in the Taiwanese healthcare context (Wu 2011).

The *Reliability* dimension is measured by four items in this study. The results of the structural model imply that these items are determinants to the *Reliability* dimension (Figure 9.5).

Figure 9.5: Standardised factor loading for Reliability dimension of the structural model



Note: *** $p < 0.001$

Based on the results of the scale refinement (Table 9.1), measurement model confirmation and structural model analysis (Table 9.2), **hypothesis H1.f is supported in this study**, as illustrated in Figure 9.5.

In this study, among the four items considered valid and reliable for measuring the *Reliability* dimension (Figure 9.5), 'hospital does things right first time without having to repeat' (sq23) is the most important item perceived by foreign patients. This is followed by 'hospital provides its service at the time it promised to do so' (sq24), 'when I have a problem, hospital shows a sincere interest in solving problems' (sq22) and 'the hospital insists on error-free records' (sq25).

Foreign patients perceive high quality of service in terms of *Reliability* when they perceive reliability and efficiency of the hospital in providing services.

Patients are able to see the reliability and efficiency of the staff such as doing things right first time without having to repeat, providing service at the time it promised, showing sincere interest in solving problems and insisting on no error records. These make patients feel positive in regard to the quality of service.

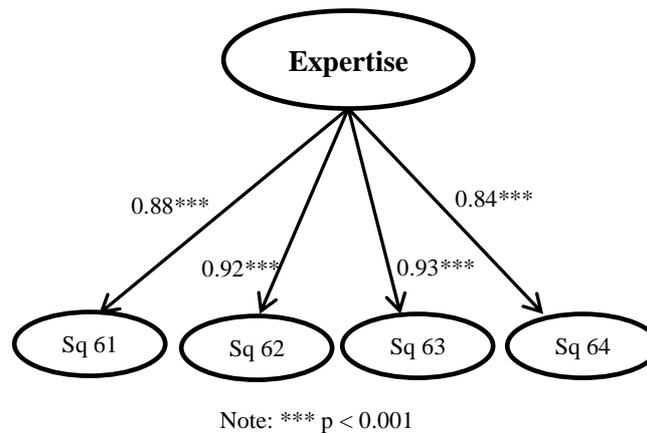
In the Jordanian hospital context (Alrubaiee & Alkaa'ida 2011), the two most important determinants of the *Reliability* dimension are 'ability of staff to inspire trust and confidence in patient' and 'staff willingness to listen carefully and help patients'.

In the Greek hospital context (Chaniotakis & Lympelopoulos 2009), the two most important determinants of *Reliability* are 'kept promises' and 'right way to carry out services'.

This implies that the items related to 'reliability and efficiency' are important indicators of *Reliability* in the healthcare context. Therefore, hospital marketers should pay attention to delivering these activities as it is a way to improve the quality of service in terms of the *Reliability* aspect.

9.1.5 Expertise

Expertise is the most important determinant of Service Quality in this study. This is in line with the results of Dagger and Sweeney's (2007) study which finds that *Expertise* is the most significant determinant of Service Quality for both novice patients and longer-term patients in the Australian healthcare context.

Figure 9.6: Standardised factor loading for Expertise of the structure model

Based on the results of the scale refinement (Table 9.1), measurement model confirmation and structural model analysis (Table 9.2), **hypothesis H1.g is supported in this study**, as illustrated in Figure 9.6.

Expertise is measured by four items as presented in Figure 9.6. Considering the meaning of the *Expertise* dimension employed in this thesis: ‘staff are highly skilled at their job’ (sq63), ‘staff carry out their task completely’ (sq62), ‘staff are well trained and qualified’ (sq61), and ‘I feel good about the quality of healthcare given me at the hospital’ (sq64), it can be seen that Dagger and Sweeney (2007) have emphasised the importance of competence, knowledge, and skill of hospital staff in providing medical services for patients. *Expertise* is also the most important dimension of the Australian healthcare context (Dagger & Sweeney 2007).

Since this dimension is the most important determinant of Service Quality, it implies that foreign patients perceive the quality of service mainly based on their perception of the competence, knowledge, and skill of hospital staff in relation to the provision of medical care including diagnosis, treatment, care, and related activities. The perception of Service Quality is high when patients have a good impression regarding the competence and skill of staff in carrying out their tasks successfully.

The hospital management teams should focus on hiring highly competent staff including doctors and nurses in particular. *Expertise* is actually a core dimension of Service Quality in the healthcare sector.

9.1.6 Summary of discussion on research question 1 and its related hypotheses

The result of the scale refinement (Section 7.3.2 – Scale refinement for the Service Quality construct) does not support the five generic SERVQUAL dimensions (RATER dimensions). The RATER dimensions are collapsed into three scales whereas the additional two scales (*Expertise* and *Outcomes*) are supported by the scale refinement processes. The measurement model confirmed a higher-order construct of Service Quality consisting of five factors; *Personal skills*, *Outcome*, *Tangibles*, *Reliability* and *Expertise*.

The SERVQUAL (RATER) scale was also not supported by other empirical studies. For example, the study by Naceur and Azaddin (2005) in the UAE banking context had exactly the same results as in this study. More specifically, the scales of *Responsiveness*, *Assurance*, and *Empathy* loaded onto the same factor. The study by Yesilada and Direktor (2010) in the Northern Cyprus healthcare service context found that the five dimensions of the SERVQUAL scales reduced to three dimensions as the factor loadings of *Responsiveness*, *Assurance*, and *Reliability* loaded onto the same factor.

The study by Mostafa (2005) in the Egyptian healthcare service industry also found that the five factors of SERVQUAL were reduced to three factors. Factor 1 ‘*Human performance quality*’ was a result of factor loadings of *Responsiveness*, *Empathy*, and two of four items from the *Assurance* factor. Factor 2 (*Reliability*) and Factor 3 (*Tangibility*) contained items relating to the factors as proposed by the RATER scale.

The study by Li et al. (2011) in the Taiwanese healthcare service industry found that the five dimensions of SERVQUAL were reduced to four as the scales of *Tangibles* and *Reliability* loaded onto the same factor. In the Bahrain banking context (Ramez 2011), the five dimensions were collapsed into three as the results of factor loading of *Reliability*, *Responsiveness*, and *Assurance* loaded onto the same factor.

The structural model provides not only the answer to the hypotheses, but also the details in relation to the importance of each item to the respective dimensions in a holistic view. It confirmed that the Service Quality construct in this study consists of five dimensions: 1) *Personal skills*, 2) *Outcome*, 3) *Tangibles*, 4) *Reliability*, and 5) *Expertise*. The following states the results of hypotheses tested (Table 9.4):

Table 9.4: Summary of the results of hypotheses tested for research question 1

Research question1: What are the determinants of Service Quality for foreign patients in Thai private hospital?			
H1	Service Quality is a multidimensional construct consisting of Tangibles, Reliability, Responsiveness, Assurance, Empathy, Expertise, and Outcome.	Supported/Not supported	Standardised Coefficient
H1.a	Tangibles is a significant and distinct determinant of Service Quality.	Supported	0.66***
H1.b	Reliability is a significant and distinct determinant of Service Quality.	Supported	0.81***
H1.c	Responsiveness is a significant and distinct determinant of Service Quality.	Not supported	0.90***
H1.d	Assurance is a significant and distinct determinant of Service Quality.	Not supported	
H1.e	Empathy is a significant and distinct determinant of Service Quality.	Not supported	
H1.f	Expertise is a significant and distinct determinant of Service Quality.	Supported	0.91***
H1.g	Outcome is a significant and distinct determinant of Service Quality.	Supported	0.85***

Note: *** = $p < 0.001$

Even though the hypotheses H1.c, d, and e are rejected in this study as the scales tested are not distinct, the *Responsiveness*, *Assurance*, and *Empathy* dimensions similar in nature were combined into one factor and labelled '*Personal skills*'. Based on the result of scale refinement, the *Personal skills* dimension has a high reliability indicated by the Cronbach's alpha value of 0.931. In addition, it accounts for 15.9 per cent of the total variance explained (64.3 %) of the Service Quality construct. The *Personal skills* dimension, therefore, is one of the most important determinants of Service Quality construct in this study.

9.2 Customer Value

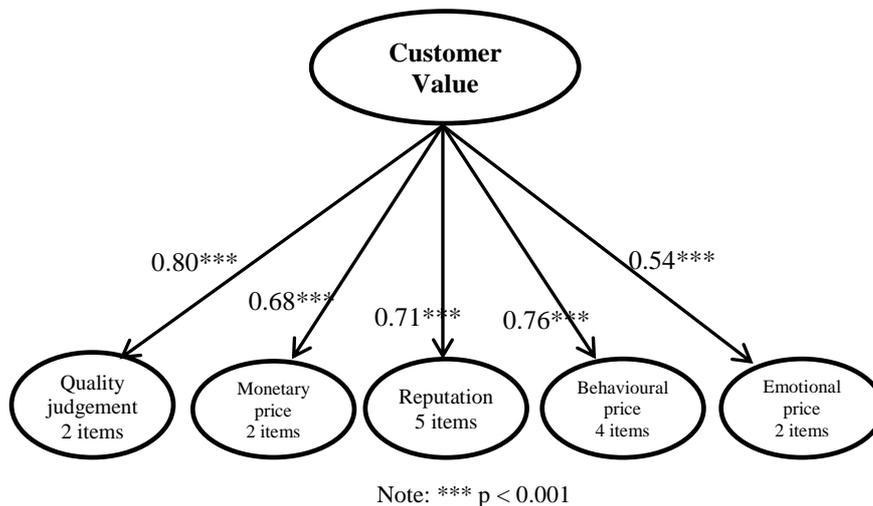
The Customer Value concept was reviewed in Section 3.1 in Chapter 3. As stated, the literature on this concept in the healthcare service sector is limited, and there is a lack of studies from the patients' perspective (Wang, Huang & Howng 2011). Despite lack of general agreement on the dimensionality, Customer Value in the healthcare service sector is commonly conceptualised as a unidimensional construct. Only a few studies conceptualised it as a multidimensional construct (see Section 3.1.5). Customer Value is conceptualised as a multidimensional construct

in this thesis. The formation of research question 2 and its related hypotheses was explained in Section 4.3.2 in Chapter 4.

To answer research question 2 and its related hypotheses, the results of the structural are interpreted. The scale refinement results indicate the factorability, interpretability, reliability and validity of the Customer Value construct in this thesis (Table 9.1). The results of the scale refinement stage suggested that the construct consisted of five factors.

The convergent validity, discriminant validity and reliability of the construct were confirmed by the measurement model confirmation process (Table 9.2). Figure 9.7 presents the Customer Value construct with the standardised factor loadings based on the structural model.

Figure 9.7: The Customer Value construct (standardised factor loadings)



The results from the structural model confirmed that Customer Value is a multidimensional construct. The most important dimension is *Quality judgement*, followed by *Behavioural price*, *Reputation*, *Monetary price*, and *Emotional response*.

This thesis adopted the multidimensional construct of Customer Value (SERV-PERVAL) from Petrick (2002) in the study of cruise passengers. These dimensions were tested in the tourism industry context by Chen and Chen (2010). The findings of this thesis are not consistent with them. Table 9.5 illustrates the findings of this study, Petrick’s (2002) study and Chen and Chen’ (2010) study regarding the importance of each Customer Value dimension.

Table 9.5: The importance of each Customer Value dimension

Rank	Current study	Petrick (2002)		Chen & Chen (2010)
		Cruise 1 Sample	Cruise 2 Sample	Tourism industry
1	Quality judgement	Quality judgement	Monetary price	Reputation
2	Behavioural price	Monetary price	Quality judgement	Monetary price
3	Reputation	Emotional respond	Emotional respond	Quality judgement
4	Monetary price	Reputation	Reputation	Emotional respond
5	Emotional respond	Behavioural price	Behavioural price	Behavioural price

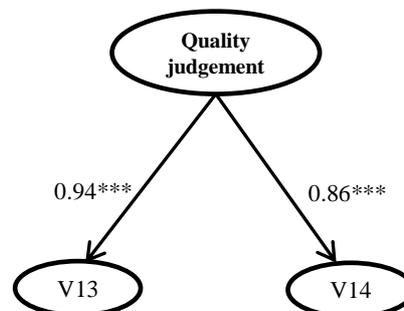
The importance of *Quality judgement* in this study is similar to the study by Petrick (2002) in the cruise industry. While *Behavioural price* is the second most important determinant of this study, it is the least important in both cruise and the tourism industry studies.

Despite the multidimensional construct of Customer Value proposed by Petrick (2002) being valid and reliable, the findings from this study imply that the perceptions of the importance of dimensions are varied among the services contexts.

9.2.1 Quality judgement

Quality judgement is the most important determinant of Customer Value in this study. *Quality judgement* was proposed to be measured by four items. However, the results of the structural model suggested it consisted of two items as presented in Figure 9.8.

Figure 9.8: Standardised factor loadings for Quality judgement of the structure model



Note: *** $p < 0.001$

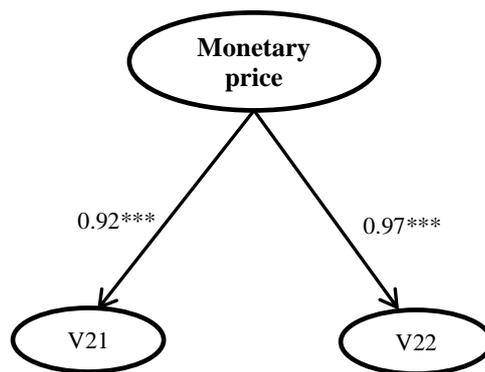
Based on the results of the scale refinement (Table 9.1), measurement model confirmation and structural model analysis (Table 9.2), **hypothesis H2.a is supported in this study**, as illustrated in Figure 9.8.

A patient’s judgement about the overall excellence or superiority of the quality of service at the hospital is expressed in terms of ‘dependable’ (v13) and ‘consistent’ (v14) in this study. Considering the terminology of these two items, it is noticeable that they are related. On the other hand, ‘outstanding’ (v11) was the only item that was dropped at the first-order measurement model stage, implying that it was not fitted to the *Quality judgement* dimension in this study. ‘Reliable’ (v12) was dropped at the structural model stage; this thus suggests that the item when taken holistically is not an important concern of foreign patients’. This can be interpreted that foreign patients perceive Customer Value of the service received through *Quality judgement* in terms of ‘dependable’ (v13), and ‘consistent’ (v14).

9.2.2 Monetary price

The *Monetary price* dimension is the second least important determinant (after *Emotional price*) to Customer Value. This dimension was proposed to be measured by four items. However, the results of the structural model suggested that the monetary price dimension actually consisted of two items as presented in Figure 9.9.

Figure 9.9: Standardised factor loadings for Monetary price of the structure model



Note: *** p < 0.001

Based on the results of the scale refinement (Table 9.1), measurement model confirmation and structural model analysis (Table 9.2), **hypothesis H2.b is supported in this study**, as illustrated in Figure 9.9.

This dimension considered Customer Value purely in terms of the ‘monetary value’: the benefits the foreign patients received and the price they paid for medical treatment. Foreign patients perceived Customer Value strongly in terms of ‘the price of medical care is fair’ (v21) and ‘the price of medical care is reliable’ (v22).

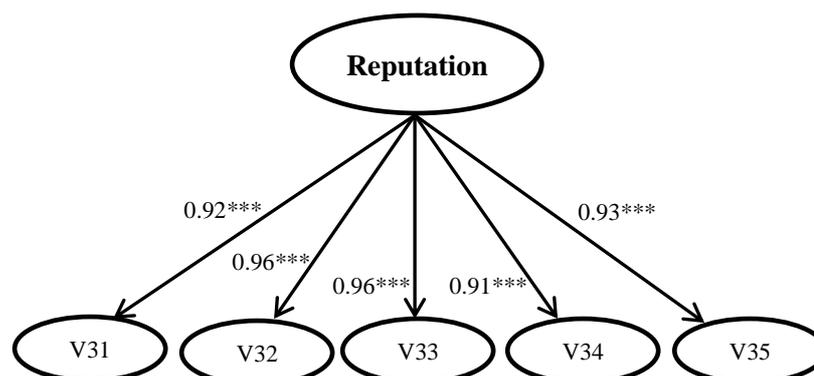
Herrick (2007) states that usually foreign patients (medical tourists) roughly know the price of treatment as the providers offer reasonably accurate price quotes. Therefore, they could assess whether the price is reliable and fair before receiving the treatment.

Not surprisingly, the item ‘the price for medical care is consistent’ (v23) was dropped at the second-order measurement model refinement stage. This is because foreign patients cannot measure price consistency against a reference point. Each medical service is composed of a variety of treatment activities, which makes it hard to compare and assess the consistency of medical charges. The item ‘price for medical care is worth the money’ was dropped at the structural model stage. This is not surprising as 69.1 per cent of foreign patients have full insurance cover whereas 10.9 per cent have partial insurance cover. In another word, 80 per cent of foreign patients have insurance and therefore monetary concern was not an issue.

9.2.3 Reputation

The *Reputation* dimension is the third important determinant of Customer Value in this study and the fourth important in the cruise industry study (Petrick2002) whereas it is the most important in the tourism industry study (Chen and Chen 2010). *Reputation* was proposed to be measured by five items. The results of the structural model confirmed that *Reputation* consisted of five items as proposed and presented in Figure 9.10.

Figure 9.10: Standardised factor loadings for Reputation of the structure model



Note: *** $p < 0.001$

Based on the results of the scale refinement (Table 9.1), measurement model confirmation and structural model analysis (Table 9.2), **hypothesis H2.c is supported in this study**, as illustrated in Figure 9.10.

Considering the terminology used in each item, the meaning of *Reputation* is represented in terms of ‘well respected’ (v32), ‘well thought of’ (v33), ‘reputable’ (v35), ‘good reputation’ (v31), and ‘status’ (v34). Foreign patients choose the hospital based on reputation and have considered carefully which is best for them to receive medical care (Herrick 2007). Therefore, *Reputation* of the hospital is an important indicator of good value of service.

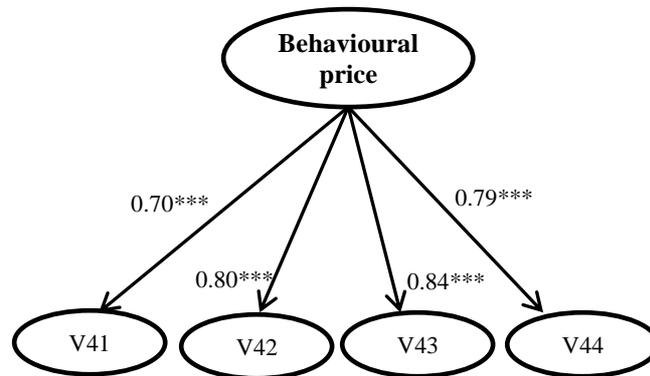
The interpretation of *Reputation* in this study is similar to other studies. For example, it is similar to the *Service equity* dimension of the Customer Value construct of Ruiz et al.’s (2008) study. The authors defined *Service equity* as a service image or brand image of the provider perceived by customers, and it is the second most important of four determinants of Customer Value in their study.

It is similar to Chen and Hu (2010) who posited that Customer Value consisted of two dimensions: a *Functional value* and a *Symbolic value*. The *Symbolic value* was defined as “an overall representation of experiential value perceptions from the social, emotional... and reputation aspects” (p. 540). These indicate that, even though the terminologies used are different, the meanings are similar. For example, while this thesis termed it as *Reputation*; others termed it as *Service equity* and *Symbolic value* referring to essentially the same concept.

9.2.4 Behavioural price

The *Behavioural price* dimension is the second most important determinant of Customer Value in this study. *Behavioural price* was proposed to be measured by four items. The results of the scale refinement and measurement model confirmation both suggested that it consisted of four items as presented in Figure 9.11.

Figure 9.11: The standardised factor loadings for Expertise at the measurement model confirmation stage



Note: *** $p < 0.001$

Based on the results of the scale refinement (Table 9.1), measurement model confirmation and structural model analysis (Table 9.2), **hypothesis H2.d is supported in this study**, as illustrated in Figure 9.11.

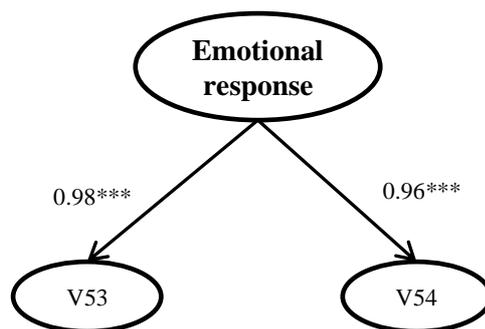
Behavioural price is measured by four items consisting of ‘easy to access the hospital premise’ (v41), ‘easy to acquire medical attention’ (v42), ‘easy to access the details of available services that the hospital’s offered’ (v43), and ‘easy to purchase the hospital’s services’ (v44). The interpretation of this is that foreign patients consider *Behavioural price* in terms of their convenience to access the hospital premises, to acquire medical attention, to access the details of available services that the hospital offered, and to purchase the hospital’s services as good value.

While *Behavioural price* is the second most important dimension of this study, it is the least important in the cruise and tourism industry contexts as shown in Table 9.5. This can be interpreted that the location of hospital and the easiness of acquiring information regarding the hospital services and treatments are important factors for customers. However, it is not that important for cruise and tourism industries as both of the industries are related to recreation where travellers are keen to go to the destination regardless where it is. In contrast, the location is considered as patient’s convenience whereas the enquiry about the hospital services and treatments are critical for patients. Hence, this dimension is a core Customer Value perceived by customers in this study, patients.

9.2.5 Emotional response

The *Emotional response* dimension is the least important dimension of Customer Value in this study. It was proposed to be measured by five items. However, the results of the structural model suggested that it consisted of two items as presented in Figure 9.12.

Figure 9.12: Standardised factor loading for Emotional response dimension at the measurement model confirmation stage



Note: *** p < 0.001

Based on the results of the scale refinement (Table 9.1), measurement model confirmation and structural model analysis (Table 9.2), **hypothesis H2.e is supported in this study**, as illustrated in Figure 9.12.

Considering the terminology used in each item, the meaning of *Emotional response* is well presented in terms of receiving medical treatment from this hospital ‘gives me a sense of joy’ (v53) and ‘makes me feel delighted’ (v54). The item ‘makes me feel good’ (v51) was dropped at the one-factor congeneric model stage. This is not surprising as patients who are sick will not think that coming to the hospital makes they feel good; they definitely do not want to be sick. Even though they do not feel good, they are still able to find pleasure in the supportive environment. This environment refers not only to the provision of first class facilities such as elegant decoration, a free computer corner with a free internet connection, free Wi-Fi, and a branded name coffee shop, but also the staff at the hospital are very friendly. Notwithstanding that *Emotional response* is the least important dimension of Customer Value; patients take this dimension into account.

9.2.6 Summary of discussion on research question 2 and its related hypotheses

The results of the scale refinement (see Table 9.1), measurement model confirmation and the structural model (see Table 9.2) suggest that the original five factors of Customer Value are supported in this thesis. Even though the finding of this thesis is not consistent with Petrick (2002) and Chen and Chen (2010)' findings in terms of the importance of each dimension, these five dimensions are confirmed as determinants to Customer Value. Among them, *Quality judgement* reflected the overall excellence or superiority of service quality provided by the hospital is the most important measurement of the Customer Value dimensions perceived by foreign patients. Besides *Quality judgement*, *Behavioural price* reflected the ease of access to the hospital premises, acquiring medical attention, and accessing other services, is the second most important Customer Value for foreign patients. *Reputation* is the third most important. This implies that foreign patients consider receiving medical treatment from a reputable institution is an important element of Customer Value for them. The *Monetary price* dimension is the second least important. This can imply that the cost of medical treatment at the hospital is not a concern. Foreign patients may perceive that eventually the cost is still cheaper than in their home country, or they have some cover from insurance. Despite *Emotional response* reflected the pleasure of receiving the medical care from the hospital is the least important dimension of Customer Value, it is one of the Customer Value attributes perceived by foreign patients. Table 9.6 summarises the results of hypotheses tested.

Table 9.6: Summary of the results of hypotheses tested for research question 2

Research question 2: What are the determinants of Customer Value for foreign patients in Thai private hospital?			
H2	What are the determinants of the Customer Value construct in Thai private hospital based on the perceptions of overseas patients?	Supported / Not supported	Standardised coefficient
H2.a	Quality judgement is a significant and distinct determinant of Customer Value	Supported	0.80***
H2.b	Monetary price is a significant and distinct determinant of Customer Value	Supported	0.68***
H2.c	Reputation is a significant and distinct determinant of Customer Value.	Supported	0.71***
H2.d	Behavioural price is a significant and distinct determinant of Customer Value	Supported	0.76***
H2.e	Emotional response is a significant and distinct determinant of Customer Value	Supported	0.54***

9.3 The relationships among Service Quality (SQ), Customer Value (CV), Customer Satisfaction (SAT) and Behavioural Intentions (BI)

The relationships among these four constructs (SQ, CV, SAT, and BI) were discussed in Chapter 4, mainly Section 4.3.3. To examine the relationships among these four constructs, SEM analysis is employed in this thesis. Before proceeding to further discussion, it is worth emphasising that one of the focuses of this thesis is on the relationships between and among the constructs proposed in the integrative conceptual model. Thus, the following discussion is focused on the results of SEM analysis. The discussion will be divided into two main sections: direct effects and indirect effects. All sections aim to answer research question 3 and related hypotheses (see Section 4.3.3).

9.3.1 The direct relationships among Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions

Simply focusing on any one concept in particular is not the best approach. The integrative model which simultaneously analyses the relationships among the constructs is a more comprehensive and superior approach as it provides an accurate and thorough assessment of relationships in the model.

Services marketing researchers have been interested in understanding the operationalisation and conceptualisation of Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions constructs (SQ, CV, SAT, and BI), with particular attention given to identifying the relationships amongst these constructs. The findings from empirical studies and literature suggest that these relationships are not always consistent (Table 4.1 in Chapter 4).

The relationships among the constructs can be viewed as direct and indirect relationships. To understand the indirect relationship, the role of mediator is assessed. In addition, some researchers such as Choi et al. (2004) and Chen and Chen (2010) examine the causal relationships based on the multi-attribute attitudinal model. This model demonstrates causality in terms of cognitive components (SQ and CV) preceding affective response (SAT), which in turn, influences conative behaviour (BI) (Han, Kim & Kim 2011; Žabkar, Brenčič & Dmitrović 2010).

The relationships among these four constructs (SQ, CV, SAT, and BI) in this thesis were explored by SEM analysis to investigate the direct, indirect, and total effects. The result of SEM or the final structural model was presented in Chapter 8, Figure 8.5.

Based on the final structural model (Figure 8.5), direct relationships across all the four key constructs in the integrative conceptual model are significant and were supported by the path coefficients at p -value < 0.01 except the direct path coefficient between Service Quality and Behavioural Intentions. Therefore, these findings support all hypotheses except Hypothesis 4, as summarised below (Table 9.7).

Table 9.7: Summary of the results of hypotheses tested – Direct effect

The direct effects		Supported/Not supported	Standardised coefficient
H3	Service Quality has a direct effect on Customer Satisfaction.	Supported	0.29**
H4	Service Quality has a direct effect on Behavioural Intentions	Not Supported	-0.03*
H5	Customer Satisfaction has a direct effect on Behavioural Intentions.	Supported	0.31***
H6	Service Quality has a direct effect on Customer Value.	Supported	0.86***
H7	Customer Value has a direct effect on Customer Satisfaction.	Supported	0.54***
H8	Customer Value has a direct effect on Behavioural Intentions.	Supported	0.51***

Note: *** = $p < 0.001$; ** = $p < 0.05$; * = $p > 0.05$

According to Table 9.7, the strongest path coefficient was shown by the relationship between Service Quality and Customer Value (0.86). This was followed by the path between Customer Value and Customer Satisfaction (0.54), Customer Value and Behavioural Intentions (0.51), Customer Satisfaction and Behavioural Intentions (0.31), and Service Quality and Customer Satisfaction (0.29).

Regarding the respondents, foreign patients, either they use medical services by choice or due to emergency, the impact on the issue relating to Behavioural Intentions should not be in doubt. This is because the final items retained in the SEM model are applicable for both types of respondents. These items were ‘I will recommend this hospital to family and friends (Boshoff & Gray 2004)’, ‘I will recommend this hospital to other people who seeks my advice (Wu et al. 2008)’ and ‘I will definitely return to this hospital in the future if necessary (Boshoff & Grey 2004)’. These final items reflected the perception of foreign patients regardless whether their being at the hospital was either by choice or due to emergency.

9.3.1.1 A direct effect on Customer Value (CV)

Based on the direct path coefficient, the direct relationship between Service Quality and Customer Value (0.86) was the strongest relationships in the proposed integrative conceptual model in this study. This suggests that the improvement of Service Quality elements (*Expertise, Personal skills, Outcome, Reliability, and Tangibles*) can be expected to have substantial impact on foreign patients’

perceptions of Customer Value. Foreign patients' impressions of Service Quality are key factors in the improvement of their perception of Customer Value.

9.3.1.2 A direct effect on Customer Satisfaction (SAT)

The results of the final structural model suggest that both Service Quality and Customer Value have a direct effect on Customer Satisfaction. More precisely, Customer Value (CV→SAT, 0.54) has a stronger direct effect than Service Quality (SQ→SAT, 0.29) on Customer Satisfaction. This reveals that the improvement of the Customer Value elements has a stronger impact on foreign patients' Satisfaction than the improvement of Service Quality. This study highlights the difference in the findings between the Asian healthcare service studies that use local patients as their sample and this study that employs foreign patients' perceptions. While Customer Value has a stronger effect than Service Quality on Customer Satisfaction based on the perceptions of foreign patients in this study, Service Quality is found to have a stronger direct effect than Customer Value on Customer Satisfaction in the South Korean (SQ→SAT, 0.82 and CV→SAT, 0.25) (Choi et al. 2004), the Taiwanese (SQ→SAT, 0.54 and CV→SAT, 0.38) (Wu et al. 2008) and the Malaysian (SQ→SAT, 0.50 and CV→SAT, 0.37) (Omar et al. 2010) healthcare service contexts. The foreign patients in this study were mostly from Western countries, mainly Europe, whereas the local patients of the three studies mentioned earlier were native to the Asian countries where the research was conducted. It is possible that that cultural difference may have influenced this study and the three Asian studies.

However, studies conducted by researchers in the field of cross-cultural studies have cautioned generalisation of cultural influences on a regional level (see for example Chhokar et al., (2007); Hofstede, 2001; House et al., 2004; Selvarajah et al., 2012, 2013). For example, House et al (2004) have highlighted that out of a total 10 world cultural clusters five distinct clusters are European, even though the European population only make up 13 per cent of the world population. This is clearly disproportionate in terms of the number of countries or the size of populations within the global regions - this definitely calls for more detailed examination of the 'rest of the world'. Maybe because of the limited knowledge and experience of mankind, there is a certain amount of ethno-centrism (Selvarajah, 2013). Given this debate in categorizing cultural clusters across the globe, it would be futile to attempt such categorization along European versus Asian or Western versus Eastern profiling in this study. This study as mentioned

earlier is about foreign patients perception about healthcare needs and the classification is not based on cultural interpretations.

9.3.1.3 A direct effect on Behavioural Intentions (BI)

The proposed integrative model based on services literature hypothesised that Service Quality, Customer Value, and Customer Satisfaction have a direct effect on Behavioural Intentions. The findings showed that Service Quality did not have a significant direct effect on Behavioural Intentions in the Thai healthcare service context based on foreign patients' perceptions

In this thesis, Customer Value (CV→BI, 0.51) has a stronger significant direct effect than Customer Satisfaction (SAT→BI, 0.31) on Behavioural Intentions. This implies that the improvement of Service Quality has no direct effect on the improvement of Behavioural Intentions. The improvement of Behavioural Intentions is more directly reliant on the performance of Customer Value than Customer Satisfaction. This finding in this study is similar to the findings of Wu et al. (2008) on the Taiwanese healthcare service industry (CV→BI, 0.47; SAT→BI, 0.23) and Omar et al. (2010) on the Malaysian healthcare service industry; (CV→BI, 0.57; SAT→BI, 0.41).

9.3.1.4 The importance of Customer Value in the Thai private hospital context based on foreign patients' perceptions

In this study, the significant role of Customer Value in the Thai private healthcare service context is verified by the path coefficients. The relationship between Service Quality and Customer Value has the highest path coefficient (0.86) in the model. In addition, Customer Value is a better predictor of Customer Satisfaction than Service Quality. Furthermore, it is a better predictor of Behavioural Intentions than Service Quality and Customer Satisfaction.

Even though Service Quality is theoretically and empirically supported by services literatures to be an important antecedent to Customer Satisfaction and Behavioural Intentions, it is not as important as Customer Value in influencing foreign patients' Customer Satisfaction and Behavioural Intentions in this study. A strenuous effort to improve Service Quality will yield a great result to the improvement of Customer Value. Accordingly, marketing strategies focusing on the improvement

of Customer Value will produce a substantial positive impact on Customer Satisfaction and Behavioural Intentions.

The Customer Value concept in this study is expressed in terms of *Quality judgement*, *Monetary price*, *Reputation*, *Behavioural price* and *Emotional response*. Hospital marketers should understand each element clearly as Customer Value is an alternative and superior means to increase the Customer Satisfaction and Behavioural Intentions of foreign patients rather than simply focusing on enhancing the Service Quality. A number of empirical studies in the healthcare service industry context have only focused on the improvement of Service Quality as an important strategy to improve Customer Satisfaction and Behavioural Intentions. The importance of Customer Value has been disregarded (Alrubaiee & Alkaa'ida 2011; Chaniotakis & Lympelopoulos 2009; Wu 2011). The results of this study demonstrate the superiority of Customer Value over Service Quality as a significant competitive strategy to improve Customer Satisfaction and Behavioural Intentions.

9.3.1.5 Summary of the direct relationships among Service Quality (SQ), Customer Value (CV), Customer Satisfaction (SAT), Behavioural Intentions (BI) in the healthcare service industry context

The findings from this study regarding the strong and direct relationship of Service Quality on Customer Value (SQ→CV) are consistent with past studies in the Asian healthcare service industry context. The path coefficient between these two constructs in this study is 0.86, in South Korea (Choi et al. 2004) is 0.67 (unstandardised), in Taiwan (Wu, Liu & Hsu 2008) is 0.75, and in Malaysia (Omar et al. 2010) is 0.81 (Table 9.8).

With regard to the path coefficients among these four constructs (SQ, CV, SAT and BI), the relationship between Service Quality and Customer Value has the highest path coefficient not only in the proposed integrative conceptual model of this study (0.86), but also in the Taiwanese (0.75) (Wu, Liu & Hsu 2008) and Malaysian (0.81) (Omar et al. 2010) healthcare service contexts (Table 9.8).

This might be interpreted as that patients consider high Customer Value based strongly on Service Quality provided by hospital no matter who they are: local or foreign patients. To gain competitive advantage, hospital management should focus

on the improvement of Service Quality perceived by patients as it has a direct and strong effect on Customer Value perceived by patients.

Table 9.8: Summary of direct effect in comparison to three healthcare settings

Effect	Direct effect			
	Thailand (current study)	South Korea (Choi et al. 2004)	Taiwan (Wu et al. 2008)	Malaysia (Omar et al. 2010)
Direct effect on Customer Value (CV)				
SQ→CV	0.86	0.67*	0.75	0.81
Direct effect on Customer Satisfaction (SAT)				
SQ→SAT	0.29	0.77	0.54	0.50
CV→SAT	0.51	0.25	0.38	0.37
Direct effect on Behavioural Intentions (BI)				
SQ→BI	-0.03**	0.21	0.34	-0.37**
CV→BI	0.51	0.18	0.47	0.57
SAT→BI	0.31	0.56*	0.28	0.41

Note: * = unstandardised path coefficient, ** = significant at $p > 0.05$, No star = significant at $p < 0.001$

Between the two antecedents (SQ and CV) of Customer Satisfaction, Customer Value in this study shows a stronger direct effect than Service Quality. This finding is not consistent with studies such as in the South Korean (Choi et al. 2004), Taiwanese (Wu, Liu & Hsu 2008) and Malaysian (Omar et al. 2010) healthcare service industry contexts (Table 9.8). However, these studies tested the relationships based on the local patients in their countries while this study is based on foreign patients. This may imply that the perceptions of foreign patients are different from those of local patients as discussed in Section 9.3.1.2. Foreign patients possibly consider Customer Value rather than Service Quality that affects their Satisfaction.

Among the three antecedents (SQ, CV, and SAT) of Behavioural Intentions, Customer Value exerts the strongest direct effect on Behavioural Intentions in this study. This is consistent with studies such as in the Taiwanese (Wu, Liu & Hsu 2008) and Malaysian (Omar et al. 2010) healthcare service industry contexts. In contrast, Customer Satisfaction exerts the strongest direct effect on Behavioural Intentions in the South Korean (Choi et al. 2004) healthcare service industry context (Table 9.8).

Another important finding in this study is the direct relationship between Service Quality and Behavioural Intentions. While a number of studies in the healthcare service industry context suggest that the relationship between Service Quality and Behavioural Intentions is direct (Choi et al. 2004; Wang, Huang & Howng 2011;

Wu, Liu & Hsu 2008), Service Quality is not found to have a direct relationship to Behavioural Intentions in this study and in the Malaysian healthcare service (Omar et al. 2010) (Table 9.8).

The relationships among the constructs in this proposed integrative model are followed by the suggestion from services literature and the causal relationships of the multi-attribute attitudinal model (Choi et al. 2004; Sheu 2010). This study presents evidence that the chain of effect (the multi-attribute attitudinal model) in terms of cognitive (SQ and CV) components precedes affective response (SAT), which in turn ultimately lead to the conative behavioural intentions (BI) is robust and applicable (Han, Kim & Kim 2011; Žabkar, Brenčič & Dmitrović 2010).

Customer Value in the healthcare service is rarely conceptualised as a multidimensional construct and none of healthcare service research incorporated Customer Value as a multidimensional construct in the integrative model consisting of four or more constructs. This thesis expands the body of knowledge in the healthcare service industry by conceptualising Customer Value as a multidimensional construct consisting of five dimensions in a more comprehensive approach within the integrative model consisting of four constructs. Also, Customer Value based on foreign patients' perceptions is dominant in this thesis as it is the most significant antecedent to both Customer Satisfaction and Behavioural Intentions. The finding suggests that foreign patients are highly value-conscious. Therefore, hospital providers who aim to capture this market and to strengthen their competitive advantage need to recognise the importance of Customer Value and understand foreign patients' evaluations of this. Hospital management is recommended to carefully design their competitive marketing strategy by focusing on the improvement of Customer Value as a way to increase Customer Satisfaction and Behavioural Intentions, which leads to achieving competitive advantage.

9.3.2 The indirect relationships among Service Quality (SQ), Customer Value (CV), Customer Satisfaction (SAT), and Behavioural Intentions (BI)

Besides the direct effects, there is an argument regarding the indirect relationships among these four constructs (SQ, SAT, CV and BI) in healthcare service literature. Even though previous studies have researched the indirect effects, they rarely clarify these in terms of either full or partial mediation. To understand the

mediating role serves to clarify the nature of relationships among the constructs in the study. Therefore, this thesis provides a clarification of the indirect relationships among the four constructs. The nature of indirect relationships in terms of either a full or partial mediating role will be evaluated based on the testing of partial models.

9.3.2.1 The indirect effect of Service Quality (SQ) on Customer Satisfaction (SAT) through Customer Value (CV) as a mediator (SQ→(CV)→SAT)

Service Quality is commonly found to have an indirect relationship on Customer Satisfaction through Customer Value (Chen & Chen 2010; Kuo, Wu & Deng 2009; Lai & Chen 2011). In the healthcare service sector, Customer Value is found to be the mediator of Service Quality on Customer Satisfaction (Choi et al. 2004; Omar et al. 2010; Wu, Liu & Hsu 2008). This thesis found that Customer Value exerts a strong indirect effect of Service Quality on Customer Satisfaction in the proposed integrative conceptual model. While the direct path coefficient between Service Quality and Customer Satisfaction is 0.29 (significant at p-value < 0.05), Customer Value exerts as a mediator with a substantial indirect effect of 0.465, significant at p-value < 0.001. This makes the total effect of Service Quality on Customer Satisfaction at 0.755 significant at p-value < 0.001 as shown in Table 9.9.

Table 9.9: Effects of Service Quality on Customer Satisfaction, Customer Value as a mediator

Standardised Effects			
Model	SQ→SAT, CV as mediator		
	Direct	Indirect	Total
Conceptual model	0.290**	0.465***	0.755***
Partial model	0.288***	0.467***	0.755***

Note: *** = p < 0.001, ** = p < 0.05, SQ = Service Quality, SAT = Customer Satisfaction, CV = Customer Value

Testing the mediating effect on a partial model consisting of the Service Quality, Customer Value and Customer Satisfaction constructs, the findings suggest that Customer Value asserts itself as a partial mediator between Service Quality and Customer Satisfaction. The results of the partial model suggest that Service Quality has a direct effect of 0.288, an indirect effect of 0.467 (through CV), and a total effect of 0.755 (all are significant at p value < 0.001) on Customer Satisfaction when Customer Value is added in the partial model. In addition, adding Customer

Value in the partial model increases the explanatory power of the effect of Service Quality on Customer Satisfaction. This is indicated by the increase of R^2 (SAT) from 0.57 to 0.65 (see Figure 8.7 and 8.8 in Chapter 8).

These findings suggest that to increase Customer Satisfaction, hospital management should not only focus on the improvement of Service Quality but also pay attention to the contribution of Customer Value which leads to the melioration of Customer Satisfaction.

Therefore, Hypothesis 9: ‘Service Quality has an indirect effect on Customer Satisfaction through Customer Value as a mediator’ **is supported in this study.**

9.3.2.2 The indirect effect of Service Quality (SQ) on Behavioural Intentions (BI)

Service Quality is commonly found to have an indirect relationship on Behavioural Intentions in services literature (Chen 2008; Gounaris, Dimitriadis & Stathakopoulos 2010; Hu, Kandampully & Juwaheer 2009; Jen, Tu & Lu 2011; Lai, Griffin & Babin 2009; Udo, Bagchi & Kirs 2010). In the healthcare service sector, it also has an indirect relationship on Behavioural Intentions (Alrubaiee & Alkaa’ida 2011; Choi et al. 2004; Hu et al. 2010; Omar et al. 2010; Wu, Liu & Hsu 2008). Even though Service Quality in the proposed integrative conceptual model has no direct effect on Behavioural Intentions, this thesis found that there is an indirect relationship between these two constructs (SQ and BI). In other words, the direct relationship is not significant (0.026, significant at p -value > 0.05), the indirect effect is 0.675 (significant at p -value < 0.001) and the total effect is 0.649 (significant at p -value < 0.001) (Table 9.10).

Table 9.10: Effects of Service Quality on Behavioural Intentions

Standardised Effects			
Model	SQ→BI		
	Direct	Indirect	Total
Conceptual model	-0.026*	0.675***	0.649***

Note: *** = $p < 0.001$, ** = $p < 0.05$, * = $p > 0.05$, SQ = Service Quality, BI = Behavioural Intentions
 However, the nature of indirect relationships among constructs is not explicated in the proposed integrative conceptual model. It does not explain the magnitude of indirect relationships and the mediating role between constructs. Therefore, the examination of the nature of relationships is carried out by the testing of mediating effect. The results of testing are as follows.

Customer Value (CV) as a mediator of Service Quality (SQ) and Behavioural Intentions (BI) (SQ→(CV)→BI): Testing the mediating effect on a partial model consisting of Service Quality, Customer Value, and Behavioural Intentions, the findings suggest that the relationship between Service Quality and Behavioural Intentions is completely explained through Customer Value. The results of the partial model suggest that Service Quality has no significant direct effect (0.058, significant at $p\text{-value} > 0.05$), has an indirect effect of 0.590 (through Customer Value) (significant at $p\text{-value} < 0.001$), and has a total effect of 0.648 (significant at $p\text{-value} < 0.001$) on Behavioural Intentions when Customer Value is added in the partial model (Table 9.11). It is clear that Customer Value is a full mediator that fully explains the relationship between Service Quality and Behavioural Intentions, and exerts a substantial indirect influence on Behavioural Intentions.

Table 9.11: Effects of Service Quality on Behavioural Intentions, Customer Value as a mediator

Standardised Effects			
Model	SQ→BI, CV as mediator		
	Direct	Indirect	Total
Partial model	0.058*	0.590***	0.648***

Note: *** = $p < 0.001$, ** = $p < 0.05$, * = $p > 0.05$

Adding Customer Value in the partial model increases the explanatory power of the effect of Service Quality on Behavioural Intentions. This is indicated by the increase of R^2 (BI) in the partial model from 0.42 to 0.54 when Customer Value is included (see Chapter 8, Figures 8.9 and 8.10).

These findings can be interpreted that the hospital performance in relation to behavioural patterns of foreign patients does not directly rely on the improvement of Service Quality. On the other hand, the improvement of Service Quality will have an effect on Customer Value, which in turn will have an effect on Behavioural Intentions.

Therefore, Hypothesis 10.a: ‘Service Quality has an indirect effect on Behavioural Intentions through Customer Value as a mediator’ **is supported in this study**, as presented in Table 9.11.

Customer Satisfaction (SAT) as a mediator of Service Quality (SQ) and Behavioural Intentions (BI) (SQ→(SAT)→BI): The mediating effect of Customer Satisfaction is tested on a partial model consisting of Service Quality,

Customer Satisfaction, and Behavioural Intentions. The findings suggest that the relationship between Service Quality and Behavioural Intentions is partially explained through Customer Satisfaction. The results of the partial model suggest that Service Quality has a direct effect of 0.290, indirect effect of 0.358, and total effect of 0.648 (all are significant at p -value < 0.001) on Behavioural Intentions when Customer Satisfaction is included in the partial model (Table 9.12).

Table 9.12: Effects of Service Quality on Behavioural Intentions, Customer Satisfaction as a mediator

Standardised Effects			
Model	SQ→BI, SAT as mediator		
	Direct	Indirect	Total
Partial model	0.290***	0.358***	0.648***

Note: *** = $p < 0.001$, ** = $p < 0.05$, * = $p > 0.05$, SQ = Service Quality, BI = Behavioural Intentions, SAT = Customer Satisfaction

Adding Customer Satisfaction in the partial model increases the explanatory power of the effect of Service Quality on Behavioural Intentions. This is indicated by the increase of R^2 (BI) from 0.42 to 0.52 when Customer Satisfaction is included in the partial model (see Chapter 8, Figures 8.9 and 8.11).

These findings can be interpreted as improvement of hospital performance being a direct consequence of increasing the performance of Service Quality, and an indirect consequence of increasing the performance of Customer Satisfaction.

Therefore, Hypothesis 10.b: ‘Service Quality has an indirect effect on Behavioural Intentions through Customer Satisfaction as a mediator’ **is supported in this study**, as presented in Table 9.12.

9.3.2.3 The indirect effect of Customer Value (CV) on Behavioural Intentions (BI) through Customer Satisfaction (SAT) as a mediator (CV→(SAT)→BI)

Customer Value is found to have an indirect relationship on Behavioural Intentions through Customer Satisfaction in services literature (Chen & Chen 2010; Hu, Kandampully & Juwaheer 2009; Kuo, Wu & Deng 2009; Lai & Chen 2011; Sheu 2010). In the healthcare service sector, Customer Satisfaction is found to be a mediator of Customer Value on Behavioural Intentions (Choi et al. 2004; Hu et al. 2010; Omar et al. 2010; Wu, Liu & Hsu 2008). The proposed integrative conceptual model of this thesis found that Customer Satisfaction exerts the indirect effect of Customer Value on Behavioural Intentions. While the direct path coefficient between Customer Value and Behavioural Intentions is 0.515 (significant at p -value < 0.001), Customer Satisfaction exerts an indirect effect of 0.165 (significant at p -value < 0.001). This makes the total effect of Customer Value on Behavioural Intentions at 0.680 (significant at p -value < 0.001) (see Table 8.15 in Chapter 8 and Table 9.13).

Testing the mediating effect on a partial model consisting of Customer Value, Customer Satisfaction and Behavioural Intentions, the findings suggest that Customer Satisfaction is the partial mediator of Customer Value on Behavioural Intentions. The result of the partial model suggests that Customer Value has a direct effect of 0.495, indirect effect of 0.239 (through SAT), and total effect of 0.734 on Behavioural Intentions (all are significant at p -value < 0.001) (see Chapter 8, Figures 8.12 and 8.13, and Table 9.13).

Table 9.13: Effects of Customer Value on Behavioural Intentions, Customer Satisfaction as a mediator

Standardised Effects			
Model	CV→BI, SAT as mediators		
	Direct	Indirect	Total
Conceptual model	0.515***	0.165***	0.680***
Partial model	0.495***	0.239***	0.734***

Note: *** = $p < 0.001$, ** = $p < 0.05$, * = $p > 0.05$

Adding Customer Satisfaction in the partial model increases the explanation power of the effect of Customer Value on Behavioural Intentions. This is indicated by the

increase of R^2 (BI) from 0.54 to 0.57 when Customer Satisfaction is included in the model (see Chapter 8, Figure 8.12 and 8.13).

This finding suggests that Customer Value itself has a very strong direct effect on Behavioural Intentions. However, Customer Satisfaction plays a role of mediator and indirect influence on the performance of Behavioural Intentions and increases the explanatory power of the relationship between Customer Value and Behavioural Intentions. Thus, hospital managers should not only concentrate on improvement of Customer Value as Customer Satisfaction supports the enhancement of Behavioural Intentions indirectly.

Therefore, Hypothesis 11: ‘Customer Value has an indirect effect on Behavioural Intentions through Customer Satisfaction as a mediator’ **is supported in this study**, as presented in Table 9.13. Table 9.14 summaries the results of hypotheses tested for indirect effect.

Table 9.14: Summary of the results of hypotheses tested - Indirect effect

The indirect effects		S/N, F/P
H9	Service Quality has an indirect effect on Customer Satisfaction through Customer Value as a mediator ($SQ \rightarrow (CV) \rightarrow SAT$)	S, P
H10	Service Quality has an indirect effect on Behavioural Intentions	
	H10.a Through Customer Value as a mediator ($SQ \rightarrow (CV) \rightarrow BI$)	S, F
	H10.b Through Customer Satisfaction as a mediator. ($SQ \rightarrow (SAT) \rightarrow BI$)	S, P
H11	Customer Value has an indirect effect on Behavioural Intentions through Customer Satisfaction as a mediator ($CV \rightarrow (SAT) \rightarrow BI$)	S, P

Note: ***= $p < 0.001$, **= $p < 0.01$, *= $p > 0.05$, S = Supported, N = Not Supported, P = Partial mediated, F = Full mediated

9.3.2.4 Customer Value emerges as the predominant construct

Customer Value is seen as an important predictor in the service literature, and it has emerged as the predominant construct in this thesis. Table 9.15 (A) shows the three highest path coefficients related to Customer Value (H6, H7, and H8). More specifically, Customer Value played a predominant role as an outcome of Service Quality (H6) and antecedent of Customer Satisfaction (H7) and Behavioural Intentions (H8) in this integrative model.

Based on the direct relationship, Customer Value has the strongest and most significant direct effect on Behavioural Intentions (H8). However, the integrative model suggests that, Service Quality does not have a direct relationship to Behavioural Intentions (H4) (Table 9.7). Based on the indirect relationship,

Customer Value exerts a very strong and significant indirect effect of 0.47 (H9) and 0.59 (H10.a) in the partial models. Its importance emerged as a significant predictor of Customer Satisfaction and Behavioural Intentions as confirmed by having the highest total effect of 0.73 (H11) on Behavioural Intentions as shown in Table 9.15.

Table 9.15: Path coefficients of the direct and indirect effects

A) The direct effects of the structural model		Path Coefficients		
H6	SQ-->CV	0.86***		
H7	CV-->SAT	0.54***		
H8	CV-->BI	0.51***		
H5	SAT-->BI	0.31***		
H3	SQ-->SAT	0.29**		
H4	SQ-->BI	-0.03*		
B) The indirect effects of partial models		Path Coefficients		
		Direct	Indirect	Total
H9	SQ-->SAT, CV as mediator	0.29***	0.47***	0.76***
H10	SQ-->BI			
	H10.a - CV as mediator	0.06*	0.59***	0.65***
	H10.b - SAT as mediator	0.29***	0.36***	0.65***
H11	CV-->BI, SAT as mediator	0.49***	0.24***	0.73***

Note: ***=p<0.001, **=p<0.01, *=p>0.05

Alongside the direct, indirect and total effects, the coefficient of determination R^2 can be used to assess the predictability of the exogenous constructs (the independent variables) in the model (Hair et al. 2010). Hair et al. (2010) suggest that the value of coefficient of determination or R^2 represents the percentage of total variances of endogenous construct (the last dependent variable in the model) explained by the exogenous constructs (the independent variables). The higher value of R^2 indicates the greater explanatory power and the better prediction of the endogenous construct.

The findings of this thesis showed that Customer Value (R^2 of BI = 0.54) was a better predictor than Service Quality (R^2 of BI = 0.42) of Behavioural Intentions (Table 9.16).

Table 9.16: R² of Behavioural Intentions

Constructs	R ²	Reference
SQ→BI*	0.42	Figure 7.22
CV→BI*	0.54	Figure 7.26
CV→SAT→BI*	0.57	Figure 8.5
SQ→CV→SAT→BI**	0.57	Figure 7.21
SQ→CV**	0.74	Figure 9.1

Note: * = the partial model, ** = the structural model

Furthermore, the R² value 0.57 of Behavioural Intentions in the partial model (CV→SAT→BI) was the same as in the structural model (SQ→CV→SAT→BI). This indicates that Service Quality does not give extra explanatory power to Behavioural Intentions in this thesis. However, it is considered as a very important antecedent or predictor of Customer Value as Service Quality has a high 74 per cent variance explained of Customer Value. Therefore, the importance of Service Quality should not be disregarded.

9.4 Chapter summary

This thesis focuses on three research questions. Research question 1 regards the dimensionality of Service Quality. Research question 2 regards the dimensionality of Customer Value. Research question 3 regards the relationships among the four constructs (SQ, CV, SAT and BI). A series of hypotheses were proposed in relation to the research questions. A series of statistical analyses including the scale refinement and SEM were undertaken to test the proposed hypotheses. A primary concern in this chapter is to discuss the outcomes of hypotheses testing in order to answer the research questions and to reveal the findings from the results of the analysis process. The answer to research question 1 is Service Quality in this study consists of five distinct and significant dimensions: *Personal skills, Outcome, Tangibles, Reliability, and Expertise*. The answer to research question 2 is that Customer Value in this study consists of five distinct and significant dimensions: *Quality judgement, Monetary price, Reputation, Behavioural price and Emotional response*.

The scale refinement analysis processes supported the factorability, interpretability, reliability and validity of the five factors of both the Service Quality and Customer Value constructs. Results of the measurement model analyses including the testing of one-factor congeneric models, first-order measurement model, and second-order

measurement model are deemed satisfactory for both constructs. Therefore, the five factors of Service Quality and Customer Value as stated above are identified as valid and reliable scales in the Thai private healthcare service industry context based on the foreign patients' perceptions.

Research question 3 is about the relationships among Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions in Thai private hospitals based on the perceptions of the foreign patients. Regarding the direct relationships, this thesis found that except for the direct path coefficient between Service Quality and Behavioural Intentions (hypothesis 4, $SQ \rightarrow BI$), the other direct path coefficients were positive and significant.

Regarding the indirect relationships, Customer Value and Customer Satisfaction act as mediators exhibit a partial mediation on the partial models. However, there is one exception, that is, in the partial model (consisting of Service Quality, Customer Value, and Behavioural Intention) Customer Value is a full mediator of Service Quality on Behavioural Intentions.

The results of the analysis have confirmed the causal relationships of the multi-attitudinal model in terms of cognitive (SQ and CV) components precede affective response (SAT), which in turn leads to conative (BI) behaviour. In this thesis, Service Quality and Customer Value are operationalised as the cognitive construct that are the antecedents of the affective construct or Customer Satisfaction. This is followed by Behavioural Intentions operationalised as a conative construct.

The results of this thesis also found that Customer Value is actually the most significant predictor of Behavioural Intentions identified by the value of coefficient of determination (R^2) as shown in Table 9.16.

This chapter provides information for hospital marketers, policy makers, scholars, and researchers. Especially for healthcare service marketers who aim to increase market share of foreign patients', the findings provide an insight into the direct and indirect relationships among factors related to the improvement of competitive advantage: Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions.

The results from analysis in this thesis demonstrate a clear picture to hospital management in order to design better marketing strategies for achieving competitive advantage.

CHAPTER 10: CONCLUSIONS, IMPLICATIONS, AND LIMITATIONS

This chapter is a summary of this thesis. It starts with the summary of each chapter, followed by the main findings, the contributions made by the study, the implications for healthcare managements and practitioners, the limitations of the research, and suggestions for future research directions.

There are six sections in this chapter. Section 10.1 is an overview of Chapters 1 to 9, followed by conclusions of the overall results in Section 10.2. Section 10.3 presents the contributions to theory and practice made by this research. Section 10.4 presents the limitations of this research and suggestions for future research. Section 10.5 concludes this chapter.

10.1 The research process

Chapter 1 presented the overview of this thesis and the rationale for the study. The importance of foreign patients was addressed by the increasing number of foreign patients reported around the world, especially in countries that emphasise the importance of the medical tourism industry to their economic development (Yeoh, Othman & Ahmad 2013; Yu & Ko 2012). Even though foreign patients are an important market segment of hospital industry, the range of studies regarding the perception of foreign patients is very limited. This highlights a critical gap in the literature. The perceptions of foreign patients towards the factors enhancing competitiveness such as Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions are important to hospital marketers in adapting their marketing strategies to gain competitive advantage. This chapter summarised the research process and structure of this thesis.

Chapter 2 critically analysed the literature on the Service Quality construct in the services industry including the SERVQUAL and SERVPERF measures, the dimensionality of the construct, the measurement, and Service Quality in the healthcare service sector. It reviewed the nature and characteristics of services including intangibility, heterogeneity, inseparability and perishability (referred to as IHIP). These IHIP characteristics distinguish services from products and also Service Quality from Product Quality. By improving Service Quality, a company can differentiate themselves from competitors (Ladhari 2009). Service Quality is

accepted widely in services literature as one of the most important factors in a company's success and in increasing its competitive advantage (Gounaris, Dimitriadis & Stathakopoulos 2010).

Chapter 3 provided a critical evaluation of literature on Customer Value, Customer Satisfaction and Behavioural Intentions aspects. The concept, the importance, the dimensionality, the measurement, and aspects related to the hospital services industry of these constructs were discussed. The evolution of the relationships between Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions was reviewed.

Chapter 4 was the extension of the literature review provided in Chapters 2 and 3. The relationships amongst Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions were discussed based on studies that applied these four constructs in their models. Five studies were discussed from general service industries and three from the healthcare service sectors. These reviews led to the development of the integrative conceptual model of this study. The research questions and hypotheses were presented in relation to the model based on an extensive review of services literature.

Chapter 5 described the research method. The chapter concentrated on the research paradigm, research design and research approach. The research approach included construct development and operationalisation, questionnaire design and measurement scaling, sampling design and procedures. The ethical considerations were discussed.

Chapter 6 discussed the data analysis strategy. The chapter commenced with preparing data for multivariate analysis such as missing data analysis and data screening for assumptions of SEM. The scale refinement and structural equation modelling were clearly explained.

Chapter 7 discussed the preliminary analysis which covered the demographic analysis and the scale refinement. The quantitative data collected from paper-based survey questionnaires was used to analyse and provide the fundamental underlying characteristics of the sample. The analysis commenced with the data screening process, the assessment of normality of data and outliers. This served as an essential preparation of the data before proceeding to an examination of the proposed integrative conceptual model of this study. The scale refinement using the Maximum likelihood (ML) extraction method was implemented to find an

underlying factor pattern and to refine the structure for Service Quality and Customer Value in particular. The factorability, interpretability, reliability and validity of the factors were tested before proceeding to structural equation modelling (SEM).

Chapter 8 examined the proposed integrative conceptual model using SEM analysis technique. The measures resulting from the scale refinement stage were used as input for the SEM analysis. This chapter commenced with the measurement model confirmation. By a series of CFA analyses, one-factor congeneric models were employed to test the unidimensionality of each construct. The multidimensional constructs of Service Quality and Customer Value were assessed for convergent and discriminant validity, reliability, and the goodness-of-fit by the first-order and second-order measurement models before being incorporated into the structural model. The relationships between the constructs, Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions were investigated by the structural model.

Chapter 9 highlighted the findings derived from Chapters 7 and 8. The discussion was sequenced based on the research questions and their related hypotheses. The detailed discussion included the interpretation of relationships in the model, specific to the Thai healthcare service sector, based on the foreign patients' perceptions in particular. The findings suggested that Service Quality consisted of five dimensions, namely *Personal skills*, *Outcome*, *Tangibles*, *Reliability*, and *Expertise*, demonstrating that SERVQUAL or RATER was not a generic scale. Customer Value consisted of five dimensions: *Quality judgement*, *Monetary price*, *Reputation*, *Behavioural price* and *Emotional response*. All the direct relationships were supported as hypothesised, except the direct relationship between Service Quality and Behavioural Intentions. All the indirect relationships were supported as hypothesised.

Chapter 10 drew conclusions about the overall results of the study, discussing the contributions to the body of existing knowledge and marketing theories, suggesting the implications for hospital marketers, addressing the limitations of the study, and suggesting future research directions, in the healthcare service industry context in particular.

10.2 Overview of results

There were three main objectives of this thesis. The first and the second objectives were to assess the dimensions underpinning the Service Quality and Customer Value constructs. The third objective was to investigate the relationships among the four constructs in the proposed integrative model consisting of Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions. The following sections draw the conclusions and results of the research questions and their related hypotheses.

To answer research question 1, hypothesis 1 (H1) along with seven sub-hypotheses (H1.a to H1.g) were proposed. The results of hypotheses testing for research question 1 are presented in Chapter 9, Table 9.4. Based on the results of the scale refinement and measurement model confirmation analyses, *Responsiveness*, *Assurance*, and *Empathy* dimensions were not supported because these three dimensions loaded onto the same factor and this factor was therefore labelled as *Personal skills*. In other words, the results of this thesis did not support the generic scales of SERVQUAL. The findings suggested that *Expertise* and *Personal skills* were the two most important dimensions whereas *Tangibles* was the least important dimension of Service Quality. Based on the findings it can be concluded that *Personal skills*, *Tangibles*, *Reliability*, *Expertise*, and *Outcome* are the determinants of the Service Quality construct in Thai private hospitals based on the perceptions of foreign patients.

To answer research question 2, hypothesis 2 (H2) along with five sub-hypotheses (H2.a to H2.f) were proposed. The results of hypotheses testing are presented in Chapter 9, Table 9.6. Based on the results of the scale refinement and measurement model confirmation analyses, the hypothesis with all sub-hypotheses was supported. *Quality judgement* was the most important dimension of Customer Value. Based on the findings it can be concluded that *Reputation*, *Behavioural price*, *Quality judgement*, *Monetary price* and *Emotional* response are the determinants of the Customer Value construct in Thai private hospitals based on the perceptions of foreign patients.

To answer research question 3, there are six hypotheses related to the direct relationships and three hypotheses (along with their respective sub-hypotheses) related to the indirect relationships among the constructs. The findings on the relationships among the four key constructs in the proposed integrative conceptual

model are presented in Chapter 8, Figure 8.5. The conclusions were based on the analysis of the direct effects and the indirect effects.

The results of hypothesis testing were grouped into two types of effects, direct effect as shown in Table 9.7 and indirect effect as shown in Table 9.14.

Direct effect: Based on the analysis using the SEM technique, the results denoted that all hypotheses (except hypothesis 4) related to the direct and indirect relationships were supported in this study. Hypothesis 4 regarding the direct relationship between Service Quality and Behavioural Intentions was not supported as shown in Chapter 9, Table 9.7. Even though this direct relationship was validated and supported in many service industries such as B2B (Spreng, Hui Shi & Page 2009), retail business (Pollack 2009), e-business (Udo, Bagchi & Kirs 2010), education (Sheu 2010), mobile and telecommunication (Shukla 2010), transportation (Lai & Chen 2011) and also in healthcare service sectors such as South Korea (Choi et al. 2004) and Taiwan (Wu, Liu & Hsu 2008), it was not found in this study.

Indirect effect: All the hypotheses and their respective sub-hypotheses of indirect relationships were supported. This thesis also provided an insight into the nature of indirect relationships by assessing the mediating effect of each construct such as Customer Value and Customer Satisfaction. The results of mediating effect analyses indicated that Customer Value was a full mediator of Service Quality on Behavioural Intentions (H10.a) whereas the other indirect relationships were affected by partial mediators of either Customer Value (H9) or Customer Satisfaction (H10.b, H11). These results supported the inclusion of Customer Value and Customer Satisfaction in explaining Behavioural Intentions. Service Quality did not have a direct effect on Behavioural Intentions but by the intervention of Customer Value as a mediator, the importance of Service Quality to Behavioural Intentions was fully explained through Customer Value. This finding was supported by the strong direct relationship between Service Quality and Customer Value that had the highest path coefficient in the structural model in this study (see Chapter 9, Table 9.14).

10.3 The contributions made by this research

This research makes a number of contributions to services research, especially in the healthcare service sector, as discussed below.

10.3.1 A comprehensive model adopted from a combination of service contexts and extensive empirical studies

The importance of Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions to the enhancement of competitive advantage has been discussed in Section 1.2.3. Despite the many studies with these constructs (Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions) included, there is limited research that investigates relationships that have more than three constructs (see Section 1.2.5). In this thesis, we have all four constructs (Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions) and the relationships are investigated simultaneously. The novelty of the study is to improve the understanding the relationships among and between constructs holistically by using well-established and validated measures from the service literature, and testing these relationships in the healthcare service industry context. The comprehensiveness of the model, adopted from these extensive studies, is a theoretical contribution to studies in the healthcare industry.

10.3.2 The multidimensional constructs of Service Quality and Customer Value in the integrative model

Despite Service Quality is commonly acknowledged as a multidimensional construct (see Section 2.7), a number of researchers still conceptualise it as a unidimensional construct in the integrative model and structural equation modelling such as in the studies of hotel industry (Hu, Kandampully & Juwaheer 2009), mobile industry (Shukla 2010) and healthcare industry (Omar, Abu, Sapuan, Aziz & Nazri 2010).

Although, the dimensions of SERVQUAL is a well-established and widely used measure of Service Quality in the service research, it has not yet be integrated in a full model consisting of four or more constructs in the healthcare service research. More precisely, this thesis is the only research in service industry that utilises the

five dimensions of SERVQUAL as a measure of Service Quality in a complex model consisting of Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions. The purpose of including the SERVQUAL dimensions is that these dimensions are well-established and validated in service research generally including in the healthcare service context.

In addition, in the healthcare service context, it has been argued that patients are not capable of evaluating the technical quality because they lack medical knowledge (Laohasirichaikul, Chaipoo Pirutana & Combs 2011). This argument highlights a gap in the healthcare service literature. This research fills this gap and articulates that patients are able to evaluate and differentiate the technical quality from other qualities. Hence, besides the five dimensions of SERVQUAL, another two technical dimensions were added to fill the gap where SERVQUAL lacks technical dimension.

The improvement in the measuring of Service Quality provides a broader understanding holistically of Service Quality in the general service research and the healthcare service industry in particular. Therefore, an improvement is made in the measuring of Service Quality in the healthcare service context and thus providing theoretical contribution to the study.

Customer Value is viewed as an important predictor of consumer behaviour (Kuo, Wu & Deng 2009; Omar et al. 2010). Likewise, there is not many research that has included Customer Value in the integrative model. More specifically, in the integrative model consisting of four or more construct, Customer Value is commonly conceptualised as a unidimensional construct. For example, in the airline industry (Chen 2008), hotel industry (Hu et al. 2009), telecommunication industry (Kuo et al. 2009), public transport industry (Lai & Chen 2011) and healthcare service industry (Choi et al. 2004; Wu et al. 2008; Omar et al. 2010) have all conceptualised Customer Value as unidimensional. Also none of the research in the healthcare service context have conceptualised it as a multidimensional construct. This thesis is the only study in the healthcare service context that conceptualises Customer Value as a five-dimensional construct and has integrated the constructs through structural equation modelling. These five dimensions were, however, used and validated in the studies of cruise passengers (Petrick 2002) and heritage tourists (Chen and Chen 2010), but have not yet been validated in the healthcare services research. The theoretical contribution made by this research is in the conceptualisation of Customer Value as a multidimensional

construct in the integrative model consisting of four constructs (SQ, CV, SAT and BI) and test it in the healthcare service context.

In conclusion, in this thesis, Service Quality and Customer Value were conceptualised as multidimensional constructs and integrated them in a complex model. By this mean, it critically increases the explanatory power in relation to the complex nature of Service Quality and Customer Value constructs in particular. More precisely, they were conceptualised as a second-order construct and were tested for factorability, interpretability, reliability, and validity before being incorporated into a structural model. By conceptualising these two constructs as multidimensional constructs, this thesis provided broad explanations regarding the significant determinants influencing Service Quality and Customer Value in a holistic manner within an integrative conceptual model proposed by this study; these are significant contributions to theory.

10.3.3 The emergence of Customer Value as a predominant construct

Despite the fact that Customer Value is an important predictor of Behavioural Intentions, previous research rarely discussed the magnitude of its importance. Customer Value is found to be the most predominant construct in this thesis for various reasons.

Firstly, it has the strongest path coefficient in the SEM model. Secondly, it has a substantive impact on Service Quality. Thirdly, between the two antecedents of Customer Satisfaction, Customer Value is shown to be a better predictor than Service Quality. Fourthly, it is a significant mediator of the relationship between Service Quality and Customer Satisfaction. In the SEM model, while the direct effect of Service Quality on Customer Satisfaction is indicated by path coefficient of 0.29, Customer Value exerts a strong indirect effect of 0.47 and contributes to the total effect of 0.76 in the SEM model (See Table 8.15 in Chapter 8).

Two partial models are also used to test the relationship between Service Quality and Behavioural Intention. One is that Customer Value is excluded from the SEM model (the model consisted of Service Quality, Customer Satisfaction and Behavioural Intentions). Another is that Customer Satisfaction is excluded from the SEM model (the model consisted of Service Quality, Customer Value and Behavioural Intentions). The purpose of testing these two partial models is to test

the mediating effects of Customer Value and Customer Satisfaction on Behavioural intentions. The results of these partial models show that Customer Value (0.59) exerted a stronger mediating effect on Behavioural intentions than Customer Satisfaction (0.36) (see Table 9.15 in Chapter 9). Moreover, Customer Value is found to be a full mediator of the relationship between Service Quality and Behavioural Intentions; the relationship between Service Quality and Behavioural Intentions in this partial model is completely explained through Customer Value.

More importantly, the value of coefficient of determination (R^2) indicates that the inclusion of Customer Value yields a high explanation power to Behavioural Intentions, similar to where Service Quality was excluded from the model (see Section 9.3.2.4).

The importance of Customer Value emerging as a crucial determinant of Behavioural Intentions in this thesis is a significant contribution to the theory of service industry literature.

10.3.4 The causal relationships supported by the multi-attitudinal model

The causal relationships among constructs based on the multi-attitudinal model have been discussed in Chapter 3 (Section 3.3.3). This model suggests that cognitive components (SQ and CV) precede affective response (SAT), which in turn leads to conative behaviour (BI). This thesis hypothesised the relationships between the constructs based on the literature and the causal relationships of the multi-attitudinal model.

The findings of this thesis confirm these relationships. The multi-attitudinal model where the cognitive constructs (SQ and CV) leading to affective construct (SAT) and in turn driving the conative construct (BI) exhibited in services literature, is robust in this thesis. Therefore, the validation of the relationships based on the multi-attitudinal model is a contribution to the theory of service industry literature.

10.3.5 Contribution and implications for practice

The improvement in the measures used as multidimensional constructs (see Section 10.3.2) allows for gaining insight into the determinants of Service Quality and Customer Value perceived by foreign patients. The comprehensive relationships among and between these constructs (SQ, CV, SAT and BI) found in this thesis

provide a broader understanding of the healthcare service industry needs as perceived by foreign patients. The understanding of these relationships is important for the hospital industry especially in the developing countries as recommended by Wu et al. (2008) and in Asian countries as recommended by Choi et al. (2004). The significant contribution and implications for practice are presented in the following sections.

Firstly, there is a strong direct effect of Service Quality on Customer Value. This indicates that to increase the value to the patients, hospital managements and healthcare service researchers are recommended to consider the aspects of Service Quality as perceived by foreign patients. The aspects of Service Quality perceived by these patients are Expertise, Personal skills, Outcome, Reliability and Tangibles.

‘Expertise’ is the most significant determinant of Service Quality perceived by patients in this research and also in the study by Dagger and Sweeney (2007). This suggests that hospital providers should focus on emphasising the experience, skill and knowledge of medical professionals such as doctors and nurses in order to improve perception of Service Quality.

‘Personal skills’ is the second most important determinant. This finding suggests that it is worth investing in interpersonal skills. This will enable hospital staff to provide better medical services to patients and directly improve the quality of service in the hospital.

‘Outcome’ is the results of medical treatment or care and is a core product of the hospital. The outcome of the medical treatment is not immediate and even though patients may find it hard to tell immediately about the effectiveness of the treatment, patients have a positive perception of immediate and possible future ‘Outcomes’ from the medical procedure. Therefore, ‘Outcome’ comes as the third important determinant of Service Quality in this thesis. Hospital managements are recommended to build the impression of Outcome as a mean to increase patient’s perception of Service Quality. Marketing Outcome communication (e.g. a testimony of expected outcomes on the hospital website) and the centres brochures (e.g. Heart Center, Orthopaedic Center, Men Center) can increase the interest of future patients.

‘Reliability’ or the ability of hospital to perform the promised service is the second least important of Service Quality. It is recommended that hospital providers keep

their promise to patients. For example, if patient makes appointment at 10 am, when patient shows up, they expect to see the doctor at the time they booked. This will help to increase the patient's perception of Service Quality.

'Tangibles' claimed to be the most important aspect of developing a hospital's reputation (Wongkit & McKercher 2013), is the least important determinant of Service Quality in this study. However, Tangibles has been indicated in the other healthcare service empirical studies as an important determinant of Service Quality, especially in the aspects of 'modern looking equipment' and 'facilities visually appealing'. Therefore, Tangibles is a valuable determinant that hospital management should not ignore.

Secondly, it has been argued that patients are not able to evaluate the technical quality because they lack medical knowledge. The results of this thesis demonstrate that patients are capable of differentiate technical quality from functional quality. This highlights to the hospital management that Expertise and Outcome are considered by patients as technical quality in the evaluation of Service Quality.

Thirdly, Customer Value has a strong influence on Customer Satisfaction and Behavioural Intentions. This indicates that to increase Customer Satisfaction and Behavioural Intentions, hospital managements are recommended to consider the determinants of Customer Value. The determinants of Customer Value perceived by patients are Quality judgement, Behavioural price, Reputation, Monetary price, and Emotional response.

In brief, patients perceive Customer Value by judging the overall excellence or superiority of the hospital, their convenience at acquiring medical service (e.g. the location of hospital), the image and status of hospital, the price of medical care, and the emotional experience with the hospital. It would be of great benefit to hospital managers if they understand these components of Customer Value and adjust their marketing strategies to deliver these values to the patients.

Fourthly, Service Quality does not have a direct effect on Behavioural Intentions, which reveals that the delivery of high Service Quality cannot guarantee a direct positive effect on patients' behavioural patterns. In other words, regardless of other factors (Customer Value and Customer Satisfaction), high Service Quality does not make patients return to the hospital when they need medical attention. High Service Quality does not make the patients recommend the hospital to friends and

family. However, Service Quality is the key factor contributing to Customer Value and Customer Satisfaction, which in turn affect Behavioural Intentions. Both Customer Value and Customer Satisfaction are found to be significant mediators (between the relationship of Service Quality and Behavioural Intentions) and exert indirect influence on Behavioural Intentions. Therefore, the importance of Service Quality should not be neglected. To improve the competitive advantage as the utmost aim of this thesis, hospital managements are recommended to consider these concepts in a holistic view in designing the marketing strategies in order to gain the market position in the competitiveness environment.

Lastly, one of the significant findings is that foreign patients are a value-conscious oriented customer group. Organisations and industries involved with foreign customers are recommended to be aware of the values perceived by foreign customers and develop suitable marketing strategies specifically for this market segment to achieve competitive advantage in an increasingly global market.

10.3.6 The importance of foreign patients to the study

Generally, the previous studies in the healthcare service context investigated the relationships between these constructs (SQ, CV, SAT and BI) based on the perceptions of patients in their home country. This thesis proposed an integrative model which was validated by the data collected from foreign patients at one of the leading private hospitals in Thailand.

Though this study is only about the perceptions of foreign patients with regard to service quality, it does make comparison to other local studies. This comparison provides a better understanding of the service quality needs of both local and foreign patients. This type of understanding can be extended to other service industries where there are foreign and local client groups. The findings in this thesis therefore could be adapted and applied in other service industries as well where there are foreign and local clients.

Furthermore, previous research in healthcare service contexts collected data from the patients in their own countries. The rigour of their models was limited by cultural bias. Choi et al. (2004, p. 919) suggested that “a rigorous test of equivalence in measures and/or in structural relationships is only possible when the study involves multinational samples of healthcare consumers”. The robustness of this study is based on the 330 usable responses collected from a multinational sample of healthcare consumers.

10.4 Limitations of this research and recommendations for future research

Although this research is based on sound literature and methodological foundations, several limitations need to be acknowledged. These are in four main areas: (1) generalisability, (2) conceptualising Service Quality as a higher-order construct, (3) English proficiency of respondents and (4) the influences of cross-cultural.

10.4.1 Generalisability

The first area of limitations of this research relates to its generalisability of the findings in several aspects. The first aspect results from the use of EFA and CFA in the same data set. Even though this approach has benefit as discussed in Section 6.6, this benefit is traded off with drawbacks such as it limits the generalizability of the findings and the results are less informative. Because of the final SEM model of this thesis employed EFA and CFA from the same data set, the final SEM model is in an optimal condition to be replicated. Future studies are highly recommended to replicate the model. Therefore, the generalizability can be increased.

The second aspect relates to the geographical area of the research. Even though this research was conducted with the empirical data collected from a multinational sample of healthcare consumers, all the respondents were drawn from only one private hospital in Thailand. Despite the collection of data being from one single hospital where effects of a single-source bias could be found, it has benefit in terms of the elimination of uncontrolled variation such as the differences in hospital characteristics. To ensure generalisability, it is recommended that this controlled study be replicated in a wider geographical setting, either by increasing the number of hospitals in the same country or by increasing the number of countries.

The third aspect relates to the cohorts of respondents. In this research, the patients who were not in a good health condition (e.g. in-patients in the Intensive Care Unit) were excluded from the study. This could affect the generalisability of the results as all patient categories were not included. Yet, this is actually a reasonable limitation. Patients with irreversible health conditions may perceive healthcare differently from those who fully recover after the treatment. Furthermore, due to surveying patients who have the potential to gain good health, the actual results

demonstrated a significant positive departure from normality. The non-normality of data was addressed by employing the appropriate analytical techniques providing significant results. The robustness of the findings can be increased by replicating the model with different cohorts of respondents. These can be categorised as in-patients, out-patients, novice patients, longer-term patients, patients with irreversible health conditions, and patients fully recovered. These cohorts of respondents might have different perceptions on the quality of services and other factors. Future studies would benefit from an in-depth understanding of each type of cohort. Hospital management would also benefit by being able to adjust their marketing strategy to suit market needs.

The fourth aspect relates to stakeholders. The foreign patients are not the only healthcare consumers of the hospital industry. There are other stakeholders such as local patients, health-insurance companies, and medical tourism agencies. This model was validated by only one type of stakeholder (foreign patients); therefore this is a limitation of the generalisability of the results. Even though health insurance companies and medical tourism agencies are not direct healthcare consumers, they are important. Their perceptions of Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions may differ from patients. Health insurance companies may be concerned more with the quality and the value of services, while medical tourism agencies may focus more on quality and satisfaction of their clients. The model validated by these stakeholders will increase the generalisability of the findings and provide better information to hospital providers in adjusting the marketing strategies to achieve competitive advantage.

The last aspect relates to the industry context. This proposed model is based on the empirical studies from general services industry literature. The relationships among the concepts such as Service Quality, Customer Value, Customer Satisfaction and Behavioural Intentions concepts were examined in the general services industry contexts as well as healthcare service contexts. The findings from literature suggested that the relationships were not consistent across the various empirical studies. Therefore, it is recommended for future research to test the model used in this study in other services industry contexts. Enhancing the robustness and generalisability of the model can be increased and contribute to the body of existing knowledge.

10.4.2 Conceptualising Service Quality as a higher-order construct

Conceptualising the Service Quality construct as a higher-order construct limits the explanatory power of the relationships between its dimensions and other constructs such as Customer Value, Customer Satisfaction and Behavioural Intentions. It might be possible that there are direct relationships among each of the Service Quality dimension, either within its dimensions or between the other constructs. Each of the Service Quality dimension could be conceptualised as an independent construct rather than a dimension. This allows examining the relationships among the dimensions (that were treated as independent constructs) and other constructs directly.

For example, in the study by Alrubaiee and Alkaa'ida (2011), each dimension of Service Quality was conceptualised as an independent construct and tested for direct relationships on Patient Satisfaction and Patient Trust. The findings showed that *Empathy* (conceptualised as an independent construct) had a very strong direct effect on Patient Satisfaction (0.84) whereas *Tangibles* (conceptualised as an independent construct) had a substantial direct effect on Patient Trust (0.57). Similarly, the results of Chaniotakis and Lympelopoulou (2009)'s study revealed that *Responsiveness*, *Tangibles* and *Assurance* (conceptualised as independent constructs) had direct effects on Patient Satisfaction whereas *Empathy* (conceptualised as independent construct) was the only one that had direct effect on word-of-mouth communication. Furthermore, *Empathy* (conceptualised as an independent construct) had a direct relationship to *Tangibles* and *Assurance* (as independent constructs).

Therefore, it might be a benefit for researchers and scholars if future studies conceptualise *Personal skill*, *Outcome*, *Tangibles*, *Reliability* and *Expertise* as independent constructs and examine the direct relationships among and between other constructs such as Customer Value, Customer Satisfaction and Behavioural Intentions. Consequently, the understanding of the relationships among them can be improved. By these means, it enhances the explanatory power of Service Quality regarding their relationships (either direct or indirect) among other concepts.

10.4.3 The proficiency in English of foreign patients

The proficiency in the English of foreign patients is a limitation of this study. The misinterpretation might have distorted the outcomes of the research. Missing data was an indicative of language issues. 11 out of 341 responses with missing values more than 30 per cent in this study were removed from further analysis at the first stage. This accounts for 3.22 per cent which is a relative low proportion of responses, suggesting that the bias was not substantial. However, this potential bias could be further eliminated by having a questionnaire distributed in other languages when testing the model with foreign patients.

10.4.4 The influences of cross-cultural differences

The limitation concerns the influences of cross-cultural issues. Even though the sample of this thesis was mostly Western patients, they were from multi-countries and cultural background. As stated in Section 1.2.2 that culture might or might not have an effect on consumer behaviour, therefore, it is recommended that the issues of cultural differences be added to study cultural effects on the responses to service quality by the foreign patients. However, as stated earlier, this would increase the complexity of the integrative model.

10.5 Chapter summary

This chapter presented a summary of this thesis. It included a summary of the research processes and chapters. The overall results of the model and findings were presented. The contributions made by this research were discussed. The implications for theory and practices were addressed. The limitations of this research were acknowledged and recommendations for future research were proposed.

This thesis investigated foreign patients' perceptions of Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions in the Thai private healthcare sector, one of the best medical tourism hubs in Asia. In doing so, an extensive review of the services literatures suggested the four key constructs: Service Quality, Customer Value, Customer Satisfaction, and Behavioural Intentions, as concepts related to the improvement of competitive advantage. Therefore, these four concepts were incorporated into the proposed integrative conceptual model of this study. To investigate the concepts related to the

enhancement of competitive advantage, three research questions in relation to the dimensionality of Service Quality (research question 1), the dimensionality of Customer Value (research question 2), and the direct and indirect relationships (research question 3) in the integrative conceptual model were raised.

The SEM analysis technique (the software package SPSS version 20 and AMOS version 20) was employed to test the hypotheses by assessing the measurement models and the structural model. The findings not only provided answers to the research questions, but also supported the emergence of Customer Value as a significant source of competitive advantage in the healthcare service sector. Customer Value is a prominent construct in the model. It is the strongest antecedent to Customer Satisfaction and Behavioural Intentions and the strongest consequence of Service Quality. The role played by Service Quality seems to be much less important in comparison to Customer Value.

One of the major outcomes of this thesis is the comprehensiveness of the model adopted from extensive empirical service industry studies that is tested with foreign patients in hospital context. This strategy provides a better understanding of the relationships between constructs in a holistic manner. This is a novelty to the Thai hospital industry and a contribution to theory in service industry literature.

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APPENDICES

Appendix 1: The questionnaire instrument

Appendix 1.1: Information statement - hospital

Faculty of Business and Enterprise

Swinburne University of Technology

Project Title: Medical tourism in Thailand: Overseas patients' perspective of Thailand's private healthcare

Date: 2 April, 2012

Dear Hospital Director

Attachment: Questionnaire

I am a Doctoral candidate at the Swinburne University of Technology in Melbourne, Australia. As part of my thesis requirement, I am conducting a research project entitled: Medical tourism in Thailand: Overseas patients' perspective of Thailand's private healthcare. Essentially, this research will seek the perception of overseas patients' with regard to the relationship between service quality, value, satisfaction, and behaviour intentions. By examining these relationships, it is expected that the finding of this research will increase the understanding of how service attributes in Thailand's private hospitals will affect the overseas patients' perceived value, satisfaction, and behaviour intentions. Understanding overseas patients' perception on quality and value may also allow private hospitals in Thailand to allocate the necessary resources and program designs to increase satisfaction of overseas patients.

The purpose of this letter is to ask for your permission to conduct this research at your hospital premises. The research involves the distribution of a questionnaire-based survey to the overseas patients at the hospital. The survey will involve both overseas inpatient and outpatient respondents as follow:

- 1) Overseas inpatients scheduled for discharge will be approached in their room. Prior to me approaching the patient, an authorised medical professional will provide a 'Health Readiness to Participate in the Research Certification' (attached) to certify that the patient is fit to participate in the proposed research.
- 2) Overseas outpatients who, after being examined by physicians, and are waiting for medication will be screened for their health readiness to participate in the research. An authorised medical professional will provide the Health Readiness to Participate In the Research Certification.

After I receive the certificate, the assigned nurse or medical professional will seek permission for the researcher to approach them. Then, I will approach the patient either in their room (inpatients), or any other hospital authorised place to conduct the research.

It should take only about 20 to 30 mins of the respondent's time to complete the survey. Respondents are encouraged to take their time and complete the survey at

their convenience. The completed questionnaire will be placed in a safety locked box provided at the admission/discharge office.

To assist in the research, I would like to request

- 1) the hospital to assign a nurse or a medical professional as a contact person to cooperate with me during the period of data collection and to approach the patients on my behalf to seek for permission for me to approach the patients.
- 2) the hospital to assign an authorised medical professional to provide the Health Readiness to Participate in the Research Certification to certify that the patient is fit to participate in the proposed research.
- 3) that a safety locked box be permitted to be placed at the admission/discharge office.

This project aims to survey overseas patients who declare themselves either as 1) tourist, 2) medical tourist, or 3) expatriate (please see attached draft questionnaire in section E, number 1 for the description of each categories). Up to 50 respondents from each hospital are expected to recruit. This project will be conducted during April – September 2012.

This is a Swinburne University of Technology’s project and results of this study will be published as part of my PhD thesis. The publications and results will not identify either the hospital or the respondents. All information collected will be treated as strictly confidential and only my PhD supervisor and I will have access to the information.

I thank you for your consideration and in anticipation of your support in advance. The information from this project is expected to not only provide useful information to hospital marketers but also contribute to Thailand’s desired aim of becoming an international medical hub.

If you have any concerns, please contact me or Professor Christopher Selvarajah, my PhD supervisor. Thank you for your interest and in considering this invitation. Please feel free to retain this information for future reference.

<p style="text-align: center;"><u>PhD candidate: Manassanan (Lyn) Prajitmutita</u></p> <p style="text-align: center;">Australia contact: Swinburne University of Technology Phone: +613 9214 5974 Thailand contact: +6681 430 5559 E-mail: mprajitmutita@swin.edu.au</p>	<p style="text-align: center;"><u>Professor Christopher Selvarajah</u></p> <p style="text-align: center;">Swinburne University of Technology Phone: +613 9214 8462 Email: CSelvarajah@groupwise.swin.edu.au</p>
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Your sincerely, **Manassanan (Lyn) Prajitmutita**, PhD Candidate

Appendix 1.2: Consent form - hospital**CONSENT FORM - HOSPITAL**

Faculty of Business and Enterprise
Swinburne University of Technology

Project Title:

Medical tourism in Thailand: Overseas patients' perspective of Thailand's private healthcare

Principle investigator: Miss Manassanan (Lyn) Prajitmutita

Date: _____

PERMISSION TO CONDUCT RESEARCH**1) On behalf of (Name of organisation)**

I hereby authorise the PhD student researcher, Miss Manassanan Prajitmutita to enter the premise to conduct a survey of approximately 100 overseas patients in the hospital. I believe that the project will commence in April 2012 and that Ms Prajitmutita will inform the hospital one month before commencing the survey.

2) In relation to this project, I agree to the following:

- I agree that the student researcher can enter into the premise to conduct the research. **Yes** **No**
- I agree that the student researcher can conduct a questionnaire-based survey with overseas patients in the hospital **Yes** **No**
- I agree to assign a contact person (a nurse or medical professional) to cooperate with the student researcher during the period of data collection. **Yes** **No**
- I agree to assign an authorised medical professional to assess the patient's health and provide the Health Readiness to participate in the Research Certification to the student researcher. **Yes** **No**
- I agree that the nurse in charge or assigned medical professional will approach patients to seek for permission for the student researcher for the student researcher to approach patients to conduct the research. **Yes** **No**
- I agree to allow the student researcher to place a safety locked box at the admission/discharge office for the return of the questionnaires. **Yes** **No**
- I authorise the student researcher to conduct the research in the patient rooms or in other suitable areas authorised by the hospital. **Yes** **No**
- I understand that the data collected for the Swinburne project will be used for research purposes and not for direct profit. Research purposes will include publishable / peer viewed outcomes.

Name of Person of Authority and Position: _____

Signature & Date: _____

Appendix 1.3: Information statement - respondent

INFORMATION STATEMENT - RESPONDENT

Faculty of Business and Enterprise
Swinburne University of Technology

Project Title: Medical tourism in Thailand: Overseas patients' perspective of Thailand's private healthcare

Date: 2 April, 2012

Dear: Prospective participating patient,

Attachment: A questionnaire and consent form

I am a Doctoral candidate at the Swinburne University of Technology in Melbourne, Australia. As part of my thesis requirement, I am conducting a research project entitled: Medical tourism in Thailand: Overseas patients' perspective of Thailand's private healthcare. Essentially, this research will seek the perception of overseas patients' with regard to the relationship between service quality, value, satisfaction, and behaviour intentions. By examining these relationships, it is expected that the finding of this research will increase the understanding of how service attributes in Thailand's private hospitals will affect the overseas patients' perceived value, satisfaction, and behaviour intentions. Understanding overseas patients' perception on quality and value may also allow private hospitals in Thailand to allocate the necessary resources and program designs to increase satisfaction of overseas patients.

As an overseas patient of the hospital, I would like to invite you to participate in the research by answering the attached questionnaire. You have been assessed by the hospital authority as being able to participate in this questionnaire survey.

With this Invitation letter, I have also attached a Consent Form. Please read it carefully and if you do not agree to participate, please do not sign the form. You are free to withdraw your participation at any time by not completing the questionnaire survey.

If you feel unwell while completing the survey, please inform the nurse in charge or medical professional immediately and stop completing the questionnaire.

It should take only about 10 to 20 mins of your time to complete the survey. You are encouraged to take your time and complete the survey at your convenience. You can either complete the questionnaire in the hospital or return the questionnaire by post to the address provided on the envelope. A safety locked box is provided in the admission/discharge office for your convenience.

To ensure anonymity and confidentiality, only composite data will be published and no individual will be mentioned.

This is a Swinburne University of Technology's project that conducts during April – September 2010. The results of this study will be published as part of my PhD thesis and will also be made available to the participating hospital. The publications and results will not identify either the hospital or the respondents. All information collected will be treated as strictly confidential and only my PhD supervisor and I will have access to the information.

I thank you for your consideration and in anticipation of your support in advance. The information from this project is expected to not only provide useful information to hospital marketers but also contribute to Thailand's desired aim of becoming an international medical hub.

If you have any concerns, please contact me or Professor Christopher Selvarajah, my PhD supervisor. Thank you for your interest and in considering this invitation. Please feel free to retain this information for future reference.

<p><u>PhD candidate: Manassanan (Lyn) Prajitmutita</u></p> <p>Australia contact: Swinburne University of Technology Phone: +613 9214 5974</p> <p>Thailand contact: +6681 430 5559 E-mail: mprajitmutita@swin.edu.au</p>	<p><u>Professor Christopher Selvarajah</u></p> <p>Swinburne University of Technology Phone: +613 9214 8462 Email: CSelvarajah@groupwise.swin.edu.au</p>
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Your sincerely, **Manassanan (Lyn) Prajitmutita**, PhD Candidate

Appendix 1.5: Questionnaire Instrument

QUESTIONNAIRE INSTRUMENT**Medical tourism in Thailand: Overseas patients' perspective of Thailand's private healthcare****Section A: Service quality**

A: Below is a set of statements about the quality dimensions of the hospital you received medical treatment in. Please indicate the extent to which you agree or disagree with the following statements. The scales are to be interpreted as:

- (1) Strongly disagree (2) Disagree (3) Somewhat disagree (4) Neither agree or disagree
(5) Somewhat agree (6) Agree (7) Strongly agree

Code	Statements	Strongly disagree			Strongly agree			
sq11	The hospital has modern-looking equipment.	1	2	3	4	5	6	7
sq12	The physical facilities in the hospital are visually appealing.	1	2	3	4	5	6	7
sq13	Staff in the hospital are neat in appearance.	1	2	3	4	5	6	7
sq14	Materials associated with the service (such as pamphlets or statements) are visually	1	2	3	4	5	6	7
Code	Statements	Strongly disagree			Strongly agree			
sq21	When the hospital promises to do something by a certain time, it does so.	1	2	3	4	5	6	7
sq22	When I have a problem, the hospital shows a sincere interest in solving it.	1	2	3	4	5	6	7
sq23	The hospital gets things right the first time without having to repeat.	1	2	3	4	5	6	7
sq24	The hospital provides its services at the time it promises to do so.	1	2	3	4	5	6	7
sq25	The hospital insists on error-free records.	1	2	3	4	5	6	7
Code	Statements	Strongly disagree			Strongly agree			
sq31	Staff in the hospital tell me exactly when services will be performed.	1	2	3	4	5	6	7
sq32	Staff in the hospital gives me prompt service.	1	2	3	4	5	6	7
sq33	Staff in the hospital are always willing to help me.	1	2	3	4	5	6	7
sq34	Staff in the hospital always respond to my requests.	1	2	3	4	5	6	7
Code	Statements	Strongly disagree			Strongly agree			
sq41	Staff in the hospital instil confidence in me.	1	2	3	4	5	6	7
sq42	I feel safe in my dealings with the hospital.	1	2	3	4	5	6	7
sq43	Staff in the hospital are always courteous to me.	1	2	3	4	5	6	7
sq44	Staff in the hospital have knowledge to answer my questions.	1	2	3	4	5	6	7

Code	Statements	Strongly disagree					Strongly agree	
		1	2	3	4	5	6	7
sq51	The hospital gives me individual attention.	1	2	3	4	5	6	7
sq52	The hospital has operating hours that is convenient to all its patients.	1	2	3	4	5	6	7
sq53	The hospital has staff that gives me personal attention.	1	2	3	4	5	6	7
sq54	The hospital has my best interests at heart.	1	2	3	4	5	6	7
sq55	The staff in the hospital understand your specific needs.	1	2	3	4	5	6	7

Code	Statements	Strongly disagree					Strongly agree	
		1	2	3	4	5	6	7
sq61	The staff at the hospital are well trained and qualified.	1	2	3	4	5	6	7
sq62	The staff at the hospital carry out their tasks competently.	1	2	3	4	5	6	7
sq63	The staff at the hospital are highly skilled at their jobs.	1	2	3	4	5	6	7
sq64	I feel good about the quality of the health care given me at the hospital.	1	2	3	4	5	6	7
	Statements	Strongly disagree					Strongly agree	
sq71	I feel hopeful as a result of having treatment at the hospital.	1	2	3	4	5	6	7
sq72	Coming to this hospital has increased my chances of improving my health.	1	2	3	4	5	6	7
sq73	I believe my future health will improve as a result of having received medical attention at	1	2	3	4	5	6	7
sq74	I believe having treatment at this hospital has been worthwhile.	1	2	3	4	5	6	7
sq75	I leave the hospital feeling encouraged about my treatment.	1	2	3	4	5	6	7
sq76	I believe the results of my treatment will be the best they can be.	1	2	3	4	5	6	7

Section B: Customer value

B: To what extent do each of the following statements reflect your perceptions about the value obtained from the hospital you received medical treatment in. Please indicate the extent to which you agree or disagree. The scales are interpreted as:

- (1) Strongly disagree (2) Disagree (3) Somewhat disagree (4) Neither agree or disagree
 (5) Somewhat agree (6) Agree (7) Strongly agree

Code	Statements	Strongly disagree					Strongly agree	
		1	2	3	4	5	6	7
v11	Quality of service at the hospital is outstanding.	1	2	3	4	5	6	7
v12	Quality of service at the hospital is reliable.	1	2	3	4	5	6	7
v13	Quality of service at the hospital is dependable.	1	2	3	4	5	6	7
v14	Quality of service at the hospital is consistent.	1	2	3	4	5	6	7

Code	Statements	Strongly disagree					Strongly agree	
v21	The price for medical care is fair.	1	2	3	4	5	6	7
v22	The price for medical care is reliable.	1	2	3	4	5	6	7
v23	The price for medical care is consistent.	1	2	3	4	5	6	7
v24	The price for medical care is worth the money.	1	2	3	4	5	6	7
Code	Statements	Strongly disagree					Strongly agree	
v31	The hospital has good reputation.	1	2	3	4	5	6	7
v32	The hospital is well respected.	1	2	3	4	5	6	7
v33	The hospital is well thought of.	1	2	3	4	5	6	7
v34	The hospital has status.	1	2	3	4	5	6	7
v35	The hospital is reputable.	1	2	3	4	5	6	7
Code	Statements	Strongly disagree					Strongly agree	
v41	Easy to access the hospital premise.	1	2	3	4	5	6	7
v42	Easy to acquire medical attention.	1	2	3	4	5	6	7
v43	Easy to access the details of available services the hospital's offered.	1	2	3	4	5	6	7
v44	Easy to purchase the hospital's services.	1	2	3	4	5	6	7
Code	Statements	Strongly disagree					Strongly agree	
Receiving medical treatment from this hospital								
v51	makes me feel good.	1	2	3	4	5	6	7
v52	gives me pleasure.	1	2	3	4	5	6	7
v53	gives me a sense of joy.	1	2	3	4	5	6	7
v54	makes me feel delighted.	1	2	3	4	5	6	7
v55	gives me happiness.	1	2	3	4	5	6	7

Section C: Customer satisfaction

C: In this section, we would like to know how satisfied you are with the hospital you receive medical treatment in. Please indicate the extent to which you agree or disagree. The scales are interpreted as:

- (1) Strongly disagree (2) Disagree (3) Somewhat disagree (4) Neither agree or disagree
(5) Somewhat agree (6) Agree (7) Strongly agree

Code	Statements	Strongly disagree					Strongly agree	
sat1	I am satisfied with the treatment I received in the hospital.	1	2	3	4	5	6	7

sat2	I am satisfied with the health care services in this hospital.	1	2	3	4	5	6	7
sat3	I am satisfied with the decision to use service from this hospital.	1	2	3	4	5	6	7
sat4	The overall feeling about the service of care in this hospital is better than what I expected.	1	2	3	4	5	6	7

Section D: Behaviour intentions

D: To what extent do each of the following statements reflect your behaviour intentions regarding the hospital you receive medical treatment in. Please indicate the extent to which you agree or disagree. The scales are interpreted as:

- (1) Strongly disagree (2) Disagree (3) Somewhat disagree (4) Neither agree or disagree
 (5) Somewhat agree (6) Agree (7) Strongly agree

Code	Statements	Strongly disagree					Strongly agree	
		1	2	3	4	5	6	7
b1	I will recommend this hospital to family and friends.	1	2	3	4	5	6	7
b2	I will recommend this hospital to anyone who seeks my advice.	1	2	3	4	5	6	7
b3	I will say positive things about this hospital to other people.	1	2	3	4	5	6	7
b4	If I need medical service in the future, I will consider this hospital as my first choice.	1	2	3	4	5	6	7
b5	I will definitely return to this hospital in the future if necessary.	1	2	3	4	5	6	7

Section E: Overall health care perception

E: To what extent do each of the following statements reflect **overall** perception during your hospitalisation /consultation with regard to:

Please indicate the extent to which you agree or disagree. The scales are interpreted as:

- (1) Very poor (2) Poor (3) Fair (4) Average
 (5) Good (6) Very good (7) Excellent

Code	Statements	Very Poor				Excellent		
		1	2	3	4	5	6	7
o1	Overall Service Quality	1	2	3	4	5	6	7
o2	Overall Customer value	1	2	3	4	5	6	7
o3	Overall Customer satisfaction	1	2	3	4	5	6	7

Section F: Patient’s demographic

The following are some personal information about you. Please place a cross on the number that best reflects your status or write your response. All responses are confidential and will only be used for statistical purposes in this research.

1. Do you consider yourself as a..... (please indicate below which status suits you best)

1. Tourist (I use the medical service because some urgent need.)

- 2. Medical tourist (I use the medical service because it is one of my purposes of visiting Thailand.)
- 3. Expatriate (I temporary work/live in Thailand and have no plan to live here the rest of my life.)
- 4. Migrant (I permanently moved to Thailand and I will live here the rest of my life.)

2. Please state your nationality as in your passport? My nationality is.....

3. What treatment have you received from the hospital? (Please feel free to tick more than one if you have received more than one procedure.)

- 1. Major surgeries (such as cardiac procedures, orthopaedic surgery, infertility treatment, bariatric surgery, etc)
- 2. Cosmetic and plastic procedures
- 3. Dental procedures
- 4. Check-up
- 5. Others: (please specific).....

4. What is your gender?

- 1. Male
- 2. Female

5. What is your age?

- 1. Less than 18
- 2. 18 - 25
- 3. 26 - 35
- 4. 36 - 45
- 5. 46 - 55
- 6. 56 - 65
- 7. Over 65 years old

6. I am an.....

- 1. In-patient
- 2. Out-patient

7. What is your occupation status?

- 1. Unemployed
- 2. Employed part-time
- 3. Employed full-time
- 4. Retired

8. Is your health insurance covering this medical treatment?

- 1. Yes, full cover
- 2. Yes, partial cover (state %.....)
- 3. No insurance

9. What is the total cost covering this medical treatment?

Please state in Baht..... or US\$.....

10. How many days have you been having medical treatment on this trip? Please state number of days...

11. Do you come to Thailand alone? 1. Yes 2. No

If not who is with you? 1. Partner/spouse 2. Other, please state.....

12. Have you visited any other parts of Thailand as a tourist on this trip?

- 1. Yes
- 2. No

13. How many days have you been in Thailand in total on this trip? Please state number of days.....

14. Excluding all covering medical costs, what is the total expenditure while in Thailand (including members of family)?

Please state in Baht.....or US\$.....

If you would like to provide comments, please feel free to do so below:

Appendix 2: Ethics application and clearance

To: Prof Christopher Selvarajah/Miss Manassanan (Lyn) Prajitmutita, FBE

CC: Dr Tony Whitefield, Research and Ethics Advisor, FBE

Ms Anne Cain, Team Leader, Research Student Administration, FBE

Dear Prof. Selvarajah,

SUHREC Project 2012/025 Medical tourism in Thailand: Overseas patients' perspective of Thailand's private healthcare

Prof Christopher Selvarajah FBE; Miss Manassanan (Lyn) Prajitmutita, Dr Aron Perenyi

Approved Duration: 05/04/2012 to 30/11/2013 [Adjusted]

I refer to the ethical review of the above project protocol undertaken by SUHREC Subcommittee (SHESC4) at a meeting held on 2 March 2012. Your responses to the review as e-mailed on 13, 23, 27 March and 5 April 2012 were reviewed by a SHESC4 delegate.

I am pleased to advise that, as submitted to date, the project has approval to proceed in line with standard on-going ethics clearance conditions here outlined.

- All human research activity undertaken under Swinburne auspices must conform to Swinburne and external regulatory standards, including the National Statement on Ethical Conduct in Human Research and with respect to secure data use, retention and disposal.

- The named Swinburne Chief Investigator/Supervisor remains responsible for any personnel appointed to or associated with the project being made aware of ethics clearance conditions, including research and consent procedures or instruments approved. Any change in chief investigator/supervisor requires timely notification and SUHREC endorsement.

- The above project has been approved as submitted for ethical review by or on behalf of SUHREC. Amendments to approved procedures or instruments ordinarily require prior ethical appraisal/ clearance. SUHREC must be notified immediately or as soon as possible thereafter of (a) any serious or unexpected adverse effects on participants and any redress measures; (b) proposed changes in protocols; and (c) unforeseen events which might affect continued ethical acceptability of the project.

- At a minimum, an annual report on the progress of the project is required as well as at the conclusion (or abandonment) of the project.

- A duly authorised external or internal audit of the project may be undertaken at any time.

Please contact the Research Ethics Office if you have any queries about on-going ethics clearance, citing the SUHREC project number. Please retain a copy of this clearance email as part of project record-keeping.

Best wishes for the project, Yours sincerely, Kaye Goldenberg, Secretary, SHESC4

Appendix 3.2: Assessment of univariate outliers

Descriptive Statistics			
	N	Minimum	Maximum
Zscore(sq11)	330	-4.30768	1.00051
Zscore(sq12)	330	-3.32754	1.05168
Zscore(sq13)	330	-3.48219	.73735
Zscore(sq14)	330	-4.89509	1.11749
Zscore(sq21)	330	-3.93650	.93188
Zscore(sq22)	330	-4.95587	.80271
Zscore(sq23)	330	-3.82625	.96867
Zscore(sq24)	330	-4.36623	.95713
Zscore(sq25)	330	-4.06172	1.04606
Zscore(sq31)	330	-3.91626	.94835
Zscore(sq32)	330	-4.70198	.79384
Zscore(sq33)	330	-4.27688	.68836
Zscore(sq34)	330	-4.53995	.77653
Zscore(sq41)	330	-5.23627	.96829
Zscore(sq42)	330	-5.65161	.87328
Zscore(sq43)	330	-6.03087	.70031
Zscore(sq44)	330	-4.43723	.86175
Zscore(sq51)	330	-5.00235	.82666
Zscore(sq52)	330	-4.46469	.84276
Zscore(sq53)	330	-5.45768	.83085
Zscore(sq54)	330	-4.70132	.85275
Zscore(sq55)	330	-3.90669	1.01395
Zscore(sq61)	330	-4.17259	1.05503
Zscore(sq62)	330	-5.17882	.93571
Zscore(sq63)	330	-4.65345	1.02009
Zscore(sq64)	330	-5.64655	.83471
Zscore(sq71)	330	-4.99149	.91420
Zscore(sq72)	330	-4.56686	.85423
Zscore(sq73)	330	-3.88403	.98022
Zscore(sq74)	330	-4.90181	.87876
Zscore(sq75)	330	-4.33156	.93914
Zscore(sq76)	330	-4.80889	.89440
Zscore(v11)	330	-5.20318	1.12890
Zscore(v12)	330	-4.36720	1.09180
Zscore(v13)	330	-3.37567	1.10711
Zscore(v14)	330	-5.22516	1.03744
Zscore(v21)	330	-2.34943	1.25109
Zscore(v22)	330	-2.75947	1.31188
Zscore(v23)	330	-2.89128	1.30882
Zscore(v24)	330	-2.83586	1.15917
Zscore(v31)	330	-4.05866	.83308
Zscore(v32)	330	-4.19513	.86109
Zscore(v33)	330	-3.95854	.90127
Zscore(v34)	330	-3.98552	.91471
Zscore(v35)	330	-4.15311	.87450
Zscore(v41)	330	-6.22405	.72667
Zscore(v42)	330	-5.53842	.78573
Zscore(v43)	330	-5.29356	.90103
Zscore(v44)	330	-5.40130	.85650
Zscore(v51)	330	-4.06648	.96894
Zscore(v52)	330	-2.77930	1.18255
Zscore(v53)	330	-2.57320	1.27640
Zscore(v54)	330	-2.54227	1.23259
Zscore(v55)	330	-2.51252	1.21254
Zscore(sat1)	330	-3.32517	.91973
Zscore(sat2)	330	-3.35278	.89450
Zscore(sat3)	330	-5.28096	.86258
Zscore(sat4)	330	-4.17949	.92562
Zscore(b1)	330	-4.48036	.72875
Zscore(b2)	330	-4.48307	.73839
Zscore(b3)	330	-5.13088	.76874

(Continued)	N	Minimum	Maximum
Zscore(b4)	330	-3.84272	.71605
Zscore(b5)	330	-4.55598	.70705
Zscore(o1)	330	-3.69201	.96712
Zscore(o2)	330	-4.08330	.96348
Zscore(o3)	330	-4.19426	.97417
Valid N (listwise)	330		

Appendix 3.3: Assessment of multivariate outliers

Observation number	Mahalanobis D-squared	p1	p2
92	154.926	.000	.000
222	139.190	.000	.000
94	137.636	.000	.000
294	126.433	.000	.000
291	125.528	.000	.000
36	124.939	.000	.000
55	114.277	.000	.000
50	112.927	.000	.000
113	107.691	.000	.000
253	106.357	.000	.000
85	101.105	.000	.000
24	97.987	.000	.000
86	97.909	.000	.000
116	95.616	.000	.000
123	93.029	.000	.000
122	92.494	.000	.000
309	91.704	.000	.000
152	88.861	.000	.000
2	87.942	.000	.000
124	87.340	.000	.000
287	87.278	.000	.000
177	86.750	.000	.000
159	86.400	.000	.000
259	85.629	.000	.000
288	85.311	.000	.000
75	85.234	.000	.000
21	84.111	.000	.000
217	83.401	.000	.000
194	82.303	.000	.000
281	81.104	.000	.000
199	80.020	.000	.000
271	79.617	.000	.000
244	77.396	.000	.000
212	76.994	.000	.000
193	75.200	.000	.000
261	74.590	.000	.000

Appendix 4: Scale refinement – Service Quality

Appendix 4.1: KMO, Bartlett's test, total variance explained, scree plot, results of EFA

Appendix 4.1.1: KMO, Bartlett's test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.953
Bartlett's Test of Sphericity	Approx. Chi-Square	8818.820
	df	496
	Sig.	0.000

Appendix 4.1.2: Total variance explained

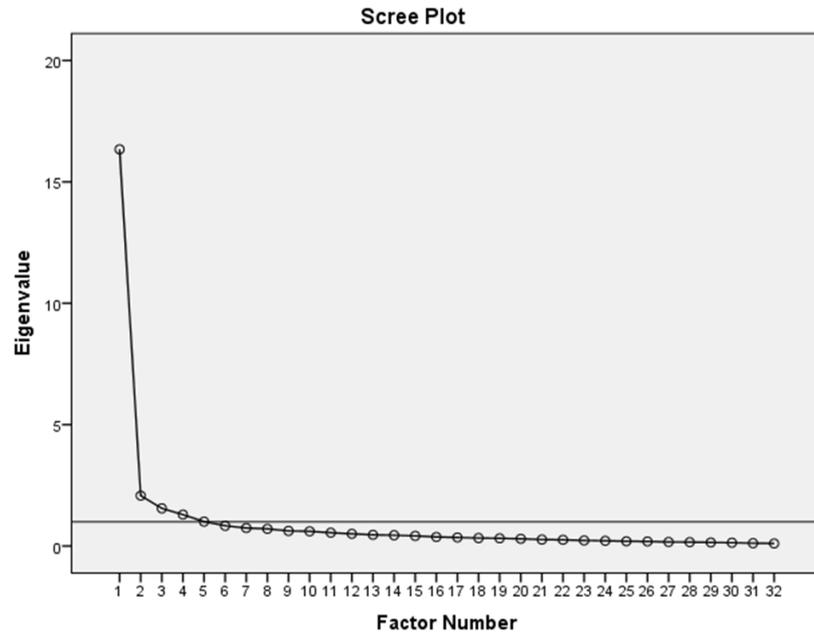
Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	16.339	51.058	51.058	15.912	49.726	49.726	10.970
2	2.076	6.487	57.546	1.772	5.537	55.262	11.275
3	1.552	4.850	62.396	1.211	3.784	59.047	8.057
4	1.294	4.043	66.439	.792	2.476	61.523	9.940
5	1.005	3.140	69.579	.899	2.808	64.331	12.303
6	.834	2.607	72.186				
7	.742	2.320	74.506				
8	.708	2.212	76.718				
9	.622	1.944	78.661				
10	.607	1.897	80.558				
11	.548	1.713	82.271				
12	.502	1.569	83.840				
13	.461	1.440	85.280				
14	.445	1.392	86.672				
15	.417	1.304	87.976				
16	.373	1.165	89.141				
17	.353	1.102	90.244				
18	.328	1.024	91.268				
19	.318	.993	92.261				
20	.299	.934	93.195				
21	.266	.831	94.026				
22	.255	.796	94.822				
23	.228	.713	95.535				
24	.215	.671	96.206				
25	.196	.613	96.819				
26	.187	.584	97.403				
27	.167	.522	97.926				
28	.159	.498	98.424				
29	.147	.460	98.884				
30	.136	.424	99.308				
31	.117	.366	99.674				
32	.104	.326	100.000				

Extraction Method: Maximum Likelihood.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

Appendix 4.1.3: Scree plot



Appendix 4.1.4: Initial results of Exploratory Factor Analysis (original 7 factors)

Initial Results of Explorative Factor Analysis - SERVICE QUALITY CONSTRUCT (32 items)

Factor	Item	Factor					Communalities
		1	2	3	4	5	
Tangible	sq11	Modern looking equipment			.894		.659
	sq12	Facilities visually appealing			.842		.659
	sq13	Staff neat in appearance	.309		.324		.454
	sq14	Materials visually appealing			.471		.461
Reliability	sq21	Hospital promises to do something by certain time				.878	.688
	sq22	Hospital shows sincere interest in solving problem			.617		.690
	sq23	Hospital gets things right first time			.554		.656
	sq24	Hospital provides its services at the time it promises to do so			.806		.699
	sq25	Hospital insists on error-free records			.603		.542
Responsiveness	sq31	Staff tell me exactly when services will be performed	.439		.345		.598
	sq32	Staff give prompt service	.479		.408		.703
	sq33	Staff are always willing to help	.564				.684
	sq34	Staff always respond to requests	.557		.311		.741
Assurance	sq41	Staff instil confidence in me	.461			-.332	.737
	sq42	I feel safe in dealing with hospital				-.377	.698
	sq43	Staff are always courteous to me	.511				.580
	sq44	Staff have knowledge to answer my questions	.435				.690
Empathy	sq51	Hospital gives individual attention	.680				.700
	sq52	Hospital has operating hours conveniently					.383
	sq53	Hospital has staff giving me personal attention	.701				.712
	sq54	Hospital has my best interest at heart	.344				.620
	sq55	Staff understand my specific needs	.347				.672
Expertise	sq61	Staff are well trained and qualified				-.699	.787
	sq62	Staff carry out their tasks competently				-.814	.810
	sq63	Staff are highly skilled at their jobs				-.867	.824
	sq64	I feel good about the quality of care given me at the hospital				-.709	.744
Outcome	sq71	I feel hopeful of the result of having treatment at hospital		-.577			.662
	sq72	Coming to hospital has increased my chances of improving health		-.784			.751
	sq73	I believe my future health improving from the result of receiving medical attention		-.779			.717
	sq74	I believe having treatment has been worthwhile		-.837			.740
	sq75	I leave the hospital feeling encouraged about my treatment		-.856			.820
	sq76	I believe the results of treatment will be at the best they can be		-.732			.754

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 13 iterations.

Note: Factor loading less than 0.30 are suppressed for the purpose of easy reading

Appendix 4.1.5: Initial results of Exploratory Factor Analysis (final 5 factors)

Initial Results of Explorative Factor Analysis - THE SERVICE QUALITY CONSTRUCT (32 items)

Factor	Item	Factor					Communalities
		1	2	3	4	5	
KMO: 0.953, Barlett's Significant: 0.000,							
Initial Eigenvalues: 16.339+2.076+1.552+1.294+1.005							
Extraction Sums of Squared Loading (% variance): 49.726+5.537+3.784+2.476+2.808 = 64.331%							
Personal skills	sq13	Staff neat in appearance	.309		.324		.454
	sq31	Staff tell me exactly when services will be performed	.439			.345	.598
	sq32	Staff give prompt service	.479			.408	.703
	sq33	Staff are always willing to help	.564				.684
	sq34	Staff always respond to requests	.557			.311	.741
	sq41	Staff instil confidence in me	.461				-.332
	sq43	Staff are always courteous to me	.511				.580
	sq44	Staff have knowledge to answer my questions	.435				.690
	sq51	Hospital gives individual attention	.680				.700
	sq53	Hospital has staff giving me personal	.701				.712
	sq54	Hospital has my best interest at heart	.344				.620
sq55	Staff understand my specific needs	.347				.672	
Outcome	sq71	I feel hopeful of the result of having		-.577			.662
	sq76	I believe the results of treatment will be at the best they can be		-.732			.754
	sq73	I believe my future health improving from the result of receiving medical attention		-.779			.717
	sq72	Coming to hospital has increased my		-.784			.751
	sq74	I believe having treatment has been worthwhile		-.837			.740
	sq75	I leave the hospital feeling encouraged about my treatment		-.856			.820
Tangible	sq11	Modern looking equipment			.894		.659
	sq12	Facilities visually appealing			.842		.659
	sq14	Materials visually appealing			.471		.461
Reliability	sq21	Hospital promises to do something by				.878	.688
	sq22	Hospital shows sincere interest in solving problem				.617	.690
	sq23	Hospital gets things right first time				.554	.656
	sq24	Hospital provides its services at the time it promises to do so				.806	.699
	sq25	Hospital insists on error-free records				.603	.542
Expertise	sq42	I feel safe in dealing with hospital					-.377
	sq52	Hospital has operating hours conveniently					.383
	sq61	Staff are well trained and qualified					-.699
	sq62	Staff carry out their tasks competently					-.814
	sq63	Staff are highly skilled at their jobs					-.867
	sq64	I feel good about the quality of care given me at the hospital					-.709
Extraction Method: Maximum Likelihood.							
Rotation Method: Oblimin with Kaiser Normalization.							
a. Rotation converged in 13 iterations.							
Note: Factor loading less than 0.30 are suppressed for the purpose of easy reading							

Appendix 4.2: Factor 1 (Personal skills) – reliability, item-to-total, and inter-item correlation matrix

Appendix 4.2.1: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.913	.919	8

Appendix 4.2.2: Item-Total-Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
sq31	43.81	27.024	.657	.444	.911
sq33	43.19	29.865	.733	.629	.902
sq34	43.37	28.337	.774	.671	.897
sq41	43.58	28.190	.764	.602	.898
sq43	43.26	29.806	.654	.471	.907
sq44	43.62	26.949	.743	.619	.900
sq51	43.35	29.085	.772	.678	.898
sq53	43.30	29.980	.730	.631	.902

Appendix 4.2.3: Inter-Item Correlation Matrix

	sq31	sq33	sq34	sq41	sq43	sq44	sq51	sq53
sq31	1.000	.535	.585	.534	.459	.527	.578	.521
sq33	.535	1.000	.728	.599	.613	.525	.573	.565
sq34	.585	.728	1.000	.646	.524	.679	.596	.552
sq41	.534	.599	.646	1.000	.547	.690	.641	.612
sq43	.459	.613	.524	.547	1.000	.530	.524	.553
sq44	.527	.525	.679	.690	.530	1.000	.650	.565
sq51	.578	.573	.596	.641	.524	.650	1.000	.764
sq53	.521	.565	.552	.612	.553	.565	.764	1.000

Appendix 4.3: Factor 2 (Outcome) – reliability, item-to-total, and inter-item correlation matrix

Appendix 4.3.1: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.927	.930	6

Appendix 4.3.2: Item-Total-Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
sq71	30.10	22.134	.734	.586	.921
sq72	30.12	20.896	.797	.708	.913
sq73	30.38	20.341	.748	.672	.922
sq74	30.08	21.240	.822	.705	.910
sq75	30.06	21.653	.864	.783	.906
sq76	30.11	21.322	.798	.695	.913

Appendix 4.3.3: Inter-Item Correlation Matrix

	sq71	sq72	sq73	sq74	sq75	sq76
sq71	1.000	.622	.536	.679	.736	.665
sq72	.622	1.000	.801	.676	.692	.630
sq73	.536	.801	1.000	.641	.664	.614
sq74	.679	.676	.641	1.000	.805	.757
sq75	.736	.692	.664	.805	1.000	.810
sq76	.665	.630	.614	.757	.810	1.000

Appendix 4.4: Factor 3 (Tangibles) – reliability, item-to-total, and inter-item correlation matrix

Appendix 4.4.1: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.816	.819	3

Appendix 4.4.2: Item-Total-Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
sq11	11.92	2.788	.728	.585	.687
sq12	11.94	2.887	.722	.579	.696
sq14	12.10	3.006	.567	.321	.854

Appendix 4.4.3: Inter-Item Correlation Matrix

	sq11	sq12	sq14
sq11	1.000	.746	.534
sq12	.746	1.000	.525
sq14	.534	.525	1.000

Appendix 4.5: Factor 4 (Reliability) – reliability, item-to-total, and inter-item correlation matrix

Appendix 4.5.1: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.896	.897	5

Appendix 4.5.2: Item-Total-Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
sq21	23.64	15.117	.775	.651	.866
sq22	23.33	16.647	.744	.563	.874
sq23	23.71	15.225	.744	.559	.873
sq24	23.57	15.667	.798	.664	.861
sq25	23.72	16.340	.667	.459	.889

Appendix 4.5.3: Inter-Item Correlation Matrix

	sq21	sq22	sq23	sq24	sq25
sq21	1.000	.677	.636	.766	.551
sq22	.677	1.000	.654	.653	.551
sq23	.636	.654	1.000	.650	.602
sq24	.766	.653	.650	1.000	.614
sq25	.551	.551	.602	.614	1.000

Appendix 4.6: Factor 5 (Expertise) – reliability, item-to-total, and inter-item correlation matrix

Appendix 4.6.1: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.937	.937	4

Appendix 4.6.2: Item-Total-Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
sq61	18.23	7.661	.830	.721	.925
sq62	18.14	7.306	.886	.785	.907
sq63	18.30	6.891	.893	.800	.905
sq64	17.99	7.933	.801	.669	.933

Appendix 4.6.3: Inter-Item Correlation Matrix

	sq61	sq62	sq63	sq64
sq61	1.000	.804	.826	.685
sq62	.804	1.000	.847	.789
sq63	.826	.847	1.000	.782
sq64	.685	.789	.782	1.000

Appendix 5: Scale refinement – Customer Value

Appendix 5.1: KMO, Bartlett's test, total variance explained, scree plot, results of EFA

Appendix 5.1.1: KMO, Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.930
Bartlett's Test of Sphericity	Approx. Chi-Square	8380.281
	df	231
	Sig.	0.000

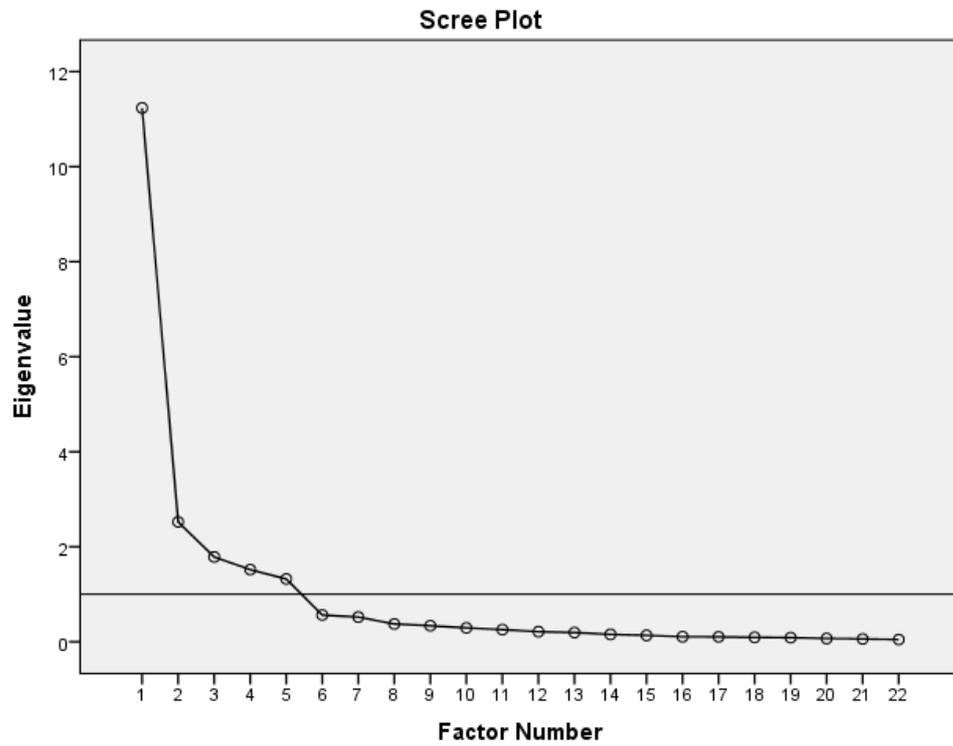
Appendix 5.1.2: Total variance explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	11.235	51.066	51.066	10.846	49.298	49.298	8.453
2	2.523	11.470	62.536	2.331	10.594	59.892	7.024
3	1.786	8.117	70.653	1.673	7.606	67.498	7.155
4	1.519	6.902	77.556	1.372	6.234	73.733	7.292
5	1.323	6.015	83.571	1.170	5.319	79.052	6.533
6	.563	2.560	86.131				
7	.521	2.366	88.497				
8	.374	1.702	90.199				
9	.338	1.537	91.735				
10	.292	1.329	93.064				
11	.256	1.165	94.229				
12	.213	.970	95.199				
13	.195	.887	96.087				
14	.156	.708	96.795				
15	.135	.612	97.407				
16	.107	.487	97.895				
17	.104	.474	98.369				
18	.094	.428	98.796				
19	.087	.397	99.193				
20	.070	.318	99.511				
21	.060	.274	99.785				
22	.047	.215	100.000				

Extraction Method: Maximum Likelihood.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

Appendix 5.1.3: Scree plot



Appendix 5.2: Customer Value - Factor 1 (Reputation)

Appendix 5.2.1: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.973	.973	5

Appendix 5.2.2: Item-Total-Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
v31	24.42	14.901	.900	.836	.969
v32	24.42	14.882	.942	.900	.963
v33	24.49	14.597	.940	.889	.963
v34	24.50	14.907	.901	.829	.969
v35	24.44	14.970	.921	.856	.966

Appendix 5.2.3: Inter-Item Correlation Matrix

	v31	v32	v33	v34	v35
v31	1.000	.907	.874	.821	.845
v32	.907	1.000	.921	.861	.886
v33	.874	.921	1.000	.881	.894
v34	.821	.861	.881	1.000	.887
v35	.845	.886	.894	.887	1.000

Appendix 5.3: Customer Value - Factor 2 (Emotional response)

Appendix 5.3.1: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.950	.948	5

Appendix 5.3.2: Item-Total-Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
v51	20.31	36.152	.653	.462	.970
v52	20.94	29.767	.900	.818	.932
v53	21.14	28.873	.933	.913	.925
v54	21.11	28.658	.926	.904	.927
v55	21.11	28.618	.912	.850	.929

Appendix 5.3.3: Inter-Item Correlation Matrix

	v51	v52	v53	v54	v55
v51	1.000	.661	.606	.602	.636
v52	.661	1.000	.886	.869	.845
v53	.606	.886	1.000	.941	.903
v54	.602	.869	.941	1.000	.903
v55	.636	.845	.903	.903	1.000

Appendix 5.4: Customer Value - Factor 3 (Monetary price)

Appendix 5.4.1: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.942	.943	4

Appendix 5.4.2: Item-Total-Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
v21	15.46	16.561	.898	.818	.914
v22	15.30	17.795	.929	.879	.904
v23	15.24	18.842	.857	.801	.926
v24	15.11	19.079	.776	.628	.950

Appendix 5.4.3: Inter-Item Correlation Matrix

	v21	v22	v23	v24
v21	1.000	.892	.831	.767
v22	.892	1.000	.891	.772
v23	.831	.891	1.000	.682
v24	.767	.772	.682	1.000

Appendix 5.5: Customer Value - Factor 4 (Quality judgement)

Appendix 5.5.1: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.929	.930	4

Appendix 5.5.2: Item-Total-Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
v11	18.02	6.729	.761	.603	.931
v12	17.95	6.414	.887	.814	.889
v13	17.94	6.473	.903	.835	.885
v14	17.94	6.571	.790	.660	.922

Appendix 5.5.3: Inter-Item Correlation Matrix

	v11	v12	v13	v14
v11	1.000	.756	.752	.637
v12	.756	1.000	.889	.769
v13	.752	.889	1.000	.803
v14	.637	.769	.803	1.000

Appendix 5.6: Customer Value - Factor 5 (Behavioural price)

Appendix 5.6.1: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.860	.863	4

Appendix 5.6.2: Item-Total-Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
v41	18.68	5.675	.650	.459	.844
v42	18.68	5.684	.739	.562	.813
v43	18.93	4.940	.747	.584	.805
v44	18.88	5.116	.705	.526	.823

Appendix 5.6.3: Inter-Item Correlation Matrix

	v41	v42	v43	v44
v41	1.000	.648	.547	.529
v42	.648	1.000	.659	.588
v43	.547	.659	1.000	.695
v44	.529	.588	.695	1.000

Appendix 6: Scale refinement – Customer Satisfaction

Appendix 6.1: KMO, Bartlett's test, total variance explained, scree plot, results of EFA

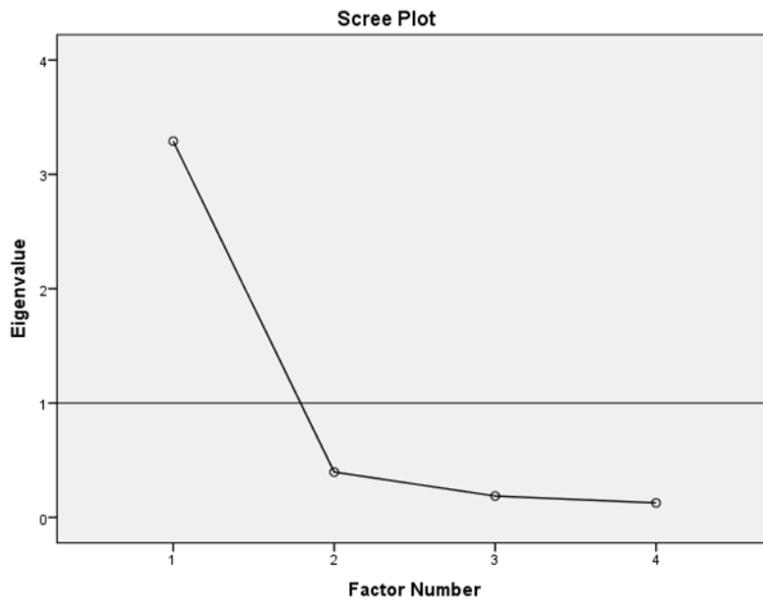
Appendix 6.1.1: KMO, Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.840
Bartlett's Test of Sphericity	Approx. Chi-Square	1136.606
	df	6
	Sig.	.000

Appendix 6.1.2: Total variance explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.290	82.255	82.255	3.073	76.814	76.814
2	.396	9.904	92.160			
3	.187	4.669	96.829			
4	.127	3.171	100.000			

Appendix 6.1.3: Scree plot



Appendix 6.2: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.921	.927	4

Appendix 6.3: Item-Total-Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
sat1	18.23	7.939	.839	.761	.891
sat2	18.20	7.785	.877	.815	.879
sat3	18.20	7.646	.867	.770	.881
sat4	18.45	7.306	.723	.532	.940

Appendix 6.4: Inter-Item Correlation Matrix

	sat1	sat2	sat3	sat4
sat1	1.000	.860	.806	.653
sat2	.860	1.000	.852	.685
sat3	.806	.852	1.000	.711
sat4	.653	.685	.711	1.000

Appendix 7: Scale refinement – Behavioural Intentions

Appendix 7.1: KMO, Bartlett's test, total variance explained, scree plot, results of EFA

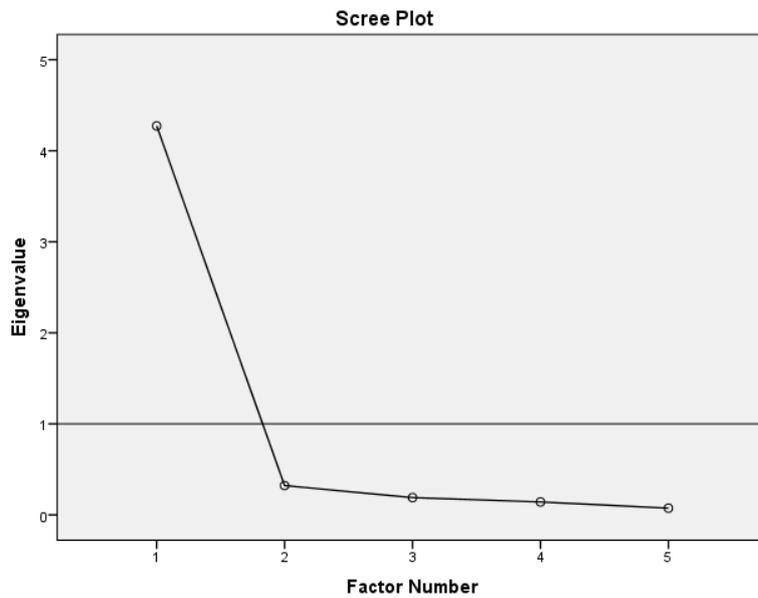
Appendix 7.1.1: KMO, Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.876
Bartlett's Test of Sphericity	Approx. Chi-Square	1927.946
	df	10
	Sig.	0.000

Appendix 7.1.2: Total variance explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.273	85.461	85.461	4.068	81.357	81.357
2	.322	6.436	91.896			
3	.190	3.792	95.688			
4	.142	2.838	98.526			
5	.074	1.474	100.000			

Appendix 6.1.3: Scree plot



Appendix 7.2: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.955	.957	5

Appendix 7.3: Item-Total-Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
b1	24.62	18.315	.894	.861	.941
b2	24.63	18.149	.918	.888	.937
b3	24.56	19.566	.873	.785	.946
b4	24.72	17.440	.845	.747	.953
b5	24.59	18.614	.868	.776	.946

Appendix 7.4: Inter-Item Correlation Matrix

	b1	b2	b3	b4	b5
b1	1.000	.923	.839	.774	.784
b2	.923	1.000	.866	.796	.806
b3	.839	.866	1.000	.751	.800
b4	.774	.796	.751	1.000	.839
b5	.784	.806	.800	.839	1.000