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**An Analysis of Restaurant Patrons’
Experiences in Malaysia: A Comprehensive
Hierarchical Modelling Approach**

A thesis
submitted in partial fulfilment
of the requirements for the Degree of
Doctor of Philosophy in Marketing,

at
Lincoln University
by
Zurinawati Mohi

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Abstract of a thesis submitted in partial fulfilment of the
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Abstract

An Analysis of Restaurant Patrons’ Experiences in Malaysia: A Comprehensive Hierarchical Modelling Approach

by

Zurinawati Mohi

Research into service quality and related constructs such as customer satisfaction, perceived value, image and behavioural intentions has increased in the last two decades. However, there is controversy about the conceptualisation and measurement of customers’ perceptions of these constructs in the services marketing literature. Additionally, most studies have neglected the comprehensive hierarchical modelling in full service restaurants, one of the most important types of restaurant. Consequently, this study is a comprehensive evaluation of restaurant patrons’ perceptions of the important constructs in moderate upscale restaurants in Malaysia. The constructs are examined using a hierarchical model following the suggestions of researchers in the service industry.

Data were collected from the restaurant patrons of several moderate upscale restaurants in the Klang Valley area, Malaysia, during January to March, 2009. The sampling frame included Malaysian and foreign restaurant patrons who were 18 years and above. The research model was tested using exploratory factor analysis and structural equation modelling with a two-step approach employing the confirmatory factor analysis method. The statistical results and the structural model support 16 hypotheses and satisfy the four research objectives. The hierarchical modelling approach used in this study provides useful empirical evidence of the significance of service quality in the service

marketing field. In addition, the results confirm that service quality is a multidimensional construct consisting of primary dimensions and subdimensions. At the same time, this research provides an analytical framework for understanding the effects of service quality on constructs such as customer satisfaction, perceived value, restaurant image and behavioural intentions. The results of this study contribute to service marketing theory by providing empirical evidence of the relationships between service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions. The findings indicate that service quality, perceived value and restaurant image are important determinants of customer satisfaction in moderate upscale restaurants in Malaysia. Further, service quality, customer satisfaction and restaurant image are important determinants of behavioural intentions. In addition, service quality is an important determinant of perceived value as well as restaurant image.

Keywords: Moderate Upscale Restaurants, Hierarchical and Multidimensional Modelling, Service Quality, Customer Satisfaction, Perceived Value, Restaurant Image, Behavioural Intentions and Malaysia.

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Statistical Abbreviations and Symbols

Abbreviation/Symbol	Definition/Elaboration
β	Beta (bay-ta); a path representing a causal path relationship (regression coefficients) from one η constructs to another η constructs
χ^2	Chi (ki)-square; the likelihood ratio
df	Degrees of Freedom
Δ	Delta (cap); increment of change
λ	Factor loading
R^2	Multiple correlation squared; measure of strength of relationship
χ^2/df	Normed chi-square
Σ	Sigma; sum or summation
AMOS	Analysis of Moment Structure
AVE	Average Variance Extracted
C.R.	Critical Ratio
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
Cronbach alpha	Cronbach coefficient alpha; index of internal consistency
EFA	Exploratory Factor Analysis
GFI	Goodness of Fit Index
KMO	Kaiser-Meyer-Olkin
MI	Modification Index
MLE	Maximum Likelihood Estimation
n	Number in a sub-sample
N	Total number in a sample
NFI	Normed Fit Index
p	Probability
PCA	Principal Component Analysis
RMR	Root-Mean Square Residual
RMSEA	Root-Mean Square Error of Approximation
SEM	Structural Equation Modelling
SPSS	Statistical Package for Social Science

Chapter 1

Introduction

In order to provide a clear insight into this study, this chapter starts with the background of this study, as well as presenting an overview of moderate upscale restaurants. Subsequent sections deal with the research objectives and contribution of the study to the literature and discuss the structure and the research design of the thesis.

1.1 Background to the Study

Eating out is a common activity in Malaysian society. When people go out to socialise, dining out is always part of or the main reason they go out. In addition, the popularity of eating out in Malaysia is also a result of affordable food prices and the wide variety of cuisine (Kueh & Boo, 2007). It is common for Malaysian people to treat themselves at least once a week by eating away from home – the choice can vary from full service restaurants to fast food outlets and hawker stalls depending on their budget (Euromonitor International, 2008).

Malaysia's rising per capita income and increasing population, especially in urban areas, coupled with a more modern and busy lifestyle have created a greater demand for food and drink that are ready to eat or more convenient to prepare (Euromonitor International, 2008). In 2009, locals and tourists spent RM9.29 billion on food and drink, which was a 6% increase on 2008 (RM8.77 billion) ("Belanja makan minum pelancong RM9.29 bilion," 2010, Monday 6 Dec), thus creating a demand for a greater number of restaurants (see Table 1.1). Table 1.1 shows the substantial growth in the number of restaurants in Malaysia. For example, in 2006, there were only 9,010 full service restaurants but by 2007 there were 9,434 outlets. The rapid expansions in the number of full service restaurants was evident especially in Asian and Western restaurants (Euromonitor International, 2008).

The huge expansion of the tourism industry in Malaysia owing to sustained economic growth, political stability and the relaxation of restrictions on travelling to Malaysia have contributed to growth in the restaurant and lodging industries. In addition, the promotion of Malaysia as tourist destination through, for example, *Visit Malaysia Year*

2007 and the hosting of large international events, such as the XVI Commonwealth Games in 1998, Formula 1 racing in Sepang and Le Tour de Langkawi, have all contributed to exposing Malaysians to foreign cultures and introducing Malaysians to international cuisine (including western food). Malaysian now demand more variety in their food as well as healthier food, thus providing new opportunities for foodservice companies and manufacturers (Euromonitor International, 2008). Another factor is that Malaysians are becoming more familiar with international cuisine especially, western food from their own experience, through study, business or holiday trips abroad (Abdul Talib, 2009). Moreover, the United States foodservice franchise operations dominate the Malaysian market and include fast food restaurants, cafés, and moderate upscale restaurants (Euromonitor International, 2008). In Malaysia, there is also a sizeable expatriate population that demands a variety of international cuisines. Therefore, Malaysian restaurant patrons are becoming more knowledgeable about the diversity of international cuisines and accept international cuisines, especially western food, as part of their eating out activity (Euromonitor International, 2008).

Table 1.1: The Number of Units/Outlets in the Foodservice Subsectors in Malaysia 2001-2007

Sectors	2001	2002	2003	2004	2005	2006	2007
Full-service restaurants	7,142	7,389	7,697	8,106	8,577	9,010	9,434
Fast foods	1,084	1,225	1,299	1,521	1,570	1,603	1,859
Cafés/bars	8,254	8,753	9,102	9,498	9,825	10,141	10,539
Street stalls/kiosks	3,810	3,870	3,928	3,983	4,046	4,128	4,229
100% home delivery/takeaway	335	370	405	434	453	465	480
Cafeterias	120	140	160	180	200	220	240

Source: adapted from Euromonitor International (2008)

Moderate upscale restaurants are mostly foreign-branded (Euromonitor International, 2008), having made their debut in Malaysia in the early 1990s with the opening of the Hard Rock Café in Kuala Lumpur in late 1991 (Hard Rock Café, 2011). Most moderate upscale restaurants, such as the Hard Rock Café, T.G.I. Friday's, DÔME Cafe and Victoria Station are among the leading brands in Malaysia and are operated by relatively large corporations through joint ventures or franchise contracts (Euromonitor International, 2008). The rapid growth in the number of moderate upscale restaurants has had a significant impact on the restaurant industry in Malaysia, especially in urban areas like the Klang Valley and Penang. As of May 2011, there were two Hard Rock Cafés (one in Kuala Lumpur and one in Penang) (Hard Rock Café, 2011), 12 T.G.I. Friday's in the

Klang Valley, Johor, and Penang area (T.G.I. Friday's Restaurant, 2011), 14 DÔME Cafés (ten in the Klang Valley, three in Penang, and one in Sabah) (DÔME Cafés, 2011), and six Victoria Stations (four around the Klang Valley and two in Penang) (Victoria Station, 2011) in Malaysia. Since their launched in Malaysia, moderate upscale restaurants have grown in popularity. However, the increasing importance of moderate upscale restaurants as full service restaurants has not gained much attention in Malaysian hospitality research because the focus for service quality studies has been on fast food and ethnic restaurants (see: Huam, Seng, Thoo, Rasli, & Abd Hamid, 2011; Josiam, M. Sohail, & Monteiro, 2007; Keang & Bougoure, 2006; Shaharudin, Wan Mansor, & Elias, 2011).

As the restaurant industry continues to expand with an increasing number of people dining out, the issue of service quality has received increasingly more attention (Kim, 2000). Academics and restaurant marketers are focusing their efforts on improving the levels of service quality, especially with regard to understanding how restaurant patrons perceive the quality of service, as well as how these perceptions of service quality impact on customer satisfaction, perceived value and restaurant image, and then lead to positive future behavioural intentions (Chow, Lau, Thamis, Sha, & Yun, 2007; Han & Ryu, 2009; Hyun, 2010; Keith & Simmers, 2011; Ladhari, Brun, & Morales, 2007; Oh, 1998; Qin & Prybutok, 2008; Ryu & Han, 2010; Ryu, Han, & Kim, 2008; Ryu, Han, & Pearlman, 1989; Tam, 2000). However, to date the relationships among service marketing constructs in the moderate upscale restaurants in Malaysia have not been investigated.

Researchers have studied the complex relationships between the service marketing constructs that exist in various service industries. Many studies have provided a theoretical framework, supported by empirical evidence, in order to improve the understanding of the complex relationships that exist among the service marketing constructs. Many suggestions have been made in previous studies including the need to develop a much deeper insight into the marketing constructs and the need for new studies to investigate the relationships among these constructs in global service industries (Babakus & Boller, 1992; Chow et al., 2007; Dabholkar, Thorpe, & Rentz, 1996; Dagger, Sweeney, & Johnson, 2007; Fornell, Johnson, Anderson, Cha, & Bryant, 1996; Lee, Shanklin, & Dallas, 2003; Oh, 1998; Ryu et al., 2008). Since the study of moderate upscale restaurants in Malaysia has been neglected thus far, this study aims to empirically test the theoretical framework through investigating the complex relationships between important service marketing constructs.

Moderate upscale restaurants are the research setting for this study. The following section begins with an overview of moderate upscale restaurants. The research gaps and the research objectives of the study are then stated, the contributions that this study will make to the service marketing literature are discussed and the research design and structure of the thesis is outlined.

1.2 An Overview of Moderate Upscale Restaurants

In the traditional typology, quick service restaurants (also known as fast food restaurants), midscale restaurants and upscale restaurants (also known as fine dining restaurants) are commonly used to describe types of restaurants (Goldman, 1993). Muller and Woods (1994), however, argue that the traditional typology is inadequate for multiunit chains and propose two more restaurant types in an expanded restaurant typology. One of these is the moderate upscale restaurant. Moderate upscale restaurants are also known as casual dining restaurants or themed restaurants (Muller & Woods, 1994) and fall into the category of full service restaurants¹ (Koutroumanis, 2005; Sanson, 2004; Weiss, Feinstein, & Dalbor, 2004).

According to Muller and Woods (1994), moderate upscale restaurants lie categorically between midscale and upscale restaurants, more specialized in concept, combining the broad food menu of midscale restaurant chains' prices and the service level of upscale restaurants. Like Muller and Woods (1994), Spears et al. (2007, p. 13) view moderate upscale restaurants as "... foodservice establishments designed to attract middle-income individuals who enjoy dining out but do not want the formality and high price of fine dining restaurants." The moderate upscale restaurant is growing in popularity because "... it fits the societal trend of a more relaxed lifestyle" (Walker, 2008, p. 30). Moreover, moderate upscale restaurants are "... designed to provide customers with not only a meal, but also an entertaining experience" (Weiss et al., 2004, p. 23). In addition, some moderate upscale restaurants such as the Hard Rock Café and DÔME Cafés, sell merchandise (Euromonitor International, 2008). Restaurant patrons are encouraged to purchase souvenirs to commemorate their experience and many restaurant merchandise are treated as collectors' items (MacLaurin & MacLaurin, 2000; Weiss et al., 2004).

¹ Full service restaurants according to Sanson (2004) are characterised by table service for restaurant patrons. Food is relatively higher in quality compared to fast food restaurants. Restaurant ambiance and style vary greatly from moderate upscale to upscale restaurants.

1.3 Research Gaps in the Literature

The following subsections describe the four research gaps related to the restaurant industry identified in the service marketing and hospitality discipline.

1.3.1 Research Gap One

The first research gap relates to a lack of published research regarding restaurant patrons' perceptions of service quality and its dimensions in moderate upscale restaurants. Not much has been written specifically on the dimensions of service quality in the moderate upscale restaurants (MacLaurin & MacLaurin, 2000; Weiss et al., 2004). How service quality dimensions influence restaurant patrons' evaluations of service quality in moderate upscale restaurants has not been fully investigated, despite the call for industry-specific measures (Babakus & Boller, 1992; Buttle, 1996; Carman, 1990; Dabholkar et al., 1996).

Numerous studies on service quality in various service industries rely on the five SERVQUAL dimensions (tangibles, reliability, responsiveness, assurance and empathy), as determinants of service quality developed by Parasuraman et al. (1988). However, the SERVQUAL instrument has been substantially criticized², especially with regard to its operationalization and dimensionality (Babakus & Boller, 1992; Buttle, 1996; Cronin & Taylor, 1994; Teas, 1993). In the foodservice literature, numerous studies using the SERVQUAL instrument to measure customers' overall service quality experiences in restaurants failed to confirm its five dimensions (Bojanic & Rosen, 1994; Fu & Parks, 2001; Tucci & Talaga, 2000). For example, Bojanic and Rosen (1994) applied the 22 paired items of the SERVQUAL instrument in a restaurant setting. Their findings indicate six dimensions: tangibles, reliability, responsiveness, assurance, knowing the customer, and access. Bojanic and Rosen (1994) factored the knowing the customer and access dimensions from SERVQUAL's empathy dimension. In addition to many researchers in the foodservice industry failing to confirm the five dimensions of the SERVQUAL instrument, the instrument did not capture the food quality dimension. Several researchers on the foodservice industry (Johns & Tyas, 1996; Lee et al., 2003; Raajpoot, 2002; Richard, Sundaram, & Allaway, 1994; Sulek & Hensley, 2004; Tucci & Talaga, 2000) ascertain that the SERVQUAL instrument is incapable of capturing all of the service

² For a critique of the universal application of the SERVQUAL dimensions, see several studies (Babakus & Boller, 1992; Brady & Cronin, 2001; Teas, 1993).

quality dimensions in restaurants because it ignores the food quality elements. In fact, the SERVQUAL instrument groups food and drink, physical environment and employee uniform into the tangibles dimension (Johns & Howard, 1998). For example, Fu and Parks (2001) in their examination of the service quality dimensions that may influence older diners' intentions to return to a family-style restaurant include two items from food quality attributes to measure older diners' perceived service quality in restaurants and identify three dimensions. Of the five dimensions of SERVQUAL, only the tangibles dimension remained in their study; reliability and responsiveness were merged into a second dimension (reliability-responsiveness), and assurance and empathy were grouped into a third dimension (assurance-empathy). Stevens, Knutson and Patton (1995) modified the SERVQUAL instrument to make it specific to the restaurant industry through the development of the DINESERV instrument to define and measure service quality in restaurants. However, the DINESERV instrument is too similar to the SERVQUAL instrument in its dimensional structure (Huang, 2004; Keang & Bougoure, 2006; Kim, McCahon, & Miller, 2003a; Madanoglu, 2004).

In contrast to the stable dimensional structure of the SERVQUAL and DINESERV instruments, other dimensional studies of service quality in the restaurant industry have produced quite diverse dimensional structures. For example, in an empirical study of Spanish restaurants, Soriano (2003) identified six dimensions of service quality: quality reservations, comfort, quality and price of menu, personnel employed, management, and ancillary services. In view of these discussions, the appropriate measurement scale measuring the dimensions of service quality in restaurant industry is beset with uncertainty. Therefore, there is a need to identify the dimensions of service quality and examine how those dimensions influence restaurant patrons' evaluations of service quality. In particular, the literature on service quality is sparse for in moderate upscale restaurants.

1.3.2 Research Gap Two

The second research gap relates to a lack of published empirical research pertaining to service quality dimensions that the restaurant patrons perceive to be more or less important. Closing the research gap is important because identifying a set of service quality dimensions and testing the order of importance as perceived by restaurant patrons will allow restaurant marketers to be more certain that they are resourcing the appropriate service quality dimensions that restaurant patrons perceive as most and least important.

1.3.3 Research Gap Three

The third research gap relates to lack of published studies on the perceptions of service quality in the hospitality industry in Malaysia. Most service quality studies in the hospitality industry have been conducted in Western countries and the findings may not apply precisely to Malaysia, despite the call for a culture-specific perspective (Ueltschy & Krampf, 2001) and from the customers' point of view (Cronin & Taylor, 1994; Martínez & Martínez, 2007). In addition, several researchers (Aigbedo & Parameswaran, 2004; Brady & Cronin, 2001; Cronin & Taylor, 1994; Dabholkar et al., 1996; Kim, Ng, & Kim, 2009; Ueltschy & Krampf, 2001) have stressed the need to investigate the perceptions of service quality from the customers' cultural-specific perspective. Raajpoot (2004, p. 181) also believes these researchers' claims are justified as the following statement makes clear:

“No one conceptualization is expected to provide an absolute, objective, and universal view about the domain of service quality. Quality can only be defined and generalized within a certain cultural context. Therefore, one particular conceptualization cannot be of equal value to all cultures.”

Studies on service quality related to hospitality fields focusing on Asian countries are increasing. However, there seems to be little interest in conducting service quality studies in South-East Asia (Keang & Bougoure, 2006). In addition, service quality studies are mostly done in non-Muslim countries (Gayatri, Chan, Mort, & Hume, 2005). In fact, to date, researchers have been more interested in studying service quality in Chinese-Confucian belief countries and often equate the Chinese-Confucian influence on service quality as reflecting a general Asian influence (Gayatri et al., 2005). In addition, the findings of studies conducted elsewhere do not accurately reflect the Malaysian situation because of Malaysia's social, religious and cultural differences (Abdul Talib, 2009; Dabholkar et al., 1996; Gayatri et al., 2005; Raajpoot, 2004; Ueltschy & Krampf, 2001). Moreover, local idiosyncrasies could result in different patterns and strengths of the variable relationships across cultures (Dabholkar et al., 1996). Therefore, a study conducted locally is deemed necessary to address the research gaps identified in this study regarding patrons of moderate upscale Malaysian restaurants, so that the findings can be generalized.

1.3.4 Research Gap Four

The fourth research gap is a lack of published research unifying the theories regarding the interrelationships between service quality, customer satisfaction, perceived

value, restaurant image and behavioural intentions in a in a single theoretical framework focusing on moderate upscale restaurants in Malaysia.

The importance of these five marketing constructs (service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions) investigated in this current study is evident from the previous research streams on the hospitality industry (see: Ha & Jang, 2010b; Hu, Kandampully, & Juwaheer, 2009; Qin, Prybutok, & Zhao, 2010; Ryu et al., 2008; Tam, 2004). However, much of the previous research is focused only on a particular construct (Chow et al., 2007; González & Brea, 2005; Qin & Prybutok, 2008; Yap & Kew, 2006) and to date few studies have gone beyond that focus. Ryu, Lee and Kim (2012) and Ryu et al. (2008) represent an exception. For example, Ryu et al. (2008) examined the relationships between the four constructs (customer satisfaction, perceived value, restaurant image and behavioural intentions) and tested them in franchised fast food restaurants in the United States Midwest but their theoretical framework did not scrutinize the service quality construct. Hence the importance of this current study where within a single theoretical framework, the conceptual research model is comprehensive and the findings more robust than those of other theoretical frameworks examining only a single relationship, for example, service quality and customer satisfaction or service quality and perceived value (Brady et al., 2005; Chang, 2009; Cronin, Brady, & Hult, 2000; Suhartanto, 2011). As Brady et al. (2005, p. 215) observe “the one conceptualization, the comprehensive model, best captures the identified relationships.” In addition, the single theoretical framework has been successfully tested in various service industry settings (Clemes, Brush, & Collins, 2011; Clemes, Gan, & Ren, 2010; Clemes, Gan, & Kao, 2007; Clemes, Wu, Hu, & Gan, 2009; Cronin et al., 2000; Dagger et al., 2007; Pollack, 2009; Shu, 2010) but not in respect of the moderate upscale restaurant. This study therefore represents the first attempt to examine those relationships in the context of moderate upscale restaurants in Malaysia.

Furthermore, several researchers have suggested that new studies are required to investigate the relationships that exist among these service marketing constructs in a new research setting for further validation of research done to date (Caruana, Money, & Berthon, 2000; Chow et al., 2007; Cronin & Taylor, 1992; DeWulf, Odekerken Schröder, & Iacobucci, 2001; Fornell et al., 1996; Fu & Parks, 2001; Heung, Wong, & Qu, 2000; Namkung & Jang, 2008; Ryu, 2005; Ryu et al., 2008; Yap & Kew, 2006). Moreover, the comprehensive hierarchical and multidimensional theoretical framework will benefit both

academics and practitioners by identifying the relationships between these five marketing constructs.

1.4 Research Objectives

To bridge the research gaps as discussed in Section 1.3, this study aims to gain a better understanding of the factors that determine restaurant patrons' perceptions of service quality in moderate upscale restaurants in Malaysia, which in turn, lead to positive future behavioural intentions. This study proposes and tests, in moderate upscale restaurants in Malaysia, a hierarchical and multidimensional model. The four specific research objectives are to:

1. identify the service quality dimensions as perceived by restaurant patrons in moderate upscale restaurants in Malaysia;
2. identify the least and most important service quality subdimensions as perceived by restaurant patrons in moderate upscale restaurants in Malaysia;
3. investigate whether interaction quality, physical environment quality or outcome quality dominate restaurant patrons' perceptions of the overall service quality in moderate upscale restaurants in Malaysia; and
4. examine the direct relationships that exist between service quality, customer satisfaction, restaurant image, perceived value and behavioural intentions in moderate upscale restaurants in Malaysia.

1.5 Contributions of the Study

This study will provide contributions to the service marketing literature from both a theoretical and a practical perspective by satisfying the four research objectives.

From the theoretical perspective, currently, no published study has developed and tested a comprehensive hierarchical model with a set of first-order, second-order and third-order service quality dimensions, and to analyse the higher-order constructs (customer satisfaction, perceived value, restaurant image and behavioural intentions) in the model. In addition, the comprehensive hierarchical model developed in this study provides a valuable framework for future researchers who are examining the relationships among the constructs in the restaurant industry. Moreover, the hierarchical and multidimensional modelling approach will address some of the weaknesses of traditional measurement methods (such as

SERVQUAL and DINESERV – as detailed in Section 2.2) and thus provide a more accurate method of assessing service quality in the restaurant industry.

Secondly, this study will contribute to service marketing literature by developing an integrated theoretical framework (a complete hierarchical model including the higher order constructs) that investigates the complex relationships that exist among service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions in moderate upscale restaurants in Malaysia. To date, only a few studies have developed and tested a complete hierarchical model and the higher order constructs in various industries such as spectator satisfaction (Clemes et al., 2011), accommodation (Clemes et al., 2010; Clemes et al., 2009), health (Dagger et al., 2007), university student satisfaction (Clemes et al., 2007), restaurants (Chow et al., 2007), hairdresser/barber services and local phone service subscribers (Pollack, 2009), and mobile communication services (Shu, 2010). A comprehensive hierarchical modelling has not yet been done in respect to moderate upscale restaurants in Malaysia. This is a valuable contribution as it helps to improve the overall understanding of restaurant patrons' perceptions of service quality and the complex relationships that exist among important service marketing constructs in moderate upscale restaurants in Malaysia.

From a practical perspective, this study will benefit those managing moderate upscale restaurants in Malaysia. The close scrutiny of the service quality dimension will benefit the management (and especially the marketers) of moderate upscale restaurants who want to retain and attract new patrons: to meet the needs of patrons they will need to understand what patrons want. The findings of this study will provide moderate upscale restaurant management with a clear understanding of relevant service quality dimensions because they come from the restaurant patrons' perspective so that management will know exactly where and how to invest their ringgit to do the most good, considering the scarcity of resources.

Finally, this study will also benefit Malaysian restaurant operators, marketers and practitioners intending to enter the foodservice industry, particularly in moderate upscale restaurants. It is hoped that the findings of this study will provide them with a clear understanding of the foodservice business in Malaysia and assist them to develop and implement successful service marketing strategies.

1.6 Structure of the Thesis

This thesis contains six chapters in order to satisfy the research objectives outlined in Section 1.4. Chapter 2 reviews the service quality literature and the literature on the related constructs (service quality dimensions, service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions).

Chapter 3 begins with a discussion of the literature associated with all the constructs used to develop the 16 research hypotheses to satisfy the four research objectives followed by the theoretical framework development. The illustration of the proposed theoretical framework for study is also presented.

Chapter 4 describes the research methodology employed to test the 16 research hypotheses. Specifically, it details three-phase of the research methodology used in this study: (1) instrument development; (2) data collection procedures; and (3) data analyses procedures.

Chapter 5 presents the results of the data analysis using the Statistical Package for the Social Sciences (SPSS) and Analysis of Moment Structure (AMOS) statistical software packages version 16.0 compatible for Microsoft Windows. It begins with an introduction of the chapter followed by the analysis of the response rate, discussion on the characteristics of the samples, followed by the factor rotation using Exploratory Factor Analysis (EFA) and the statistical analysis of 16 hypotheses using SEM.

Finally, Chapter 6 concludes the study by making the final inferences of the thesis. It begins with the discussion of major findings of the study presented in Chapter 5, followed by the implications of the study, its limitations and recommendations for future research.

1.7 Research Design

To carry out the research for this study, a three-stage research design was devised. A graphic representation detailing the research design is presented in Figure 1.1. Additional details of the research methodology are illustrated in Figure 4.1.

The first stage provides the background to the study, then identifies research gaps in the literature and sets out the research objectives. This leads on to a review of relevant literature on services marketing, especially in the hospitality and tourism disciplines, in order to develop the key issues. Based on the information generated predominantly from empirical studies, the research gaps and objectives of the study are refined, and then the

research hypotheses are established. Initially, the main focus of the literature review was to develop the hypotheses of the study and to establish the theoretical framework for demonstrating these hypotheses.

Data gathering, the second stage in the research design is separated into three phases. The first focuses on development of the questionnaire which involved generating samples of items before constructing a prototype questionnaire. The first-phase also emphasized the reliability of the measurement. After obtaining human ethics approval from Lincoln University, this involved conducting a pilot test and developing the final draft of the questionnaire. Special attention was paid to the comments and suggestions of the respondents as well as the Cronbach alpha score impacts resulting from the pilot testing before finalizing the draft questionnaire. The second phase involved the data collection procedures. Their focus was to test the hypotheses established in Chapter 3 as well as to satisfy the research objectives described in Chapter 1. Second-phase activity involved identifying the minimum sample size and deciding to employ a non-random sampling method and mall intercept sampling techniques to select potential respondents for the questionnaire. Respondents were drawn from restaurant patrons of moderate upscale restaurants in Klang Valley, Malaysia. Lastly, the third phase of the research design involved conducting preliminary data analyses, followed by analysing in depth the data and examining the findings. Based on the results of analysing the data, the research hypotheses was tested and confirmed, then later, shown to satisfy the research objectives. The third phase also emphasized identifying and ensuring the validity and reliability of the measurements. Special attention was given to unexpected methodological issues arising from testing the hypotheses and the proposed theoretical framework of the study.

Finally, the third-stage activity involved writing up the detailed discussion and interpretation of the findings using the hypotheses established in the study as well as the research objectives. The thesis then concludes with a discussion of the research limitations and implications and recommendations for future research.

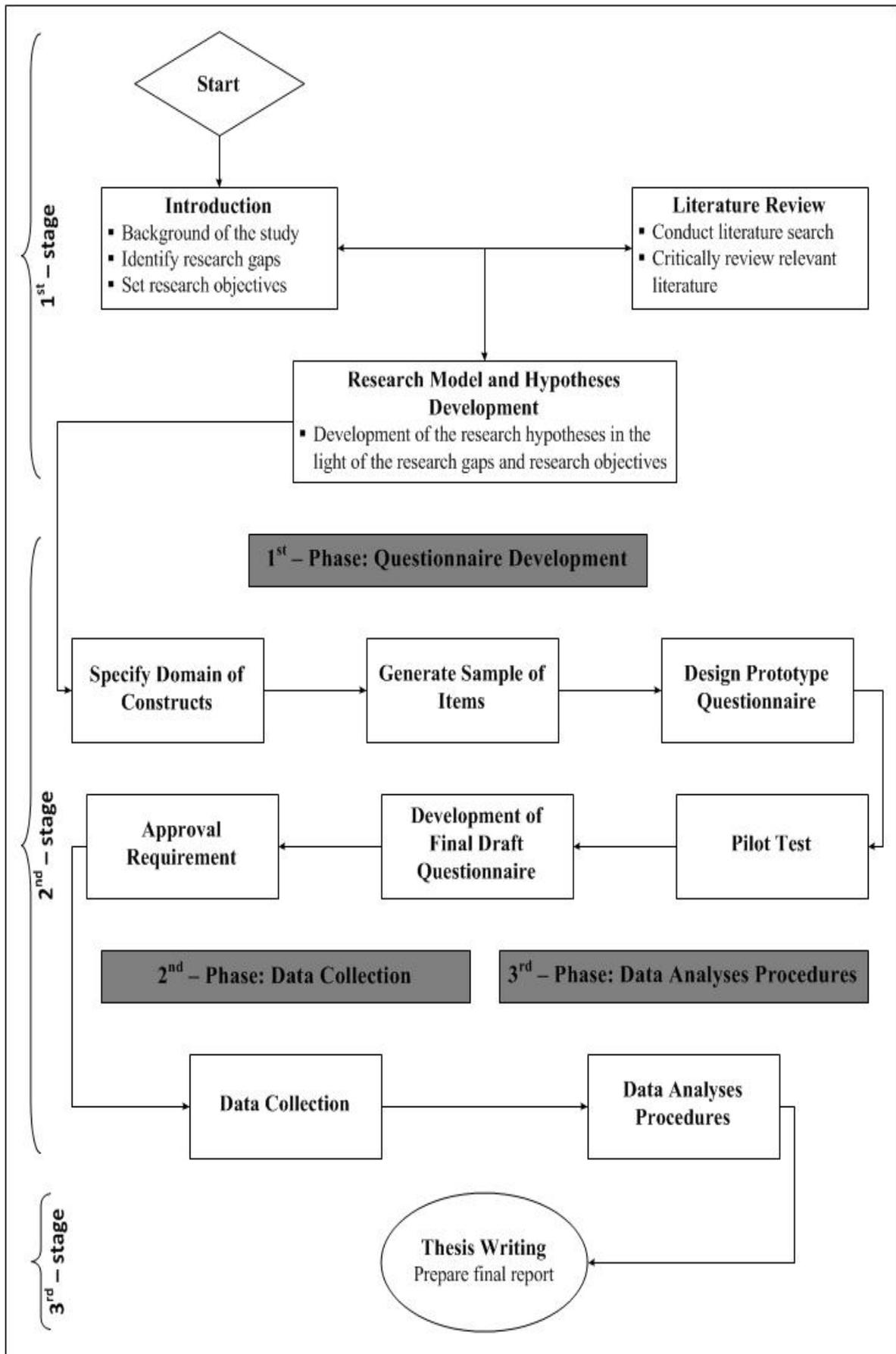


Figure 1.1: Research Design Outline

Chapter 2

Literature Review

This chapter provides a review of the relevant literature on the conceptualisation and measurement of service quality particularly focusing on studies on moderate upscale restaurants in Malaysia. The primary dimensions and subdimensions of moderate upscale restaurant service quality, service quality, customer satisfaction, perceived value, restaurant image, behavioural intentions, and the relationships among these marketing constructs are also discussed.

2.1 Conceptualization of Service Quality

Over several decades, the conceptualization and measurement of service quality perceptions have been one of the most debated and controversial topics in the services marketing literature. Many studies on service quality have attempted to conceptualise the construct and develop a corresponding model. In the early services marketing era, several researchers proposed that perceived service quality consisted of two dimensions (Grönroos, 1984), ten dimensions (Parasuraman, Berry, & Zeithaml, 1985), five dimensions (Parasuraman et al., 1988) and three dimensions (Rust & Oliver, 1994). Specifically, from a theoretical viewpoint, two dominant schools of thought existed before a reconciliation attempt on the conceptualization of service quality by Brady and Cronin (2001). According to Brady and Cronin (2001), researchers have generally adopted one of two conceptualizations of service quality: the Nordic Perspective proposed by Grönroos (1984) and the American Perspective proposed by Parasuraman et al. (1988). The following subsections present a review of service quality models.

2.1.1 The Perceived Service Quality Model

According to the Nordic Model developed by Gronroos (1984), the two dimensions of perceived service quality are technical quality (what service is provided) and functional quality (how the service is provided). The technical quality dimension in the Nordic model reflects the outcome of the service act and parallels the outcome quality dimension of Brady and Cronin (2001). The technical dimension can be measured by customers

objectively or in a product (Grönroos, 1984). According to Grönroos (1984) technical quality is basically tangible and what customers get after the service delivery and buyer-seller interactions. To simplify, technical quality relates to what the customer receives in material terms; in a restaurant context, it refers to what the restaurant delivers to its patrons, for instance, the quality of the food.

Functional quality represents the perception of the manner in which the service is delivered. Brady and Cronin (2001) view functional quality as interaction quality, that is, the interactions between customers and staff during the service encounter. Grönroos (1984) points out that the functional dimension is usually evaluated in a very subjective way. For example, in a restaurant setting, functional quality refers to the behaviour of a restaurant waiter or the appearance of a restaurant hostess. Restaurant patrons will be influenced by the ways in which the technical quality is transferred to them. In addition, the technical and functional qualities of service have a direct effect on an organization's image (Grönroos, 1984).

2.1.2 The SERVQUAL Model

In the original SERVQUAL model, Parasuraman et al. (1985) proposed 10 dimensions: access, communication, competence, courtesy, credibility, reliability, responsiveness, security, tangibles and understanding/knowing the customer. These authors identified the differences between perceived performance and expected performance on the 10 dimensions that determined overall perceived service quality.

In a further study, Parasuraman et al. (1988) identified levels of overlap among some of the dimensions identified in the 1985 study and reduced the original 10 dimensions to five dimensions (tangibles, reliability, responsiveness, assurance and empathy). The SERVQUAL model has been well utilized as evidenced in the literature (Babakus & Boller, 1992; Buttle, 1996; Chang, 2009; Heung et al., 2000; Kueh & Boo, 2007) but, since its creation, it has been highly criticized (see a critique of SERVQUAL in Subsection 2.2.1). Nevertheless, the SERVQUAL model has been used by several researchers (Brady & Cronin, 2001; Cronin & Taylor, 1994; Dabholkar et al., 1996; Raajpoot, 2004; Wong & Fong, 2012) as the groundwork for developing new measurements and models.

2.1.3 The Three-Component Model

A Three-Component Model proposed by Rust and Oliver (1994) was formed as an expansion of the Nordic Model developed by Grönroos (1984). In this model, the overall perception of service quality was based on the customer's evaluation of three dimensions of the service interface: the service product (technical quality), the service delivery (functional quality) and the service environment (the authors added this third dimension in the three-component model). The three-component model suggests that a service product is the outcome of the service performance, but service delivery is the consumption process that occurs during the service act. Lastly, the service environment is the internal and external atmosphere that is viewed as having an integrated role in customer service perception development. However, Rust and Oliver (1994) did not test their conceptualization, but support has been found for similar models by McDougall and Levesque (1994) in retail banking and by McAlexander, Kaldenberg and Koenig (1994) in the health care industry.

2.1.4 The Multilevel Model of Retail Service Quality

Drawing from an extensive literature review of service quality studies, especially in the retail environment, Dabholkar et al. (1996) maintained that the SERVQUAL model was inappropriate in the retail industry and proposed a multilevel model of retail service quality suitable for use in retail businesses offering a mixture of services and goods, such as department or specialty stores.

The findings of Dabholkar et al. (1996) study provided the initial evidence that service quality needs to be assessed at several levels. The multilevel model of retail service quality recognized the many facets and dimensions of service quality suggesting that retail service quality is assessed at three different levels: a higher-order factor that is defined by two additional levels of dimensions (Brady & Cronin, 2001). The higher-order factor of the retail service quality model is defined by five primary dimensions (physical aspects, reliability, personal interaction, problem solving and policy) which in turn are composed of six subdimensions: appearance, convenience, promise, doing it right, inspiring confidence, and being courteous and helpful (Dabholkar et al., 1996).

To validate the proposed model, Dabholkar et al. (1996) utilized both qualitative and quantitative research methods and identified 28³ measured items to test only the performance-based measures of retail service quality. The findings produced excellent model-fit-indices for each of the levels as well as evidence of scale reliability and discriminant validity and accurately captured the sample customers' perceptions of retail service quality.

2.1.5 An Integrated Hierarchical Model

The reconciliation work of Brady and Cronin (2001) was the first attempt to integrate and expand the multilevel model of retail service quality based on Dabholkar et al. (1996) who considered that perceptions of service quality were multilevel and multidimensional and the three-component model based on the notion of Rust and Oliver (1994) that the overall perception of service quality was based on a customer's evaluation of the three dimensions of the service encounter: (1) the customer-employee interaction (functional quality; see Grönroos, 1982, 1984); (2) the service environment (SERVICESCAPE; see Bitner, 1992); and (3) the outcome (technical quality; see Grönroos, 1982, 1984). Thus, Brady and Cronin (2001) proposed an integrated hierarchical model extended from models developed by Dabholkar et al. (1996) and Rust and Oliver (1994).

Further, Brady and Cronin (2001) claimed that although it was obvious that perceptions of service quality are hierarchical and multidimensional, there was no specific agreement on the number of service quality dimensions and the content of the dimensions. The authors also revealed that although Carman (1990) was the first researcher to note that customers tend to break service quality dimensions into various subdimensions, there had been little effort to identify the attributes or factors that defined the subdimensions. Drawing from an extensive literature review, Brady and Cronin (2001) conducted the survey to four industries: amusement parks, photo developing, dry cleaning and fast food restaurants, to make the study more relevant to generic service industries. The integrated hierarchical model viewed the service quality factor as a higher-order factor and suggested that customers form perceptions of service quality based on three primary dimensions: interaction quality, physical environment quality and outcome quality that may take place

³ The 28 measured items in the multilevel model of retail service quality were a combination of the 17 original SERVQUAL items that apply to the proposed models and 11 new items developed to measure the constructs that are unique to the retail environment.

during service delivery. The three primary dimensions contrast with the five dimensions of SERVQUAL developed by Parasuraman et al. (1988). The findings of the qualitative survey yielded nine distinct subdimensions; each primary dimension was found to consist of its own subdimensions including attitude, behaviour and expertise for interaction quality, ambience, design and social factors for physical quality, and waiting time, tangibles and valence for outcome quality. Brady and Cronin (2001) further claimed that only the tangible dimension in SERVQUAL can be considered as representing service quality. The other four dimensions of SERVQUAL (reliability, responsiveness, assurance and empathy) are repositioned as descriptors or modifiers of the nine subdimensions. These perceptions, in turn, form the customers' overall perceptions of service quality (Brady & Cronin, 2001).

2.2 Measuring Service Quality

The next subsection discusses the SERVQUAL instrument and the criticisms of it. Then the SERVPERF, DINESERV and hierarchical modelling approach are also discussed.

2.2.1 An Overview of the SERVQUAL Instrument

The SERVQUAL instrument developed by Parasuraman et al. (1988) has been outlined in many papers in recent years and has been used in many areas, including the hospitality industry, to assess customer perceptions of service quality in service organizations (Babakus & Boller, 1992; Heung et al., 2000; Kang, 2006; Saleh & Ryan, 1991; Seidman, 2001).

The SERVQUAL instrument was based on the disconfirmation paradigm used originally to evaluate the level of customer satisfaction. The disconfirmation paradigm suggests that a customer's satisfaction level towards a product or service depends on the level of disconfirmation which ranges from negative disconfirmation, confirmation, to positive disconfirmation. Negative disconfirmation occurs when the performance of the product or service is lower than a customer's expectation resulting in customer dissatisfaction. Confirmation occurs when the performance of the product or service evenly matches a customer's expectation which may lead to either customer satisfaction or dissatisfaction. Positive disconfirmation occurs when the performance of the product or service exceeds a customer's expectation (Churchill & Surprenant, 1982).

Subsequent studies in a variety of service settings suggested that the SERVQUAL instrument possessed certain limitations. Cronin and Taylor (1992), Babakus and Boller (1992) and Carman (1990) were among the earliest researchers to report the replication and testing of the SERVQUAL instrument and offered suggestions. The central issues involved in measuring service quality employing the SERVQUAL instrument have been well documented by several academics (Babakus & Boller, 1992; Brown, Churchill, & Peter, 1993; Buttle, 1996; Carman, 1990; Cronin & Taylor, 1994; Teas, 1993) especially in the operationalization of the SERVQUAL instrument and the five dimensions of SERVQUAL. The following subsections review the criticisms of the SERVQUAL Instrument.

2.2.1.1 The Dimensions of SERVQUAL

Parasuraman et al. (1988) claimed that the five SERVQUAL dimensions were a concise representation of the core criteria that customers employ in evaluating service quality. In addition, the authors maintained that the five dimensions of SERVQUAL are applicable across a broad spectrum of service industries. Nevertheless, the findings of several studies do not agree with this contention (see: Babakus & Boller, 1992; Brown et al., 1993; Buttle, 1996; Carman, 1990; Cronin & Taylor, 1992; Kueh & Boo, 2007).

Numerous replication studies such as Brown et al. (1993), Babakus and Boller (1992) and Carman (1990) adopted the SERVQUAL instrument and their findings failed to confirm the five dimensions of SERVQUAL. For example, Carman (1990) adopted the SERVQUAL instrument to measure service quality in four service industries (dental school patient clinic, business school placement centre, tyre store and acute care hospital) and found that the SERVQUAL instrument was limited in its application: the five dimensions of the SERVQUAL instrument were not completely generic across these four service industries leading to the suggestion that modifications to the measured items and wordings were necessary to accommodate the service industry under investigation. Babakus and Boller (1992) raised questions about the suitability of the SERVQUAL instrument for measuring service quality in a wide range of services and concluded that it is inappropriate to use SERVQUAL as a standard measurement scale for all services; they recommended that measurements should be designed for specific service industries. In addition, Brown et al. (1993) doubted whether the SERVQUAL instrument used to measure service quality could be universally applicable to all service industries because many measured items were missing.

Many academics in the foodservice industry have applied the SERVQUAL instrument to assess service quality, including full service restaurants (Bojanic & Rosen, 1994; Kueh & Boo, 2007; Lee & Hing, 1995; Tucci & Talaga, 2000), pizza delivery (Richard et al., 1994), industrial foodservice restaurants (Johns & Tyas, 1996), family-style restaurants (Fu & Parks, 2001) and airport restaurants (Heung et al., 2000). Based on a review of the literature, there has been much debate over service quality construct in the foodservice industry when the construct is measured using the SERVQUAL instrument. For example, like the findings of Babakus and Boller (1992) and Carman (1990), Tucci and Talaga (2000) and Johns and Tyas (1996) also raised doubts that the SERVQUAL instrument could be used effectively in any or all foodservice settings. These authors claimed that since each type of restaurant faced a different set of patrons, the instrument must reflect the unique evaluative criteria used by these patrons. In addition, Sulek and Hensley (2004) intended to use the SERVQUAL instrument in their study but it did not meet the restaurant manager's needs because the questions were too long and too general and did not capture critical characteristics of a restaurant's service. Similar case was happen in the study in fast food restaurants in Delhi, Jain and Gupta (2004) employed SERVQUAL instrument; they observed that many respondents hesitated to fill it up the questionnaire and returned it on the spot when they saw the lengthy questionnaire.

Furthermore, Johns and Tyas (1996) and Namkung and Jang (2007) noted that when food items were included in the SERVQUAL instrument, they were unable to clearly obtain factor patterns and the results factored differently from Parasuraman et al. (1988). Several researchers (Johns & Tyas, 1996; Namkung & Jang, 2007; Sulek & Hensley, 2004; Tucci & Talaga, 2000), recommended that the SERVQUAL instrument needed to be applied with caution and concluded that a more appropriate measurement was needed to measure service quality in the foodservice industry.

2.2.1.2 The Operationalization of the SERVQUAL Instrument

The original SERVQUAL instrument consisted of 22 pairs of items to measure the gap between what the customers think should be provided and what they think actually has been provided. The SERVQUAL instrument analyses the level of service quality by evaluating the gaps between customers' expectations and perceptions of a service and the actual service performance. A positive gap occurs when the customers' perceptions exceed their expectations. A negative gap occurs when customers' expectations are not met.

Respondents must complete the entire SERVQUAL instrument based on their expectations and perceptions of the actual service received. In addition, completing the SERVQUAL instrument may be difficult, especially in service areas where many customers are first-time visitors and their expectations are not realistic. Some customers have difficulty in differentiating many of the measured items in the SERVQUAL instrument and it is sometimes impractical to ask customers about their expectations before consumption and then again immediately after consumption (Bozorgi, 2006; Carman, 1990; Fu & Parks, 2001; Kouthouris & Alexandris, 2005).

In responding to these criticisms, Parasuraman et al. (1991) conducted another study that employed the original SERVQUAL instrument. However, their findings failed to support the original five dimensions of the SERVQUAL instrument identified in Parasuraman et al. (1988) earlier study. The substantial overlaps between the responsiveness and assurance factors were detected in the five-factor structure (Parasuraman et al., 1991). In order to improve the SERVQUAL instrument and to verify its applicability, Parasuraman et al. (1991) refined the instrument and claimed that the key to providing superior service is understanding and responding to customer expectations; the authors study eliminated the negatively expressed items, replaced two confusing items with non-redundant alternatives and added importance weights to the measurement process. Notwithstanding that, their findings did not support the usefulness of the expectation items of the SERVQUAL instrument, consistent with their 1988 study. Further, Parasuraman et al. (1991) recommended measuring service quality only in terms of performance.

Despite the original SERVQUAL instrument having undergone several modifications and refinements over a period of years (Parasuraman et al., 1991; Parasuraman, Berry, & Zeithaml, 1994), the SERVQUAL instrument continues to display a lack of consistency in replicating the dimensions in different service environments. Academics in the service marketing field (Babakus & Boller, 1992; Brady & Cronin, 2001; Brown et al., 1993; Carman, 1990; Cronin & Taylor, 1992, 1994; Llosa, Chandon, & Orsingher, 1998; Teas, 1993; Van Dyke, Kappelman, & Prybutok, 1997) have raised criticisms and questioned the appropriateness of using the SERVQUAL instrument to measure service quality in service industries. These criticisms led to the development of alternative instruments (such as SERVPERF and DINESERVE) and models to measure customer perceptions of service quality.

2.2.2 Performance-based Measures (SERVPERF)

Cronin and Taylor (1992) who were amongst the first researchers to criticize the SERVQUAL instrument, specifically regarding its the reliability and validity in all circumstances, converted the framework of the model of Parasuraman et al. (1988) with respect to the conceptualization and measurement of service quality and proposed a ‘SERVPERF’ performance-based measure of service quality. SERVPERF is a measurement of service quality based only on performance rather than expectations and performance. In their empirical study, Cronin and Taylor (1992) provided evidence across four industries (banks, pest control, dry cleaning companies and fast food restaurants) to corroborate the superiority of the ‘performance-based’ instrument over the disconfirmation-based SERVQUAL instrument. The authors claimed that the performance-based measure was an enhanced means of measuring the service quality construct and was superior to the SERVQUAL instrument.

The SERVPERF instrument is supported in many studies; for example, Jain and Gupta (2004) conducted a survey of customers’ service quality perceptions in fast food restaurants in India. The authors compared weighted and unweighted versions of the SERVQUAL and SERVPERF instruments. The authors found that SERVPERF instrument is more effective in explaining service quality constructs and variations in overall service quality. In addition, the SERVPERF instrument has a psychometrically superior assessment of service quality, enjoys improved reliability and validity, and explains more variance in the overall evaluation of perceived service quality (Cronin & Taylor, 1992; Jain & Gupta, 2004; Martínez & Martínez, 2007, 2008). Therefore, this study measures service quality using a performance-only measurement scale.

2.2.3 DINESERV Instrument

Stevens et al. (1995) developed the DINESERV instrument in response to the findings of Dubé, Renaghan and Miller (1994) that the SERVQUAL instrument was inadequate for the unique restaurant environment. The DINESERV instrument was designed to measure service quality in restaurants based on the LODGSERV instrument developed by Knutson, Stevens, Wullaert, Patton and Yokoyama (1990) for the hotel industry. A number of researchers (Keang & Bougoure, 2006; Kim et al., 2003a; Ladhari et al., 2007; V. Estepa, Shanklin, & Back, 2004) have used the DINESERV instrument to measure service quality in the foodservice industry.

Tucci and Talaga (2000) maintained that existing instruments such as SERVQUAL and DINESERV used in measuring service quality in restaurant settings, while theoretically sound, have implementation problems. The DINESERV instrument shares similar problems to the SERVQUAL instrument as addressed by several researchers (Babakus & Boller, 1992; Carman, 1990; Cronin & Taylor, 1992), such as the five dimensions of SERVQUAL and the operationalization of the instrument (Kim et al., 2003a; Sulek & Hensley, 2004; Tucci & Talaga, 2000). Like the SERVQUAL instrument, the DINESERV instrument is also a gap theory model as it compares a service quality expectation index to a service quality perception index using 29 paired items. In addition, Sulek and Hensley (2004) maintained that DINESERV instrument is too long and it contains no questions assessing the overall quality of the dining experience.

2.2.4 The Hierarchical Modelling Approach

Marketing academics have generally agreed that service quality is a hierarchical and multidimensional construct (Brady & Cronin, 2001; Dabholkar et al., 1996; Grönroos, 1984; Parasuraman et al., 1988; Rust & Oliver, 1994). Brady and Cronin (2001) introduced a hierarchical and multidimensional model; they extended the model based on the retail service quality model developed by Dabholkar et al. (1996) as a framework for measuring service quality on the basis that service quality is a multidimensional construct with a hierarchical structure. The hierarchical and multidimensional framework is believed to offer an improved and more thorough approach that explain the complexity of human reactions to a service experience leading some researchers to propose that perceptions of service quality are not only multidimensional but also occur at various levels (Brady & Cronin, 2001; Dabholkar et al., 1996).

The impact of the conceptualisation and measurement of service quality by Brady and Cronin (2001) has been reflected in some replications, adaptations or modifications of their hierarchical model by a number of studies on the conceptualization and measurement of service quality in various service industries and cultures such as accommodation (Clemes et al., 2010; Clemes et al., 2009), restaurants (Chow et al., 2007), education (Clemes et al., 2007), health services (Dagger et al., 2007), hairdresser/barber services and local phone service subscribers (Pollack, 2009), mobile communication services (Lu, Zhang, & Wang, 2009; Shu, 2010), sport (Clemes et al., 2011; Ko & Pastore, 2005; Shonk, 2006), travel and recreation (Chen, Lee, Chen, & Huang, 2011; Martínez & Martínez,

2008; Martínez & Roemer, 2006), transport services (Martínez & Martínez, 2007) and insurance companies (Martínez & Martínez, 2010). These studies provide empirical evidence and add support to a multidimensional and hierarchical model of service quality as identified by Brady and Cronin (2001) and Dabholkar et al. (1996).

2.2.5 Limitations of the SERVQUAL and DINESERV Measurement Instrument

Instruments such as SERVQUAL, SERVPERF and DINESERV discussed in the previous sections have been considered inappropriate for measuring service quality in the restaurant industry (Johns & Tyas, 1996; Kim et al., 2003a; Namkung & Jang, 2007; Sulek & Hensley, 2004; Tucci & Talaga, 2000). Other instruments like TANGSERV and DINESCAPE have also been seen as inappropriate for measuring service quality in the restaurant industry because these instruments only measured the tangibles dimension of service quality. TANGSERV instrument proposed by Raajpoot (2002) is a modification of SERVQUAL models focusing on measuring only the tangible dimension in the restaurant industry. The TANGSERV instrument included a three-factor structure: layout/design, product/service and ambiance/social. However, the findings generated by the TANGSERV instrument has not received much attention from researchers mainly because of unclear methodology and questionable statistical analyses that cloud the findings (Ryu & Jang, 2008). In responding to the unclear methodology and questionable statistical analyses of the TANGSERV instrument, Ryu and Jang (2008) proposed DINESCAPE instruments. DINESCAPE is combination of the built environment and SERVICESCAPE (developed by Bitner, 1992)⁴ with the man-made physical and human surroundings only inside the dining room areas but not in the non-dining internal environments (e.g., restroom and waiting area) and external environment (e.g., parking and external building design). The DINESCAPE instruments identified six factors: facility aesthetics, ambiance, lighting, table settings, layout, and service staff. The statistical analyses show the DINESCAPE is reliable and valid instrument; however this instrument primarily targeted the upscale restaurant. Similar to the TANGSERV instrument, the DINESCAPE instrument is only

⁴ Bitner (1992) proposed the built environment and SERVICESCAPE whose focus is on three dimensions: (1) ambiance (temperature, noise, music, odours, and lighting; elements related to aesthetic appeal), (2) spatial layout and functionality (the way in which seats, aisles, hallways and walkways, foodservice lines, restrooms, and the entrance and exits are designed and arranged in service settings to facilitate customers' enjoyment), and (3) signs, symbols and artefacts (includes signage and décor used to communicate and enhance a certain image or mood, or to direct customers to desired destinations).

measuring the physical environment part and not the restaurant patrons' perceptions of service quality.

Therefore, in the light of the criticisms of SERVQUAL and other instruments, this current study adopts the hierarchical and multidimensional modelling approach introduced by Brady and Cronin (2001) and Dabholkar et al. (1996) to measure restaurant patrons' perceptions of service quality in moderate upscale restaurants in Malaysia. The use of the multidimensional and hierarchical model has received substantial support from several marketing academics and has been validated by several researchers in various industries (e.g., Chen et al., 2011; Clemes et al., 2011; Martínez & Martínez, 2010; Shu, 2010).

2.3 Service Quality Dimensions for Moderate Upscale Restaurants

A hierarchical modelling approach using the framework introduced by Brady and Cronin (2001) has been used in this study to evaluate the subdimensions of service quality based on restaurant patrons' evaluations of three dimensions of the service encounter: interaction quality, physical environment quality and outcome quality. In brief, the hierarchical model suggests restaurant patrons of moderate upscale restaurants judge their perceptions of service on the food and beverage they ordered (outcome quality), how the food and beverage was served and how employees interacted with them (interaction quality). The restaurant ambience and restaurant cleanliness (physical environment quality) of the restaurant also influenced the restaurant patrons' perceptions of overall service quality. The three primary dimensions: interaction quality, physical environment quality and outcome quality are defined by 12 corresponding subdimensions for measuring overall service quality in moderate upscale restaurants. The subsequent subsections provide a review of the service marketing literature relating to the primary dimensions of service quality in moderate upscale restaurants.

2.3.1 Interaction Quality

Interaction quality represents the interplay between the restaurant patrons and the service personnel (Surprenant & Solomon, 1987). Functional quality, as proposed in the Nordic Model of Grönroos (1984), is a similar concept to interaction quality.

In the restaurant industry, the front-of-the-house employees, for example wait staff, represent large numbers of employees who have direct contact with restaurant patrons (Yoo, Shin, & Yang, 2006). In addition, according to Tucci and Talaga (2000, p. 10) front-

of-the house employees are in most cases, “the only direct personal contact between a representative of the restaurant and the diner.” Hartline and Ferrell (1996) claimed that the employee and restaurant patron interface was an important determinant of restaurant patrons’ perceptions of service quality.

The restaurant industry involves a high degree of interaction between the front-of-the-house employees and restaurant patrons, therefore there are numerous opportunities for service failures to occur (Yoo et al., 2006). The employees’ actual attitude and behaviour and service expertise may change a restaurant patron’s assessment of the service (Brady & Cronin, 2001). For example, front-of-the-house employees who are able to provide a prompt and courteous service are likely to enhance customer satisfaction. Normally, the more effort an employee demonstrates, the greater the level of service quality and, the greater the level of customer satisfaction. In addition, interaction quality not only relies on the interaction between front-of-the-house employees and the restaurant patrons but also on the interaction among the employees (Brady & Cronin, 2001; Hartline & Ferrell, 1996; Heide & Grønhaug, 2006; Ko & Pastore, 2005; Noone, 2008; Seidman, 2001).

In this study, three subdimensions are proposed as constituting the interaction quality dimension, employees’ interpersonal skills, professional skills and problem solving skills. The following subsections focus on the subdimensions of interaction quality for moderate upscale restaurants.

2.3.1.1 Interpersonal Skills

The first subdimension of interaction quality in this study is employees’ interpersonal skills. This study proposes that employee attitude, behaviour empathy and personal grooming are the elements of employees’ interpersonal skills. Grönroos (1988, p. 13) states that attitude and behaviour means “the customers feel that the contact persons are concerned about them and genuinely interested in solving their problems in a friendly and spontaneous way (process-related criteria).” Several studies (Bitner, 1990; Brady & Cronin, 2001; Grönroos, 1990; Koutroumanis, 2005; Surprenant & Solomon, 1987) point out that employee attitude and behaviour are extremely important in service organizations because these skills influence restaurant patrons’ perception of service quality. The employees’ interpersonal skills, such as social sensitivity, helpfulness, friendliness and politeness, help to create a good first impression for restaurant patrons and may influence customer satisfaction (Sulek & Hensley, 2004). Dube et al. (1994) found that although

customer satisfaction depended most on food quality, the “attitude of staff who wait the table and serve the food” for example, was a significant attribute predicting customer satisfaction in a restaurant.

2.3.1.2 Professional Skills

The professional skills subdimension is identified as the second subdimension in interaction quality in this study. Employee service skills, language and communication and product knowledge, are the elements of the professional skills in this study. The employees’ professional skills are important prerequisites for the creation of successful service encounters (Grönroos, 2006). Grönroos (1988, p. 13) stated that professionalism and skills means “the customers realize that the service provider, its employees, operational systems, and physical resources have the knowledge and skills required to solve their problems in a professional way (outcome-related criteria).” The front-of-the-house employees’ role in increasing sales in hospitality has been pointed out by Bowen and Morris (1995) whose findings showed that menu design alone does not increase sales; however, front-of-the-house employees could use the menu card as a sales aid in order to increase sales.

2.3.1.3 Problem Solving Skills

In addition to employees’ interpersonal skills and professional skills, the third subdimension, employees’ problem solving skills, is included because it has been shown as an important dimension by previous studies on various services industries (Cadotte & Turgeon, 1988; Dabholkar et al., 1996; Fu & Parks, 2001; Martínez & Martínez, 2008; Soriano, 2003). Several service marketing academics (Kim & Jin, 2002; Lu et al., 2009; Martínez & Martínez, 2008) have pointed out that problem solving skills are part of the interaction quality, based on their qualitative and empirical analyses. These authors’ findings reveal that the customers are quite sensitive to how service providers address problems and complaints. Similarly, Westbrook (1981) has posited that customers are concerned about how the employees handle problems and complaints during the interaction process. In the restaurant setting, front-of-the-house employees play an important role, during service delivery and service recovery, because they repeatedly deal with unsatisfied customers when there is a service failure (Kim, McCahon, & Miller, 2003b; Yoo et al.,

2006) and problem solving skills help the front-of-the-house employees respond to complaints (Dabholkar et al., 1996).

2.3.2 Physical Environment Quality

The physical environment quality has a broader definition than the SERVQUAL tangibles dimension which refers to the physical aspects of the service. In a traditional service setting, the service environment relates to the physical ambience of the service encounter (Rust & Oliver, 1994).

According to Ryu and Han (2011), eating away from home for a majority of restaurant patrons is more important than dining. Such patrons may seek a memorable dining experience away from home so that the atmosphere of the restaurant can play a critical role in creating a memorable experience (Ryu & Han, 2011). To capture how restaurant patrons perceived the physical environment quality in moderate upscale restaurants, six subdimensions (restaurant ambience, restaurant aesthetics, layout and design, menu design, table settings and restaurant cleanliness) were proposed. They are discussed in the following subsections.

2.3.2.1 Restaurant Ambience

Restaurant ambience factors include music, temperature, lighting, noise and scent (Baker, 1987; Bitner, 1992; Kotler, New York University, Institute of Retail Management/1973; Tombs & McColl-Kennedy, 2003). Restaurant ambience has considerable support in the foodservice literature. For example, Milliman (1986) examined the effect of background music on the behaviour of restaurant patrons. Milliman's (1986) findings suggested that the tempo of background music affects dining speed. Other research supports the idea that good smells sell. For example, pleasant scents enhance mood (Robson, 1999) and food aroma is expected to be a strong indicator of the quality of the food itself (Raajpoot, 2002). In a study of ethnic restaurants, Josiam et al. (2007) claim that sight, sound, smell and touch are all combined to create the stage setting for the dining experience.

Studies have suggested that the restaurant ambience of a moderate upscale restaurant is more elaborate, attempts to tell a story and may also provide a source of entertainment on its own (Weiss, 2003). Furthermore, each moderate upscale restaurant should have some uniqueness to differentiate it from its competitors (Abdelhamied, 2011;

MacLaurin & MacLaurin, 2000; Ryu et al., 2008; Weiss, 2003). For instance, in a Hard Rock Café, American style food is served to the patrons, rock and roll background music is played in the dining areas and the retail store plays a role in the entertainment value of the restaurants (MacLaurin & MacLaurin, 2000; Weiss, 2003). In Victoria Station restaurants, food and beverages are served in a unique dining room setting: the dining areas are modelled after railroad boxcars with the décor of railroad memorabilia and baggage carts. The decoration in the dining area of Victoria Station restaurants matches the restaurant theme. Additionally, the particular identity and unique character of the Hard Rock Café or Victoria Station restaurant directly or indirectly appears and is viewed by the customer, thus providing an entertaining and memorable dining experience.

2.3.2.2 Facility Aesthetics

Facility aesthetics, according to Wakefield and Blodgett (1994), refer to a function of architectural design, along with interior design and décor. Several elements categorized as facility aesthetics like wall décor (such as paintings and picture frames), flowers, plants, and furniture, can distinguish a restaurant from its competitors (Ryu & Jang, 2007). Facility aesthetic factors are important because they influence ambience (Bitner, 1992). According to Ryu and Jang (2008), facility aesthetics have become an integral part of dining out, because once the restaurant patrons are inside the dining area they may spend hours observing the interior of the dining area either consciously or subconsciously. This observation may affect their attitude to the restaurant (Baker, Berry, & Parasuraman, 1988).

In moderate upscale restaurants, restaurant patrons may be influenced by colour schemes, wall decorations with pictures or paintings, the table setting, floor coverings, and the quality of the dining table and chairs in the dining area. These aspects may create an overall facility aesthetic impression enhancing the perceived quality of the dining environment and influencing restaurant patrons' positive future behavioural intentions (Han & Ryu, 2009; Ryu & Han, 2011). In addition, facility aesthetics can play an important part in creating specific restaurant themes (Ryu & Han, 2011).

2.3.2.3 Layout and Design

The third subdimension of physical environment quality in this study is layout and design. Layout refers to the way in which objects (e.g., machinery, equipment and furnishings) are arranged within the environment (Ryu & Jang, 2007). Wakefield and

Blodgett (1996) identify layout accessibility as furnishings (includes equipment and service areas), passageways (includes entry and exit), and ancillary service areas and claim that layout accessibility can have a positive influence on perceived quality in a number of leisure settings, with seating comfort also having an effect on perceived quality.

The design and layout of a dining room can enhance the pleasure and satisfaction of the dining experience. In general, effective restaurant layout and design keeps restaurant patrons from feeling crowded (Han & Ryu, 2009). In addition, layout and design may directly affect restaurant patrons' service quality perceptions and excitement levels and indirectly affect their desire to return and at the same time assist with employee productivity (Bitner, 1992; Raajpoot, 2002; Ryu & Jang, 2008; Wakefield & Blodgett, 1994, 1996).

Seating comfort (depending on the design and condition of the furnishings) as well as seating arrangements are important and have a tremendous impact on the overall experience of a restaurant patron (Baker & Cameron, 1996; Ryu, 2005; Wakefield & Blodgett, 1994, 1996). For example, patrons may sit for a relatively long time in a restaurant, therefore, seats that are too close to each other can cause patrons to feel crowded and cramped and may generate feelings of psychological discomfort because they operate as a boundary for the customer (Ryu & Han, 2011; Sulek & Hensley, 2004). In addition, seating arrangements are also an important factor because they may affect the ease with which patrons can exit their seats to use ancillary services (e.g., restrooms). Besides seating comfort, Sulek and Hensley (2004) add that most restaurant patrons have to wait for seating in a full service restaurant therefore physical comfort in waiting areas is important because it can affect overall customer satisfaction and their intention to return.

2.3.2.4 Menu Design

Menu design has been called "the silent sales person of the restaurant" (Lundberg & Walker, 1993, p. 74). Menus have been "compared to speeches by professional speakers; carefully chosen words in speech can make it exciting and memorable" (Kreck, 1984, as cited in Bowen & Morris, 1995, p. 4). Bowen and Morris (1995) indicate that the first way restaurant patrons may evaluate the quality of food is through the menu design. In addition, a properly designed menu helps in "... presenting the product offerings of the restaurant in an attractive manner, describing them in a way that paints an attractive picture, and pricing them to give the impression of value" (Mill, 2007, p. 131). MacLaurin and MacLaurin

(2000) suggest the elements that should be in a menu design should be attractive and reflect the restaurant image; the menu should be self-explanatory and user-friendly, the food variety excellent, and the names of dishes appropriate to the restaurant theme.

In menu design, colour, paper, illustrations, typeface and layout reflect the overall ambience of the restaurant (Bowen & Morris, 1995; Lundberg & Walker, 1993). In addition, the menu is an extension of the personality of the restaurant should reinforce the image of the restaurant and can draw the customer's attention to items that the restaurant attempts to sell (Bowen & Morris, 1995). For example, the menu cover should be designed to complement the overall theme of the restaurant. Menu descriptions should describe the dishes and present them in a way that will give patrons an accurate picture of the food while increasing the likelihood of their sale (Mill, 2007). If the information expectation is based on incorrect menu representations, for example, and the quality or quantity of a menu item is not met or exceeded, then restaurant patrons may not return to that restaurant (Lionel & Mills, 2006). In addition, readability of menu is important; the typeface used must be large and legible enough to allow patrons to read the descriptions (Eliwa, 2006). Further, Mill (2007) suggests that Roman script imitates handwriting and should be used primarily only for headings and subheadings because it is difficult to read, whereas typefaces with lowercase are easier to read; typefaces with italics and uppercase should be used only to maximise impact.

2.3.2.5 Table Setting

Table setting is defined as "... the product or material used to serve every customer whenever a turnover occurred" (Ryu, 2005, p. 154). Since the table setting is the first thing that the restaurant patrons see at the table, it is important to blend the table setting attractively with appropriate dinnerware⁵, glassware⁶, flatware⁷, table linen⁸ and table accessories⁹ so they coordinate the mood of the restaurant: formal or informal; expensive or economical (Mill, 2007; Ryu, 2005; Ryu & Han, 2011; Ryu & Jang, 2007).

⁵ Dinnerware or chinaware refers to the dishes used to serve food and hot beverages such as cups and plates (Katsigris & Thomas, 1999).

⁶ Glassware refers to the containers used for serving water or beverages, coming in different shapes and sizes such as water goblets and wine glasses (Katsigris & Thomas, 1999).

⁷ Flatware or silverware means forks, knives and spoons in all various sizes and shapes. Generally, flatware is made from stainless steel (Katsigris & Thomas, 1999).

⁸ Table linen, such as napkins and table cloths, adds to the feeling within a restaurant. Table linen comes in a variety of colours that can blend with the mood of the restaurant (Mill, 2007).

⁹ Mill (2007) suggests that a flower vase, salt and pepper shaker, a candle or lamp, and an ashtray (if the table is in a smoking section) are the only table accessories that should be on the table as part of the table setting.

Table setting is often accepted as one of the most important tangible qualities of a restaurant service (Raajpoot, 2002; Ryu & Jang, 2007, 2008; Wang, 2011), however, the table setting has been largely ignored in the foodservice literature probably "... because it is very unique and valid only to restaurants" (Ryu & Jang, 2007, p. 61). Even though the table setting has not had much academic attention, it should be included in a restaurant study to capture the physical environment of restaurants (Ryu & Jang, 2008). In addition, Ryu and Jang (2007) claim that the table setting can be used to influence restaurant patrons' quality perceptions, which, in turn, influence customer behaviour. Furthermore, the table setting should reflect the restaurant's image (Ryu, 2005).

Table setting is an important factor in respect of atmosphere in an upscale restaurant setting (Ryu & Han, 2011; Ryu & Jang, 2008); moderate upscale restaurants should also have an impressive table setting to harmonize the mood of the restaurant. The way in which the table is set-up, for instance, with a clean pressed table cloth, folded napkins, and replenished salt and pepper shakers, can make patrons feel that they are in a stylish environment that meets the restaurant's theme (Ryu & Han, 2011; Ryu & Jang, 2008).

2.3.2.6 Restaurant Cleanliness

The final subdimension in the physical environment quality is restaurant cleanliness. Restaurant cleanliness is an important determinant in physical environment quality, whereas dirty conditions may cause restaurant patrons to have negative reactions towards the restaurant facilities (Wakefield & Blodgett, 1996). The findings of several studies suggest that restaurant cleanliness, whether it is the entrance, building exterior, dining room, washroom, or table setting, may influence the restaurant patrons' perceptions of service quality (Abdelhamied, 2011; Barber, Goodman, & Goh, 2011; Barber & Scarcelli, 2009, 2010; Ryu & Jang, 2008; Stevens et al., 1995). Restaurant cleanliness exerts a strong influence on restaurant patrons' perceptions of restaurants and services (Akan, 1995; Bartlett & Han, 2007; Wakefield & Blodgett, 1996). For example, Akan (1995) reported that cleanliness is an important contributor to hotel service quality. Bartlett and Han (2007) also concluded that cleanliness is one of the elements in the tangibles dimension in restaurants. Sulek and Hensley (2004) claim restaurant patrons typically remember unpleasant moments with the restaurant cleanliness longer than they remember food or service problems and more likely avoid returning in future.

2.3.3 Outcome Quality

The last primary dimension in the hierarchical model is the outcome quality. Grönroos (1984, p. 37) labels technical quality as “... what the consumer is left with when the production process is finished.” and also refers to outcome quality as “technical quality”, defining the construct as, “what the consumer received as a result of this interaction with the service firm.” Rust and Oliver (1994) regard outcome quality as the outcome of the service act representing what the consumer gained from the service and whether the outcome fulfilled the customer’s needs. The outcome quality focuses on the outcome of the service act and indicates the perceptions of quality (Fassnacht & Koese, 2006).

Richard et al. (1994) investigated the effect of service quality dimensions on choice behaviour in the home pizza delivery market. Twenty-two service quality items based on the original SERVQUAL’s five dimensions were included in the survey questionnaire. They claimed that the SERVQUAL instrument ignored the outcome dimension of service quality, such as whether the pizzas had generous amounts of toppings and whether the pizzas were made with fine ingredients. This led them to add six items that measured the outcome of the pizza delivery service; they concluded that the outcome, empathy, responsiveness and reliability dimensions were the important determinants of choice behaviour.

There is agreement in the literature that the outcome of the service encounter significantly affects customer perceptions of service quality (Carman, 1990; Grönroos, 1984; Martínez & Martínez, 2007; McDougall & Levesque, 1994; Rust & Oliver, 1994). Brady and Cronin (2001) suggest that outcome quality is measured by customers based on the tangibles evidence, the waiting time associated with the delivery of the service and the valence (the customers’ perception of whether the service is good or bad). In this study, three subdimensions, as discussed in the following subsections, are proposed as constituting the outcome quality primary dimension: waiting time, food quality and valence.

2.3.3.1 Waiting Time

The first subdimension of outcome quality is waiting time. Taylor (1994, p. 56) refers to waiting time for service as “... the time from which a customer is ready to receive the service until the time the service commences.” Houston, Bettencourt and Wenger

(1998) incorporated waiting time into their analysis of service encounter quality and found it to be an important predictor of outcome quality.

Waiting time's significance has considerable support in the literature. In previous studies, several researchers (Butcher & Heffernan, 2006; Davis & Vollmann, 1990; Lee & Lambert, 2000; Taylor, 1994; Tom & Lucey, 1995) noted that waiting time is the amount of time customers spent waiting for service. Customer satisfaction tends to decrease as the perceptions of waiting time increase (Yüksel & Yüksel, 2002b). In addition, McDougall and Levesque (1999) claim that waiting for service is a frustrating experience for many customers and Butcher and Heffernan (2006) state that the perceived waiting time is positively associated with repeat visit intentions and positive word-of-mouth. For example, in moderate upscale restaurants, restaurant patrons may tolerate waiting longer for service on weekends but not during weekdays when time is usually more critical. Longer waiting times negatively affect service quality and customer satisfaction; therefore moderate upscale restaurants may lose the customers when they are forced to wait for service (Aigbedo & Parameswaran, 2004; Lee & Lambert, 2000; McDougall & Levesque, 1999; Noone, Kimes, Mattila, & Wirtz, 2007; Sulek & Hensley, 2004).

2.3.3.2 Food Quality

Restaurants are generally assumed to be in the business of selling only food (Yüksel & Yüksel, 2002b), although, in reality, the restaurant product offers both food and beverages. According to Yüksel and Yüksel (2002b) food is still the main product of the restaurant and this is justified by the fact that restaurant patrons recognize a certain restaurant for the food that it sells rather than the drinks (Abdul Talib, 2009). Although Abdul Talib (2009) and Raajpoot (2002) term food quality as a service/product dimension, this study adopts "food quality" because the term is more fitting and precisely describes the subdimension being discussed.

In the restaurant setting, food quality not only provides tangible evidence of outcome quality but is also an important component of outcome quality in the hospitality industry (Andersson & Mossberg, 2004; Johns & Tyas, 1996; Kim, Lee, & Yoo, 2006; Mattila, 2001; Namkung & Jang, 2007). In many studies food quality is ranked as one of the most important determinants of customers' re-patronization of the restaurant (Andaleeb & Conway, 2006; Auty, 1992; Lewis, 1981; MacLaurin & MacLaurin, 2000; Mattila, 2001; Pettijohn, Pettijohn, & Luke, 1997; Qu, 1997; Soriano, 2002; Sulek & Hensley,

2004). For example, in Andaleeb and Conway's (2006) study, food quality had a strong influence on the relationship between restaurant patron and the restaurant hence reinforcing its importance in developing restaurant customer satisfaction and loyalty.

Despite the importance of food quality in a restaurant setting, there is no consensus among researchers on the individual attributes that represent food quality. A thorough literature review reveals six elements that constitute food quality: (a) food appearance and presentation; (b) food temperature, safety and hygiene; (c) fresh ingredients; (d) unique taste consistency; (e) menu variety; and (f) dietary needs (healthy and religious food options) (Abdul Talib, Mohd Ali, & Jamaludin, 2008; Assadi, 2003; Dugan, 1994; Ha & Jang, 2010a; Josiam et al., 2007; Kivelä, Reece, & Inbakaran, 2000; Namkung & Jang, 2007; Nasir & Pereira, 2008; Raajpoot, 2002; Siguaw & Enz, 1999; Soriano, 2002; Sulek & Hensley, 2004). Therefore, this study uses all of these six elements to represent food quality.

2.3.3.3 Valence

The third subdimension in the outcome quality is valence. Ko and Pastore (2005) refer to valence as a customer's post-consumption assessment of whether the service outcome was acceptable or unacceptable. "Valence captures attributes that control whether customers believe the service outcome is good or bad, regardless of their evaluation of any other aspects of the experience" (Brady & Cronin, 2001, p. 40). Several studies report that valence was a key determinant of service outcome (Brady & Cronin, 2001; Clemes et al., 2009; Ko & Pastore, 2005; Martínez & Martínez, 2007).

2.4 The Relationships between the Five Higher-Order Constructs

The hierarchical and multidimensional model developed for this study is also used as a theoretical framework to examine the relationships that may exist between service marketing constructs: service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions. The following subsections provide a review of service marketing literature on these important marketing constructs and their direct relationships.

2.4.1 Customer Satisfaction

Churchill and Surprenant (1982, p. 493) define customer satisfaction as "... an outcome of purchase and use resulting from the buyers' comparison of the rewards and

costs of the purchase in relation to the anticipated consequences.” Bozorgi (2006, p. 8) defines customer satisfaction as “ ... the feeling or attitude of a customer towards a product or service after it has been used.”

Customer satisfaction is an important construct that has been positioned as a central concern of marketing studies for decades (Brady & Robertson, 2001; Cronin et al., 2000; Tam, 2004; Williams & Uysal, 2003) because the construct is crucial in meeting the needs and wants of customers (Churchill & Surprenant, 1982; Han & Ryu, 2009). Customer satisfaction is conceived as one aspect of customer behaviour and evolves over the duration of the customer experience (Bozorgi, 2006). It is a major outcome of marketing activities linking the process of purchasing and consumption with post-purchase phenomena (Churchill & Surprenant, 1982).

The Expectancy-Disconfirmation theory proposed by Lewin (1938) is the most widely accepted theory to explain customer satisfaction (Churchill & Surprenant, 1982; Oh & Parks, 1997). The theory encompasses four constructs: expectation, performance, disconfirmation and satisfaction. The expectation construct reflects a pre-consumption perception associated with goods and services (Barsky & Labagh, 1992). The performance construct constitutes the basis of the customer's perception of the service. Disconfirmation which occupies a central position as a crucial intervening variable in the expectancy-disconfirmation paradigm arises from the discrepancy between the prior expectation of goods and services and actual performance (Churchill & Surprenant, 1982). For example, in the restaurant setting, once the food is served and consumed, patrons compare their perceptions of the food quality or service with their expectations. The patron's perceptions that exceed their expectations result in satisfaction, leading to a positive attitude toward the product or service, thus influencing positive future behavioural intentions. Alternatively, if a patron's perception falls short of their expectations, they will experience negative disconfirmation which, in turn, leads to dissatisfaction (Ha & Jang, 2010b; Yüksel & Yüksel, 2002b).

The customer satisfaction construct is regularly used as an indicator of whether satisfied restaurant patrons will re-patronize a restaurant (Dubé et al., 1994). Customer satisfaction studies show that the degree of satisfaction may affect patrons' positive future behavioural intentions (Dubé et al., 1994; Stevens et al., 1995). For example, by increasing customer satisfaction, it is more likely that a restaurant patron will re-patronize a restaurant (Dubé et al., 1994; Kivelä et al., 2000). However, while there is no assurance that a

satisfied restaurant patron will pay a repeat visit it is almost certain that a dissatisfied restaurant patron will not return (Dubé et al., 1994). In addition, customer satisfaction is capable of making a difference between a company's survival and failure because restaurant patrons are the primary source of most foodservice revenue, especially in the commercial foodservice industry (Kandampully, 2007; Tam, 2004; Williams & Uysal, 2003). As noted by Kivelä et al. (1999, p. 205), "the importance of customer satisfaction supersedes aspects such as occupancy rates, return rates and profitability." Nevertheless, despite the notable progress of studies on the customer satisfaction construct in service industries, this construct has remained under-researched and there is a need for further research in this area (Kim et al., 2009; Kivelä, Inbakaran, et al., 1999).

2.4.1.1 The Positive Effect of Service Quality on Customer Satisfaction

Research interest on the relationship between service quality and customer satisfaction has increased tremendously over the years. However, among academics, there has been confusion about that relationship according to Cronin and Taylor (1992) who identified two opposing views on the service quality customer satisfaction relationship. For example, researchers like Bolton and Drew (1991) and Bitner (1990) suggest that a high level of customer satisfaction leads to a high level of perceived service quality, whereas several studies view the relationship differently. The most accepted alternative view is that a high level of customer satisfaction results from a high level of perceived service quality (Brady, Robertson, & Cronin, 2001; Chow et al., 2007; Cronin & Taylor, 1992; Dagger et al., 2007; Hu et al., 2009; Pollack, 2009). In addition, a restaurant patron with positive perceptions about service quality is likely to report high levels of satisfaction (Caruana, 2002; Cronin & Taylor, 1992; Spreng & Chiou, 2002; Spreng & Mackoy, 1996), which leads to positive behavioural intentions, such as repurchasing or return patronage and positive word-of-mouth (Kivelä, Inbakaran, et al., 1999).

Numerous foodservice studies provide empirical evidence of a positive relationship between service quality and customer satisfaction (Abdelhamied, 2011; Brady et al., 2001; Hyun, 2010; Keang & Bougoure, 2006). For example, Keang and Bougoure (2006) propose that perceived service quality has a direct effect on customer satisfaction. After analysing data collected from 300 university students in Malaysia, the authors concluded that service quality has a positive direct effect on customer satisfaction ($\beta = 0.89$) in fast food restaurants. A recent investigation of chain restaurants (T.G.I. Fridays and Bennigans)

in the United States, Hyun (2010) showed a positive relationship between service quality and customer satisfaction. That study analysed data collected from 208 students and faculty members of Virginia Tech demonstrated that service quality had a significant positive effect on customer satisfaction ($\beta = 0.218$) in chain restaurants. It should, however, be noted that the sample was collected in a college campus, not in the restaurant, and the respondents were students and faculty members only.

Some studies on the relationship between service quality and customer satisfaction present mixed findings. For example, Cronin et al. (2000) studied six service industries: namely, spectator sports, participative sports, entertainment, health care, long distance carriers and fast food restaurants; they proposed that service quality would positively affect customer satisfaction in all six industries. However, the findings were not consistent; only five industries showed significant results (spectator sports, participative sports, entertainment, health care and fast food restaurants), whereas long distance carriers showed non-significant results.

2.4.2 Perceived Value

Zeithaml (1988, p. 14) defines perceived value as “... the customer’s overall assessment of the utility of a product, based on perceptions of what is received and what is given.” Kwun and Oh (2004, p. 38) define it as “value perceptions deriving from the customer comparison of gain (e.g., quality) and loss (e.g., price) when buying a target product, while compared value is the perceived value of a chosen ‘relative’ to that of alternative products.”

Most customers visit restaurants not only because of good food, good service personnel, quality service and a pleasant service environment, but also because of value for money (Yüksel & Yüksel, 2002b). A number of researchers have investigated the role of perceived value in consumption contexts. Zeithaml (1988), for example, provides evidence supporting an influential role of value in a consumer’s decision to make a purchase. According to the ‘Means-end model’, perceived value is a direct antecedent of a purchase decision and a direct consequence of perceived service quality (Zeithaml, 1988). That study recommended that customer perceived value be assessed on the perceived utility/worth resulting from the trade-off of “get” versus “give up”. However, the meaning of value is relative. According to Yüksel and Yüksel (2002b, p. 55), “value may have a different

meaning to different individuals. It might be a low price for some consumers, or “the quality the consumer gets for the price he/she pays.”

2.4.2.1 The Positive Effect of Service Quality on Perceived Value

Service quality and customer satisfaction are the dominant constructs in the service marketing literature; however, perceived value has been a rather neglected aspect in discussions on customers' evaluations of service quality (Caruana et al., 2000; Clemes et al., 2009; Cronin et al., 2000). Perceived value is viewed as the benefits received relative to costs (Zeithaml, 1988). Several researchers have suggested that perceived value positively influences customers' perceptions of service quality (Andaleeb & Conway, 2006; Gallarza & Gil Saura, 2006; Hu et al., 2009; Jensen & Hansen, 2007). In addition, studies on the restaurant industry focusing on service quality and perceived value have been conducted on fast food restaurants (Kivelä, Inbakaran, et al., 1999; Lee & Hing, 1995; Oh, 2000; Qin & Prybutok, 2008) but to date there has been a lack of research interest on moderate upscale restaurants.

2.4.2.2 The Positive Effect of Perceived Value on Customer Satisfaction

According to McDougall and Levesque (2000), the connection between perceived value and customer satisfaction has been debated in the services marketing literature. Studies have shown that perceived value has a strong and significant impact on customer satisfaction, which, in turn, affects repurchase intentions (Chen, 2008; Cronin et al., 2000; McDougall & Levesque, 2000; Patterson & Spreng, 1997; Soriano, 2002). For example, Cronin et al. (2000) suggested that service value directly relates to satisfaction and found a positive significant effect for six industries (spectator sports, participative sports, entertainment, health care, long distance carriers and fast food restaurants). In a recent study conducted on airline passengers in Koashiung International Airport, Taiwan, Chen (2008) proposed that perceived value had a significant influence on satisfaction, for which there was statistical support. The same author concluded that perceived value plays an important role in affecting customer satisfaction and positive future behavioural intentions in the airline industry. Nevertheless, other studies on the relationship between customer satisfaction and perceived value produce different findings. For example, Qin and Prybutok (2008) investigated fast food restaurants in the United States and concluded that price/value were not antecedents of customer satisfaction. Brady et al. (2001) proposed that there was a

direct relationship between service value and satisfaction in the fast food restaurants in two countries (the United States and Ecuador) but while the finding from the United States sample was significant ($\beta = 0.43$). However, the one from Ecuador sample was insignificant.

2.4.3 Restaurant Image

Barich and Kotler (1991, p. 95) refer to the term image as “the sum of beliefs, ideas and impressions that a person or a group has of an object. The object may be a company, product, brand, place and person”. Similarly, Suhartanto (1998, p. 19) interprets image as “... perception of a phenomena; impressions that are held in memory. As a consequence, image can exist for any organization, product, or brand.” Eliwa (2006, p. 10) who defines restaurant image as “... the overall attitude toward the restaurant, based upon the customer perceptions of relevant restaurant attributes.”

The importance of image has received growing attention in the marketing literature since it affects the individual’s subjective perception and consequent behaviour (Ryu et al., 2008). Many studies have addressed the impact of an organization’s image on consumer behaviour because the image relates to customers’ perceptions of the goods and services offered (Zeithaml & Bitner, 1996), particularly customer satisfaction and customer loyalty in service industries (Andreassen & Lindestad, 1998). For example, the intangibility of the service characteristics of the foodservice industry may enhance the crucial role of image in influencing customers’ behaviour because restaurant patrons depend on tangible cues, such as the restaurant brand name, décor and interior design and price (Ryu et al., 2008). Ryu (2008, p. 2) suggests that “ ... restaurateurs should establish a distinctive image that differentiates them from competitors, to communicate the product’s major benefits and positioning towards a target market.” In addition, a favourable restaurant image with a unique concept creates a competitive advantage that is not easily replicated by other restaurants (Eliwa, 2006).

Restaurant image affects the customer choice of restaurants to patronize and serves as a guide for customers in determining whether a restaurant fulfils their needs (Eliwa, 2006). Several researchers have suggested that restaurant image can directly indicate the quality of dining service for customers. A restaurant image can also have an enormous influence on customers’ perceptions of value and their satisfaction, which, in turn, affects their behavioural intentions in the hotel and foodservice industries (Kandampully &

Suhartanto, 2000; Ryu et al., 2008). Despite the importance of restaurant image, its study in foodservice literature is in its infancy (Abdul Talib, 2009; Oh, 1998). Very few studies have been conducted on restaurant image (Eliwa, 2006; Mamalis, Ness, & Bourlakis, 2005; Oh, 1998; Ryu et al., 2008; Ryu et al., 1989); the relationship between restaurant image and other service marketing constructs has not been adequately explored in the literature (Abdul Talib, 2009; Oh, 1998; Ryu et al., 2008).

2.4.3.1 The Positive Effect of Service Quality and Customer Satisfaction on Restaurant Image

A restaurant's image refers to the quality of the dining service for customers which can have an enormous influence on customers' perceptions of satisfaction that, in turn, affect their behavioural intentions (Kandampully & Suhartanto, 2000; Patterson & Spreng, 1997; Ryu et al., 2008). Restaurant image is seen as an essential component of customer satisfaction and is, therefore, a cornerstone of the success of a restaurant (Eliwa, 2006). Previous studies have shown that restaurant image can be a critical factor that influences customer satisfaction and subsequent behavioural intentions (Andreassen & Lindestad, 1998; Bloemer & Ruyter, 1998).

Service quality has had a significant positive impact on restaurant image and restaurant image in turn positively influences customer satisfaction (Grönroos, 1982; Ryu et al., 2008). In addition, Ryu et al. (1989) note that restaurant image is a significant predictor of customers' behavioural intentions. In the hospitality literature (Bloemer & Ruyter, 1998; Clemes et al., 2009; Kandampully & Suhartanto, 2000), there has been a general consensus among researchers that image affects the future behaviour of customers: it is a significant predictor of favourable behavioural intentions in the hospitality industry (Nguyen, 2006; Ryu et al., 1989). For example, restaurant patrons who have never visited a moderate upscale restaurant might base their impression on the restaurant's image, which may also influence their positive future behavioural intentions such as re-patronizing the restaurant.

A recent study by Ryu et al. (2012) was conducted in an authentic upscale Chinese restaurant in a Southern state in the United States. After analysing the data collected from 300 restaurant patrons, the authors concluded that the relationship between restaurant image and customer satisfaction was not significant. Although restaurant image is an important construct, the direct relationship between service quality, customer satisfaction

and behavioural intentions has not been adequately explored, thus presenting an area that should be further explored in the foodservice literature (Oh, 1998; Ryu et al., 2008; Ryu et al., 1989).

2.4.4 Behavioural Intentions

Zeithaml, Berry and Parasuraman (1996) describe behavioural intentions as the customers' response to a service encounter. Intentions can be favourable which may cause customers to continue doing business with the organization or unfavourable which may cause the customers to withdraw their patronage. Although the definition of behavioural intentions varies depending on the research context, this study adopts the conceptualization of the behavioural intentions construct as suggested by Zeithaml et al. (1996). It considers behavioural intentions as a customer's willingness to provide positive word-of-mouth, to visit the restaurant again in the future, to stay longer than anticipated and to spend more time than anticipated.

According to Zeithaml et al. (1996), behavioural intentions can be measured by factors such as repurchase intentions, word-of-mouth, loyalty, complaining behaviour and price sensitivity. Certain behaviours signal that customers are bonding with a company. Customer loyalty is evident when customers express a preference for one company over others, continue to purchase from it and, hence, increase future business (Boulding, Kalra, Staelin, & Zeithaml, 1993; Zeithaml et al., 1996). As noted by Olorunniwo et al. (2006), high service quality viewed from the customers' perspective often leads to favourable behavioural intentions but low service quality tends to lead to unfavourable behavioural intentions.

2.4.4.1 The Positive Effect of Service Quality on Behavioural Intentions

Several studies indicate that service quality affects behavioural intentions only through customer satisfaction (Brady & Robertson, 2001; Brady et al., 2001; Qin & Prybutok, 2008; Yap & Kew, 2006). However, the results of other studies suggest that service quality may also have a direct effect on behavioural intentions (Brady & Robertson, 2001; Olorunniwo et al., 2006; Qin & Prybutok, 2008; Yap & Kew, 2006). For example, in a study of fast food restaurants, Qin and Prybutok (2008) proposed that service quality had a direct effect on behavioural intention produced a significant result not unlike that of the study by Cronin et al. (2000) regarding the effects of a direct relationship between service

quality and behavioural intentions in six industries (namely, spectator sports, health care, participation sports, long distance carriers, entertainment, and fast food). After analysing data collected from those six industries, Cronin et al. (2000) concluded that the results were significant, except for fast food restaurants. The standardized coefficient paths in the five industries were small ($\beta = 0.10 - 0.23$) whereas that between service quality and behavioural intentions for fast food restaurants was moderate ($\beta = 0.33$).

Nevertheless, several researchers have maintained that the effect of service quality on behavioural intentions is indirect through customer satisfaction. For example, Cronin and Taylor (1992) proposed that service quality positively affected behavioural intentions in four industries (banking, pest control, dry cleaning and fast food restaurants). However, the results for all industries showed that the effect appeared to be indirect, through customer satisfaction. Similarly, Brady et al. (2001) proposed that there was a significant effect of a direct relationship between service quality and behavioural intentions in fast food restaurants in the United States and Ecuador. However, the findings from both samples were not significant so the authors concluded that the effect was indirect through customer satisfaction assessments and service value evaluations. Some studies on the relationship between service quality and behavioural intentions report different findings, for example Olorunniwo et al. (2006) and Keillor et al. (2007). Olorunniwo et al. (2006) studied service quality in middle-class restaurants in the United States and proposed that service quality affected behavioural intentions not only indirectly but also directly. The result was significant but the standardized coefficient path between service quality and behavioural intentions was low ($\beta = 0.10$) whereas the indirect effect of service quality on behavioural intentions through customer satisfaction was stronger ($\beta = 0.89$). In their study, Keillor et al. (2007) proposed that service quality would positively affect behavioural intentions in all eight countries studied. However, the results of the statistical analyses varied: six countries showed significant results (Australia, Germany, India, Netherlands, Sweden and the United States), whereas two countries (China and Morocco) showed insignificant results.

2.4.4.2 The Positive Effect of Customer Satisfaction on Behavioural Intentions

A literature review indicates that there are several studies on the relationship between customer satisfaction and behavioural intentions in various service industries.

Several studies have reported a positive relationship between customer satisfaction and behavioural intentions (Han & Ryu, 2006; Kim, Lee, et al., 2006; Kim et al., 2009; Patterson & Spreng, 1997; Pollack, 2009; Taylor & Baker, 1994; Weiss, 2003; Yap & Kew, 2006).

Overall, the literature suggests that customer satisfaction is an important antecedent of behavioural intentions. For example, Cronin and Taylor (1992) and Oliver (1980) agree that customer satisfaction and behavioural intentions although not similar are related, because the outcome of satisfaction may reinforce a customer's decision to use a particular brand of service on a given occasion. The findings from studies on the restaurant industry also support a significant link between customer satisfaction and behavioural intentions. For example, Yap and Kew (2006), in a study of Chinese cuisine family restaurants in Malaysia, found that there was a significant relationship between customer satisfaction and re-patronising intentions. The finding of Weiss (2003), who investigated theme restaurants, were similar leading to the conclusion that customer satisfaction influences restaurant patrons' revisit intentions. The findings of Pettijohn et al. (1997) suggest that satisfied restaurant patrons' show a significantly higher intention of returning, whereas Kivelä et al. (2000) suggest that dining satisfaction significantly influences post-dining behavioural intentions. Similar studies by Yüksel and Yüksel (2002b) and Oh (2000) show that customer satisfaction is important to foodservice managers because it leads to repeat patronage. Recently, Ha and Jang (2010b) proposed that customer satisfaction positively influences behavioural intentions. The findings of that study conducted in a Korean restaurant suggest that customer satisfaction is a significant antecedent of behavioural intentions. Nevertheless, the extent to which customer satisfaction carries over into intention behaviours in moderate upscale restaurants remains unclear.

2.5 Summary

This chapter has reviewed the literature on the constructs to be examined in this study. It has presented the relevant literature regarding the conceptualization of service quality and the relationships between service quality and related constructs like customer satisfaction, perceived value, restaurant image and behavioural intentions. It has also provided an overview of the literature specific to service quality in the foodservice industry, especially in the restaurant industry.

Chapter 3

Research Model and Hypotheses Development

This chapter begins with a discussion of the development of the 16 hypotheses followed by a discussion of the development of the research framework. The testing of the 16 hypotheses addresses the four research objectives of this study (see Section 1.4).

3.1 Hypotheses Development

There are 16 hypotheses formulated in this study; 14 hypotheses have been formulated to test each of the paths in the research model, one hypothesis tests the importance of the subdimensions of service quality and the last hypothesis tests the importance of the primary dimensions of service quality. The development of the hypotheses is discussed in the following subsections.

3.1.1 Hypotheses Relating to Research Objective 1

Researchers have stressed the need to develop industry-specific and cultural-specific models, from the restaurant patrons' perspective, when investigating the dimensional structures of service quality (Aigbedo & Parameswaran, 2004; Brady & Cronin, 2001; Cronin & Taylor, 1994; Dabholkar et al., 1996; Kim et al., 2009; Ueltschy & Krampf, 2001). Thus, subdimensions of interaction quality, physical environment quality and outcome quality are identified in this study using the literature review and focus group discussions specifically for restaurant patrons in moderate upscale restaurants in Malaysia (see Subsection 4.1.2).

3.1.1.1 Interaction Quality

Surprenant and Solomon (1987) describe interaction quality as the interplay between the customer and the service personnel. As discussed in Section 2.3.1, interaction quality is an important factor when customers assess the service quality of a service organization that relies on the interaction between the service provider (employee) and the restaurant patrons and the interaction of the employees (Brady & Cronin, 2001; Fu &

Parks, 2001; Hartline & Ferrell, 1996; Heide & Grønhaug, 2006; Soriano, 2002). Employees, as the service providers, require appropriate skills to ensure the operational success of the organization. Thus, the interaction quality skills required by the employees are as follows:

- a. Interpersonal Skills (Bartlett & Han, 2007; Sulek & Hensley, 2004);
- b. Professional Skills (Cadotte & Turgeon, 1988; Lundberg & Mossberg, 2008; Wall & Berry, 2007); and
- c. Problem Solving Skills (Cadotte & Turgeon, 1988; Fu & Parks, 2001; Soriano, 2003).

Thus, the first hypothesis is formulated:

H1: There is a significant positive relationship between the subdimensions of interaction quality (H1_a, H1_b and H1_c) and the interaction quality primary dimension.

3.1.1.2 Physical Environment Quality

Meals are always consumed in a “room” (Gustafsson, Öström, Johansson, & Mossberg, 2006). A room can be a cafeteria in a hospital, a canteen in a school or a dining room in a restaurant (Gustafsson et al., 2006). In this study, a room refers to the dining room of a moderate upscale restaurant. Researchers (Baker, 1987; Bitner, 1992; Brady & Cronin, 2001; Gustafsson et al., 2006; Rust & Oliver, 1994; Wakefield & Blodgett, 1996) found that the physical or “built” environment influenced customer service evaluations and agreed that the quality of the physical environment was an important aspect during service assessment by customers. Bitner (1992), for example, found that the surrounding environment had a significant influence on perceptions of the overall quality of the service encounter.

Based on the foodservice literature reviewed in Subsection 2.3.2, the following factors have been identified as components of physical environment quality:

- a. Restaurant Ambience (Bitner, 1992; Caldwell & Hibbert, 2002; Raajpoot, 2002);
- b. Facility Aesthetics (Kim, Lee, et al., 2006; Ryu, 2005; Wakefield & Blodgett, 1996);
- c. Layout and Design (Bitner, 1992; Kim et al., 2009; Koutroumanis, 2005; Stevens et al., 1995; Yüksel & Yüksel, 2002b);
- d. Menu Design (Kivelä, Inbakaran, et al., 1999; Raajpoot, 2002; Stevens et al., 1995);

- e. Table Setting (Raajpoot, 2002; Ryu & Jang, 2007); and
- f. Restaurant Cleanliness (Cadotte & Turgeon, 1988; Shao, Baker, & Wagner, 2004; Stevens et al., 1995; Wakefield & Blodgett, 1996).

Based on these six factors, the second hypothesis is formulated:

- H2: There is a significant positive relationship between the subdimensions of physical environment quality (H2_a, H2_b, H2_c, H2_d, H2_e, H2_f and H2_g) and the physical environment quality primary dimension.

3.1.1.3 Outcome Quality

Outcome quality, also known as technical quality, is what restaurant patrons receive after the service delivery and buyer-seller interactions are completed (Brady & Cronin, 2001; Grönroos, 1984). Brady and Cronin (2001) stress there was a consensus in the literature that customers' perceptions of outcome quality have an impact on customers' overall perceptions of service quality (McDougall & Levesque, 1994; Powpaka, 1996; Rust & Oliver, 1994). Based on the literature reviewed in Subsection 2.3.3, the following three factors of outcome quality are identified:

- a. Waiting Time (Brady & Cronin, 2001; Hwang & Lambert, 2008; Lee & Lambert, 2000);
- b. Food Quality (Namkung & Jang, 2007; Ryu et al., 2012; Sulek & Hensley, 2004); and
- c. Valence (Brady & Cronin, 2001; Clemes et al., 2009; Ko & Pastore, 2005).

Based on these three factors, the third hypothesis is formulated:

- H3: There is a significant positive relationship between the subdimensions of outcome quality (H3_a, H3_b and H3_c) and the outcome quality primary dimension.

3.1.1.4 Overall Perceived Service Quality

The hierarchical model of service quality suggests that the restaurant patrons' form perceptions of each of the three primary dimensions: interaction quality, physical environment quality and outcome quality, in order to form an overall service quality perception (Brady & Cronin, 2001). Therefore, the three hypotheses are formulated:

- H4: There is a significant positive relationship between the interaction quality primary dimension and restaurant patrons' overall service quality perceptions.
- H5: There is a significant positive relationship between the physical environment quality primary dimension and restaurant patrons' overall service quality perceptions.
- H6: There is a significant positive relationship between the outcome quality primary dimension and restaurant patrons' overall service quality perceptions.

3.1.2 Hypothesis Relating to Research Objective 2

Several previous studies have assessed restaurant patrons' perceptions of service quality in the restaurant industry (Fu & Parks, 2001; Johns & Howard, 1998; Soriano, 2003; Sulek & Hensley, 2004; Tucci & Talaga, 2000). However, the comparative importance of the service quality subdimensions based on the perceptions of restaurant patrons' was not clearly identified in these studies. Several researchers (Akan, 1995; Clemes, Gan, Kao, & Choong, 2008; Dubé et al., 1994; Josiam et al., 2007; Oyewole, 1999) suggest that more studies should focus on the most and least important dimensions of service quality. In order to gain an understanding of restaurant patrons' perception of the important and unimportant subdimensions of restaurant service quality, therefore, the following hypothesis is proposed:

- H7: Restaurant patrons will vary in their perceptions of the importance of each of the subdimensions.

3.1.3 Hypothesis Relating to Research Objective 3

Several studies in the services literature have assessed whether interaction quality, physical environment quality or outcome quality has the most influence on customers' overall perceptions of service quality. For example, studies on sport spectators (Clemes et al., 2011), accommodation (Clemes et al., 2010; Clemes et al., 2009), urgent transport (Martínez & Martínez, 2007), online paid services (homepage service, sport coverage and online shopping) (Fassnacht & Koese, 2006), hairdresser/barber services and local telephone service subscribers (Pollack, 2009), suggest that outcome quality has the strongest influence on service quality of the three primary dimensions. In contrast, Chow et al. (2007) applied the three primary dimensions originally developed by Brady and Cronin (2001) and Dabholkar et al. (1996) in a study involving 284 restaurant patrons of two

restaurants in Guangzhou, China, however, the authors found that outcome quality was not a significant predictor of service quality. The findings from SEM suggest that only interaction quality and physical environment quality are important. According to Chow et al. (2007), customers assess the quality of service that they experienced; their finding supports the contention of Powpaka (1996) that the outcome quality dimension may not be significant but is required in every service industry. Powpaka (1996) added that whether restaurant patrons used this outcome quality dimension in their overall assessment of service quality depended on their ability to assess the outcome quality of the service accurately and efficiently.

It should also be noted that the findings relating to the three primary dimensions are variable. Studies by Clemes et al. (2007) on university student satisfaction and Shu (2010) on Chinese mobile communication suggest that interaction quality was perceived as the most important primary dimension. However, in their study on Chinese mobile brokerage Lu et al. (2009) identify environment quality as the most important dimension. Thus, in view of these variable findings, the following hypothesis is proposed:

H8: Restaurant patrons will vary in their perceptions of the importance of each of the primary dimensions.

3.1.4 Hypotheses Relating to Research Objective 4

Service quality is proposed to have a positive influence on customer satisfaction (Chow et al., 2007; Hyun, 2010; Keang & Bougoure, 2006; Tam, 2004), perceived value (Hu et al., 2009; Oh, 2000; Qin & Prybutok, 2008), image (Chow et al., 2007; Clemes et al., 2009; Hu et al., 2009), and behavioural intentions (Cronin et al., 2000; Olorunniwo et al., 2006; Qin & Prybutok, 2008). Therefore, the following hypotheses are formulated:

H9: Higher perceptions of service quality positively influence customer satisfaction.

H10: Higher perceptions of service quality positively influence perceived value.

H11: Higher perceptions of service quality positively influence restaurant image.

H12: Higher perceptions of service quality positively influence behavioural intentions.

Customer satisfaction is proposed to positively influence behavioural intentions (Ha & Jang, 2010b; Han & Ryu, 2006; Kim et al., 2009; Kivelä et al., 2000; Weiss, 2003; Yap & Kew, 2006; Yüksel & Yüksel, 2002b). Thus, the following hypothesis is formulated:

H13: Higher perceptions of customer satisfaction positively influence behavioural intentions.

Perceived value is proposed to have a positive influence on customer satisfaction (Chen, 2008; Cronin et al., 2000; McDougall & Levesque, 2000; Patterson & Spreng, 1997; Soriano, 2002). That therefore gives rise to the following hypothesis:

H14: Higher perceptions of perceived value positively influence customer satisfaction.

Restaurant image is proposed to positively influence both customer satisfaction (Eliwa, 2006; Ryu et al., 2008) and behavioural intentions (Nguyen, 2006; Ryu et al., 1989). Therefore, the following two hypotheses are formulated:

H15: Higher perceptions of restaurant image positively influence customer satisfaction.

H16: Higher perceptions of restaurant image positively influence behavioural intentions.

3.2 Model Development

A multidimensional and hierarchical research model has been adopted in this study (see Figure 3.1). The research model is based on that introduced by Brady and Cronin (2001) which was further extended from the three-component model (Rust & Oliver, 1994), the multilevel model of retail service quality (Dabholkar et al., 1996) and the Nordic model (Grönroos, 1984). Interest in hierarchical modelling is increasing and several researchers have determined that service quality is a hierarchical and multidimensional concept (Brady & Cronin, 2001; Clemes et al., 2011; Clemes et al., 2010; Clemes et al., 2007; Dagger et al., 2007; Ko & Pastore, 2005; Lu et al., 2009; Martínez & Martínez, 2008). In addition, Ko and Pastore's (2004) research suggests that future studies of service quality should be conducted in different service industries in order to validate hierarchical modelling. Similarly, Lee et al. (2003) research also suggest that future studies need to investigate the existence of hierarchical factors of service quality in the foodservice industry. The theoretical framework as research model in this study has also been used as a framework to identify the relationships between service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions. To date, no previous studies on moderate upscale restaurants have used a comprehensive hierarchical model and synthesised the higher-order constructs (service quality, customer satisfaction, perceived

value, restaurant image and behavioural intentions) with a set of first-order and second-order dimensions in a path model.

In this study, the research model suggests that restaurant patrons of moderate upscale restaurants in Malaysia are expected to evaluate service quality at three orders and hierarchical levels: an overall level, a primary dimensional level, and a subdimensional level. The primary dimensional level consists of three primary dimensions (interaction quality, physical environment quality and outcome quality) which also consist of multiple subdimensions pertaining to each of the service quality primary dimensions. The three primary dimensions with their corresponding subdimensions are combined to reflect customers' overall perceptions of service quality (Brady & Cronin, 2001).

The research theoretical framework presented in Figure 3.1 also illustrates the potential relationships that may exist between service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions in moderate upscale restaurants in Malaysia. Specifically, the research model illustrates that customers' perceptions of service quality are expected to influence customer satisfaction, perceived value, restaurant image and behavioural intentions. Customer satisfaction is expected to influence behavioural intentions and perceived value is expected to influence customer satisfaction. Restaurant image is expected to influence both customer satisfaction and behavioural intentions.

3.3 Summary

Chapter 3 identifies four research gaps in the literature on restaurant patrons' perceptions of service quality in a moderate upscale restaurant context. A research model has been presented, along with 16 testable hypotheses that, in turn, will satisfy the four research objectives stated in Section 1.4.

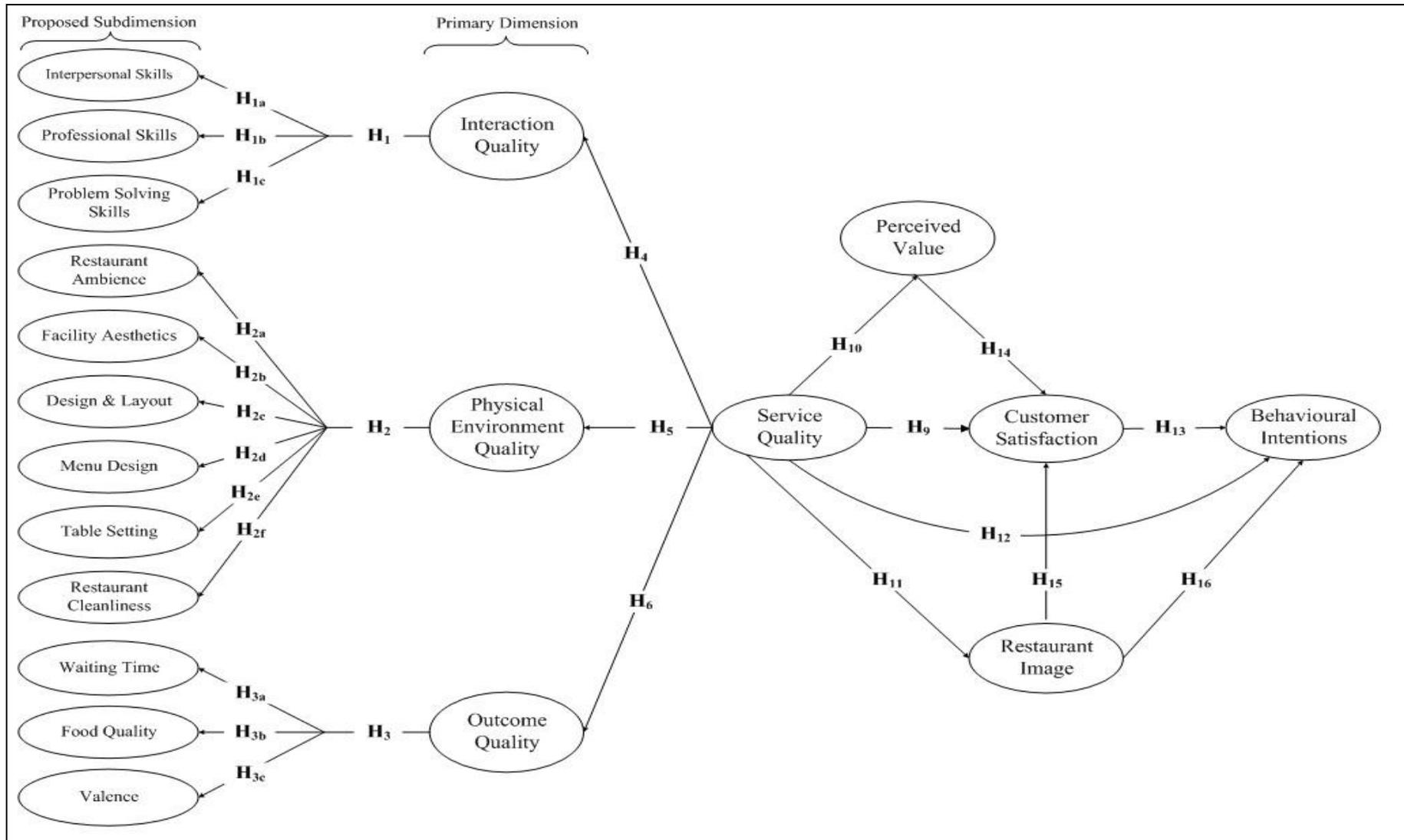


Figure 3.1: Proposed Research Model and Hypotheses for Restaurant Patrons in Moderate Upscale Restaurants in Malaysia

Note: Hypotheses 7 and 8 are not included in the path model

Chapter 4

Research Methodology

This chapter entails a detailed discussion focused on the questionnaire development process and methodology that is used to examine the 16 hypotheses (discussed in Section 3.2) and satisfy the four research objectives (as stated in Section 1.4).

Figure 4.1 outlines the three-phase research design used to test the research model depicted in Figure 3.1. Development of the questionnaire following the recommendations of Churchill (1979) is discussed in the first phase. In the second phase, data collection procedures are presented with an explanation of the sampling plan. In phase three, a step-by-step description of the statistical methods used to analyse the data to address the 16 research hypotheses is discussed. The following sections discuss each step of the research procedure in detail.

4.1 Development of the Questionnaire

The lack of published research relating to moderate upscale restaurants in Malaysia made it necessary to collect primary data to examine the 16 hypotheses and satisfy the four research objectives of this study. Therefore, in order to measure customers' perceptions of service quality, a questionnaire was designed and developed specifically for Malaysian restaurant patrons. Based on the suggestions of Churchill (1979), this study implemented a vigorous process to examine the 16 hypotheses and satisfy the four research's objectives. The step-by-step research design of the methodology is illustrated in Figure 4.1.

A survey questionnaire is the most popular method of data collection among hospitality and tourism researchers (Altinay & Paraskevas, 2008). There are several advantages in using a questionnaire: (1) it is a systematic approach to collecting information from a large number of people; (2) it is low cost; (3) it saves time as it is directly administered to the target population; (4) it allows respondents to complete it without any direct assistance or intervention from the researcher; and (5) it allows for more truthful responses due to its anonymous nature.

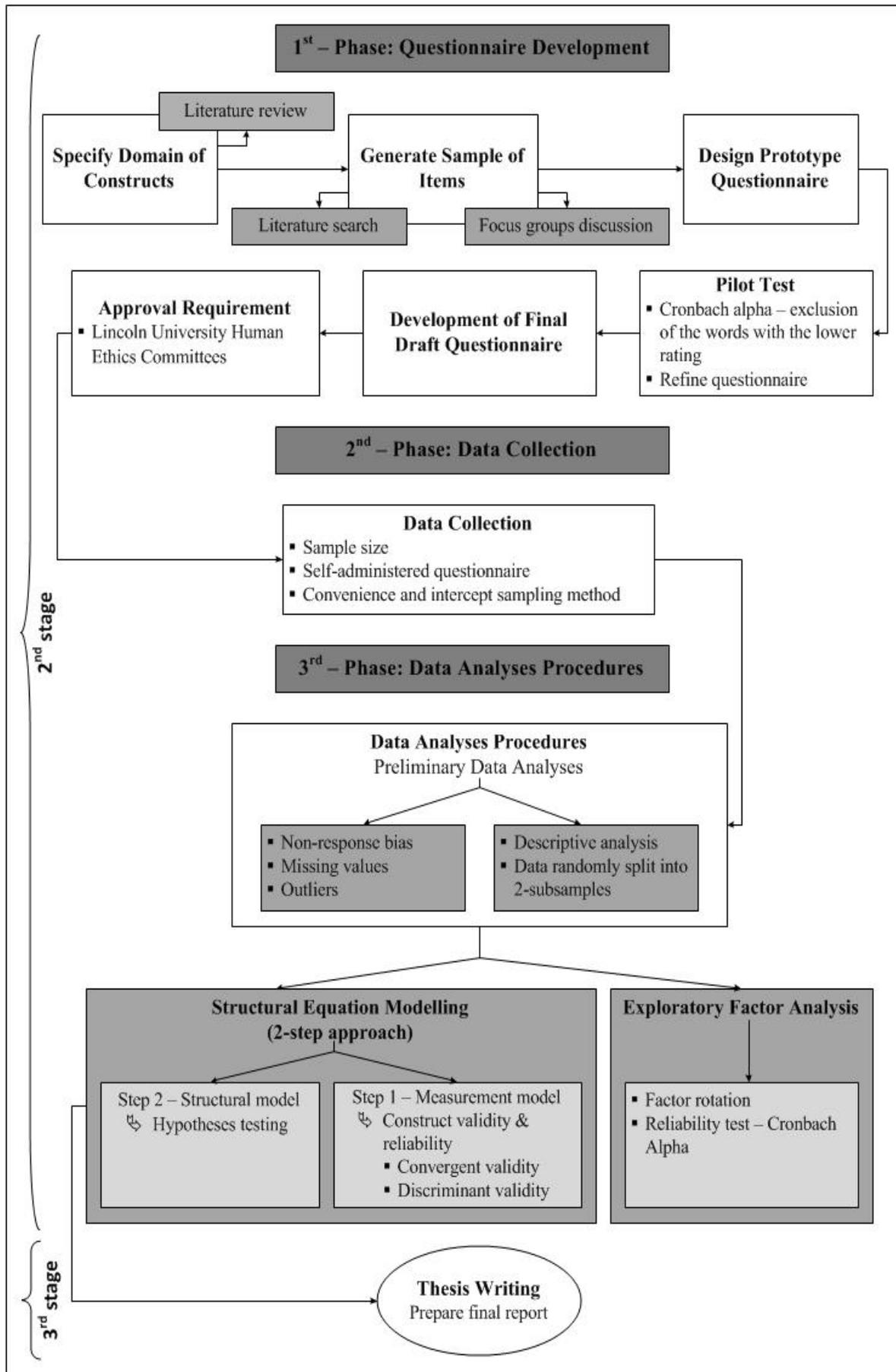


Figure 4.1: Research Methodology Outline

4.1.1 Construct Operationalization

Since this is an exploratory study, as shown in phase one of the research designs in Figure 4.1, generating a pool of items for the questionnaire development was done in two steps: (1) an extensive literature research and (2) focus group discussions to determine the importance of a set of service quality dimensions for moderate upscale restaurants in Malaysia.

In the first step, an extensive literature search was used to generate sample items in order to specify the construct domains. This approach was based on the suggestion of Churchill (1979) that an extensive literature search should reveal how the measurement items have been defined in previous studies. Based on the literature discussed in Chapter 2 (Section 2.3), potential items for possible subdimensions of the three primary dimensions of service quality were classified (see lists of summarised items in Appendix 1). The potential items and subdimensions are those important to the hospitality discipline, especially to full service restaurants.

In the second step, once the potential items were determined and the subdimensions classified, a focus group discussion helped identify the “right” items and subdimensions that specifically suited a moderate upscale restaurant in Malaysia. The following subsection discusses the focus group procedures in detail.

4.1.2 Focus Group Procedures

In order to gain greater understanding and more insight in developing the questionnaire, three focus groups were conducted. The focus group had the further role of providing the study with an in-depth knowledge of the service quality dimensions and possible measurement items. Edmunds (1999, p. 4) defines a focus group as a “group discussion exploring a specific set of issues.” Churchill (1979, p. 67) claims that “... critical incidents and focus groups also can be used to advantage at the item-generation stage.”

Focus groups can assist in defining and developing a questionnaire, thus creating reliable measurement scales (Barbour & Kitzinger, 1999; Hair, Bush, & Ortinau, 2000; Kandampully, Mok, & Sparks, 2001); they are a productive method of narrowing the concepts and issues, hence the “right” questions are asked. Focus groups have been used for years in service quality studies and have been recommended by several researchers (Dabholkar et al., 1996; Parasuraman et al., 1985; Powpaka, 1996; Rust & Oliver, 1994).

Parasuraman et al. (1985), for instance, employed a focus group approach to generate the dimensions for the SERVQUAL instrument.

In order to obtain in-depth information, several recommendations about how to conduct focus groups were followed. Cooper and Schindler (2003) recommend that a focus group should consist of five to ten participants and Hair et al. (2000) suggest that focus groups should be as homogeneous as possible so that the participants feel comfortable. Accordingly, three small sessions were held once approved by the Lincoln University Human Ethics Committee (HEC). Five to eight Malaysian students were recruited from Lincoln University and the University of Canterbury to discuss their dining experiences at moderate upscale restaurants in Malaysia.

The focus group sessions, moderated by the researcher, lasted for approximately two hours. Throughout the sessions, questions related to various factors were posed to obtain more specific information to help establish and list the appropriate items to use in the questionnaire. Following the approach of several researchers (Brady & Cronin, 2001; Dabholkar et al., 1996; Martínez & Martínez, 2007), the focus group participants were encouraged to list all the factors that influenced their perceptions according to their recent service experiences in moderate upscale restaurants. The exception was price because the literature suggested that price¹⁰ is a determinant of service value (Brady & Cronin, 2001; Dabholkar et al., 1996; Zeithaml, 1988). Finally, participants were asked to place the factors (subdimensions) under each of the three primary dimensions of service quality: interaction quality, physical environment quality, and outcome quality (Brady & Cronin, 2001).

The information obtained from the focus group discussions was summarised, inferences were drawn and they were then categorised along with the findings derived from the literature review (see Tables 4.1 to 4.3). That information was used as the basis for developing the measurement items used in the questionnaire. Besides assisting in the early stages of questionnaire development, the focus group discussions provided valuable information for finalizing the research model. For example, Brady and Cronin (2001) identify attitude, behaviour and expertise as subdimensions of interaction quality. However, in this study, the two subdimensions, attitude and behaviour, were considered as one – interpersonal skills – and “expertise” was renamed “professional skills”. “Employees’ problem solving skills” was added as a subdimension of interaction quality,

¹⁰ Price in this study was part of the perceived value construct.

which is consistent with several studies of service quality in different services industries (Dabholkar et al., 1996; Martínez & Martínez, 2007, 2008; Martínez & Roemer, 2006). The following subsections discuss the design of the questionnaire in detail.

4.1.3 Designing the Questionnaire

Survey questionnaires are generally of two types: open-ended and closed-ended¹¹, each with its own advantages. In open-ended questionnaires, respondents create their own answers whereas closed-ended ones are limited to yes or no answers, categories of responses and rank-ordered responses or scales. Closed-ended questionnaire responses are easier to record and analyse (Aaker, Day, Kumar, & Lawley, 2005).

The closed-ended questionnaire format was chosen to obtain the data for this study. Following Churchill (1979), the questionnaire was developed through a multi-stage process. A comprehensive review of the literature was performed to help obtain conceptual and measurement information about potential items that were further refined¹² based on the findings from the focus group discussions. A list of measurement items was compiled, grouped in accordance with the subdimensions, and divided into each of the primary dimensions (see Tables 4.1 to 4.3) and then transformed into a prototype questionnaire.

The questionnaire had two parts: the measurement items and the evaluative part. The first part focussed on the items used to measure each construct; they were mostly adopted from previous foodservice studies but tailored to suit the multiracial restaurant patrons in Malaysia (Powpaka, 1996). The measured items included in the questionnaire were based on performance-only items following the suggestion in prior studies. Several researchers (Babakus & Boller, 1992; Bojanic & Rosen, 1994; Brown et al., 1993; Carman, 1990; McDougall & Levesque, 1994) used two separate measurements (expectations and perceptions measurement) designed by Parasuraman et al. (1988), but found theoretical and operational problems. Furthermore, some researchers (Fu & Parks, 2001; Teas, 1993) have indicated that they had difficulties in collecting expectations and perceptions data separately. Thus, based on the weakness highlighted by these researchers, this study used performance-only items in the questionnaire. In addition, performance-only items in several studies have demonstrated a higher correlation, higher adjusted R^2 and superior construct validity and reliability compared with measurements of service quality based on

¹¹ Closed-ended questionnaires are also known as structured questionnaires.

¹² It should be noted that, although the existing scales were used as resources for the items, parts of those scales might not be necessarily be appropriate for this study.

the disconfirmation paradigm (Cronin & Taylor, 1994; Dabholkar et al., 1996; Zeithaml et al., 1996).

Several academics (Churchill, 1979; Hair, Black, Babin, & Anderson, 2010; Robert, 2002), emphasise that the measurement of constructs with single items has been criticised in the marketing literature, mostly because single items can cause measurement errors and often cannot capture the richness of a concept. A set of measurement items may better capture various facets of a construct than a single measurement item (Kline, 2009). Furthermore, in employing SEM, Hair et al. (2010) claim that for a single item measure, reliability and validity cannot be examined as with multiple-item measures. A single-item measure usually causes a problem with model identification and is more likely to be empirically under-identified than models that have at least three measured items per construct (Blunch, 2008; Byrne, 2009; Chinna, 2009; Kline, 2005; Schumacker & Lomax, 2004). Moreover, academics (Byrne, 2009; Chinna, 2009; Kline, 2005) suggest that at least three measured items per construct should remain after carrying out the CFA in order to counter problems (such as specification error and non-convergence of iterative estimation) which are more likely to occur in a model that had only two measured items per factor. In line with these claims, 12 subdimensions¹³, the primary dimensions and the related constructs of service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions were measured with multiple items so that they could be measured more accurately.

The wording of the questionnaire is also an important consideration. Altinay and Paraskevas (2008) acknowledged questionnaire design as a communication exercise; words of questions often have different meanings for different people. It is important to choose the right words and minimise technical terminology and jargon (Altinay & Paraskevas, 2008; Schall, 2003). Thus, all questions in the questionnaire were simple, ordinary, positive and unambiguous so they could be understood by the respondents.

The sequence of statements is crucial in a questionnaire because it may influence the nature of the respondents' answers and it may produce better data (Schall, 2003). Thus, in compliance with the suggestions of Schall (2003), in the questionnaire specific statements were asked first, followed by general questions¹⁴ (summative overall-

¹³ The subdimensions of each of the primary dimensions were expected to be multi-item measures.

¹⁴ In this study, general items or summative overall-satisfaction questions were used to rate the primary dimensions.

satisfaction). All questions were arranged from one topic to another in a logical manner with questions focusing on completing the section before moving to the next section.

In the second part of the questionnaire, multiple-item likert scales were used in Sections A to D. Likert scales, according to Aaker et al. (2005), require a respondent to indicate a degree of agreement or disagreement with a variety of statements related to the attitude or object. A seven-point likert scale ([1] indicating “Strongly Disagree” to [7] indicating “Strongly Agree”) was used in line with Schall’s (2003) recommendation. Schall (2003) determined that a seven-point anchored scale was the optimum size for hospitality industry questionnaires when comparing four, five, and seven point scales. Based on Schall’s (2003) research, a seven-point scale was used with a balance between equal numbers of positive and negative responses and with a neutral point; to collect more accurate data and ensure the usage was also consistent with other studies in service quality (Dagger et al., 2007; Ha & Jang, 2010b; Kim & Moon, 2009; Ko & Pastore, 2005; Qin & Prybutok, 2008).

The demographic section of the questionnaire was designed to obtain personal information about the respondents such as gender and educational level, which were measured with a multiple-choice single response format using nominal and ordinal scales. A nominal scale (also known as a categorical scale) presents only categories or classes and usually measures demographic characteristics such as gender and marital status (Abu Samah & Suandi, 1999; Hair et al., 2010). With an ordinal scale, variables are ordered or ranked in relation to the amount of the attribute possessed; measured items usually can be compared with other measured items in terms of a “greater than” or “less than” relationships such as household income and average spending; they provide no measure of the actual amount, only the order of the values (Hair et al., 2010).

4.1.4 Construct Validity of the Measurement

Construct validity refers to the degree to which the instruments can quantify the differences between individuals on the construct one seeks to measure (Churchill, 2001). Construct validity is an important procedure because it addresses the question of the survey’s scale and its measurement, i.e., what it actually measured. Schall (2003) states that the construct validity of the measurement refers to whether a question in the questionnaire measured the desired topic and notes that poor measurements generate misleading data and can lead to incorrect conclusions. Similarly, according to Spielmann, Laroche and Borges

(2012), different understandings of the same words used in a different context can significantly influence interpretation of the scale items, thereby affecting the outcome.

Prior to conducting the survey, content and face validity was conducted in order to improve the initial version of the questionnaire. Content and face validity are the most widely accepted form to measure the validity of a construct (Hair et al., 2010; Kline, 2009; McDaniel & Gates, 1998; Schall, 2003). Hair et al. (2010, p. 125) state that the objective for conducting content validity is "... to ensure that the selection of scale items extends past just empirical issues to also include theoretical and practical considerations." Content validity includes the intention of the question, which means whether the question actually measured what it was intended to measure, whether the questionnaire adequately represented the construct under study and whether the items are appropriate and "looked right" (Churchill, 1979; Kivelä, Inbakaran, et al., 1999; Schall, 2003). According to McDaniel and Gates (1998), measurement has face validity when the measurement appears to measure what it is supposed to measure.

The assessment of content and face validity for the initial version of the questionnaire in this study was performed through a three-step processes. The first step to accomplish the content validity was determined by an in-depth literature review and use of a questionnaire validated by 2 marketing experts and 2 restaurant experts. Besides that, a focus group discussion was also conducted to guarantee that the questionnaire covered the concepts intended for this study. The second step is conducting the face validity which involved asking three service marketing experts and two industry experts to review and freely comment on the survey questions. The third step involved selecting a small representative group to conduct the pilot testing of the preliminary questionnaire (see Subsections 4.1.4). Besides content and face validity, the other two widely considered key forms of construct validity used in this study were: (1) convergent validity and (2) discriminant validity, as discussed in Subsection 4.3.3.2.3.

Besides the extensive literature review, a focus group discussion was also conducted to guarantee that the questionnaire covered the concepts intended for this study. The second step is conducting the face validity which involved asking six service marketing and hospitality experts and four restaurant industry experts to review and freely comment on the survey questions. The third step involved selecting a small representative group to conduct the pilot testing of the preliminary questionnaire (see Subsections 4.1.4). Besides content and face validity, the other two widely considered key forms of construct

validity used in this study were: (1) convergent validity and (2) discriminant validity, as discussed in Subsection 4.3.3.2.3.

4.1.5 Pilot Testing Procedures

As the questionnaire was developed specifically for this study, a pilot test of the questionnaire development process was conducted in order to improve the measurement items in the questionnaire with regard to the content validity of the scale (i.e., clarity, readability and comprehension). Hair et al. (2010, p. 655) claim that “... when measures are either developed for a study or taken from various sources, some type of pre-test should be performed, the pre-test should use respondents similar to those from the population to be studied so as to screen items for appropriateness.” The pilot test had two primary objectives: (1) to evaluate the content validity such as the sequence and flow of questions, ambiguity or bias of words and the simplicity of the questionnaire and (2) to test the format and clarity of scales, length of survey and time to complete the questionnaire (Malhotra, Hall, Shaw, & Oppenheim, 2002).

Malhotra et al. (2002) suggest that the sample size required for a pilot test vary from 15 to 30 respondents. In this study, the questionnaire was tested by 50 respondents for wording, layout and comprehension. The breakdown of respondents was as follows: 30 restaurant patrons in Malaysia who had recently dined at moderate upscale restaurants; 16 respondents using a convenient sample of Malaysian postgraduate students studying at Lincoln University and the University of Canterbury; and 4 experts in the service marketing and hospitality field in New Zealand and Malaysia (academics and practitioners). Cronbach alpha was performed to test the reliability and internal consistency of each of the 77 items used to measure the constructs. The results of Cronbach alpha were well above 0.60, indicating internal consistency (Churchill, 1979).

The questionnaire was also checked for content validity in light of the claim by Schall (2003) that many questions used in hospitality industry surveys are invalid. Respondents were encouraged to make comments on any measured items they thought were ambiguous or difficult to answer. In order to ensure content validity, the researcher chose the last 10 respondents who are experts in hospitality fields and familiar with the subject. According to Kline (2009), expert opinions are essential because they are the basis for establishing content validity. Therefore, in order to ensure the measurement items are

representative of some domains, expert opinion should be sought as recommended by Kline (2009).

4.1.6 Layout of the Final Draft Questionnaire

Several technical changes were made to the questionnaire based on the reliability results and the respondents’ feedback. The necessary changes were based on recommendations after the reviews and before the questionnaires were considered ready to be administered to the target sample. The wording of the questionnaire was re-stipulated and some wording was slightly modified. In order to ensure clarity, the order of certain measured items was adjusted and the spacing and the ease of filling out the questionnaire was improved.

The final questionnaire consisted of five sections (see the final questionnaire in Appendix 2). Sections A to C contained items that measured the interaction quality, physical environment quality and outcome quality constructs. Section D contained items measuring service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions. Section E dealt primarily with the demographic information and lifestyles profiles of the respondents. In addition, a formal covering letter was attached to the questionnaires in order to explain the research background to the respondents. The following subsections provide details of the final layout of the questionnaire.

4.1.6.1 Section A

Section A included a total of 17 items for measuring interaction quality; there were three pertaining subdimensions. As presented in Table 4.1, there were six items for measuring interpersonal skills, six items for measuring professional skills, three items for measuring problem solving skills and two items for measuring customer overall perceptions of interaction quality.

Table 4.1: Measurement Items for Measuring Interaction Quality

Constructs Items	Items No.	Description
<i>Interaction Quality</i>	A16	Overall, I am satisfied with the interaction between customers and employees
	A17	Overall, I am satisfied with the interaction between employees.
<u>Interpersonal Skills</u>	A1	Employees with a pleasant attitude
	A5	Capable of handling special requests
	A2	Employees with pleasant behaviour
▪ Attitude		
▪ Behaviour		

Constructs Items	Items No.	Description
▪ Personal grooming	A3	Well groomed and clean employees
▪ Empathy	A4	Employees are sympathetic to customer
	A11	Employees are sensitive to customers' individual needs
<u>Professional Skills</u>	A8	Well trained and experienced employees
▪ Service skills	A15	Deliver superior service
▪ Language/Communication	A7	Employees listen and speak in an understandable language
	A10	Employees can answer customer questions quickly
▪ Knowledge	A6	Employees can inform about products knowledge
	A9	Make an effort to inform customers on products available
<u>Problem Solving Skills</u>	A12	Solve complaints rather than relying on policies
	A13	Empowered to handle complaints
	A14	When I have to wait for service, I receive an apology

4.1.6.2 Section B

Section B included a total of 27 items for measuring physical environment quality; there were six pertaining subdimensions. As represented in Table 4.2, there were five items for measuring facility aesthetics, four items for measuring restaurant ambiance, six items for measuring layout and design, four items for measuring menu design, three items for measuring table setting, three items for measuring restaurant cleanliness and two items for measuring customers' overall perceptions of physical environment quality.

Table 4.2: Measurement Items for Measuring Physical Environment Quality

Constructs Items	Items No.	Description
<i>Physical Environment Quality</i>	B26	In general, a moderate upscale restaurant has good physical environment that matches its theme, image and price range
	B27	Overall, I am satisfied with the physical
<u>Facility Aesthetics</u>	B3	Comfortable dining table
▪ Furniture	B4	Comfortable seats and easy to move around
	B5	Spacious seating arrangement
▪ Decoration/paintings/pictures/ ▪ Flowers	B1	Visually attractive interior décor
▪ Colour	B2	Fashionable colour scheme
<u>Restaurant Ambience</u>		
▪ Music	B6	Suitable background music
▪ Lighting	B7	Comfortable lighting atmosphere
▪ Temperature	B8	Comfortable dining room temperature
▪ Scents	B9	Pleasant dining room aromas
<u>Layout & Design</u>		
▪ Location & parking	B14	Ample parking spaces
	B15	Convenient location
▪ Building size, design and layout	B13	Visually attractive exterior of building
	B11	Smoking and non-smoking sections
	B10	Comfortable waiting lounge
▪ Signage	B12	Easy to follow signage
<u>Menu Design</u>		
▪ Clarity of a menu	B17	A menu that is easily read
	B18	Using appetizing words and easily understood
▪ Design	B16	Visually attractive menu card
▪ Appealing words	B19	Menu card written in a foreign language, provides translation

Constructs Items	Items No.	Description
<u>Table setting</u>		
▪ Tableware	B20	Good quality of tableware
▪ Table linen	B21	Attractive and neat table linen
▪ Table accessories	B22	Attractive table accessories
<u>Restaurant Cleanliness</u>	B24	Clean and well maintained rest rooms
▪ Common area	B25	Visually attractive and clean dining area
▪ Table setting	B23	Clean table setting and hygienically handled by the employees

4.1.6.3 Section C

Section C included a total of 19 items for measuring outcome quality; there were three pertaining subdimensions. As presented in Table 4.3, there were four items for measuring waiting time, nine items for food quality, three items for measuring valence and three items for measuring customers' overall perceptions of outcome quality.

Table 4.3: Measurement Items for Measuring Outcome Quality

Constructs Items	Items No.	Description
<i>Outcome Quality</i>	C13	Overall, I am satisfied with the food quality
	C18	Overall, I anticipate that a moderate upscale restaurant will provide a fast service and try to minimize the waiting time
	C19	Overall, I have had an excellent experience
<u>Waiting Time</u>	C11	Reasonable waiting time
	C12	Normally, I do not wait a long time to be seated
	C16	Employees serve customers at the time they promise
	C17	Normally, I do not wait longer for service than I expect
<u>Food Quality</u> ▪ Wide variety of item ▪ Healthy & religious conscious ▪ Temperature, safety, & hygienic ▪ Freshness ▪ Presentation ▪ Taste & consistency	C1	Offers unique food that unable to prepare at home
	C2	Offers a variety of menus to choose from
	C3	Offers a selection of beverages to complement the food
	C5	Offers a choice of food and beverages that caters for my dietary needs
	C4	Offers a choice of food that is prepared according to the requirements of my religious beliefs
	C6	Serves food at the appropriate temperature
	C7	Serves fresh and properly cooked food
	C8	Serves attractive and tempting food
	C9	Serves food that meets customer expectation
<u>Valence</u>	C10	I believe a moderate upscale restaurant tries to give me a good dining experience
	C14	I believe a moderate upscale restaurant knows the type of experience its customers want
	C15	At the end of dining, I feel that I receive and experience what I want in my dining

4.1.6.4 Section D

Section D included a total of 20 items for measuring customers' overall perceptions of service quality, customer satisfaction, perceived value, restaurant image and behavioural

intentions. As presented in Table 4.4, there were four items for measuring customers' overall perceptions of service quality, three items for measuring customer satisfaction, four items for measuring perceived value, four items for measuring restaurant image and five items for measuring behavioural intentions.

Table 4.4: Measurement Items for Measuring Higher-Order Constructs

Constructs Items	Items No.	Description
<i>Service Quality</i>	D1	Provides prompt and quick service
	D2	Employees help each other maintain the speed and quality of service
	D3	I am satisfied with the service quality
	D4	Overall, the service quality of a moderate upscale restaurant could be considered superior to a similar class and category of restaurants
<i>Customer Satisfaction</i>	D5	Highly satisfied with the food and beverages I order
	D6	Has operating hours that are convenient
	D7	Overall, I am pleased I choose to dine in a moderate upscale restaurant
<i>Perceived Value</i>	D8	The food and beverage items on the menu are worth the money
	D9	The price is reasonable
	D10	Provides an accurate check/bill for the customer
	D11	Overall, I am satisfied with the value I receive from a moderate upscale restaurant
<i>Restaurant Image</i>	D12	Good impression of a moderate upscale restaurant
	D13	Has an excellent reputation
	D14	The image of the restaurant has more impact on my restaurant choice than the actual quality of that restaurant
	D15	Overall, I am satisfied with the image portrayed by a moderate upscale restaurant
<i>Behavioural Intentions</i>	D16	Say positive things about a moderate upscale restaurant
	D17	Recommend to my friends and my family
	D18	Deserves my loyalty
	D19	My first dining choice
	D20	Revisit on my next dining out occasion

4.1.6.5 Section E

Section E (see Appendix 2) included eight items for measuring demographic information such as gender, age and marital status, and the last four items for measuring trends and lifestyle profiles of the respondents.

4.1.7 Reliability of the Measurement

The reliability of the questionnaire should be assessed and must be addressed by the researcher to reduce measurement error (Hair et al., 2010). Reliability "... is an assessment of the degree of consistency between multiple measurements of a variable" (Hair et al., 2010, p. 125). As noted by Cronbach (1951, p. 297), "any research based on measurement

must be concerned with the accuracy or dependability or, as we usually call it, reliability of measurement.”

The reliability of the dependent measures is calculated by the determination of the Cronbach coefficient alpha (hereafter called Cronbach alpha), the most widely used measure to assess the internal consistency of a scale (Hair et al., 2010; Kline, 2009). Churchill (1979) recommended that a Cronbach alpha greater than 0.60 is adequate for a newly developed questionnaire’s scale to express reliability, whereas a Cronbach alpha score of higher than 0.80 is interpreted as extremely reliable. The threshold value of 0.60 for Cronbach alpha is also consistent with the claim by Hair et al. (2010) that 0.60 may be used in exploratory research.

Nevertheless, Hair et al. (2010) claim that no single item is a perfect measure of a concept, and a series of diagnostic measures is necessary to assess internal consistency of the reliability. Therefore, to assess the reliability of the construct using SEM it was necessary to use composite reliability and average variance extracted (AVE) (as detailed in Subsection 4.3.3.2.3) as well as a Cronbach alpha. In addition, another practice to verify the reliability of a measurement is to conduct a pilot test (Hair et al., 2010), as explained in Subsection 4.1.5.

4.2 Sampling Methods and Data Collection Procedures

4.2.1 Sample Size

The sample size determined in this study is based on two types of data analysis techniques; Exploratory Factor Analysis (EFA) and SEM. Sample size is an important factor in making generalisations about the constructs under investigation. It should provide reliable estimates and reflect the population parameters as closely as possible with a narrow margin of error (Sekaran, 2003). In general, the reliability of the factors emerging from a factor analysis depend on the size of the sample, although there is no consensus on what the sample size should be (Hair et al., 2010). Most researchers agree, however, that there should be more respondents than variables (Bryman & Cramer, 2005).

Academics (Hair et al., 2010; Kline, 2005; Pallant, 2007) recommend a minimum sample size of 100 or more for conducting EFA with at least five times as many observations as the number of measured items to be analysed and a more acceptable ratios of 10:1. Thus, considering these recommendations, a minimum sample size of at least 280 respondents would be appropriate for an EFA since there were 56 items. For SEM analysis

using Maximum Likelihood Estimation (MLE), in general, a sample size of at least 200 to 400 respondents is recommended (Hair et al., 2010; Tanaka, 1993). Thus, taking into account the claims of Hair et al. (2010) and Tanaka (1993), the ideal sample size for using SEM in this study should be between 200 and 400 observations. Accordingly, the minimum sample size for this study was set at 480 usable questionnaires to test the 16 hypotheses and satisfy the four research objectives. However, 550 questionnaires were distributed for the actual data collection to guarantee at least 480 usable questionnaires after taking account of the claim by Hair et al. (2010) that 100% completion of questionnaires was highly unlikely. Some questionnaires may be unusable or incomplete and invalid; incomplete questionnaires were therefore excluded from the analysis (Clemes et al., 2011; Kim, 2003; Ryu et al., 2012; Tabachnick & Fidell, 2007).

4.2.2 Sample Derivation

Before data collection could commence in Malaysia, approval from the HEC of Lincoln University was required. This was the second approval from the HEC after permission was granted for conducting the focus group sessions. Approval from the Economic Planning Unit of Malaysia was also needed. After receiving the approvals data collection in Malaysia commenced in January and ended in March, 2009.

In the interests of generalizability in the data collection and to improve the representativeness of the sample, following Brady et al.'s (2001) and Cronin et al.'s (2000) sampling method, four moderate upscale restaurants were investigated: the Hard Rock Café, T.G.I Friday's Restaurant, DÔME Café and Victoria Station Restaurant. Most of the moderate upscale restaurants are located in major cities in Malaysia such as in the Klang Valley, Penang and Johor Bharu, where spending power and population concentration are higher (Euromonitor International, 2008). However, owing to monetary restrictions and time constraints, data collection was confined to restaurant patrons of moderate upscale restaurants in the Klang Valley.

4.2.3 The Data Collection Method and Procedure

In order to ensure effectiveness during data collection, several techniques such as intercept sampling, convenience sampling and a self-administered questionnaire were adopted.

4.2.3.1 Intercept Sampling

An intercept (analogous to the mall intercept or street intercept) sampling was adopted since the researcher was not permitted to enter the restaurants. Using the intercept sampling method in this study was consistent with the work of other researchers (Ko & Pastore, 2005; Li, 2002; MacLaurin & MacLaurin, 2000; Shonk, 2006; Weiss et al., 2004). Moreover, in the last few years, the intercept sampling survey method has been widely used in market research and is a feasible alternative to traditional survey methods (Bush & Hair, 1985; Gates & Solomon, 1982; Keillor et al., 2007; Miller, Wilder, Stillman, & Becker, 1997).

Intercept sampling was deemed the most suitable method for this study after considering the advantages and disadvantages of various data collection methods such as door-to-door personal interview, telephone interview, mail survey and email survey (Bush & Hair, 1985; Gates & Solomon, 1982; Miller et al., 1997). The main advantages of intercept sampling are as follows: (1) it is less expensive; (2) there is greater control; (3) it has a high response rate; (4) accurate data is obtained in a face-to-face manner; (5) it represents the correct respondents; and (6) the respondents are able to supply a real experience (Bush & Hair, 1985; Gates & Solomon, 1982; Ko, Zhang, & Pastore, 2007; Miller et al., 1997).

4.2.3.2 Convenience Sampling

Intercept sampling is a classic example of convenience sampling (Mallett, 2006), the sampling technique used in this study, following the work of several researchers (Kivelä, Reece, & Inbakaran, 1999; Ko et al., 2007; Ryu et al., 2008). The advantages of convenience sampling are: (1) a large number of people can complete the questionnaire; (2) the data collection can be conducted in a short time; (3) it is relatively inexpensive; (4) convenient; and (5) the respondents are often selected because they happen to be in the right place at the right time (Malhotra et al., 2002; Zikmund, Ward, Lowe, & Winzar, 2007).

In addition to the advantages of convenience sampling, this method is considered as an acceptable sampling technique for data collection if the purpose of the study is to: (1) test the theoretical; (2) test the hypotheses regarding how particular variables relate to behaviour as stated in the research objective; and (3) provide evidence in supporting or

rejecting the theory tested, regardless of the nature of the sample (Leary, 2004; Reynolds, Simintiras, & Diamantopoulos, 2003).

In respond to ethical reason in data collection, measuring respondents' attitudes and perceptions through questionnaire surveys as used in this study requires respondent consent. Therefore, only restaurant patrons age 18 and above whom consent can be selected as respondents. Following Suhartanto (2011), to minimise the weakness of using convenience sampling, data were collected from several moderate upscale restaurants in Klang Valley area.

4.2.3.3 Self-Administrated Questionnaire

Testing the 16 hypotheses formulated for this study required a large sample size (more than 400 sample size); therefore, a self-administered questionnaire was adopted for collecting the data due to cost and time considerations. Self-administered questionnaires are often used in shopping centres, or other central locations, where the researcher has access to captive respondents (Malhotra et al., 2002; Zikmund et al., 2007). In fact, the self-administered questionnaire field survey approach has been the dominant study design for service quality studies in the hospitality field (Aaker et al., 2005; Kivelä, Reece, et al., 1999).

Thus, this study used a self-administered questionnaire based on the reason that: (1) the respondents responsible for reading and responding to the questions; (2) it enables the researcher to distribute numerous questionnaires to many respondents in different places simultaneously; and (3) the data can be collected from various restaurants at different locations in a relatively short time period (Malhotra et al., 2002; Suhartanto, 2011; Zikmund & Babin, 2007; Zikmund et al., 2007).

4.2.3.4 The Actual Data Collection Method

During the data collection sessions, the researcher intercepted every first of the five potential respondents (restaurant patrons) as they left the restaurant and explained the nature of the survey to them. They were informed that their participation in the study was voluntary and the information provided would be kept private and confidential. Restaurant patrons aged under 18 years were excluded from the sample because it was expected they might encounter difficulties in interpreting the questionnaire (Clemes et al., 2011; Miller et al., 1997; Weiss, 2003) and would probably not be making the decision on future

behavioural intentions (Weiss, 2003). The questionnaires were administered by the researcher in a public area near the entrance to moderate upscale restaurants during lunch (12.00 noon – 3.00 pm) and dinner time (6.00 pm – 9.00 pm) over a period of three months. Additionally, a non-response bias test (see Section 5.1.2) was conducted before analysing the data.

Restaurant patrons were asked to complete the 10 – 15 minute questionnaire and return the completed questionnaire to the researcher. By utilizing this method, a total of 480 questionnaires were expected to be completed. Respondents could ask the researcher for assistance if they had difficulty interpreting or understanding the questions which were based on performance-only items; there was no need for the respondent to be approached twice.

Response rates between 20% and 30% are common for hospitality studies (Hartline, Woolridge, & Jones, 2003). The problem of low response rates can be minimised by providing prepaid and non-monetary incentives (Aaker et al., 2005; Willimack, Schuman, Pennell, & Lepkowski, 1995; Yu & Cooper, 1983). Willimack et al. (1995) report no increases in measurement error due to using incentives. In line with this suggestion, incentives were given to the respondents in order to encourage them to participate and to ensure that the study achieved an acceptable response rate. Restaurant patrons were told that if they completed and returned the questionnaires to the researcher they would receive a gift, an option between a key-chain or a fridge magnet as a token of appreciation.

4.3 Data Analyses Procedures

This study used two procedures to analyse the data collection (i.e., EFA and SEM) employing SPSS and AMOS software. SPSS is an enormously powerful data analysis package and among the most widely used programs for statistical analysis, especially in social science disciplines. Above all, the researcher benefitted because SPSS is capable of handling very complex statistical procedures and also user-friendly. In addition, the researcher can organise the SPSS output easily since it is compatible with Microsoft Office packages and also supports an ‘add on’ of AMOS program (Janssens, Wijnen, Pelsmacker, & Kenhove, 2008; Pallant, 2007; Zikmund, 2003). This study therefore employed SPSS for coding and entering the raw data, performing the data screening, conducting the EFA and calculating the Cronbach alpha.

After SPSS statistical analyses, AMOS was employed to build SEM models (i.e., measurement and structural models) and then to test the hypothesized model illustrated in Figure 3.1. The advantages of employing AMOS are detailed in Subsection 4.3.3. The following subsections discuss the specific procedures employed for analysing the data, starting with the data screening.

4.3.1 Preliminary Data Analyses

According to Aaker et al. (2005), the quality of statistical analysis is influenced by how well the data is prepared and converted into a form suitable for analysis. Thus, before conducting further statistical analyses, the collected raw data were subjected to preliminary analyses by careful screening to ensure that the data coding and entry were appropriate for carrying out the analyses. It was important to ensure the data were “clean” before proceeding to the next step. The screening process was necessary because model estimation in SEM is not always successful because of “messy data” (Kline, 2005; Schumacker & Lomax, 2004). According to Schumacker and Lomax (2004, p. 240), “messy data” such as “... missing data, outliers, multicollinearity, and non-normality of data distribution seriously affect the estimation process often resulting in fatal error messages or failure to reach convergence (unable to compute a set of parameter estimates).”

Briefly, the procedures used to clean the data in this study were as follows: (1) sample non-response bias (using independent sample t-test); (2) missing data (using t-tests for a series of dependent variables); (3) outliers (using boxplots, histogram and standardised residual values or Z-score); and (4) normality of data distribution (using skewness and kurtosis). Each of these procedures is further described in the following subsection. Besides the data cleaning procedures, SPSS was also employed to conduct descriptive analysis including frequencies, mean, and standard deviation of each item and demographic characteristics of the respondents to gain preliminary information about the data collected in the study.

4.3.1.1 Outliers

Upon calculating the descriptive statistics, outliers were thoroughly examined. An outlier is “an observation that is substantially different from the other observations (has an extreme value) on one or more characteristics (variables)” (Hair et al., 2010, p. 36). Typically an outlier is judged “... to be an usually high or low value on a variable or a

unique combination of values across several variables that make the observation stand out from the others” (Hair et al., 2010, p. 64).

There are three methods of detecting outliers: univariate, bivariate and multivariate. This study examined only univariate and multivariate methods considering the claim by Hair et al. (2010, p. 66) that “... researchers’ should limit the general use of bivariate methods to specific relationships between variables, such as the relationship of the dependent versus independent variable in regression; as the outliers will arise whenever the number of variables increases.”

Univariate outliers can be detected during data screening. A case may be a univariate outlier if it has an extreme score for a single variable; it is easy to find by inspecting the frequency distributions of z scores or standardized residual value (Hair et al., 2010; Kline, 2005). Hair et al. (2010) suggest that for a large sample, any data value with a standardized residual value less than -4 or greater than +4 can be identified as an outlier. In terms of handling univariate outliers in this study, any cases that appeared to be less than -4 or greater than +4 were eliminated from the database. However, the decision to remove outliers from the data set must be made with care because the deletion often results in the generation of further outlying cases (Pallant, 2007). Multivariate outliers can be detected using graphical methods such as residual scatter plots or statistical methods such as the Mahalanobis distance (Hair et al., 2010).

4.3.1.2 Normality Test

Normality refers to the shape of the data distribution for an individual metric variable and its correspondence to the normal distribution (Hair et al., 2010, p. 71). Skewness and kurtosis are two indications of normality; skewness according to Morgan and Griego (1998) refers to the symmetry of a distribution compared with a normal distribution while kurtosis is used to describe whether the peak of a distribution is taller or shorter than a normal distribution. The values of the skewness and kurtosis are frequently used to examine and determine whether the measured items are normally distributed in a large sample size (200 or more) (Field, 2009). Further, Kline (2005) suggests that the any absolute value of skewness greater than three and an absolute value of kurtosis greater than eight indicate problems with normality in the sample distribution. In this study following Kline (2005), any absolute value of skewness greater than three and any absolute value of kurtosis greater than eight indicated problems with normality in data distribution.

4.3.1.3 Procedures for Splitting the Data

Once the data screening was completed, the 'clean' data were randomly split into two data sets. The objectives of the data splitting procedure are to validate the EFA results and to move to SEM analyses (Hair et al., 2010; Kline, 2005; Schumacker & Lomax, 2004). According to Kline (2005), it is inappropriate to run EFA and CFA using the same data, as the results of EFA are subject to capitalization on chance variation, and using CFA to specify a model based on the results of EFA just compounds this problem. Kline (2005) added that, sometimes, factor structures identified through EFA may turn out to have poor model-fit-indices to the same data when evaluated using SEM. In addition, Schumacker and Lomax (2004) suggest that a researcher could begin model generation by using EFA on a sample of data to find the number and type of latent variables in a plausible model. Once a plausible model is identified, another sample of data could be used to employ SEM to confirm or test the model.

In line with the reasons, this study deemed it inappropriate to run EFA and SEM using same data set. As a result, two subsamples were required for this research as two techniques were used in part of the data analysis process: EFA and SEM. Each sample group must meet the minimum size requirements as explained in Section 4.2.1. In general, a three-stage process was used in order to perform the data analysis. In the first-stage process of data analysis, the first subsample data set was used to conduct EFA and to perform the Cronbach alphas, which, in turn, partially satisfied Research Objective 1. In the second-stage of data analysis, the second subsample data set was used to reassess the results of the EFA using SEM analysis by employing CFA, which, in turn, satisfied Research Objectives 1 to 3. The third-stage of data analysis involved developing and estimating a causal path model on the second subsample to test the hypotheses regarding the relationships between the five constructs (service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions) discussed in Subsections 3.2.4, which, in turn, satisfied Research Objective 4.

4.3.2 Exploratory Factor Analysis Procedures

Due to the exploratory nature of this study, an EFA was performed to obtain a robust and reliable factor structure. EFA is the most common approach in marketing research (see: Andaleeb & Conway, 2006; Bindu, Chandrasekharan, & Sai, 2008; Clemes et al., 2010; Dagger et al., 2007; Lu et al., 2009; Stewart, 1981; Swaid & Wigand, 2009).

EFA is often used in the early stages of research to gather information by providing a data summarization perspective, which offers a better understanding of the factors and therefore would be an appropriate analysis to undertake before SEM (Hair et al., 2010; Kline, 2005; Pallant, 2007; Schumacker & Lomax, 2004).

The two types of factor rotation methods used in the computations for EFA are Oblique and Orthogonal rotation. The objective of factor rotation is to make the factor structure more interpretable when the dimensions are rotated (Aaker et al., 2005). VARIMAX, QUARTIMAX and EQUIMAX are the three major orthogonal rotations; however, VARIMAX is the most popular factor rotation method and is frequently applied in marketing research (see: Ady, 2009; Bindu et al., 2008; Kim, Lee, et al., 2006; Noone, 2008; Shu, 2010; Swaid & Wigand, 2009). Principal Component Analysis (PCA) and the VARIMAX rotation were specifically used in this study to extract the factors for all 56 items. The VARIMAX factor rotation was used because it simplifies the columns in a factor matrix (Hair et al., 2010); an OBLIMIN factor rotation (oblique rotation) was also undertaken here. Oblique rotations and orthogonal rotations often result in similar solutions, but the output of an oblique rotation is more difficult to interpret (Hair et al., 2010; Meyers, Gamst, & Guarino, 2006; Tabachnick & Fidell, 2007). Thus, the final factorial structure was based on the VARIMAX rotation results because the output of an oblique rotation is more difficult to interpret (Tabachnick & Fidell, 2007).

4.3.2.1 Performing Exploratory Factor Analysis – Tests and Interpretation

4.3.2.1.1 Factor Loadings

Factor loadings were used as the criterion for item reduction in the EFA performed for this study. Hair et al. (2010) suggest that factor loadings in the range 0.30 to 0.40 meet the minimal level for interpretation of structure; factor loadings of 0.50 or greater are considered practically significant and factor loadings exceeding 0.70 are considered indicative of a well-defined structure. In this study, following the recommendation of Hair et al. (2010), items loading below 0.50, item cross loadings, and item misclassifications were removed from the item pool.

4.3.2.1.2 Tests for Determining Appropriateness of Exploratory Factor Analysis

In order to perform a factor analysis, several investigations need to be conducted to ensure that the data matrix has sufficient correlations to justify the application of factor

analysis (Pallant, 2007). The investigations include: (1) examining the correlation matrix; (2) inspection of the anti-image correlation matrix; (3) assessing the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy; and (4) assessing the Bartlett's Test of Sphericity. The explanations of each investigation are as follows:

1. Examination of the correlation matrix is a simple method to determine the appropriateness of factor analysis (Hair et al., 2010). Pallant (2007) suggests factor analysis is appropriate when there are substantial numbers of correlations greater than 0.30 in a data matrix, indicating that the items share common factors and are, therefore, suitable for factor analysis (Chinna, 2009; Pallant, 2007). Otherwise, the data matrix is considered to be inappropriate for factor analysis.
2. The anti-image correlation matrix is the negative value of the partial correlation (Hair et al., 2010). For good factoring, most of the off-diagonal elements are assumed to be small in the diagonal of the anti-image correlation matrix (Tabachnick & Fidell, 2007). However, if the anti-image matrix has many non-zeros, or a larger number of partial off-diagonal entries, the correlation matrix may not be suitable for factor analysis (Stewart, 1981).
3. KMO provides a measure to determine whether the variables belong together (Stewart, 1981). KMO interpretations are: if the value is less than 0.50 it is unacceptable; 0.50 or above is miserable; 0.60 or above is mediocre; 0.70 or above is middling; 0.80 or above is meritorious; and 0.90 or above is marvelous (Kaiser & Rice, 1974). By convention, to indicate appropriateness, KMO values should be above 0.50 (Chinna, 2009).
4. Bartlett's Test of Sphericity is a statistical test for the presence of correlations among the variables and, therefore, provides statistical evidence that the correlation matrix has significant correlations among at least some of the variables (Hair et al., 2010).

4.3.2.1.3 Interpretation of Factors

Three commonly used criteria to determine the number of factors and the criteria for ceasing extraction are: (1) Eigenvalues or the latent root criterion; (2) percentage of variance criterion; and (3) scree test criterion (Janssens et al., 2008; Pallant, 2007; Stewart, 1981). Eigenvalues are the most commonly used technique for selecting the number of

factors (Hair et al., 2010). Pallant (2007) suggests that any factors with Eigenvalues greater than one should be considered significant, otherwise the factors should be ignored.

Beside Eigenvalues, the percentage of variance criterion was also checked. The purpose of this criterion is to ensure practical significance for the derived factors by ensuring that they explain at least a specified amount of total variance (Hair et al., 2010). Hair et al. (2010) suggest that, in the social sciences, it is common to consider a solution that accounts for 60% or less (in some circumstances) of the total variance as satisfactory.

In addition to Eigenvalues and the percentage of variance criterion, the last criterion, the scree test criterion, was also checked. The scree test criterion, according to Hair et al. (2010), is derived by plotting the latent roots against the number of factors in their order of extraction. The shape of the resulting curve is used to assess the cut-off point. The procedure is explained by Stewart (1981, p. 58), as follows:

A straight edge is laid across the bottom portion of the roots to see where they form an approximate straight line. The point where the factors curve above the straight line gives the number of factors, the last factor being the one whose eigenvalues immediately precede the straight line.

Once the final factors were established, Cronbach alphas were calculated for the remaining items to ensure scale reliability (see Subsections 4.1.5.2). The last step was to label or name the final factors following Hair et al. (2010, p. 149) who recommend that “variables with higher loadings are considered more important and have greater influence on the name or label selected to represent a factor’s conceptual meaning.”

Once the final factor was identified SEM was conducted following the EFA (Anderson & Gerbing, 1988a; Bagozzi & Yi, 1988; Churchill, 1979). As noted by Kline (2005), EFA is a standard statistical technique for evaluating a measurement model. However, to test the efficacy of the research model, SEM should be employed. In fact, numerous recent studies on service quality have employed EFA to develop a model and scale and used SEM to develop a comprehensive factor structure model (Bindu et al., 2008; Dagger et al., 2007; Fassnacht & Koese, 2006; González & Brea, 2005; Lu et al., 2009; Olorunniwo et al., 2006; Swaid & Wigand, 2009).

4.3.3 Structural Equation Modelling

SEM was employed in this study to examine the research model based on several suggestions and advantages. Byrne (2009), Chinna (2009) and Hair et al. (2010) claims that

when comparing SEM with multiple regression analysis, several advantages emerge, such as:

- more flexible assumptions (particularly allowing interpretation even in the face of multicollinearity);
- the ability to handle difficult data (e.g., non-normal data and incomplete data);
- the use of CFA to reduce measurement error by having multiple indicators per latent variable;
- the attraction of the SEM graphical modelling interface;
- the desirability of testing models overall rather than coefficients individually;
- the ability to model mediating variables;
- the ability to model error terms;
- the ability to test models with multiple dependents;
- the ability to depict all of the relationships among construct (the dependent and independent variables) involved in the analysis; and
- the ability to test the relationships among independent variables (exogenous constructs) and dependent variables (endogenous constructs), even when the dependent variable becomes an independent variable in other relationships.

Several authors (Chen et al., 2011; Rahman, 2010; Ryu & Han, 2010; Ryu et al., 2008; Ullman, 2007; Yap & Kew, 2006) suggest that future research should employ SEM, claiming that statistical techniques such as multiple regression analysis have specific limitations because multiple regression analysis assesses only a single relationship between the independent and dependent variables. Ryu et al. (2008, p. 9) claim that “SEM is a prominent alternative method of investigating the higher-order structure.” Hair et al. (2010) believe that SEM, with adequate theoretical support, will become a powerful analytical tool for researchers studying complex relationships in many fields, while Ullman (2007, p. 679) asserts that “when the phenomena of interest are complex and multidimensional, SEM is the only analysis that allows complete and simultaneous tests of the relations.” Thus, considering the limitations of multiple regression (Chinna, 2009; Hair et al., 2010) and the suggestions of several researchers (Chen et al., 2011; Rahman, 2010; Ryu & Han, 2010; Ryu et al., 2008; Ullman, 2007; Yap & Kew, 2006), SEM was employed in this study. The decision to do so was also based on the research model that service quality is viewed as hierarchical with higher order constructs (see Figure 3.1).

SEM development in the early 1950s originated when economic researchers desired to establish causal relationships between variables. However, the mathematical complexity of SEM limited its application until the availability and wide use of computers and software (Blunch, 2008; Byrne, 2009; Kline, 2005). Today, SEM is “the dominant multivariate technique and the application is widely being published in the academic social science literature” (Hair et al., 2010, p. 642). SEM is known by many names: covariance structure analysis, latent variable analysis, path analysis, confirmatory factor analysis, and sometimes, referred to by the name of the specialized software packages, such as LISREL and AMOS (Blunch, 2008; Byrne, 2009; Hair et al., 2010; Ullman, 2007). To conduct SEM in this study, AMOS software was chosen, based on several advantages addressed by a number of academics (Asperin, 2007; Blunch, 2008; Byrne, 2009; Chinna, 2009; Hair et al., 2010). The advantages are: (1) AMOS is among the first SEM programs that is user-friendly; (2) the researcher can perform the analysis without writing any computer code because it works directly from a path diagram (graphics) model; (3) AMOS also has a BASIC programming interface as an alternative to graphics; (4) AMOS software is available as an addition to the SPSS software package; and (5) the researcher can organise the output because it was developed within the Microsoft Windows interface. These advantages help the user, especially a new user, to handle the analysis and organise the work.

4.3.3.1 Two-Step Approach

There are several approaches in the literature for conducting SEM: one-step, two-step and four-step approaches. The two-step approach (measurement model¹⁵ and a structural model¹⁶) proposed by Anderson and Gerbing (1988a), was used as a complete SEM model in this study and is also commonly used in the marketing research (see: Kim, 2003; Lu et al., 2009; Martínez & Martínez, 2007; Olorunniwo et al., 2006; Pollack, 2009; Shu, 2010; Swaid & Wigand, 2009; Xiaoyun, Kwortnik, & Chunxiao, 2008).

Researchers usually start their research by specifying a model, a model in this context meaning the representation of a theory. Theory is often a primary objective of academic research, which has developed from some underlying theory (Hair et al., 2010). Theory “can be thought of as a systematic set of relationships providing a consistent and

¹⁵ Measurement model – representing how measured items came together to represent the constructs (Hair et al., 2010, p. 638).

¹⁶ Structural model – showing how constructs were associated with each other (Hair et al., 2010, p. 638).

comprehensive explanation of phenomena” (Hair et al., 2010, p. 637). In addition, in this study, the items measuring the construct are represented as reflective (effect) indicators; the arrows are drawn from latent constructs to measured items, which are presumed to be caused by underlying factors and their measurement errors (Chinna, 2009; Kline, 2005).

For the purposes of this study, the measurement model and structural model were analysed separately to allow separate inspection of measurement problems (psychometric inadequacy) from the inspection of the structural model (theory under investigation) (Brady & Cronin, 2001; Dabholkar et al., 1996; Ko, 2000). Details of the measurement model and structural model are discussed in the following subsections.

4.3.3.2 Measurement Model

The measurement model is the first half of a SEM model that deals with the latent variables and their measured items (Blunch, 2008; Byrne, 2009; Chinna, 2009). The measurement model is estimated before the analysis of the structural model. CFA in the SEM literature is a technique used to assess the measurement model (Gallarza & Gil Saura, 2006; Hair et al., 2010). Eighty-three items used to measure 20 latent constructs were subjected to CFA to verify unidimensionality and convergent validity in this study. The first stage of the CFA procedure is to assess the psychometric properties of the measurement model of the subdimensions, primary dimensions and causal paths.

Specifically, five separate measurement models were analysed¹⁷. There were 12 proposed subdimensions comprising the first three measurement models (see Figures 4.2 to 4.4), followed by the primary dimensions (see Figure 4.5), and then the causal path model (see Figure 4.6). Because of the large number of items, analyses of the subdimensions and primary dimensions were performed separately (Brady & Cronin, 2001). The following subsections discuss the CFA procedures undertaken in this study.

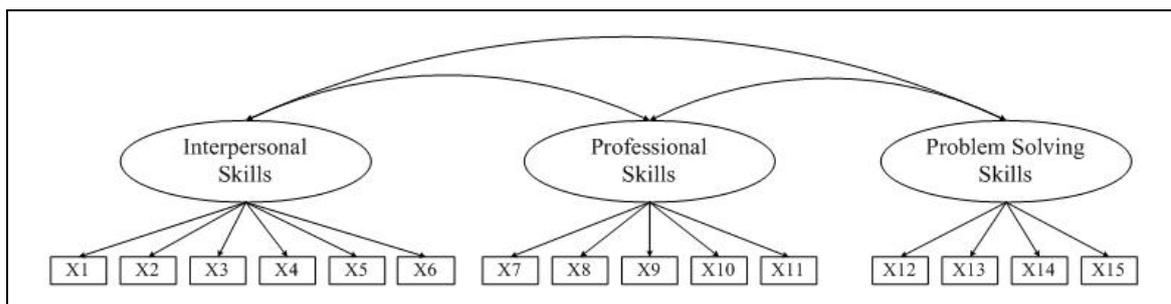


Figure 4.2: Measurement Model 1 – Interaction Quality Subdimension

¹⁷ The constructs were grouped for analysis based on the most logical breakdown of the model’s components.

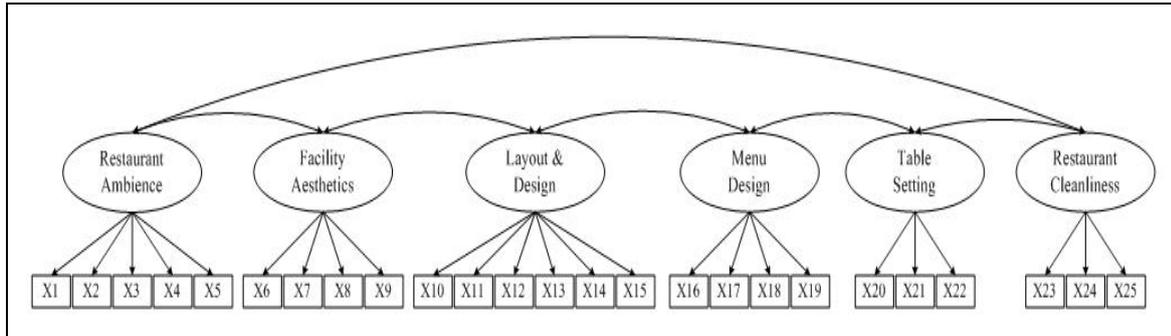


Figure 4.3: Measurement Model 2 – Physical Environment Quality Subdimension

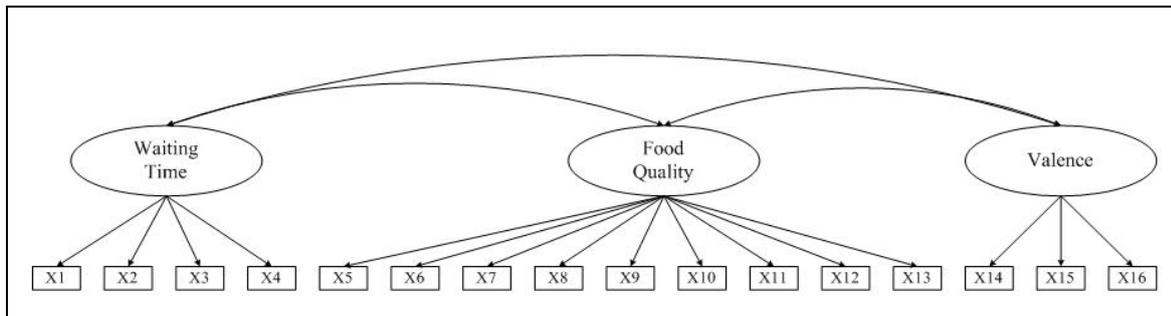


Figure 4.4: Measurement Model 3 – Outcome Quality Subdimension

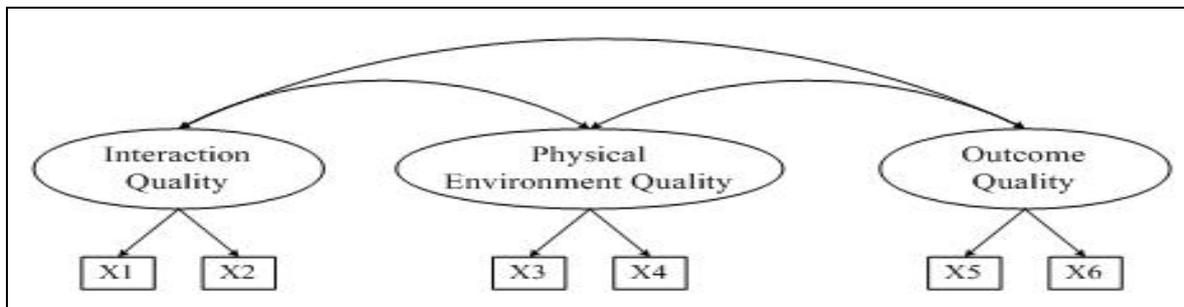


Figure 4.5: Measurement Model 4 – Primary Dimensions

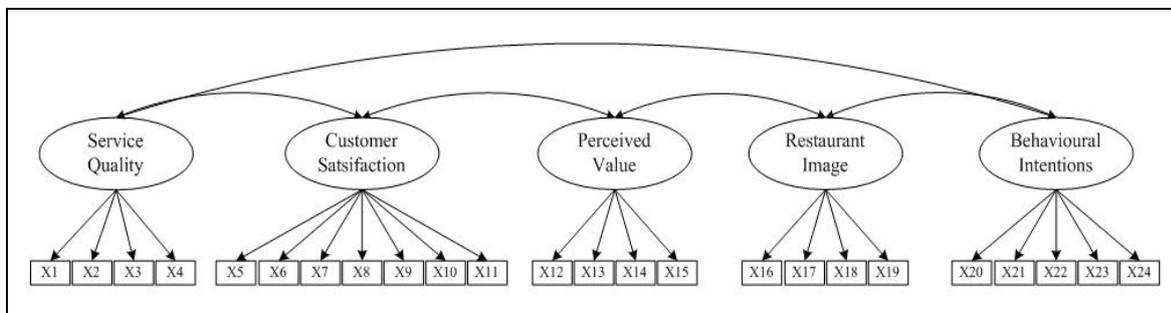


Figure 4.6: Measurement Model 5 – Causal Path

4.3.3.2.1 Modelling Assessment Procedures

SEM employs a five-stage process of modelling: (1) model specification; (2) model identification; (3) model-fit-indices; (4) model modification, and, once the models are satisfied; (5) the reliability and validity of the models are assessed.

Model Specification

Model specification involves determining every relationship and parameter in the research model (Kline, 2005). In this study, all measurement models and structural models were specified based on the relevant empirical theories and studies. In addition, the models could be expected to comply with the recommendations of Byrne (2009):

1. the first of each measured item was set to 1.0, with all other factor loadings either freely estimated on a specific factor or fixed to zero on other factors;
2. all covariance parameters were correlated and freely estimated in the first-order CFA; covariations among the first-order factors were fully explained by their regression on the higher-order factor in the second-order; and
3. error terms related to each measured item were uncorrelated.

Model Identification

Model identification often complicated the evaluation of the path model. A model was usually identified because it was theoretically possible to derive a unique estimate of each parameter and not of the present sample data (Kline, 2005). Models that have an identification status problem should be re-specified before further analysis; otherwise “the analyses may be fruitless” (Kline, 2005, p. 105).

The procedure to determine model identification in SEM is known as the t-rule (Blunch, 2008; Byrne, 2009). In the t-rule procedure, the number of measured items $(v+1)/2$ (where v is the pieces of information) is compared with the total number of estimated parameters in the model. For any model, the pieces of information must be at least equal to or greater than the estimated parameters. The identified model can be characterized by the degrees of freedom (df) after all the parameters to be estimated are specified (Hair et al., 2010), and the “more df the more precise the estimation and the more powerful the test” (Blunch, 2008, p. 73). Estimated parameters in this context according to Kline (2005, p. 170) are:

The total number of variances and covariances (i.e., unanalysed associations) of the exogenous variables¹⁸ (the factors and measurement errors) plus direct effects of the factors on the indicators (i.e., the loadings) equals the number of parameters.

¹⁸ Note: An exogenous variable is a variable that does not appear as a dependent variable anywhere in the model (Blunch, 2008, p. 77)

Accordingly, three types of model identification status are identified in the SEM literature: (1) under-identified model; (2) just-identified model; and (3) over-identified model (Blunch, 2008; Byrne, 2009; Hair et al., 2010; Kline, 2005; Schumacker & Lomax, 2004). An under-identified model means there are more parameters to be estimated than the items of variance and covariance, therefore it has a negative df (Byrne, 2009).

A 'just-identified' model indicates a model that has just enough information (number of items measure of variances and covariances) to estimate all parameters in the model, or zero df . Since the just-identified model has zeroed df the data perfectly fit the models so the theory is not tested. As a result, the model is not scientifically interesting to researchers testing the theory (Blunch, 2008; Byrne, 2009; Hair et al., 2010). Kim (2003, p. 81) suggests that if the preliminary model is just-identified, "... it is necessary to add possible paths to the model so that it could be identified." Byrne (2009) suggests that the condition to resolve identification problems by the imposition of constraints on particular parameters may be beneficial in helping the researcher to attain an over-identified model.

The last type of identification model is an over-identified model, the targeted model. Over-identified models have more than just enough information to estimate all parameters in the model; they have a positive df which allows testing for model fit. In addition, in order to ensure the model is over-identified, several authors recommend having four item measures per construct whenever possible; in this way, identification is always satisfied (Blunch, 2008; Byrne, 2009; Chinna, 2009; Hair et al., 2010). Nevertheless, an over-identified model does not always mean the model fitted (Blunch, 2008); the model-fit-indices, reliability and validity of the measurement are also assessed.

Model-Fit-Indices

The objective of the analysis of model-fit-indices procedure is "... to determine the degree to which the sample variance-covariance data fit the SEM" (Schumacker & Lomax, 2004, p. 100). The model-fit-indices of the measurement model and the structural model are assessed using MLE with indices taken from the output of AMOS. The advantage of employing MLE in SEM is that the estimation is simultaneous; therefore the estimates of the model parameters are calculated all at once, which provides valid results although using small sample sizes (Hair et al., 2010; Kline, 2005).

Numerous model-fit-indices are found in the literature; each index often provides sufficient unique information to evaluate the fitness of a model. Using three to four model-

fit-indices provides an adequate evidence of model fit (2010). However, as claimed by Hair et al. (2010), researcher does not needs to report all of these indices because of the redundancy among them. Hair et al. (2010) also suggested that in addition to the χ^2 value and the associated of df , the researcher should report at least one incremental index (such as NFI and CFI) and one absolute index (such as RMR, RMSEA and GFI). Considering the recommendations by several authors (Chinna, 2009; Hair et al., 2010; Kline, 2005; Nokelainen, 2009; Schumacker & Lomax, 2004), the model-fit-indices used in this study can be explained as follows:

1. The Normed chi-square (χ^2/df) is a simple ratio of (χ^2) over degrees of freedom (df) for a model. Hair et al. (2010) note that χ^2/df has been widely used because it is directly calculated from the model results and not from software programs. Kline (2005) suggests that a χ^2/df of less than 3.0 indicates an excellent model fit. However, Schumacker and Lomax (2004) maintain that a value of up to 5.0 is considered as a relative fit, while Schumacker and Lomax (2004) interpret a value less than 1.0 as a poor model fit; more than 5.0 reflected a need for improvement.
2. Comparative Fit Index (CFI) also known as the Bentler Comparative Fit Index, is one of the classes of fit statistics most widely used in SEM (Kline, 2005). The CFI is an incremental fit index that is an improved version of the Normed Fit Index. The threshold for CFI is larger than 0.90, with higher values indicating a better fit (Byrne, 2009; Chinna, 2009; Hair et al., 2010; Kline, 2005).
3. Normed Fit Index (NFI) was one of the original incremental fit indices but is now used less. One disadvantage is that if the models are more complex they will necessarily have a higher index value and artificially inflate the estimation of model fit (Hair et al., 2010). The threshold for NFI is larger than 0.90, with higher values indicating a better fit (Byrne, 2009; Chinna, 2009; Hair et al., 2010; Kline, 2005).
4. Goodness of Fit Index (GFI) is an absolute fit measure indicating which overall model predicted the observed correlation matrix. GFI was an early attempt to produce a fit statistic that was less sensitive to sample size. However, with the recent development of other fit indices, the use of GFI has declined (Hair et al., 2010). The threshold for GFI is larger than 0.90, with higher values indicating a better fit (Byrne, 2009; Chinna, 2009; Hair et al., 2010; Kline, 2005).

5. Root-Mean Square Residual Index (RMR) uses the square root of the mean-squared differences between matrix elements in S and Σ (Schumacker & Lomax, 2004). A threshold for RMR of less than 0.10 is considered favourable (Kline, 2005).
6. Root-Mean Square Error of Approximation (RMSEA) is a ‘badness-of-fit’ index in that a value of zero indicates the best fit and higher values indicate a worse fit. The RMSEA was designed to evaluate the approximate fit of the model of the respondents (Nokelainen, 2009). RMSEA can be estimated as follows: less than .05 (close fit), values between .05 – .08 (fair fit), values between .08 – 0.10 (mediocre fit), and greater than 0.10 (poor fit) (Nokelainen, 2009; Ullman, 2007).

Table 4.5 provides a summary of the recommended thresholds for the model-fit-indices used in this study.

Table 4.5: Model-fit-indices and Recommended Thresholds

Model-Fit-Indices	Level of Acceptance	Note	References	
Absolute Fit Index:				
χ^2	$\rho > .05$	The chi-square is sensitive to large sample size	(Byrne, 2009; Chinna, 2009; Hair et al., 2010)	
RMSEA	$\leq .10$	A lower value RMSEA indicates a better model fit	(Nokelainen, 2009; Ullman, 2007)	
RMR	$\leq .10$	A lower value RMR indicates a better model fit	(Kline, 2005)	
GFI	≥ 0.90	The possible range of GFI values is 0 to 1 with higher values indicating better fit	(Byrne, 2009; Chinna, 2009; Hair et al., 2010)	
Incremental Fit Index:				
CFI	≥ 0.90	The possible range of CFI values is 0 to 1 with higher values indicating better fit		
NFI	≥ 0.90	The possible range of NFI values is 0 to 1 with higher values indicating better fit		
Parsimony Fit Index:				
χ^2/df	≤ 5.00	Less than 3.00 is preferred, up to 5.00 is still acceptable	(Schumacker & Lomax, 2004)	

Referring to the Table 4.5, in general, cut-off value 0.90 became the magic number for good-fitting models as well has become the ultimate goal to the researcher to assist them to specify acceptable and unacceptable models (Hair et al., 2010). In addition, Hair et al. (Hair et al., 2010) maintain that a researcher may be able to increase model-fit-indices, but only in a manner that compromises the testing of the theory, as justified in the following statement makes clear:

“It is also critically important to realize the distinction between testing theory and pursuing a good fit. SEM is not used to get a good fit; it is used to test theory. It is quite easy to become so fixated with fit that a valid theory test never takes place. In fact, the pursuit of achieving a magic value on a fit index

can lead to several poor practices in model specification” (Hair, Black, Babin, Anderson, & Tatham, 2006, p. 751).

*“Values of fit indices indicate only the average or overall fit of a model. It is thus possible that some parts of the model may poorly fit the data even if the value of a particular index seems favourable.”
“Fit indexes do not indicate whether the results are theoretically meaningful. For example, the signs of some path coefficients may be unexpectedly in the opposite direction. Even if values of fit indexes appear to be favourable, results so anomalous require explanation” (Kline, 2005, p. 134).*

Thus, in order to establish an adequate evidence of the model-fit-indices, this study will follow the recommendation by Hair et al. (2010) that claim by using three to four model-fit-indices provides an adequate evidence of model fit.

4.3.3.2.2 Model Modification

Model modification occurred mostly in the measurement model rather than in the structural model. This is because the main source of misspecification occurred in the measurement model, the foundation for the structural model (Schumacker & Lomax, 2004). According to Chinna (2009), most model modification is by the way of model trimming, which involves deleting one path or measured item at a time. Nevertheless, Chinna (2009) maintains that, in model modification, it is important for it to be done only if consistent with the theoretical insights and the researcher’s judgement, as well as from the statistical sense. Similarly, Hair et al. (2006, p. 733) claim that model modification “... must always be done with theoretical support rather than just empirical justification.”

There are two types of output that may be useful for conducting model modification. First, Modification Indices (MI) may be used (Janssens et al., 2008). AMOS outputs provide two types of information; MI and covariance residuals. MI provides information for the measured items concurrently with the Expected Parameter Change statistics (EPC). Second, the standardized residual values are examined to identify model misspecifications. Standardized residual values larger than the critical value of 2.58 suggest possible areas of model misfit (Janssens et al., 2008). Large standardized residuals (> 2.58) indicate that a particular variable relationship is not well accounted for in the model (Schumacker & Lomax, 2004).

4.3.3.2.3 Construct Validity and Reliability of the Measurement

In addition to the reliability test, the construct validity of the measurement model was examined. Construct validity is “the extent to which an observation measures the concept it is intended to measure” (Bagozzi & Phillips, 1982, p. 468). Construct validity is

essential in the assessment to confirm a measurement model for theory development and testing (Hair et al., 2010; Peter, 1981).

Hair et al. (2010) and Kline (2005) claims that no single method provides a definitive test of construct validity; construct validity is measured through a series of tests: (a) content validity and (2) face validity (see Subsection 4.1.4); (3) convergent validity; and (4) discriminant validity. In order to establish the construct validity in the measurement model in this study, convergent validity and discriminant validity were conducted and these two validity test are common approaches in employing CFA (Kline, 2005). In general, Anderson and Gerbing (1991) suggest that a prerequisite for assessment of construct validity and reliability is the unidimensionality of the measure. Byrne (1994) suggest that there is strong evidence of unidimensionality when a CFI for a model is 0.90 or above. The following subsections explain convergent and discriminant validity as used in this study.

Convergent Validity

Convergent validity indicates “the degree to which two different indicators of a latent variable confirm one another” (Janssens et al., 2008, p. 306). Following work by several researchers, this study examined the unidimensionality of the measured items and calculated the composite reliabilities and AVE of each construct to establish the convergent validity.

Unidimensional measures mean a set of measured indicators has only one underlying construct. To establish convergent validity, a unidimensional set is evaluated by examining the parameter estimates (Anderson & Gerbing, 1988a; Chinna, 2009; Janssens et al., 2008; Nokelainen, 2009). The measured items must all have a high loading on the latent variables and must be statistically significant. Factor loadings lower than 0.50 suggest that the measured items have a high potential to be deleted from the research model (Anderson & Gerbing, 1988a; Hair et al., 2010; Janssens et al., 2008). As well as factor loading, unidimensionality is also examined through t-values. In evaluating the t-values, critical ratios are used. AMOS provides only critical ratios output rather than t-values. In order to establish the unidimensionality of the measured items, using a significance level of .05%, any critical ratios (C.R.) greater than 1.96 for a two-tail test would be statistically significant (Arbuckle & Wothke, 1998, in Janssens et al., 2008), therefore indicating convergent validity has been established.

Unidimensionality of the measured items alone is insufficient to ensure the usefulness of a scale. The reliability of the construct (Cronbach alpha and composite reliability) should also be assessed (Anderson & Gerbing, 1988b). The purpose of composite reliability is to measure the reliability of the internal consistency of the measured items representing a latent construct and must be established before construct validity can be assessed (Hair et al., 2010). In addition, Byrne (2009) and Chinna (2009) note that for post analysis, the composite reliability estimate is more precise than the Cronbach alpha. According to Chinna (2009), composite reliability, by convention, should be at least 0.70 to suggest good reliability and to indicate that internal consistency exists. However, Hair et al. (2010) maintain that a composite reliability value between 0.60 and 0.70 may be acceptable provided other indicators of a model's construct validity are good. Like Cronbach alpha, the composite reliability estimate must be calculated separately for each item measuring a construct in the model. However, AMOS output did not compute composite reliability directly, but the output provided all of the information necessary to calculate it manually using Equation 4.1¹⁹.

Equation 4.1: Composite Reliability

$$\text{Composite Reliability} = \frac{(\sum \text{standardized loadings})^2}{(\sum \text{standardized loadings})^2 + \sum \text{measurement errors}}$$

Source: Janssens et al. (2008, p. 307).

Once unidimensionality and composite reliability are satisfied, an examination of AVE follows. AVE is a summary indicator to see if convergence validity exists. An AVE of 0.50 or higher is a good rule of thumb suggesting adequate convergence, whereas an AVE of less than 0.50 indicates that, on average, more error remained in the items than the variance explained by the latent factor structure imposed on the measure (Hair et al., 2010). Like composite reliability, the AVE value must be calculated manually and separately for each measured construct in the model (Equation 4.2).

Equation 4.2: Average Variance Extracted

$$\text{AVE} = \frac{\sum (\text{standardized loadings})^2}{\sum (\text{standardized loadings})^2 + \sum \text{measurement errors}}$$

Source: Janssens et al. (2008, p. 309)

¹⁹ In reference to Equations 4.1 and 4.2, the standardized loadings were obtained from the AMOS 16.0 output (known as standardized regression weights in AMOS) and were computed as 1 minus the reliability of the measured items (known as squared multiple correlations in AMOS)(Janssens et al., 2008).

Discriminant Validity

Discriminant validity is a measure of the degree to which similar concepts are distinct (Hair et al., 2010). There are several methods used to determine discriminant validity. However, following Kline (2005), discriminant validity is established when the correlation coefficients between the constructs are not excessively high ($r \leq 0.85$). Correlation coefficient values between constructs exceeding 0.85 can indicate multicollinearity (Kline, 2005), therefore, the measured items from one of the two constructs should be deleted.

4.3.3.3 Structural Model

Once the measurement model was confirmed, the structural model was constructed. The structural model is the path model that relates the independent variables to the dependent variables. A path model is produced when a diagram pictorially represents a structural model. Usually, paths are represented by straight lines with arrowheads pointing towards the affected variable (Byrne, 2009; Chinna, 2009).

Five separate structural models were analysed and, in the first, the first three models were designed to test the relationship between the three primary dimensions (see Figures 4.7 to 4.9). The second model was designed to test the relationship between the three primary dimensions (interaction quality, physical environment quality and outcome quality) and service quality (see Figure 4.10). The third model was intended to test the causal path model as a means of investigating the relationships between service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions (see Figure 4.11).

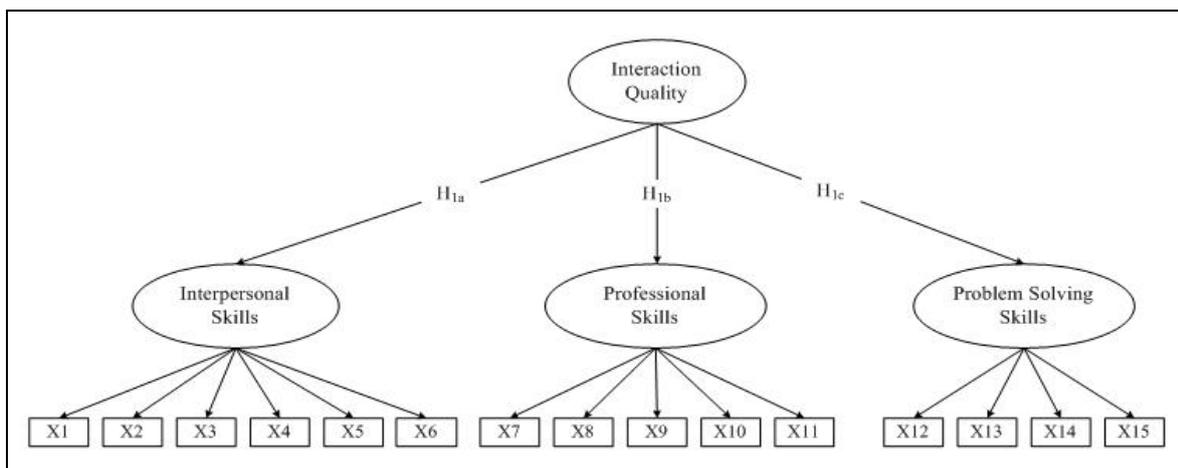


Figure 4.7: Structural Model 1 – Model for Interaction Quality

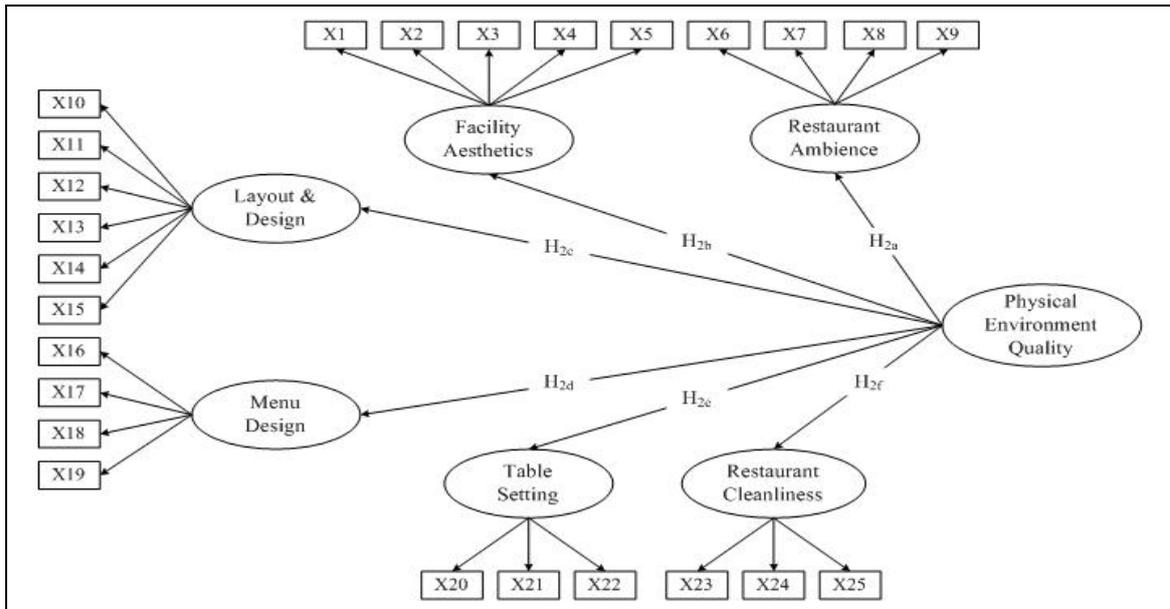


Figure 4.8: Structural Model 2 – Model for Physical Environment Quality

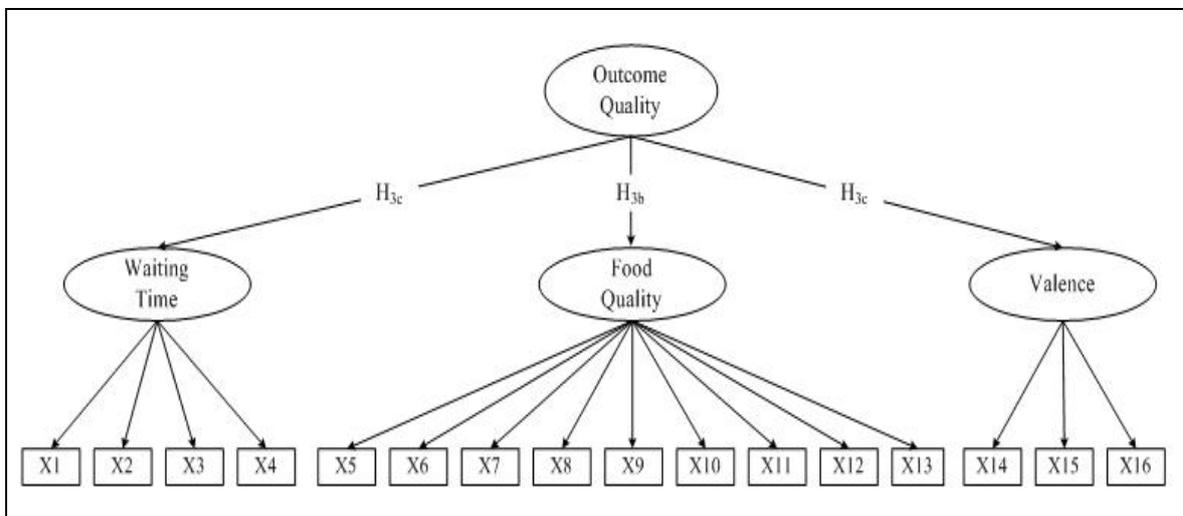


Figure 4.9: Structural Model 3 – Model for Outcome Quality

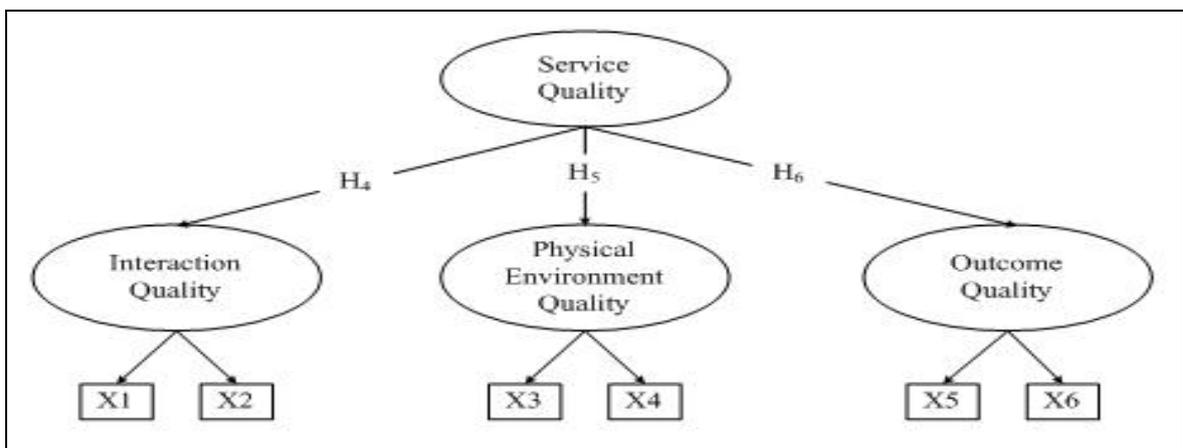


Figure 4.10: Structural Model 4 – Primary Dimensions

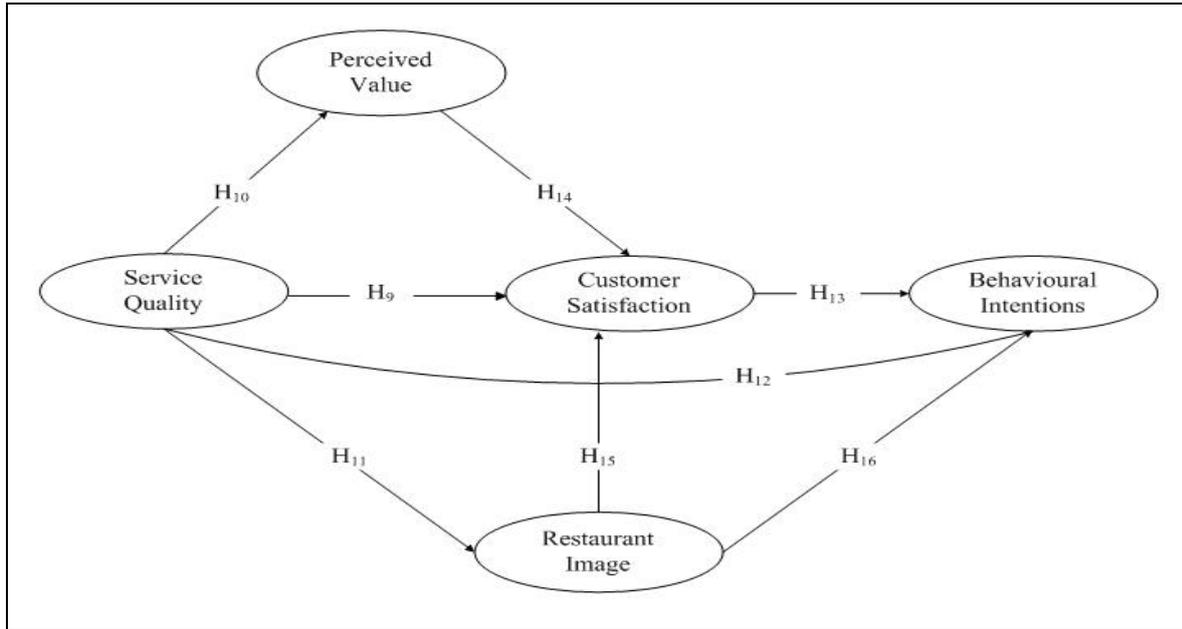


Figure 4.11: Structural Model 5 – Causal Relationship

In the structural model there are four first-order models and four second-order models to assess. The objective of assessing the first-order models is to test the correspondence between the first-order latent factors and measured items. In the second-order models, it is to assess whether the second-order latent variable is a multidimensional construct composed of multiple first-order factors that are explained by their corresponding measured items (Byrne, 2009). In addition to first-order models and second-order models, the model-fit-indices were also examined. Bogozzi and Yi (1988) suggest that a similar set of model-fit-indices as used to examine the measurement model should also be used to assess the model-fit-indices for the structural model. A comparison of all model-fit-indices with their corresponding recommended thresholds (see Table 4.5) provides evidence of a good model fit. Upon the production of a satisfactory structural model, hypothesis testing was conducted. The hypothesis is supported if the C.R. is statistically significant at the .05% level (critical ratio = $t - value > 1.96$).

4.4 Summary

This chapter has outlined the research design and methodology used to test the 16 hypotheses stated in Section 3.2 and to satisfy the four research objectives presented in Section 1.4. In particular, the questionnaire design, expected sample size, sampling method and methods of data collection have been explained. The statistical methodology used in this study, including EFA and SEM, and their assumptions were also discussed.

Chapter 5

Results

This chapter presents the results of the analyses based on the data analysis procedures discussed in Chapter 4. The data set was examined to ensure its appropriateness for EFA and SEM. Sixteen hypotheses were tested to satisfy the four research objectives. The summarised results are presented in Tables (see Tables 5.1 to 5.24) and illustrations of models are illustrated in Figures (see Figures 5.1 to 5.17).

5.1 Response Rate and Respondents' Profiles

5.1.1 Sample and Response Rates

Data collection took place over three months (January – March, 2009). Five hundred and fifty questionnaires were distributed and 546 were returned. Eleven questionnaires (three questionnaires not filled out; eight questionnaires partly filled out) were excluded from the data analysis since the questionnaires were incomplete and not suitable for use (Tabachnick & Fidell, 2007).

Thus 535 useable questionnaires met the preliminary screening requirements, representing a response rate of 97.28%. The number of usable responses was larger than the minimum sample size of 480 required for this study (see Sections 4.2.1). Therefore, the 535 sample size was deemed acceptable for the purposes of this study.

5.1.2 Non-response Bias

5.1.2.1 Early/Late Responses

The ability to generalise the results of this study can be affected by non-response bias (Churchill, 1979). In addition, Kumar, Aaker and Day (1999) and Yu and Cooper (1983) point out, non-response bias can be a serious problem in convenience sampling in data collection method as this bias is a source of error in sample estimates. Armstrong and Overton (1977) suggest that the extrapolation method should be used for estimating non-

response bias. The extrapolation method is based on the assumption that a subject who has responded less readily²⁰ is more like a non-respondent.

In this study, 275 responses were received in the period 2nd Jan to 15th Feb 2009, and the last 260 questionnaires were received in 16th Feb to 31st March 2009. The data in Table 5.1 shows the mean scores for the sum of the subdimensions, the service quality items, the customer satisfaction items, the perceived value items, the restaurant image items and the behavioural intentions items of the two groups. Independent t-tests were conducted to determine whether the group means were statistically significant. The results reported in Table 5.1 shows that the equal variance significance values for all constructs were greater than the 0.05 level of significance between the two groups (Pallant, 2007). Therefore, there was no evidence of non-response bias reported in this study.

Table 5.1: Independent Sample Test for Non-response Bias

Construct	Levene's Test for Equality of Variances		T-test for Equality of Means Significant at 5%				
	F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
IQ	0.213	0.645	-.264	533	0.792	-.01283	.04855
PEQ	2.786	.096	.349	533	0.727	.02374	.06802
OQ	0.393	0.531	-.067	533	0.947	-.00415	.06215
SQ	0.188	0.665	.418	533	0.676	.03386	.08097
CS	.048	0.827	-.387	533	0.699	-.03061	.07905
PV	0.479	0.489	-.325	533	0.746	-.02512	.07740
RI	0.897	0.344	-.186	533	0.853	-.01556	.08371
BI	0.347	0.556	-.977	533	0.329	-.08917	.09128

5.1.3 Respondents' Demographic Characteristics

Section E of the questionnaire was designed to capture some basic demographic details of the respondents who participated in this study. Their demographic characteristics are presented in Tables 5.2 and 5.3.

The results in Table 5.2 indicate that there was an almost equal split in the gender of the respondents (55% female; 45% male). Respondents aged 25 – 34 accounted for 41.9% of the sample and 50.3% of them were married at the time. Ethnically, the majority were Malay (65.6%), followed by Chinese (18.1%) and Indian (10.7%). In terms of religion, Muslim respondents were the largest group (67.3%), followed by Christian (12.9%) and Buddhist (12%). A bachelor's degree was held by 42.6% and most came from

²⁰ "Less readily" was defined as "answering later, or as requiring more prodding to answer" (Armstrong & Overton, 1977, p. 397).

the professional class (51%); 43.9% of the respondents had a monthly household income below RM3,000 and 34.8% of the respondents had a monthly household income between RM3,001 and RM6,000.

Table 5.2: Demographic Profile of the Sample (N=535)

Demographic Characteristics	Options	Frequency	Percent (%)
Gender	Male	241	45.0
	Female	294	55.0
Age	18 – 24	132	24.7
	25 – 34	224	41.9
	35 – 44	130	24.3
	45 – 54	33	6.2
	55 – 64	14	2.6
	Over 64	2	0.4
Marital Status	Single	246	46.0
	Married	269	50.3
	Separated	4	0.7
	Divorced	10	1.9
	Widowed	6	1.1
Ethnicity	Malay	351	65.6
	Chinese	97	18.1
	Indian	57	10.7
	Iban	5	0.9
	Kadazan	5	0.9
	Dusun	3	0.6
	American	7	1.3
	Nigerian	3	0.6
	African	1	0.2
	British	3	0.6
	Arab	3	0.6
Religion	Muslim	360	67.3
	Buddhist	64	12.0
	Hindu	40	7.5
	Christian	69	12.9
	Other	2	0.4
Educational Level	Primary School	3	0.6
	Secondary School	33	6.2
	Diploma	162	30.3
	Bachelor	228	42.6
	Master	101	18.9
	Ph. D.	8	1.5
Occupation	Professional	273	51.0
	Tradesperson	19	3.6
	Government Officer	72	13.5
	Business Owner/Self-Employed	41	7.7
	Student	105	19.6
	Housewife	18	3.4
	Unemployed	7	1.3
Monthly Income	Below RM3,000	235	43.9
	Between RM3,001-RM6,000	186	34.8
	Between RM6,001-RM9,000	67	12.5
	More than RM9,001	47	8.8

Table 5.3 shows that the main purpose for which respondents were dining out was an outing with friends (38.7%) followed by a family outing (37.8%). The largest proportion of respondents (37.6 %) dined out with friends while 37.2% dined out with family. Of the respondents, 35.1% dined out at least once a month and 39.6% spent RM51 to RM100 on each occasion.

Table 5.3: Trends and Lifestyles Profiles of the Sample (N=535)

Responses Category	Options	Frequency	Percent (%)
Reason for dining	Family outing	202	37.8
	Outing with friends	207	38.7
	Business purposes	53	9.9
	Special occasion	73	13.6
With whom	Family	199	37.2
	Spouse	45	8.4
	Partner	41	7.7
	Friends	201	37.6
	Business associate	48	9.0
	Alone	1	0.2
Spending	Less than RM50	186	34.8
	Between RM51 - RM100	212	39.6
	Between RM101 - RM150	114	21.3
	More than RM151	23	4.3
Frequency of dining out	First time visit	54	10.1
	Once a week	11	2.1
	2 to 3 times each month	131	24.5
	Once a month	188	35.1
	Once or twice every 6 months	112	20.9
	Once or twice every 12 months	39	7.3

5.2 Preliminary Data Analysis

Before conducting the statistical analysis to test the 16 hypotheses, a preliminary data analysis was conducted to check the normality distribution and outliers of the data following suggestions by several researchers (Blunch, 2008; Byrne, 2009; Hair et al., 2010; Kline, 2005; Pallant, 2007; Schumacker & Lomax, 2004). In addition, a descriptive statistical analysis was conducted on the construct variables. The following subsections discuss the results of the preliminary data analysis.

5.2.1 Outliers

Based on standardized value (z-scores) less than -4 or greater than +4, no outliers were identified in the data set of this study. Thus, all 535 responses were retained in the data set (Hair et al., 2010).

5.2.2 Normality Test

The data set was examined for normality. The data satisfied the normality and linearity assumptions for all measured items. The results pertaining to the normality test of the data indicated that the maximum absolute values of skewness and kurtosis were 0.320 and 1.919 respectively (see Table 5A.1 in Appendix 3). These values were well below their respective cut-offs of 3 for skewness and 8 for kurtosis as suggested by Kline (2005), implying that the measured items were normally distributed.

5.2.3 Descriptive Statistics

Before splitting the data set, descriptive analyses comprising means and standard deviations (based on a seven-point scale: 1 = strongly disagree; 4 = neutral; 7 = strongly agree) were calculated for all measured items of the service quality dimensions, service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions constructs in the questionnaire. The descriptive statistics are given in Tables 5.4 to 5.12.

5.2.3.1 Service Quality Dimension

5.2.3.1.1 Primary Dimensions

Table 5.4 presents a summary of the means and standard deviations for the seven items used to measure the primary dimensions of service quality. The means ranged from 5.226 to 5.731, and the standard deviations ranged from 0.943 to 1.040. For the majority, the mean of the primary dimensions of service quality of measured items was above the midpoint of the scale (mean = 5.491, standard deviation = 0.999). This suggests that the majority of the respondents agreed with the positive statements of the primary dimensions of service quality for moderate upscale restaurants.

Table 5.4: Means and Standard Deviations of the Primary Dimensions

Item No.	Min	Max	Mean	Standard Deviation	Item No.	Min	Max	Mean	Standard Deviation
A16	3.00	7.00	5.232	1.020	C13	3.00	7.00	5.568	0.943
A17	3.00	7.00	5.226	1.029	C18	3.00	7.00	5.512	1.040
B26	3.00	7.00	5.731	0.973	C19	3.00	7.00	5.456	1.032
B27	3.00	7.00	5.712	0.958					

5.2.3.1.2 Interaction Quality

Table 5.5 presents a summary of the means and standard deviations for the fifteen measured items used to measure the interaction quality subdimensions. The means ranged from 5.744 to 5.009 and the standard deviations ranged from 0.765 to 0.957. On average, the measured items of interaction quality were above the midpoint of the scale (mean = 5.397, standard deviation = 0.860). This suggests that, on average, respondents agreed with the positive statements of interaction quality for moderate upscale restaurants.

Table 5.5: Means and Standard Deviations of Interaction Quality

Item No.	Min	Max	Mean	Standard Deviation	Item No.	Min	Max	Mean	Standard Deviation
A1	4.00	7.00	5.744	0.774	A9	3.00	7.00	5.252	0.877
A2	4.00	7.00	5.563	0.936	A10	3.00	7.00	5.009	0.856
A3	4.00	7.00	5.705	0.773	A11	3.00	7.00	5.329	0.861
A4	3.00	7.00	5.493	0.889	A12	2.00	7.00	5.260	0.765
A5	3.00	7.00	5.473	0.957	A13	2.00	7.00	5.40	0.798
A6	3.00	7.00	5.424	0.847	A14	4.00	7.00	5.473	0.942
A7	3.00	7.00	5.140	0.872	A15	2.00	7.00	5.40	0.812
A8	3.00	7.00	5.293	0.937					

5.2.3.1.3 Physical Environment Quality

Table 5.6 presents a summary of the means and standard deviations for the 25 items used to measure the physical environment quality subdimensions. The means ranged from 4.736 to 5.813 and the standard deviations ranged from 0.919 to 1.295. For the majority, the means of the measured items for physical environment quality subdimensions were above the midpoint of the scale (mean = 5.539, standard deviation = 1.3045). This suggests that, on average, respondents agreed with the positive statements of physical environment quality for moderate upscale restaurants.

Table 5.6: Means and Standard Deviations of Physical Environment Quality

Item No.	Min	Max	Mean	Standard Deviation	Item No.	Min	Max	Mean	Standard Deviation
B1	3.00	7.00	5.813	0.965	B14	2.00	7.00	4.736	1.292
B2	3.00	7.00	5.772	0.962	B15	2.00	7.00	5.198	1.073
B3	3.00	7.00	5.723	1.008	B16	3.00	7.00	5.546	0.919
B4	3.00	7.00	5.619	1.074	B17	3.00	7.00	5.598	0.980
B5	2.00	7.00	5.299	1.192	B18	3.00	7.00	5.542	1.010
B6	2.00	7.00	5.602	1.088	B19	3.00	7.00	5.379	1.084
B7	3.00	7.00	5.645	1.028	B20	3.00	7.00	5.768	0.997
B8	3.00	7.00	5.727	0.966	B21	3.00	7.00	5.602	1.019
B9	3.00	7.00	5.609	1.025	B22	3.00	7.00	5.553	1.037
B10	4.00	7.00	5.766	0.975	B23	3.00	7.00	5.643	1.030
B11	2.00	7.00	5.129	1.295	B24	4.00	7.00	5.751	0.962
B12	3.00	7.00	5.479	1.077	B25	3.00	7.00	5.622	1.046
B13	3.00	7.00	5.344	1.023					

5.2.3.1.4 Outcome Quality

Table 5.7 presents a summary of the means and standard deviations for the 16 measured items used to measure the outcome quality subdimensions. The means ranged from 5.394 to 5.756 and the standard deviations ranged from 0.946 to 1.155. On average, the means of the measured items for the outcome quality subdimensions were above the midpoint of the scale (mean = 5.572, standard deviation = 1.029). This suggests that, on average, respondents agreed with the positive statements of outcome quality for moderate upscale restaurants.

Table 5.7: Means and Standard Deviations of Outcome Quality

Item No.	Min	Max	Mean	Standard Deviation	Item No.	Min	Max	Mean	Standard Deviation
C1	3.00	7.00	5.611	1.068	C9	3.00	7.00	5.728	0.983
C2	3.00	7.00	5.636	0.994	C10	3.00	7.00	5.697	1.008
C3	3.00	7.00	5.679	0.991	C11	3.00	7.00	5.475	1.074
C4	2.00	7.00	5.394	1.155	C12	2.00	7.00	5.516	1.116
C5	3.00	7.00	5.449	1.072	C14	3.00	7.00	5.518	0.946
C6	3.00	7.00	5.665	1.031	C15	3.00	7.00	5.477	0.984
C7	3.00	7.00	5.720	1.022	C16	3.00	7.00	5.413	1.000
C8	3.00	7.00	5.756	0.993	C17	3.00	7.00	5.419	1.028

5.2.3.2 Higher-Order Constructs

5.2.3.2.1 Service Quality

Table 5.8 presents a summary of the means and standard deviations for the four items used to measure the service quality construct. The means ranged from 5.411 to 5.508 and the standard deviations ranged from 0.985 to 1.089. For the majority, the means of the service quality items were above the midpoint of the scale (mean = 5.480, standard deviation = 1.028) suggesting that most respondents agreed with the positive restaurant service quality statements.

Table 5.8: Means and Standard Deviations of Service Quality

Item No.	Min	Max	Mean	Standard Deviation
D1	3.00	7.00	5.508	1.005
D2	3.00	7.00	5.499	1.035
D3	3.00	7.00	5.501	0.985
D4	3.00	7.00	5.411	1.089

5.2.3.2.2 Customer Satisfaction

Table 5.9 presents the summary of the means and standard deviations for the three items used to measure the customer satisfaction construct. The means ranged from 5.557 to

5.574 and the standard deviations ranged from 0.967 to 0.987. For the majority, the means of the customer satisfaction measured items were above the midpoint of the scale (mean = 5.568, standard deviation = 0.976). This suggests that most respondents agreed with the positive restaurant customer satisfaction statements. This result shows that most respondents were satisfied with their dining in the moderate upscale restaurants.

Table 5.9: Means and Standard Deviations of Customer Satisfaction

Item No.	Min	Max	Mean	Standard Deviation
D5	3.00	7.00	5.557	0.987
D6	3.00	7.00	5.572	0.967
D7	3.00	7.00	5.574	0.974

5.2.3.2.3 Perceived Value

Table 5.10 presents a summary of the means and standard deviations for the four items used to measure the perceived value construct. The means ranged from 5.505 to 5.611 and the standard deviations ranged from 0.972 to 1.000. On average, the means of the perceived value measured items were above the midpoint of the scale (mean = 5.548, standard deviation = 0.989). This suggests that, on average, respondents agreed with the positive restaurant service quality statements. This result indicates that the respondents perceived that the moderate upscale restaurants represented good value.

Table 5.10: Means and Standard Deviations of Perceived Value

Item No.	Min	Max	Mean	Standard Deviation
D8	3.00	7.00	5.518	1.000
D9	3.00	7.00	5.505	0.998
D10	3.00	7.00	5.611	0.986
D11	3.00	7.00	5.557	0.972

5.2.3.2.4 Restaurant Image

Table 5.11 presents a summary of the means and standard deviations for the seven items used to measure the restaurant image construct. The means of the measured items ranged from 5.508 to 5.572 and the standard deviations ranged from 0.999 to 1.093. On average, the means of the restaurant image measured items were above the midpoint of the scale (mean = 5.544, standard deviation = 1.044). This finding demonstrates that the respondents perceived that the moderate upscale restaurants had a favourable restaurant image.

Table 5.11: Means and Standard Deviations of Restaurant Image

Item No.	Min	Max	Mean	Standard Deviation
D12	3.00	7.00	5.572	0.999
D13	3.00	7.00	5.568	1.023
D14	3.00	7.00	5.508	1.093
D15	3.00	7.00	5.527	1.059

5.2.3.2.5 Behavioural Intentions

Table 5.12 presents a summary of the means and standard deviations for the seven items used to measure the behavioural intentions construct. The means of the measured items ranged from 5.340 to 5.542 and the standard deviations ranged from 1.061 to 1.227. On average, the means of the behavioural intentions measured items were above the midpoint of the scale (mean = 5.456, standard deviation = 1.129). This suggested that, on average, respondents agreed with the positive restaurant service quality statements relating to behavioural intentions.

Table 5.12: Means and Standard Deviations of Behavioural Intentions

Item No.	Min	Max	Mean	Standard Deviation
D16	3.00	7.00	5.484	1.063
D17	3.00	7.00	5.542	1.061
D18	3.00	7.00	5.422	1.147
D19	2.00	7.00	5.340	1.227
D20	2.00	7.00	5.490	1.146

5.3 Data Analysis Interpretation

Once satisfied with the outliers and normality tests of the collected dataset, the set was randomly split into two datasets (Hair et al., 2010; Kline, 2005) to test the 16 hypotheses formulated in this study as stated in Table 5.13, which in turn satisfy four research objectives (see Section 1.4).

The first dataset consisted of 280 questionnaires as the minimum sample size suggested by Hair et al. (2010) to conduct an EFA for all 56 items: 15 items for interaction quality, 25 items for physical environment quality and 16 items for outcome quality. R-mode type factor analysis using PCA and VARIMAX rotation (orthogonal) was used in this study (Hair et al., 2010; Stewart, 1981), which in turn, partially satisfied Research Objective 1 (see formulation of hypotheses in Table 5.13). The second dataset, comprising 235 questionnaires, was well above the minimum sample size of 200 for conducting SEM using MLE (Anderson & Gerbing, 1988a; Hair et al., 2010). This process, in turn, satisfied Research Objectives 1 to 3 (see Table 5.13). Finally, in order to satisfy Research

Objective 4 (see Table 5.13); the second dataset was used to validate the measurement model and structural model of the causal path model. A summary of the findings of the hypotheses tests are presented in Table 5.24. The following sections discuss the key results.

Table 5.13: Hypotheses and Statements

Hypotheses No.	Descriptions
H1	There is a significant positive relationship between the subdimensions of interaction quality (H1 _a , H1 _b and H1 _c) and the interaction quality primary dimension.
H2	There is a significant positive relationship between the subdimensions of physical environment quality (H2 _a , H2 _b , H2 _c , H2 _d , H2 _e , H2 _f and H2 _g) and the physical environment quality primary dimension.
H3	There is a significant positive relationship between the subdimensions of outcome quality (H3 _a , H3 _b and H3 _c) and the outcome quality primary dimension.
H4	There is a significant positive relationship between the interaction quality primary dimension and restaurant patrons' overall service quality perceptions.
H5	There is a significant positive relationship between the physical environment quality primary dimension and restaurant patrons' overall service quality perceptions.
H6	There is a significant positive relationship between the outcome quality primary dimension and restaurant patrons' overall service quality perceptions.
H7	Restaurant patrons will vary in their perceptions of the importance of each of the subdimensions.
H8	Restaurant patrons will vary in their perceptions of the importance of each of the primary dimensions.
H9	Higher perceptions of service quality positively influence customer satisfaction.
H10	Higher perceptions of service quality positively influence perceived value.
H11	Higher perceptions of service quality positively influence restaurant image.
H12	Higher perceptions of service quality positively influence behavioural intentions.
H13	Higher perceptions of overall customer satisfaction positively influence behavioural intentions.
H14	Higher perceptions of perceived value positively influence customer satisfaction.
H15	Higher perceptions of restaurant image positively influence customer satisfaction.
H16	Higher perceptions of restaurant image positively influence behavioural intentions.

5.3.1 Data Analysis Interpretation for Interaction Quality

5.3.1.1 Interpretation of Exploratory Factor Analysis of Interaction Quality

Originally, 15 items were proposed to measure the three subdimensions of interaction quality: interpersonal skills, professional skills and problem solving skills. The correlation matrix revealed that most correlations were above 0.30 ($0.30 < r < 0.90$) indicating that the data shared common factors appropriate for factor analysis (Hair et al., 2010). The Bartlett's Test of Sphericity result was statistically significant at the .001% level. The KMO value of 0.867 exceeded the cut-off level of 0.60 (Tabachnick & Fidell, 2007) and was greater than 0.80, which is regarded as meritorious²¹ (Kaiser & Rice, 1974).

²¹ KMO interpretations with absolute values less than 0.50 are interpreted as unacceptable, 0.50 or above is considered miserable, 0.60 or above is considered mediocre, 0.70 or above is considered middling, and 0.80 or above is considered meritorious, 0.90 or above is considered marvelous (Kaiser & Rice, 1974).

Thus, these tests indicated that the present data was appropriate for factor analysis. The scree plot in Figure 5.1 shows that the extraction of three factors was appropriate for this analysis.

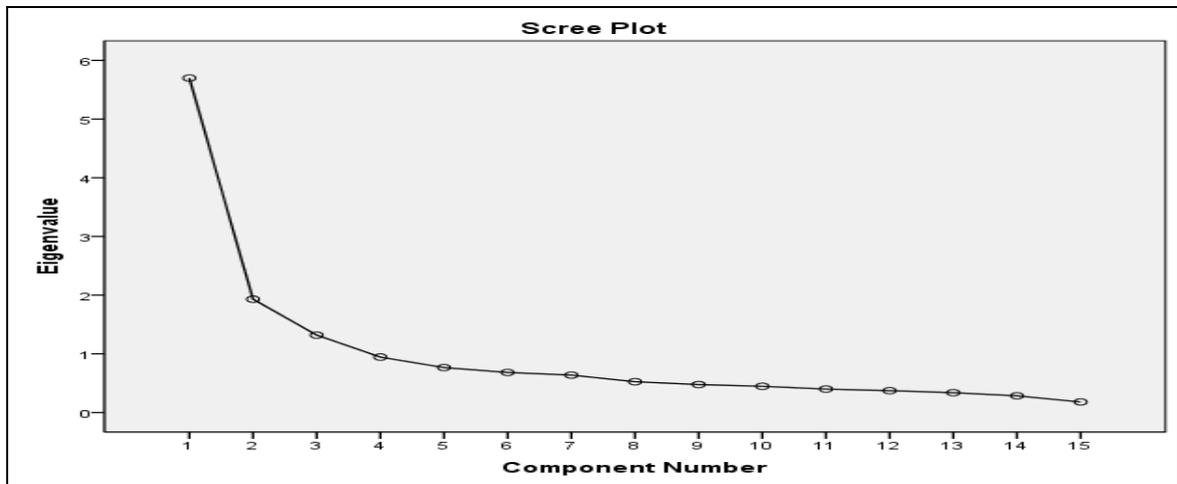


Figure 5.1: The Scree Plot of Interaction Quality

Both rotations, VARIMAX and the OBLIMIN, demonstrated a similar pattern for all 15 items. However, the VARIMAX rotation produced a better structure in terms of the content validity of the factors. Therefore, the final factor structure was based on the factor loadings from the VARIMAX rotation. Table 5.14 shows three factors with Eigenvalues greater than one were generated, which explained about 59.65% of the total variance. The total variance for this interaction quality is lower than 60%; however, it is considered satisfactory because a total variance below 60% is common in social science research (Hair et al., 2010).

As reported in Table 5.14, the 15 items loaded on three separate factors, however, four items did not load exactly on the subdimensions as originally planned. Specifically, for Factor 1, one item from problem solving skills (A14) loaded on interpersonal skills. In Factor 2, one item from interpersonal skills (A14) loaded on professional skills and in Factor 3, one item from professional skills (A15) loaded on problem solving skills. All items highly loaded on a single factor, indicating an adequate unidimensionality among the items (Bernard, 2000). All of the factor loadings for the items retained are above 0.50. Factor loading values ranged from 0.524 to 0.782. Each factor was named according to the leading themes among the items (Hair et al., 2010; Pallant, 2007): Interpersonal Skills (Factor 1), Professional Skills (Factor 2) and Problem Solving Skills (Factor 3). The remaining items were subjected to a reliability test. Reliability was measured with

Cronbach alpha (Cronbach, 1951). Cronbach alpha scores were 0.848, 0.822 and 0.815, higher than the general criterion of 0.60²² recommended by Churchill (1979), so indicating the internal consistency of the variables in the exploratory study.

Table 5.14: EFA Results for Interaction Quality using VARIMAX Rotation

Items No	Attributes	Components		
		Factor 1	Factor 2	Factor 3
A1	Employees with a pleasant attitude	0.782		
A3	Well groomed and clean employees	0.777		
A5	Capable of handling special requests	0.724		
A4	Employees are sympathetic to customer	0.724		
A2	Employees with pleasant behaviour	0.699		
A14	When I have to wait for service, I receive an apology	0.524		
A7	Employees listen and speak in understandable language		0.756	
A10	Employees can answer customer questions quickly		0.713	
A6	Employees can impart product knowledge		0.688	
A8	Well trained and experienced employees		0.629	
A11	Employees are sensitive to customer individual needs		0.628	
A9	Make an effort to inform customers on products available		0.617	
A12	Solve complaints rather than relying on policies			0.790
A13	Empowered to handle complaints			0.708
A15	Deliver superior service			0.706
Eigenvalues		5.698	1.931	1.319
Cronbach Alpha		0.848	0.822	0.815

5.3.1.2 Interpretation of Structural Equation Modelling for Interaction Quality

5.3.1.2.1 Interpretation of First-Order Measurement Model of Interaction Quality

Based on the research model in Figure 3.1, the preliminary first-order model for interaction quality as illustrated in Measurement Model 1 (see Figure 4.2) was designed to examine the relationships between the three subdimensions (interpersonal skills, professional skills and problem solving skills) and the measured items (see Figure 5.2).

The preliminary first-order model presented with 15 items which were $v = 120$ pieces of information ($15[15+1]/2 = 120$) and the number of estimated parameters were $p = 33$ parameters (12 regression weights, 3 covariances and 18 variances); the model was over-identified with 87 *df* (120 pieces of information - 33 parameters).

Except for one item (A14), the standardized factor loadings ranged from 0.591 to 0.836, all of which are well above the acceptable value of 0.50 (Bagozzi & Yi, 1988). The factor loading for item A14 was below 0.50 suggesting it be deleted (Hair et al., 2010;

²² Cronbach alpha greater than 0.60 is adequate for a newly developed questionnaire for the scale to express reliability, whereas Cronbach alpha scores higher than 0.80 are interpreted as extremely reliable (Churchill, 1979).

Janssens et al., 2008). All items were statistically significant at the .001% level, indicating unidimensionality among the items (see Table 5A.2 in Appendix 4).

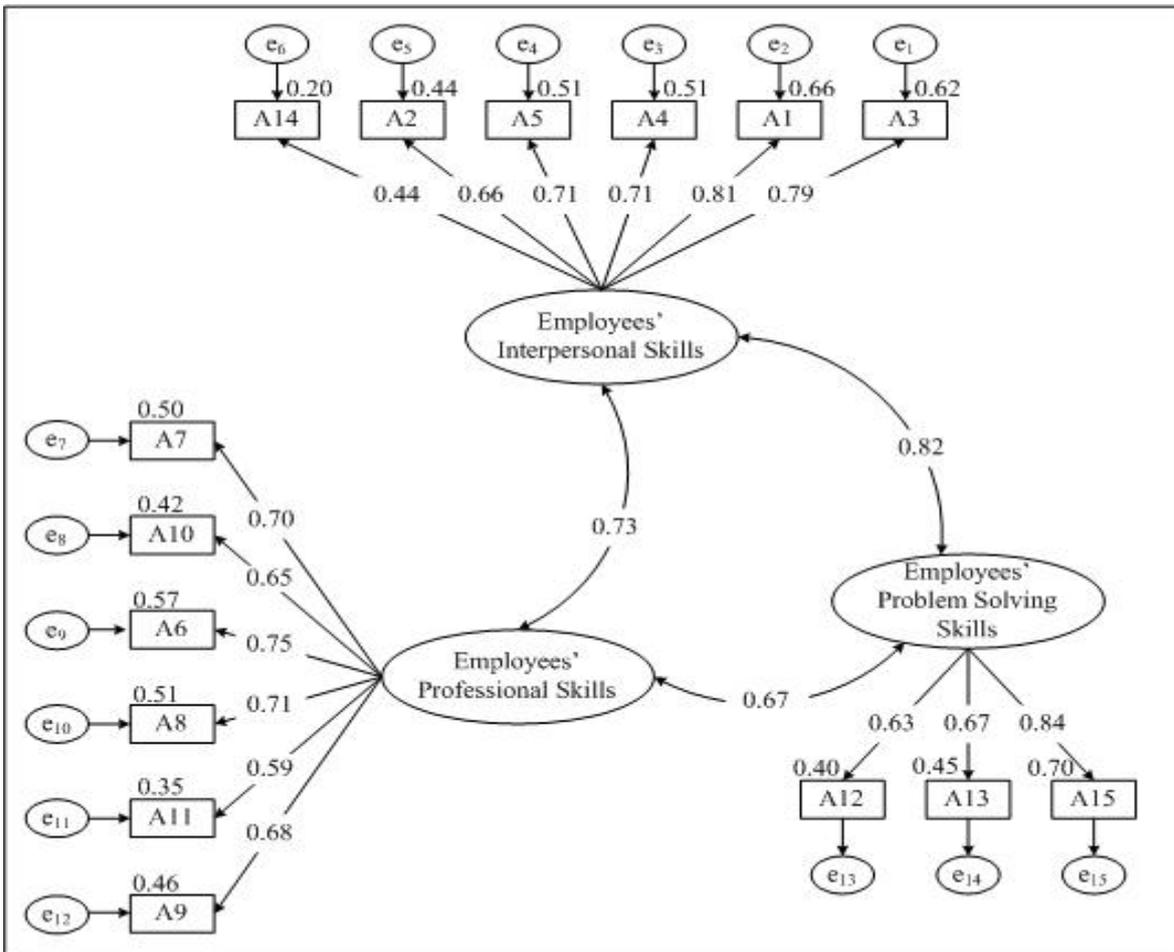


Figure 5.2: Measurement Model 1 – Preliminary Model for Interaction Quality

The preliminary first-order model was statistically significant at the .001% level. However, based on the recommended thresholds presented in Table 4.5, the model-fit-indices ($\chi^2_{[87]} = 402.054$; $\chi^2/df = 4.621$; GFI = 0.818; NFI = 0.793; CFI = 0.829; and RMSEA = 0.119) were not acceptable except that RMR = .047 (see Table 5A.2, Appendix 4); therefore, some modifications were needed in order to improve the model-fit-indices.

In reviewing the MI and standardized residual covariances, two misspecification areas having a substantially large MI value, or a larger residual value than the 2.58 threshold recommended by Janssens et al. (2008), were identified. These areas associated with the pair A1 and A3 (MI = 74.746; EPC = 0.164) and the pair A7 and A10 (MI = 35.438; EPC = 0.182; standardized residual = 2.608) in the error covariances matrix. Provided with the information from the MI, a preliminary first-order model for interaction

quality was re-specified three times, starting with deleting item A14, pairing items A1 and A3, and pairing items A7 and A10. Further review of the information from MI was ignored in this study because it could not be supported by a strong, substantive and empirical rationale²³ (Chinna, 2009; Hair et al., 2010). Finally, through the model modification process, five items remained for all constructs except problems solving skills, which remained with three items (see Figure 5.3).

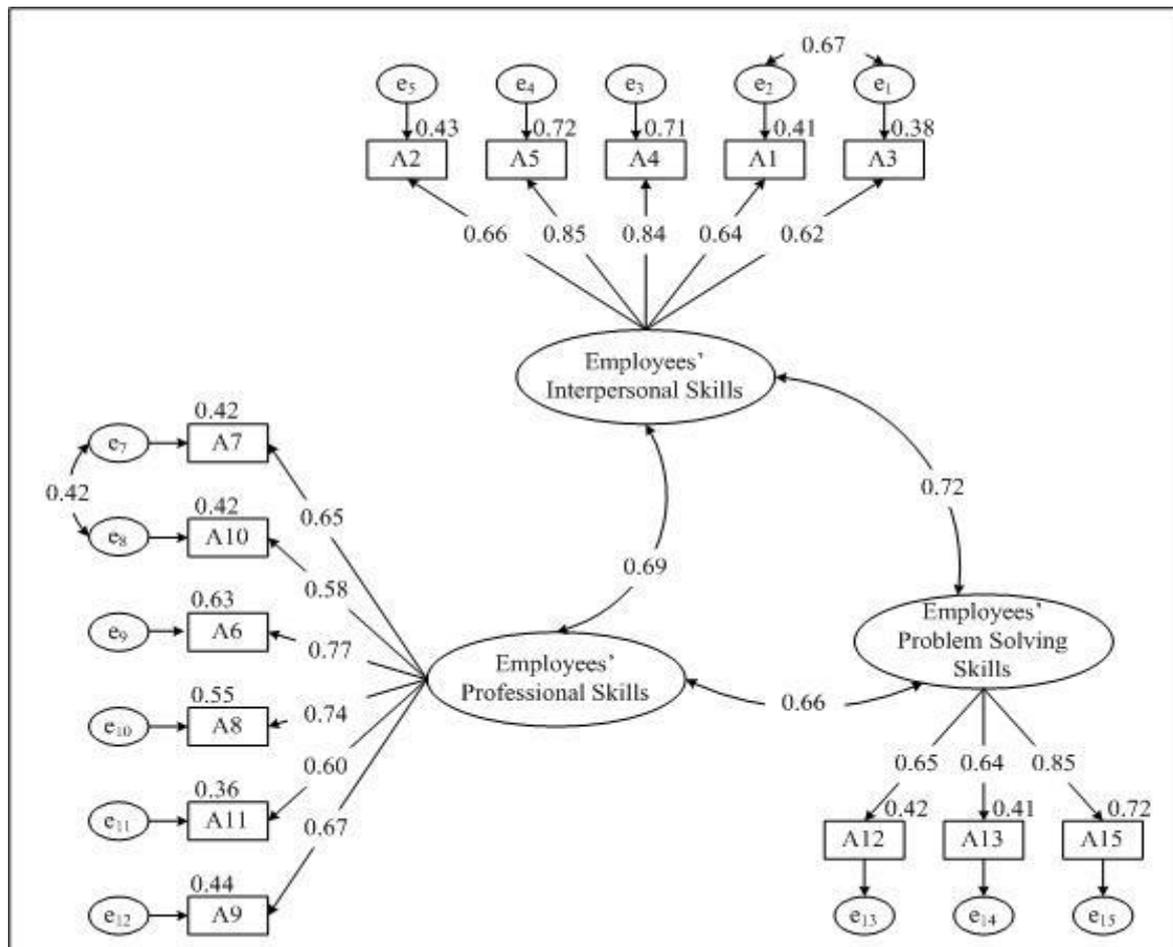


Figure 5.3: Measurement Model 1 – Modified Model for Interaction Quality

The modified first-order model presented 14 items. Based on the t-rule, the number of measured items was $\nu = 105$ pieces of information ($14[14 + 1]/2 = 105$) and the number of estimated parameters was $p = 33$ parameters (11 regression weights, 5 covariances, and 17 variances); the model was over-identified with $72 df$ (105 pieces of information - 33 parameters).

²³ Hair et al. (2006, p. 733) claim that ‘... model respecification must always be done with theoretical support rather than just empirical justification’. Chinna (2009, p. 43) also stresses that MI is often used to alter models to achieve better fit, but this process must be done carefully and with theoretical justification.

The model-fit-indices for the modified first-order model were statistically significant at the .001% level and, except for GFI and NFI, satisfied the relative recommended thresholds presented in Table 4.5 ($\chi^2_{[72]} = 230.852$; $\chi^2/df = 3.206$; CFI = 0.911; RMR = .046; and RMSEA = .093). The values of GFI (0.889) and NFI (0.877) were little improved from the preliminary first-order model. The model-fit-indices' results are summarized in Table 5A.2, Appendix 4.

Although, the values of GFI and NFI were lower than recommended threshold, the modified first-order model is considered as marginal adequate based on the claims²⁴ by several academics (Hair et al., 2006; Kim, 2003; Kline, 2005) (see Subsection 4.3.3.2.1). The modified first-order model, therefore, was considered as the final first-order model for interaction quality, reflecting the best fitting model, based on the aforementioned information of model fit and MI.

The improvement in the model fit was also examined by subtracting the overall χ^2 statistics for the modified model from the preliminary model. Comparing the preliminary model ($\chi^2_{[87]} = 402.054$) with the modified model ($\chi^2_{[72]} = 230.852$) yielded a difference in the χ^2 value of 171.202 ($\Delta\chi^2_{[15]} = 171.202$). Since $\Delta\chi^2_{[15]} = 171.202 > \chi^2_{24,996, \alpha.05}$, the modified first-order model was statistically significant and indicated an improvement in the model-fit-indices.

To verify the construct validity, convergent and discriminant validity were measured (Janssens et al., 2008; Kline, 2005; Schumacker & Lomax, 2004). Unidimensionality was assessed. The standardized factor loadings of all items were larger than 0.50, ranging from 0.579 to 0.848, and were statistically significant at the .001% level. This evidence supported the unidimensionality of each scale, which indicated that convergent validity was obtained. Reliability must always be verified (Hair et al., 2010; Janssens et al., 2008). Composite reliability and AVE were calculated using the procedures outlined by Fornell and Larcker (1981). The former was calculated using the Equation 4.1 for each of the three subdimensions: interpersonal skills (0.847), professional skills (0.832) and problem solving skills (0.841). These values were greater than the minimum acceptable reliability of 0.60 (Bagozzi & Yi, 1988). AVE was calculated using Equation 4.2. The AVE values for two subdimensions: interpersonal skills (0.531) and problem solving skills

²⁴ Hair (2006) claim that by using three to four model-fit-indices provides an adequate evidence of model fit; the authors also suggest that in addition to the χ^2 value and the associated df , the researcher should report at least one incremental index (such as NFI or CFI) and one absolute index (such as RMR, RMSEA or GFI)

(0.516) exceeded the minimum criterion ($AVE > 0.50$). However, the AVE that for professional skills was 0.454, indicated that the variance due to measurement error was less than the variance captured by the construct (Fornell & Larcker, 1981).

Although the AVE for the professional skills construct was below 0.50, it can be concluded that convergent validity was satisfied based on the recommendations of several researchers (Anderson & Gerbing, 1988a; Bagozzi & Yi, 1988; John & Reve, 1982). There was substantial evidence of convergent validity because factor loading estimates of all measured items were larger than 0.50 and statistically significant (Anderson & Gerbing, 1988a; Hair et al., 2010; John & Reve, 1982). In addition, Hair et al. (2010), Bagozzi and Yi (1988), and John and Reve (1982) claim that if the composite reliability of each construct is above the recommended cut-off point of 0.60, it indicates convergent validity. In this case, the factor loading estimates ranged from 0.579 to 0.846 and all items were statistically significant at the .001% level. On further review, the composite reliabilities of the three constructs were 0.847, 0.832, and 0.841, i.e., greater than the minimum acceptable reliability of 0.60. In reviewing these results, the evidence supported the fact that the professional skills construct obtained adequate convergent validity. Once convergent validity was achieved, it was appropriate to test for discriminant validity²⁵. The correlation estimates of all pairs of three subdimensional factors of Interaction Quality were 0.687, 0.658 and 0.720 and less than the recommended value ($r \leq 0.85$) indicating the existence of discriminant validity. See Table 5A.2, Appendix 4.

In summary, the modified first-order model generally exceeded the criteria established in Table 4.5 for model-fit-indices. In addition, all conditions required for examining the convergent and discriminant validities recommended by several researchers (Anderson & Gerbing, 1988a; Byrne, 2009; Chinna, 2009; Kline, 2005; Nokelainen, 2009; Schumacker & Lomax, 2004) were satisfactorily met. The first-order modified model represented the best model fit for measuring the service quality structure with the present data; therefore, the model was used for the second-order model.

5.3.1.2.2 Interpretation of Second-Order Structural Model of Interaction Quality

Based on the research model illustrated in Figure 3.1 and the results of the modified first-order model of interaction quality, Structural Model 1, as designed in Figure 4.7, was

²⁵ Discriminant validity was present when the correlation between two constructs was lower than the recommended value ($r \leq 0.85$) suggested by Kline (2005).

initially specified. Specifically, the second-order model for interaction quality was designed to test the relationships between the three subdimensions (interpersonal skills, professional skills and problem solving skills) and one primary dimension of service quality (interaction quality).

Before examining the validity of the structural model for interaction quality, it is essential to address the identification issues in the second-order factor model (Byrne, 2009). The first-order model was over-identified with 72 *df*. However, in the hierarchical or second-order model, identification status had to be conducted to “check the identification status of the higher order portion of the model” (Byrne, 2009, p. 130). In this case, the second-order structure model with three first-order factors was just-identified with 0 *df* ($[v = 3[3 + 1]/2 = 6$ pieces of information = 6 parameters [$p = 3$ regression weights and 3 variances]). According to Byrne (2009), it is possible that the second-order level may be just-identified or under-identified²⁶. This is because, in the first-order factor model, factors function as indicators of the second-order factor, therefore identification can easily be assessed.

In order to solve the just-identified problem, equality constraints²⁷, as suggested by Byrne (2009), were placed on particular parameters that were approximately equal as identified using the critical ratio difference method (CRDIFF)²⁸. In this case, two prime candidates for placing equality constraints in both residuals were between professional skills (0.63) and problem solving skills (0.69). In a more detailed inspection of the variances, the CRDIFF between these two residuals was compared with the critical value of 1.96. From the CRDIFF listing, these two residuals were less than the critical value of 1.96; thus, the hypothesis that these two residual variances were equal in the population was accepted. As a result, the variances of the two residuals were constrained by placing the same value (var_a); thus the identification status of the higher-order portion was over-identified with 1 *df* ($3[3 + 1]/2 - 6$ pieces of information - 5 parameters [3 regression weights and 2 variances]) (see Figure 5.4).

In reviewing the standardized solutions in Table 5A.3 (see Appendix 4); all estimates in the structural model were both reasonable and statistically significant at the .001% level. The model-fit-indices except for GFI and NFI were sufficiently satisfied

²⁶ An Under-identified model is also known as an unidentified model (Hair et al., 2010).

²⁷ Note: only two of the three residual variances were to be constrained equal (Byrne, 2009).

²⁸ CRDIFF produces a listing of critical ratios for the pairwise differences among all parameter estimates.

relative to their recommended thresholds presented in Table 4.5 ($\chi^2_{[73]} = 231.141$; $\chi^2/df = 3.166$; CFI = 0.911; RMR = .047; and RMSEA = .092). The values of GFI (0.889) and NFI (0.877) were close to the recommended 0.90 threshold, thus the model-fit-indices were interpreted as marginally adequate (Hair et al., 2006; Kim, 2003; Kline, 2005) (see Subsection 4.3.3.2.1). It can be concluded that the second-order modified structural model can be used to examine Hypotheses 1 and 7, which in turn, satisfy Research Objectives 1 and 2.

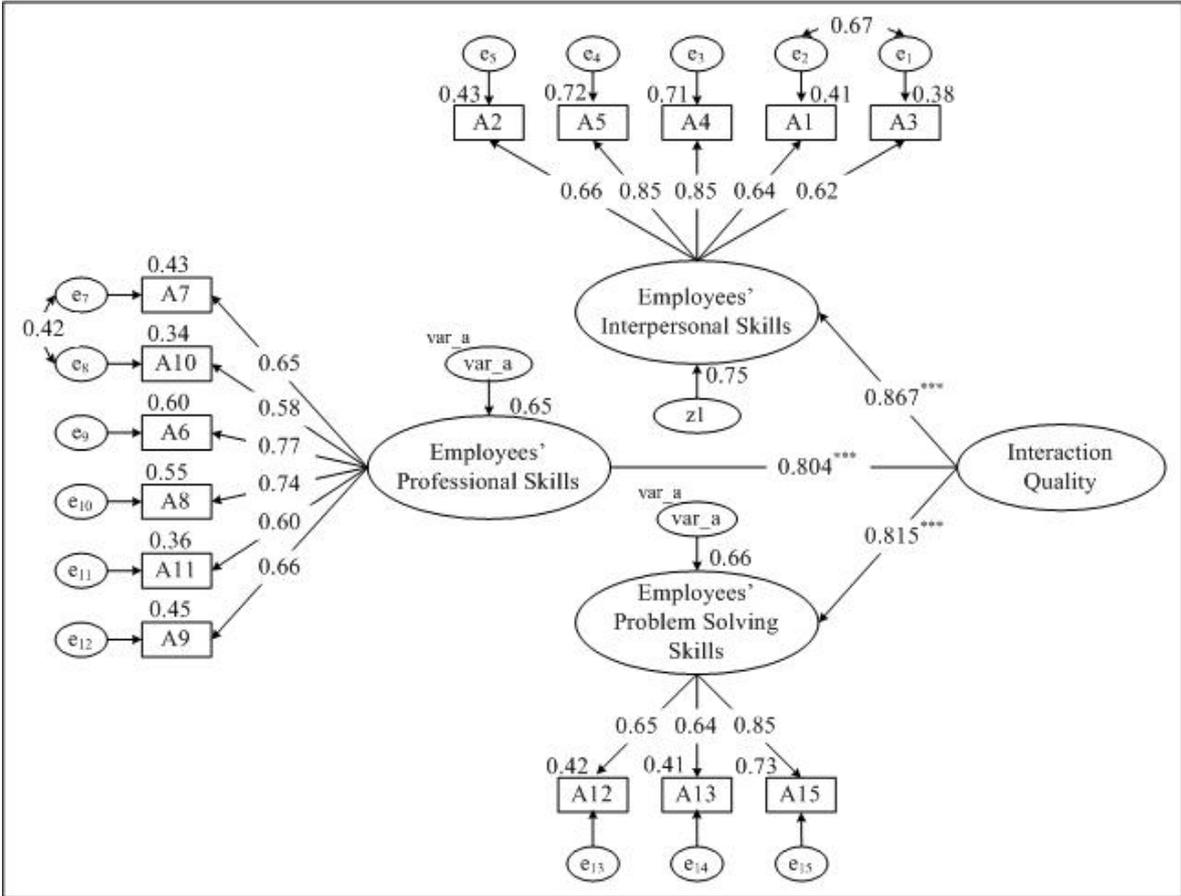


Figure 5.4: Structural Model 1 – Second-Order Model for Interaction Quality

5.3.1.3 Hypothesis Testing

In this structural model, the second-order model was designed to test the hypothesis that interaction quality was a multidimensional construct comprising three subdimensions: interpersonal skills, professional skills and problem solving skills, which in turn, partially satisfy Research Objective 1. In addition, Hypothesis 7 proposed that restaurants patrons will vary in their perceptions of the importance of each subdimension, which, in turn, partially satisfies Research Objective 2.

From the results reported in Table 5.15, interpersonal, professional and problem solving skills subdimensions positively influence the interaction quality perceptions. All subdimensions were statistically significant at the .001% level with interpersonal skills ($\beta = 0.867$) the strongest indicator of interaction quality followed by problem solving skills ($\beta = 0.815$) and professional skills ($\beta = 0.804$). Thus, it may be concluded that Hypotheses 1 and 7 were supported by the data and, therefore, Research Objectives 1 and 2 were satisfied. Moreover, the second-order latent variable, represented by interaction quality, explained 75% of the variance for interpersonal skills, 66% of the variance for problem solving skills and 65% of the variance for professional skills.

Table 5.15: Structural Parameter Estimates

Hypothesized Path	Standardized Coefficients Path (β)	Critical Ratio	R^2	Assessment
H _{1a} : Interpersonal Skills←IQ	0.867	8.889***	0.751	Supported
H _{1b} : Professionalism Skills←IQ	0.804	8.905***	0.647	Supported
H _{1c} : Problem Solving Skills←IQ	0.815	11.424***	0.664	Supported

Note: Statistically significant at *** = .001; ** = .05; * = 0.10

5.3.2 Data Analysis Interpretation for Physical Environment Quality

5.3.2.1 Interpretation of Exploratory Factor Analysis of Physical Environment Quality

Originally, 25 items were used to measure the six subdimensions of physical environment quality: i.e., aesthetics, restaurant ambience, layout and design, menu design, table setting and restaurant cleanliness. The correlation matrix revealed that most of the correlations were above 0.30 indicating that the data shared common factors appropriate for factor analysis (Hair et al., 2010; Janssens et al., 2008; Pallant, 2007). Bartlett's Sphericity test was statistically significant at the .001% level. The KMO value was 0.948, exceeding the cut-off level of 0.60 (Tabachnick & Fidell, 2007) and greater than 0.90, which is interpreted as marvelous (Kaiser & Rice, 1974). These tests indicated that the present dataset was appropriate for factor analysis. The scree plot in Figure 5.5 shows that the extraction of four factors was appropriate for this analysis.

Both rotations, VARIMAX and OBLIMIN, displayed a similar pattern for all 25 items. However, the VARIMAX rotation produced a better structure in terms of the content validity of the factors. Therefore, the final factor structure was based on the factor loadings

from the VARIMAX rotation. Table 5.16 shows that four factors with Eigenvalues greater than one were generated, which explained about 73.99% of the total variance.

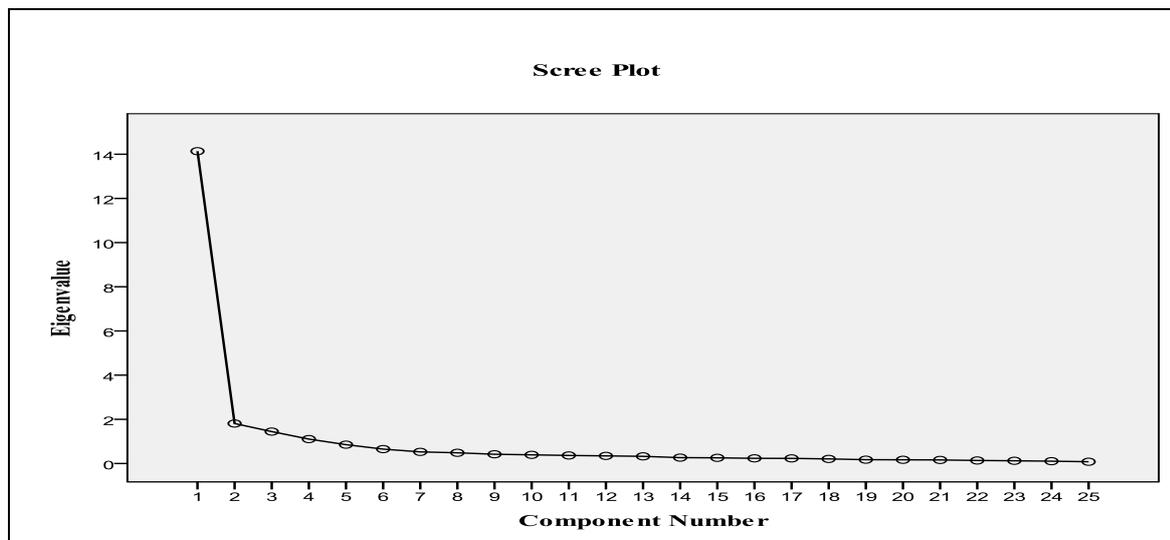


Figure 5.5: The Scree Plot of Physical Environment Quality

Table 5.16: EFA Results for Physical Environment Quality using VARIMAX Rotation

Items No	Attributes	Components			
		Factor 1	Factor 2	Factor 3	Factor 4
B1	Visually attractive interior décor	0.816			
B7	Comfortable lighting atmosphere	0.815			
B3	Comfortable dining table	0.813			
B2	Fashionable colour scheme	0.787			
B6	Suitable background music	0.773			
B8	Comfortable dining room temperature	0.741			
B9	Pleasant dining room aromas	0.691			
B4	Comfortable seats and easy to move around	0.670			
B21	Attractive and neat table linen		0.834		
B22	Attractive table accessories		0.805		
B23	Clean table setting and hygienically handled by the employees		0.788		
B20	Good quality table setting		0.758		
B25	Visually attractive and clean dining area		0.698		
B24	Clean and well maintained rest rooms		0.672		
B5	Spacious seating arrangement			0.733	
B11	Smoking and non-smoking sections			0.712	
B14	Ample parking spaces			0.696	
B13	Visually attractive exterior of building			0.629	
B15	Convenient location			0.608	
B12	Easy to follow signage			0.549	
B17	A menu that is easily to read				0.795
B18	Using appetizing words and easily understood				0.775
B16	Visually attractive menu card				0.723
B19	Menu card written in a foreign language, providing translation				0.517
	Eigenvalues	14.137	1.810	1.445	1.105
	Cronbach α	0.955	0.942	0.881	0.903

The 24 items, as reported in Table 5.16, loaded on four separate factors. Except for factor B10, all factor loadings for the items retained are above 0.50. B10 (an item from the layout and design subdimension) was eliminated from the EFA because the factor loading was below 0.50. In addition, eight items did not load exactly on the three subdimensions originally proposed. The eight items were: four items from restaurant ambience (B4, B6, B7 and B8) that loaded on the aesthetics, three items from table setting (B20, B21 and B22) that loaded on the restaurant cleanliness and one item from aesthetics (B5) that loaded on the layout and design subdimension. Since no items loaded on more than one factor, this indicated adequate unidimensionality (Bernard, 2000). Factor loadings ranged from 0.834 to 0.517. Each factor was named according to the salient themes among the items (Hair et al., 2010; Pallant, 2007). The final factors were identified as Restaurant Ambience and Aesthetics (Factor 1), Table Setting and Restaurant Cleanliness (Factor 2), Layout and Design (Factor 3), and Menu Design (Factor 4). Lastly, the remaining items were subjected to a reliability test using Cronbach alpha. For these four factors, the Cronbach alpha values ranged from 0.955 down to 0.881, all being greater than 0.60, indicating extreme reliability (Churchill, 1979).

5.3.2.2 Interpretation of Structural Equation Modelling for Physical Environment Quality

5.3.2.2.1 Interpretation of the First-Order Measurement Model of Physical Environment Quality

Based on the research model in Figure 3.1, the preliminary first-order model for physical environment quality as illustrated in Measurement Model 2 (see Figure 4.3) was designed to examine the relationships between the six subdimensions of physical environment quality and the measured items. However, after EFA only four subdimensions appeared (restaurant ambience and aesthetics, table setting and restaurant cleanliness, layout and design, and menu design). The preliminary first-order model for physical environment quality examined the relationships between the four subdimensions and the measured items (see Figure 5.6).

The preliminary first-order model had 24 items. The number of items measured was $v = 300$ pieces of information ($24[24 + 1]/2 = 300$) and the number of estimated parameters was $p = 54$ parameters (20 regression weights, 6 covariances, and 28 variances); the model was over-identified with 246 df (300 pieces of information - 54 parameters).

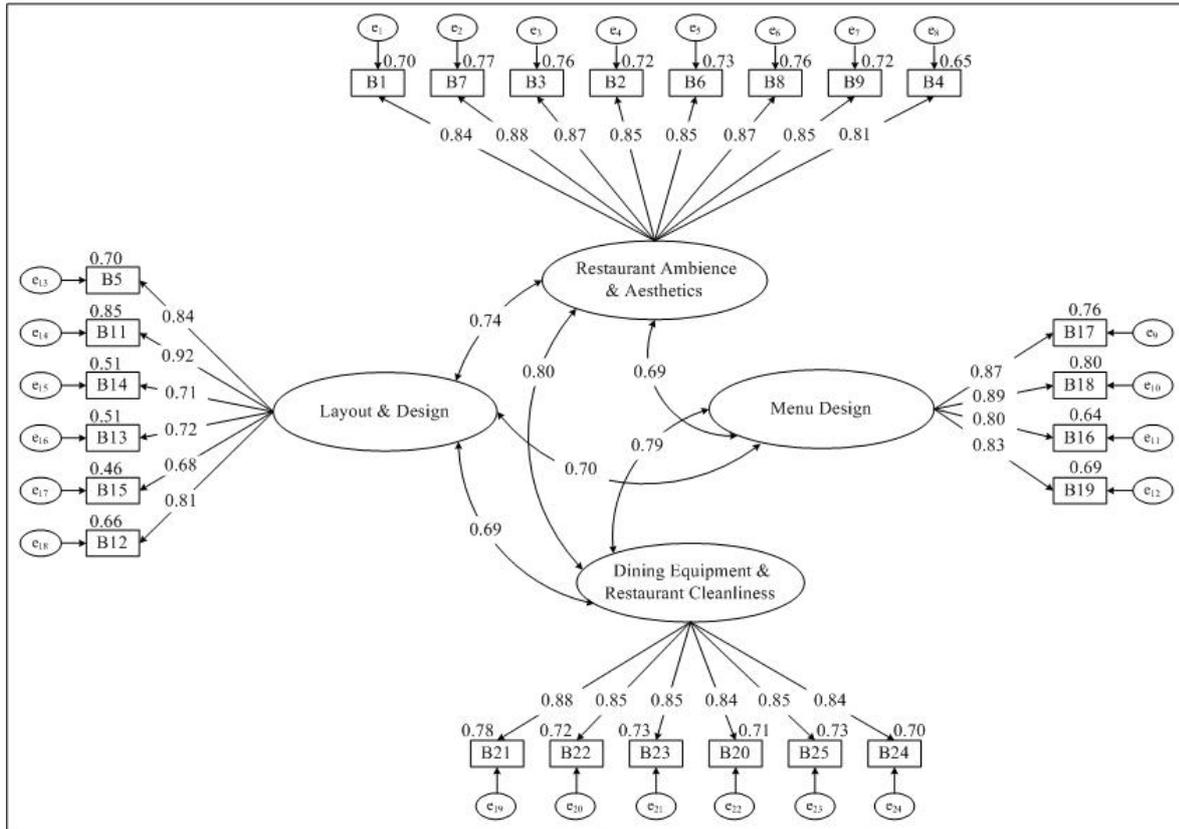


Figure 5.6: Measurement Model 2 – Preliminary Model for Physical Environment Quality

Although the results were statistically significant at the .001% level, the model-fit-indices reported in Table 5A.4 (see Appendix 4) indicated that, except for GFI and NFI, this preliminary first-order model was not acceptable according to the recommended thresholds as summarized in Table 4.5 ($\chi^2_{[246]} = 890.181$; GFI = 0.763; NFI = 0.858; CFI = 0.892; and RMSEA = 0.102). The results indicated that some modifications to the preliminary first-order model were needed to improve the model fit.

In reviewing the MI, eight misspecification areas were identified, which involved the deletion of five items and three pairing correlated errors (see Table 5.17). Other suggestions in the MI were ignored because they were not supported by a strong, substantive and empirical rationale (Chinna, 2009; Hair et al., 2010). Based on the information relating to both the model-fit-indices and MI (see Table 5.17), the preliminary first-order measurement model for physical environment quality was re-specified eight times, step-by-step, starting with eliminating B9, B12, B13, B14 and B16 and then pairing B1 and B2, B21 and B22, and B24 and B25. Finally, through the model modification process, three items remained for all constructs except restaurant ambience and aesthetics with seven items, and table setting and restaurant cleanliness with six items.

Table 5.17: Suggestion for Improving Model-fit-indices from MI

Items	Suggestions from Modification Index	Modification Index	Expected Par Change
Cross loadings with			
B9	Restaurant ambience and aesthetics	4.570	-.040
	Table setting and restaurant cleanliness	5.732	.042
B12	Restaurant ambience and aesthetics	10.906	.072
	Layout and design	9.166	-.079
	Menu design	5.514	.061
B13	Table setting and restaurant cleanliness	4.534	.049
	Layout and design	5.429	-.070
B14	Table setting and restaurant cleanliness	4.309	.060
	Menu design	5.710	.090
B16	B15	13.590	0.122
	B13	8.537	.098
	B24	4.649	.082
	B14	4.991	.060
Pairing with Other Items			
B1	B2	52.516	0.136
B21	B22	35.918	0.114
B24	B25	18.076	.088

The modified first-order model presented with 19 items (see Figure 5.7). The number of measured items was $v = 190$ pieces of information ($19[19 + 1]/2 = 190$) and the number of estimated parameters was $p = 47$ parameters (15 regression weights, 9 covariances and 23 variances); the model was over-identified with 143 df (190 pieces of information - 47 parameters).

In reviewing the standardized solutions in Table 5A.4, Appendix 4, all indicators, except for GFI, in the modified first-order model were both reasonable and statistically significant at the .001% level. The model-fit-indices sufficiently satisfied their relevant recommended thresholds summarized in Table 4.5 ($\chi^2_{[143]} = 382.809$; $\chi^2/df = 2.677$; NFI = 0.920; CFI = 0.948; RMR = .056; and RMSEA = .081). The GFI value (0.863) was close to the recommended 0.90 threshold and thus interpreted as marginally adequate (Hair et al., 2006; Kim, 2003; Kline, 2005) (see Subsection 4.3.3.2.1). To summarise, a comparison of all model-fit-indices with their corresponding recommended thresholds presented in Table 4.5 provided evidence of a good model fit. The modified first-order model, therefore, was considered the final model for outcome quality, reflecting the best model fit, based on the above information of model fit and MI.

The improvement in the model fit was also examined by subtracting the overall χ^2 statistics for the modified model from the preliminary model. Comparing the preliminary model ($\chi^2_{[246]} = 890.181$) with the modified model ($\chi^2_{[143]} = 382.809$) yielded a difference in

the χ^2 value of 507.372 ($\Delta\chi^2_{[103]} = 507.372$). Since $\Delta\chi^2_{[103]} = 507.372 > \chi^2_{127,689,\alpha.05}$, the modified model, therefore, was statistically significant and indicated an improvement in the model-fit-indices.

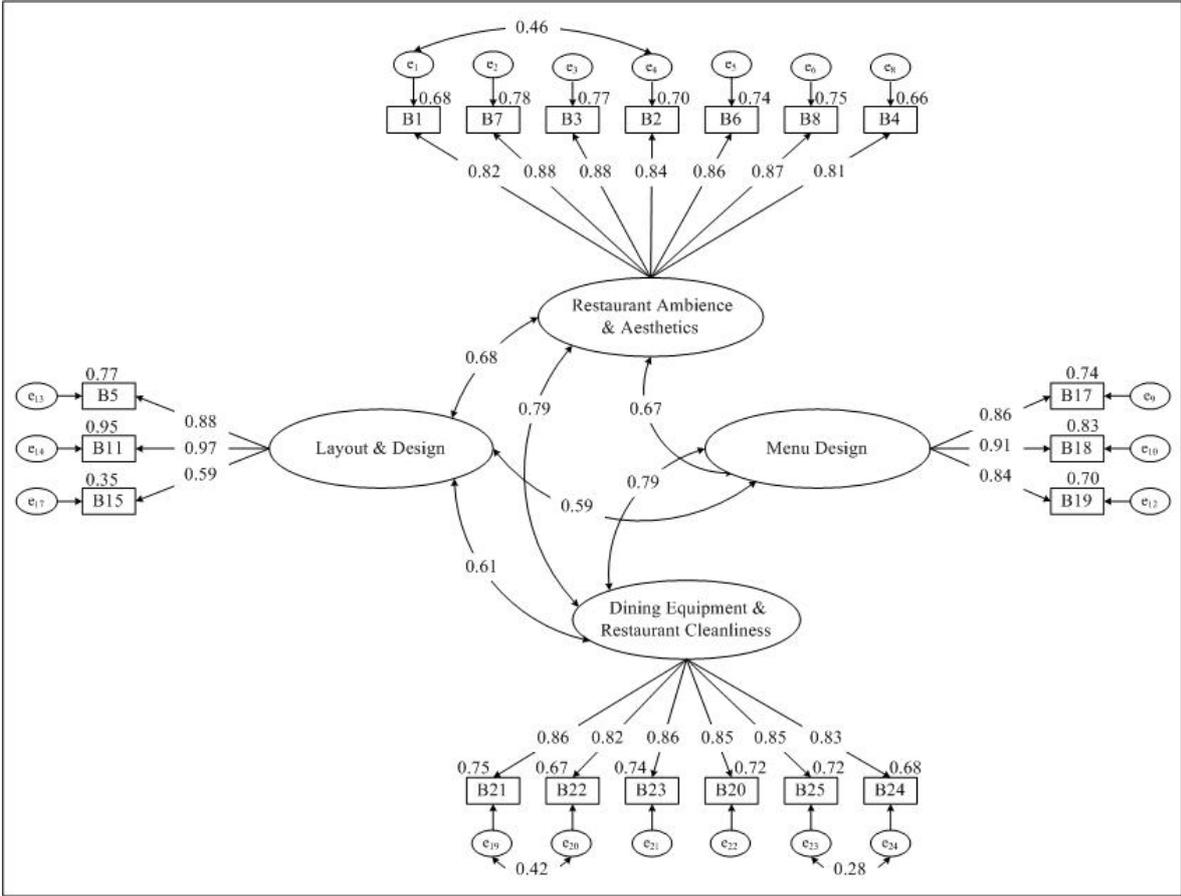


Figure 5.7: Measurement Model 2 – Modified Model for Physical Environment Quality

To verify the construct validity, the convergent and discriminant validity were measured (Janssens et al., 2008; Kline, 2005; Schumacker & Lomax, 2004). Unidimensionality was assessed. The standardized factor loadings ranged from 0.592 to 0.974, all of which were well above the acceptable value (> 0.50) and all were statistically significant at the .001% level. This evidence supported the unidimensionality of each scale, which indicated that convergent validity was obtained (Bagozzi & Yi, 1988).

Reliability must always be verified (Kline, 2005; Schumacker & Lomax, 2004). Composite reliability and AVE were calculated using the procedures outlined by Fornell and Larcker (1981). Composite reliability was calculated using Equation 4.1 for each of the four subdimensions; all of restaurant ambience and aesthetics (0.948), table setting and

restaurant cleanliness (0.937), layout and design (0.865) and menu design (0.904) exceeded the threshold level of 0.70, indicating a high internal consistency of the measurement scales (Bagozzi & Yi, 1988; Fornell & Larcker, 1981; Hair et al., 2010). AVE was calculated using Equation 4.2 for each of the four subdimensions; all of restaurant ambience and aesthetics (0.724), table setting and restaurant cleanliness (0.712), layout and design (0.690) and menu design (0.759) exceeded the minimum criterion ($AVE > 0.50$) (Hair et al., 2010). These four constructs indicated that the variance due to measurement error was less than the variance captured by the construct (Fornell & Larcker, 1981). This evidence supported the reliability of each scale which indicated (1) that convergent validity was obtained and (2) that the measurement items have high reliability and validity (Bagozzi & Yi, 1988; Chen, 2008; Fornell & Larcker, 1981). Once convergent validity was achieved, it was appropriate to test for discriminant validity. The correlation estimates on all pairs of the four subdimensional factors of physical environment quality were 0.586 to 0.792, and were less than the recommended value ($r \leq 0.85$) indicating the existence of discriminant validity (Kline, 2005). See Table 4A, Appendix 4.

In summary, the modified first-order model generally exceeded the criteria established in Table 4.5 for model-fit-indices. In addition, all conditions required for examining the convergent and discriminant validities recommended by several researchers (Anderson & Gerbing, 1988a; Byrne, 2009; Chinna, 2009; Kline, 2005; Nokelainen, 2009; Schumacker & Lomax, 2004) were satisfactorily met. The first-order modified model represented the best model fit for measuring the service quality structure with the present data; therefore the model was used for the second-order structural model.

5.3.2.2.2 Interpretation of the Second-Order Structural Model for Physical Environment Quality

Based on the research model illustrated in Figure 3.1 and the results of the modified first-order model of physical environment quality, the Structural Model 2 as shown in Figure 4.8 was initially specified. Specifically, the second-order model for Physical Environment Quality was designed to test the relationships between the four subdimensions (restaurant ambience and aesthetics, table setting and restaurant cleanliness, layout and design, and menu design) and one primary dimension of service quality (physical environment quality) (see structural model in Figure 5.8).

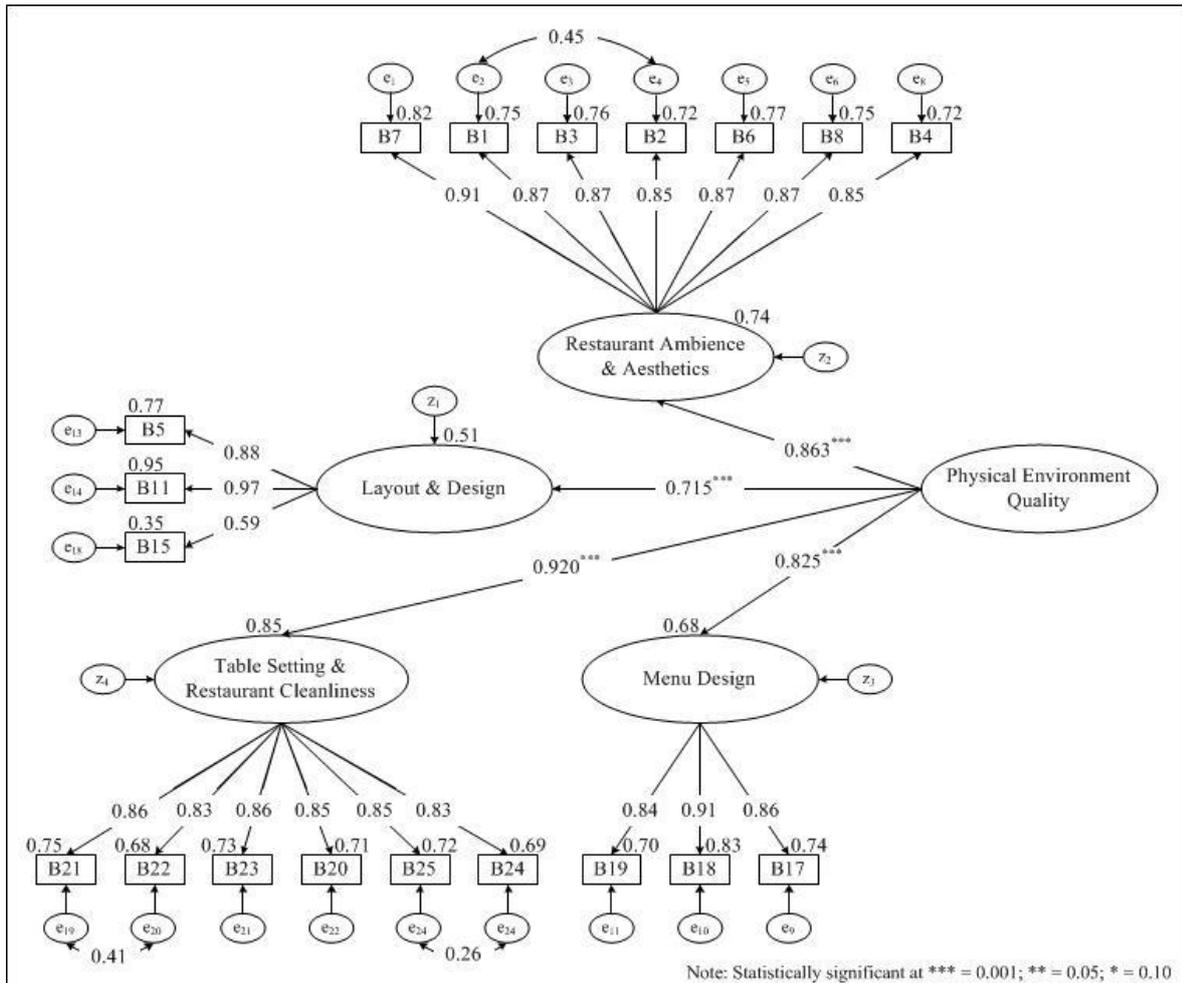


Figure 5.8: Structural Model 2 – Second-Order Model for Physical Environment Quality

Before examining the validity of the structural model for physical environment quality, it was essential to address the identification issues in the second-order (Byrne, 2009). The first-order factor model was over-identified with 143 *df*. Although there was an over-identified model for the second-order, model identification still had to be conducted (Byrne, 2009). In this case, the second-order structure with four first-order factors was $\nu = 10$ pieces of information ($4[4+1]/2 = 10$) and the number of estimated parameters was $p = 8$ parameters (4 factor loadings and 4 residuals); the second-order model was over-identified with 2 *df* (10 pieces of information - 8 parameters).

When reviewing the model-fit-indices in Table 5A.5, Appendix 4, both were reasonable and sufficiently satisfied their relevant recommended thresholds presented in Table 4.5 ($\chi^2_{[145]} = 400.312$; $\chi^2/df = 2.761$; NFI = 0.917; CFI = 0.945; RMR = .060; and RMSEA = .083); they were statistically significant at the .001% level, indicating that the

model fitted the present data. However, the GFI (0.855) value was close to the recommended 0.90 threshold, thus, this model may be interpreted as marginally adequate (Hair et al., 2006; Kim, 2003; Kline, 2005) (see Subsection 4.3.3.2.1). Thus, the modified second-order model was used to examine Hypotheses 2 and 7, which in turn, satisfy Research Objectives 1 and 2.

5.3.2.3 Hypothesis Testing

In this structural model, the second-order model was designed to test the hypothesis that physical environment quality is a multidimensional construct comprising four subdimensions: restaurant ambience and aesthetics, table setting and restaurant cleanliness, layout and design, and menu design, which in turn, satisfies Research Objective 1. In addition, Hypothesis 7 proposed that restaurants patrons will vary in their perceptions of the importance of each subdimension, which, in turn, partially satisfies Research Objective 2.

From the results reported in Table 5.18, the restaurant ambience and aesthetics, table setting and restaurant cleanliness, layout and design, and menu design subdimensions positively influence physical environment quality perceptions. All subdimensions were statistically significant at the .001% level with table setting and restaurant cleanliness ($\beta = 0.920$) the strongest indicator of physical environment quality, followed by restaurant ambience and aesthetics ($\beta = 0.863$), menu design ($\beta = 0.825$), and layout and design ($\beta = 0.715$). Thus, it may be concluded that Hypotheses 2 and 7 were supported by the data and, therefore, Research Objectives 1 and 2 were satisfied. The second-order latent variable, represented by physical environment quality, explained 75% of the variance for restaurant ambience and aesthetics, 85% of the variance for table setting and restaurant cleanliness, 68% of the variance for menu design and 51% of the variance for layout and design.

Table 5.18: Structural Model Parameter Estimates

Hypothesized Path	Standardized Coefficients Path (β)	Critical Ratio	R^2	Assessment
H _{2a} : R. Amb. & Aesthetics←PEQ	0.863	12.897***	0.745	Supported
H _{2b} : Layout & Design←PEQ	0.715	8.135***	0.511	Supported
H _{2c} : Menu Design←PEQ	0.825	12.361***	0.680	Supported
H _{2d} : T. Setting & R. Clean.←PEQ	0.920	13.966***	0.846	Supported

Note: Statistically significant at *** = .001; ** = .05; * = 0.10

5.3.3 Data Analysis Interpretation for Outcome Quality

5.3.3.1 Interpretation of Exploratory Factor Analysis for Outcome Quality

Sixteen items measured the outcome quality with three subdimensions: waiting time, food quality and valence. The correlation matrix revealed that most correlations were above 0.30 indicating that the data shared common factors and were, therefore, appropriate for factor analysis (Hair et al., 2010; Janssens et al., 2008; Pallant, 2007). Bartlett's Sphericity test was statistically significant at the .001% level. The KMO value was 0.893, exceeding the cut-off level of 0.60 (Tabachnick & Fidell, 2007) and was greater than 0.80, which is interpreted as meritorious (Kaiser & Rice, 1974). These tests indicate that the present data was appropriate for factor analysis. The scree plot in Figure 5.9 shows that the extraction of three factors was appropriate for this analysis.

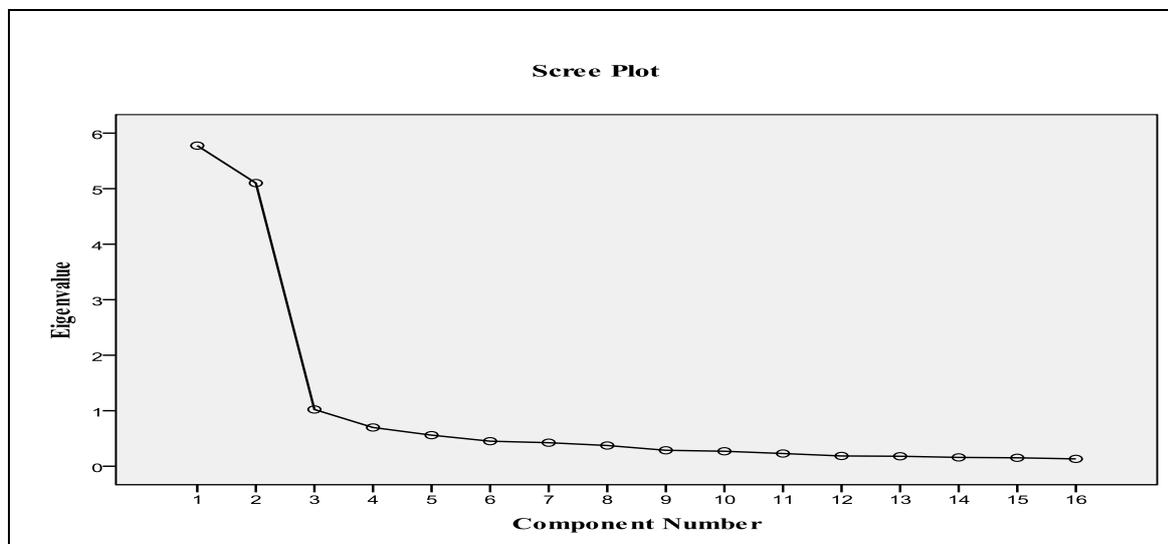


Figure 5.9: The Scree Plot of Outcome Quality

Both rotations, VARIMAX and OBLIMIN, displayed a similar pattern in all 16 items. However, the VARIMAX rotation produced a better structure in terms of content validity of the factors. Therefore, the final factor structure was based on the factor loadings from the VARIMAX rotation. Table 5.19 shows three factors with Eigenvalues greater than one were generated, which explained about 74.37% of the total variance.

As reported in Table 5.19, the 16 items loaded on three separate factors. However, the second factor was different from what was originally proposed. Eight items did not load exactly on the three subdimensions originally proposed. The eight items comprised three items from valence (C10, C14 and C15) that loaded on waiting time and five items separated from food quality (C1 C2, C3, C4 and C5). No items loaded on more than one

factor, indicating an adequate unidimensionality (Bernard, 2000). All of the factor loadings for the items retained are above 0.50. The factor loadings ranged from 0.717 to 0.890. Each factor was named according to the salient themes among the items (Hair et al., 2010; Pallant, 2007). Factor 2 remained as Food Quality. Factors 1 and 3 were renamed as Pleasant Dining Experience and Menu Variety, respectively (see Table 5.19). The remaining items were subjected to a reliability test. For the three factors, the Cronbach alpha scores ranged from 0.879 to 0.939; all were greater than 0.60, indicating internal consistency (Churchill, 1979).

Table 5.19: EFA Result for Outcome Quality using VARIMAX Rotation

Items No.	Attributes	Component		
		Factor 1	Factor 2	Factor 3
C11	Reasonable waiting time	0.890		
C16	Employees serve customers at the time they promise	0.889		
C14	I believe a moderate upscale restaurant knows the type of experience its customers want.	0.860		
C15	At the end of dining at a moderate upscale restaurant, I feel that I receive and experience what I want in my dining.	0.845		
C12	Normally, I do not wait a long time to be seated	0.844		
C10	I believe a moderate upscale restaurant tries to give me a good dining experience.	0.838		
C17	Normally, I do not wait longer for service than I expect	0.831		
C4	Offers a choice of food that is prepared according to the requirements of my religion		0.824	
C2	Offers a variety of menu to choose from		0.797	
C5	Offers a choice of food and beverages that caters for my dietary needs.		0.760	
C3	Offers a selection of beverages to complement the food		0.738	
C1	Offers unique food that unable to prepare at home		0.717	
C7	Serves fresh and properly cooked food			0.867
C8	Serves attractive and tempting food			0.845
C9	Serves food that meets customer expectation			0.832
C6	Serves food at the appropriate temperature			0.798
Eigenvalues		5.775	5.101	1.022
Cronbach α		0.939	0.879	0.936

5.3.3.2 Interpretation of Structural Equation Modelling for Outcome Quality

5.3.3.2.1 Interpretation of First-Order Measurement Model for Outcome Quality

Based on the research model in Figure 3.1, the preliminary first-order model for outcome quality as illustrated in Measurement Model 3 (see Figure 4.4) was designed to examine the relationships between the three primary dimensions (waiting time, food quality and valence) and the measured items. However, after EFA, two subdimensions were factored differently (pleasant dining experience, food quality and menu variety).

The preliminary first-order model presented with 16 items. The number of measured variances and covariances was $\nu = 136$ pieces of information ($16[16+1]/2 = 136$) and the number of estimated parameters in the model was $p = 35$ parameters (13 regression weights, 3 covariances and 19 variances); the model was over-identified with 101 *df* (136 pieces of information - 35 parameters). The preliminary first-order model of outcome quality is shown in Figure 5.10.

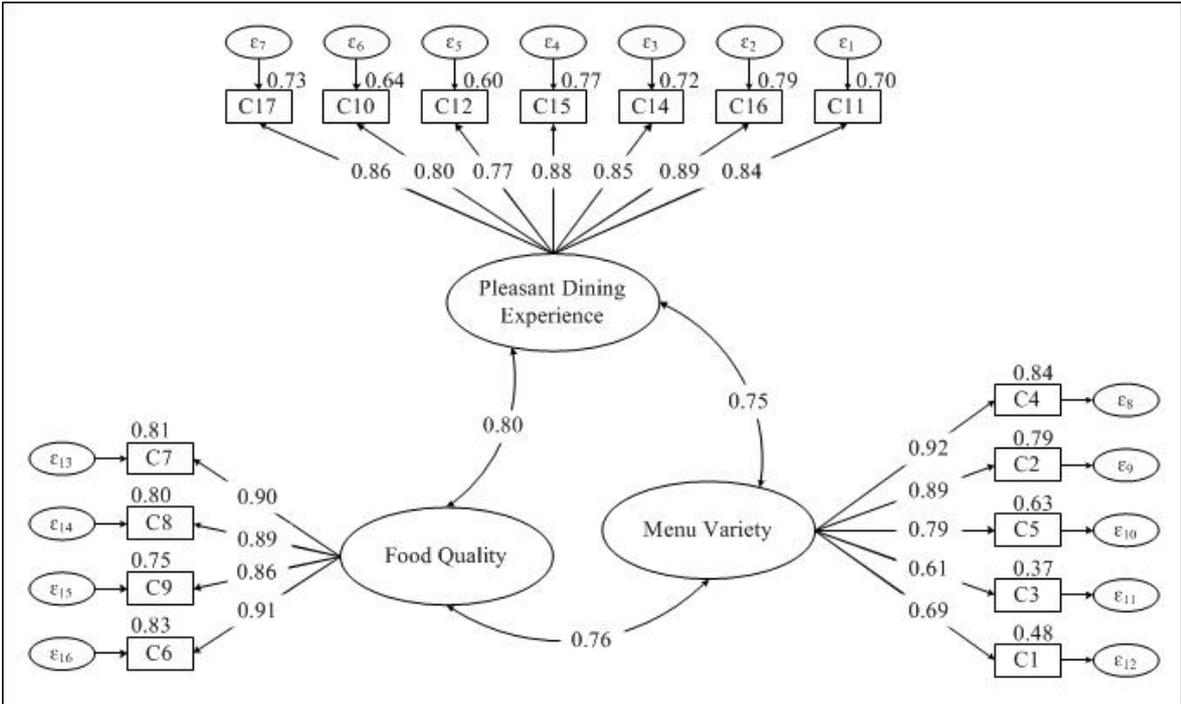


Figure 5.10: Measurement Model 3 – Preliminary Model for Outcome Quality

With the exception of RMSEA = 0.105, the indicators in the model-fit-indices were acceptable according to the recommended threshold indices presented in Table 4.5 ($\chi^2_{[10]} = 382.318$; $\chi^2/df = 3.785$; NFI = 0.903; CFI = 0.926 and RMR = .056). They were statistically significant at the .001% level (see Table 5A.6, Appendix 4). These results indicate that some modifications were needed to improve RMSEA in the preliminary first-order model.

In reviewing the MI, three misspecification areas were identified, which involved the deletion of two items (C1 cross loading with food quality [MI = 7.085; EPC = 0.142], C10 cross loading with food quality [MI = 8.986; EPC = 0.132]) and one pairing C11 and C12 (MI = 26.298; EPC = 0.173) in the error covariances matrix. Provided with the information from MI, a preliminary first-order model for outcome quality was re-specified

three times, step-by-step, starting with deleting item C1, then C10 and pairing C11 and C12. No further review of the information from MI was undertaken in this study because it could not be supported by a strong, substantive and empirical rationale (Chinna, 2009; Hair et al., 2010). Finally, through the model modification process, four items remained for all constructs except pleasant dining experience with six items (see Figure 5.11).

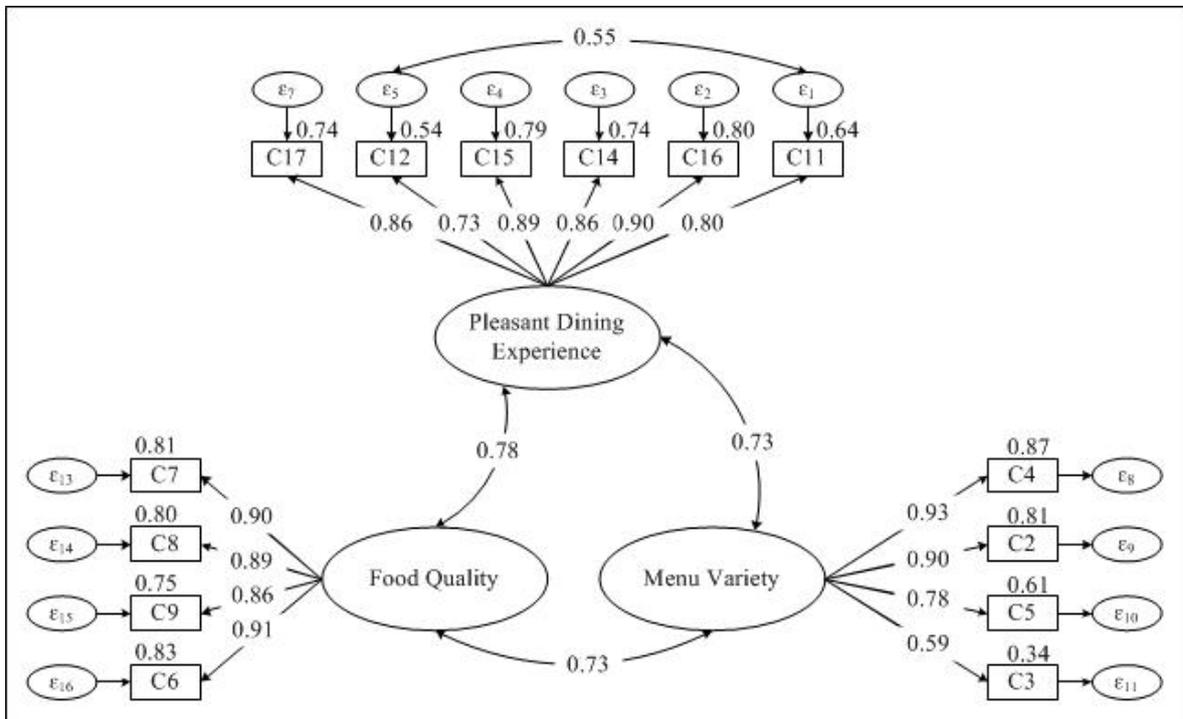


Figure 5.11: Measurement Model 3 – Modified Model for Outcome quality

The modified first-order model presented 14 items. The number of measured variances and covariances was $v = 105$ pieces of information ($14[14 + 1]/2 = 105$) and the parameters in the model were $p = 32$ parameters (11 regression weights, 4 covariances and 17 variances); the model was over-identified with $73 df$ (105 pieces of information - 32 parameters).

The results were statistically significant at the .001% level, the model-fit-indices were improved and sufficiently satisfied their relevant recommended thresholds presented in Table 4.5 ($\chi^2_{[73]} = 184.774$; $\chi^2 / df = 2.531$; GFI = 0.909; NFI = 0.946; CFI = 0.967; RMR = .044; and RMSEA = .078), indicating that the model fitted the present data. The model-fit-indices results are shown in Table 5A.6, Appendix 4. The modified first-order model, therefore, was considered as the final model for outcome quality, reflecting the best model fitting based on the aforementioned information of model fit and MI.

The improvement in the model-fit-indices was also examined by subtracting the overall χ^2 statistics in the modified model from the preliminary model. Comparing the preliminary model 382.318 ($\chi^2_{[101]}=382.318$) with the modified model ($\chi^2_{[73]}=184.774$) yielded a difference in χ^2 value of 197.544 ($\Delta\chi^2_{[28]}=197.544$). Since $\Delta\chi^2_{[28]}=197.544 > \chi^2_{41.337,\alpha.05}$, the modified first-order model was, therefore, statistically significant with improved model-fit-indices.

To verify the construct validity, convergent and discriminant validity were measured (Janssens et al., 2008; Kline, 2005; Schumacker & Lomax, 2004). Unidimensionality was assessed. All factor loadings were greater than 0.50 and ranged from 0.932 to 0.586. All measured items loaded as statistically significant at .001% level on their corresponding latent constructs, indicating the unidimensionality of each scale and confirming that convergent validity was obtained. Reliability must always be verified (Hair et al., 2010; Janssens et al., 2008). Composite reliability and AVE were calculated using the procedures outlined by Fornell and Larcker (1981). Composite reliability was calculated using Equation 4.1 for each of the three subdimensions; pleasant dining experience (0.960), food quality (0.940) and menu variety (0.882) were all greater than the 0.60 minimum acceptable (Bagozzi & Yi, 1988). Using Equation 4.2, the AVE values were calculated for three constructs; pleasant dining experience (0.799), food quality (0.796) and menu variety (0.657) all exceeded the minimum criterion ($AVE > 0.50$). These three constructs indicated that the variance due to measurement error was less than the variance captured by the construct (Fornell & Larcker, 1981). This evidence supported the reliability of each scale, which indicated that convergent validity was obtained, further indicating that the measurement items have high reliability and validity (Bagozzi & Yi, 1988; Chen, 2008; Fornell & Larcker, 1981). Once convergent validity was achieved, it was appropriate to test for discriminant validity. The correlation estimates of all pairs of the three subdimensional factors of outcome quality were 0.729 0.734 and 0.784, less than the recommended value ($r \leq 0.85$) indicating the existence of discriminant validity (see Table 5A.6, Appendix 4).

In summary, the modified first-order model generally exceeded the criteria established in Table 4.5 for model-fit-indices. In addition, all conditions required for examining the convergent and discriminant validities recommended by several researchers (Anderson & Gerbing, 1988a; Byrne, 2009; Chinna, 2009; Kline, 2005; Nokelainen, 2009; Schumacker & Lomax, 2004) were satisfactorily met. The first-order modified model

represented the best model fit for measuring the service quality structure with the present data; therefore, the model was used for the second-order structural model.

5.3.3.2.2 Interpretation of the Second-Order Model for Outcome Quality

Based on the research model illustrated in Figure 3.1 and the results of the modified first-order model of outcome quality, the Structural Model 3 as designed in Figure 4.9 was initially specified. Specifically, the second-order model for outcome quality was designed to test the relationships between three subdimensions (pleasant dining experience, food quality and menu variety) and one primary dimension of service quality (outcome quality).

Before examining the validity of the structural model for outcome quality, it was essential to address the identification issues in the second-order structural model (Byrne, 2009). Although the modified first-order model was an over-identified model with 34 *df* (55 pieces of information - 21 parameters), the second-order model's identification status had to be repeated (Byrne, 2009). In this case, the higher-order structure with three first-order factors was $\nu = 6$ pieces of information ($3[3+1]/2 = 6$) and the number of estimated parameters was $p = 6$ parameters (3 factor loadings and 3 residuals); the model was just-identified (6 pieces of information = 6 parameters).

The second-order model was required to be over-identified and, therefore, equal constraints were placed on particular parameters that were approximately equal. In this case, the two residuals' estimated values were almost equal (0.78 for pleasant dining experience and 0.79 for food quality). In a more detailed inspection of the variances, the CRDIFF between these two residuals was compared with the critical value of 1.96. From the CRDIFF listing, both residuals were less than that critical value; thus, the hypothesis that these two residuals' variances were equal in the population was accepted (Kim, 2003). Given this information, it was reasonable to place equal constraints on these two residuals (Kim, 2003). As a result, the variances of the two residuals were constrained by placing the same value (var_a) on them, thus the identification status of the higher-order portion was over-identified with 1 *df* ($3[3+1]/2 = 6$ pieces of information - 5 parameters [3 regression weights and 2 residuals]) (see Figure 5.12).

The model-fit-indices indicated that the present data fitted the model (see Table 5A.7, Appendix 4). The results were statistically significant at the .001% level and all model-fit-indices sufficiently satisfied their relevant recommended thresholds as

reported in Table 4.5 ($\chi^2_{[74]}=184.774$; $\chi^2/df = 2.497$; GFI = 0.909; NFI = 0.946; CFI = 0.967; RMR = .044; and RMSEA = .077). As a result, the modified second-order model was determined as the final model to represent an adequate description of the outcome quality structure for the present sample.

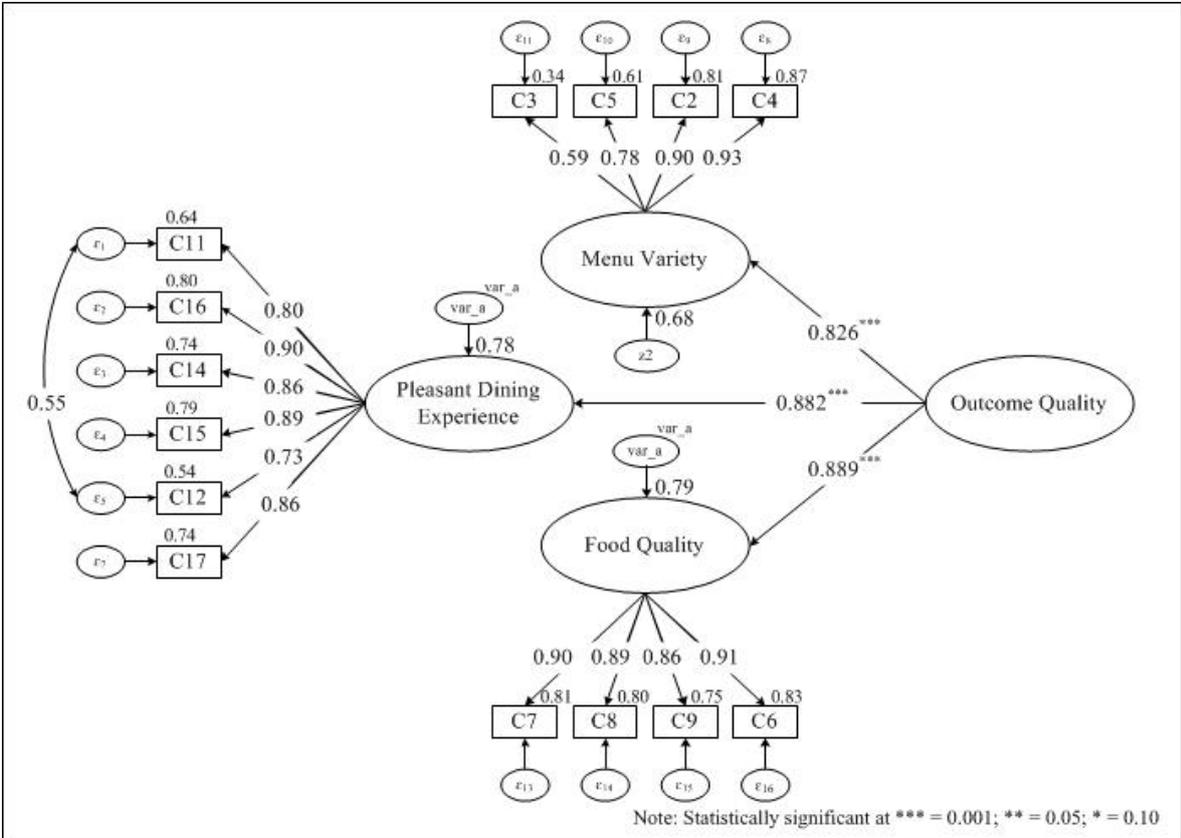


Figure 5.12: Structural Model 3 – Second-Order Model for Outcome Quality

5.3.3.3 Hypothesis Testing

In this structural model, the second-order factor model was proposed to test the hypothesis that outcome quality was a multidimensional construct comprising three subdimensions: pleasant dining experience, food quality and menu variety, which, in turn, partially satisfy Research Objective 1. In addition, Hypothesis 7 proposed that restaurant patrons will vary in their perceptions of the importance of each subdimension, which, in turn, partially satisfy Research Objective 2.

From the results reported in Table 5.20, the food quality, pleasant dining experience and menu variety subdimensions positively influence outcome quality perceptions. All subdimensions were statistically significant at the .001% level, with food quality ($\beta = 0.889$) the strongest indicator of outcome quality followed by pleasant dining

experience ($\beta = 0.882$) and menu variety ($\beta = 0.826$). Thus, it may be concluded that Hypotheses 3 and 7 were supported by the data and, therefore, Research Objectives 1 and 2 were satisfied. The second-order latent variable represented by outcome quality explained 79% of the variance for food quality, 78% of the variance for pleasant dining experience and 68% of the variance for menu variety.

Table 5.20: Structural Parameter Estimates

Hypothesized Path	Standardized Coefficients Path (β)	Critical Ratio	R^2	Assessment
H _{3a} : P. Dining Exp←OQ	0.882	14.056***	0.777	Supported
H _{3b} : Food Quality←OQ	0.889	15.246***	0.791	Supported
H _{3c} : Menu Variety←OQ	0.826	8.796***	0.682	Supported

Note: Statistically significant at *** = .001; ** = .05; * = 0.10

5.3.4 Data Analysis Interpretation of the Structural Equation Modelling for the Primary Dimensions Model

5.3.4.1 Interpretation of the First-Order Measurement Model of the Primary Dimensions

Based on the research model in Figure 3.1, the first-order model for service quality as illustrated in Measurement Model 4 (see Figure 4.5) was designed to examine the relationships between the three primary dimensions (interaction quality, physical environment quality and outcome quality) and the measured items (see Figure 5.13).

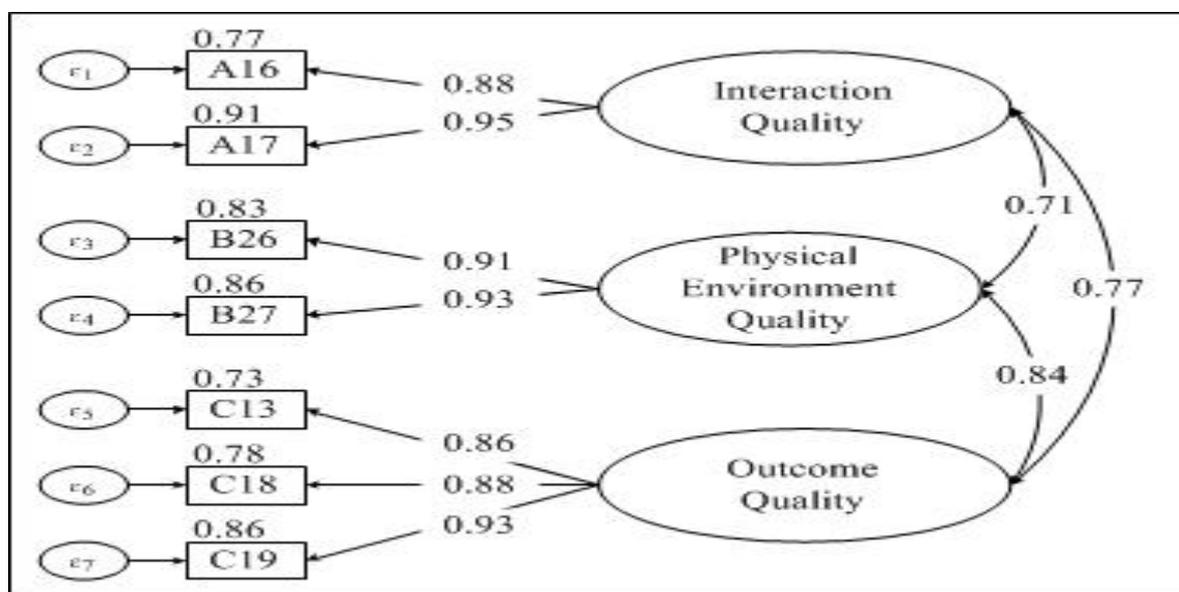


Figure 5.13: Measurement Model 4 – Model for the Primary Dimension

The first-order model presented seven items. The number of measured items was $v = 28$ pieces of information ($7[7 + 1]/2 = 28$) and the number of estimated parameters was $p = 17$ parameters (4 regression weights, 3 covariances and 10 variances); the model was over-identified with 11 df (28 pieces of information - 17 parameters). The first-order model was statistically significant at the .05% level and model-fit-indices according to all indicators demonstrated that the model was acceptable based on the recommended thresholds presented in Table 4.5 ($\chi^2_{[1]} = 32.243$; $\chi^2/df = 2.931$; GFI = 0.962; NFI = 0.981; RMSEA = .087; CFI = 0.987; and RMR = .018) (see Table 5A.8, Appendix 4). In reviewing the model-fit-indices, model modification was not necessary because the first-order model had model-fit-indices that were more than satisfactory.

To verify the construct validity, the convergent and discriminant validities were measured (Fornell & Larcker, 1981; Hair et al., 2010; Janssens et al., 2008). Table 5A.8 (see Appendix 4) showed that each standardized factor loading ranged from 0.857 to 0.952, well above the acceptable value and statistically significant at the .001% level, indicating the unidimensionality of each scale, showing that convergent validity was obtained.

Reliability must always be verified (Cronbach, 1951; Hair et al., 2010). Reliability was verified with Cronbach alpha, composite reliability and AVE. Cronbach alpha for all constructs in the first-order model were 0.911, 0.917 and 0.917, all of which exceeded the threshold level of 0.60, indicating high internal consistency of the measurement scales (Churchill, 1979; Hair et al., 2006; Janssens et al., 2008). Using Equation 4.1, the composite reliability was calculated; interaction quality (0.913), physical environment quality (0.918) and outcome quality (0.920) all exceed the threshold level of 0.60 indicating high internal consistency of the measurement scales (Bagozzi & Yi, 1988; Fornell & Larcker, 1981; Hair et al., 2006). Using Equation 4.2, the AVE values for the three primary dimensions were 0.841, 0.848, and 0.792; all exceed the minimum criterion ($AVE > 0.50$) (Fornell & Larcker, 1981; Hair et al., 2010; Janssens et al., 2008). These three constructs indicated that the variance due to measurement error was less than the variance captured by the construct (Fornell & Larcker, 1981). This evidence supported the reliability of each scale which indicated that convergent validity was obtained, therefore showing that the measurement items had high reliability and validity (Bagozzi & Yi, 1988; Chen, 2008; Fornell & Larcker, 1981). Once convergent validity was achieved, it was appropriate to test for discriminant validity. The correlation estimates on all pairs of the three subdimensional factors of outcome quality were 0.708, 0.842, and 0.774 which are

less than the recommended value ($r \leq 0.85$) of Kline (2005), indicating that discriminant validity existed (see Table 5A.8, Appendix 4).

In summary, the analysis of the measurement model of the primary dimensions suggested that the scales used in the study adequately captured the latent constructs. The measurement model generally exceeded the criteria established in Table 4.5 for model-fit-indices. In addition, all conditions required for examining the convergent and discriminant validities recommended by several researchers (Anderson & Gerbing, 1988a; Byrne, 2009; Chinna, 2009; Kline, 2005; Nokelainen, 2009; Schumacker & Lomax, 2004) were satisfactorily met. The measurement model represented the best model fit for measuring the service quality structure with the present data; therefore, the model was used for the structural model.

5.3.4.2 Interpretation of the Second-Order Model for the Primary Dimensions Model

Based on the research model illustrated in Figure 3.1 and the results of the modified first-order model of service quality, Structural Model 4 in Figure 4.10 was initially specified. Specifically, the second-order model for service quality was designed to test the relationships between the three primary dimensions (interaction quality, physical environment quality and outcome quality) and one independent second-order construct, service quality.

Before examining the validity of the second-order structural model, it was essential to address the identification issues in the second higher-order (Byrne, 2009). The first-order model was over-identified with 6 *df*; however, with the second-order, model identification had to be re-specified to check the identification status (Byrne, 2009). In this case, the higher-order structure with three first-order factors was $\nu = 6$ pieces of information ($3[3+1]/2 = 6$) and the number of estimated parameters was $p = 6$ parameters (3 factor loadings and 3 residuals); the model was just-identified (6 pieces of information = 6 parameters).

The second-order model was required to be over-identified; therefore, to solve the just-identified problem, Byrne (2009) suggests placing equality constraints on particular parameters that are approximately equal. The two higher order residuals chosen for this were physical environment quality (0.77) and outcome quality (0.92). In a more detailed inspection of the variances, the CRDIFF between these two residuals was compared with the critical value of 1.96. From the CRDIFF listing, both residuals were less than the

critical value of 1.96, thus, the hypothesis that these two residuals' variances were equal in the population was accepted (Kim, 2003). Given this information, it was reasonable to place equal constraints (var_a) on these two residuals (Byrne, 2009; Kim, 2003). In this case, the second-order structure was $\nu = 6$ pieces of information ($3[3+1]/2 = 6$) and the number of estimated parameters was $p = 5$ parameters (3 factor loadings and 2 residuals); the model was over-identified with 1 *df* (6 pieces of information - 5 parameters). The second-order model is shown in Figure 5.14.

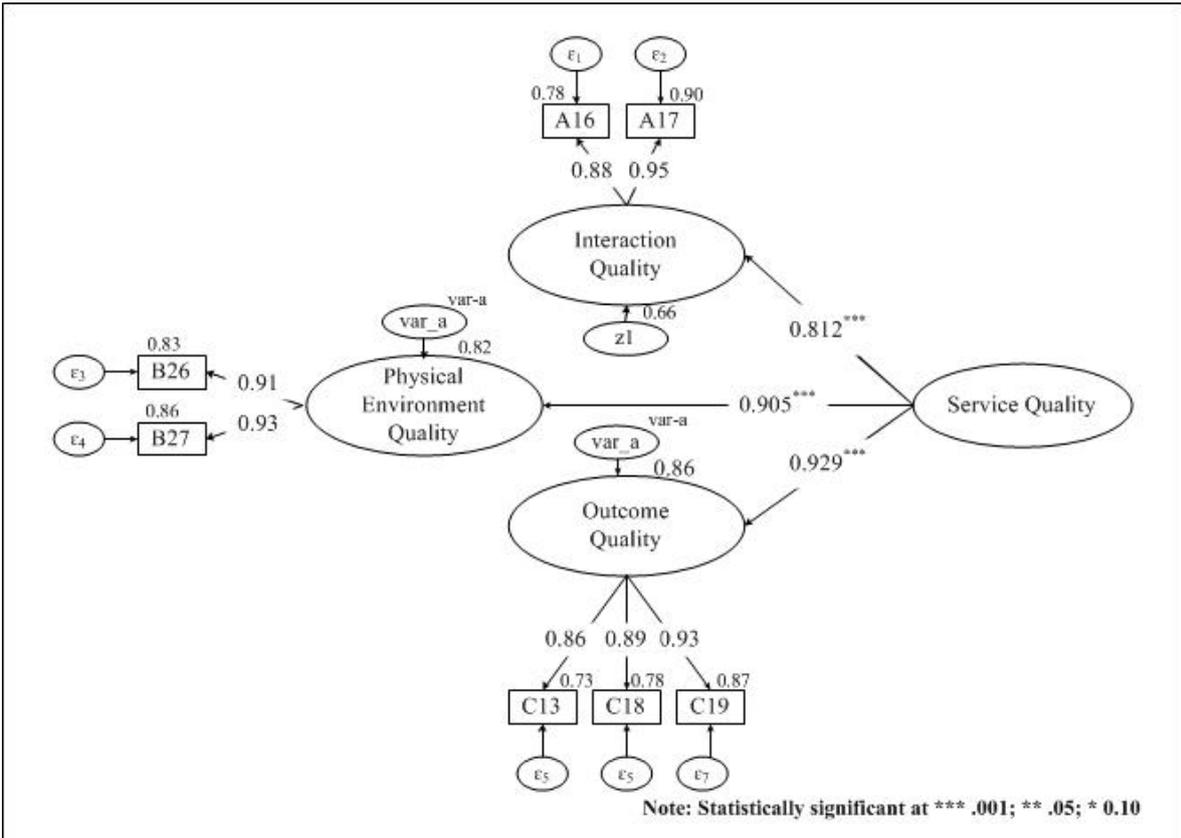


Figure 5.14: Structural Model 4 – Second-Order Model for Primary Dimension

The model-fit-indices indicated that the present data fitted the model (see Table 5A.9, Appendix 4). The results were statistically significant at the .05% level and all model-fit-indices sufficiently satisfied their relevant recommended thresholds as reported in Table 4.5 ($\chi^2_{[12]} = 34.553$; $\chi^2/df = 2.879$; GFI = 0.960; NFI = 0.979; CFI = 0.986; RMR = .021; and RMSEA = .086). As a result, the modified second-order model was determined as the final model to represent an adequate description of the primary dimension of structure in the present study. Thus, the modified second-order model was used to examine Hypotheses 4 to 6, which in turn, satisfies Research Objectives 1 and 3.

5.3.4.3 Hypothesis Testing

In this structural model, the second-order model for service quality was designed to examine the hypothesis that service quality is a multidimensional construct composed of three primary dimensional factors (interaction quality, physical environment quality and outcome quality), which in turn, partially satisfies Research Objective 1. In addition, Hypothesis 8 proposed that restaurant patrons will vary in their perceptions of the importance of each primary dimension, in turn, partially satisfying Research Objective 3.

As indicated in Table 5.21, all three primary dimensions positively affected overall service quality perceptions and were statistically significant at the .001% level with outcome quality ($\beta = 0.920$) being the most important, followed by physical environment quality ($\beta = 0.890$) and interaction quality ($\beta = 0.811$). Thus, the results supported Hypotheses 4, 5, 6 and 8 therefore satisfying Research Objectives 1 and 3. The second-order latent variable, represented by service quality, explained 85% of the variance for outcome quality, 80% of the variance for physical environment quality and 66% of the variance for interaction quality.

Table 5.21: Structural Parameter Estimates

Hypothesized Path	Standardized Coefficients Path (β)	Critical Ratio	R^2	Assessment
H4: IQ \leftarrow SQ	0.812	13.967***	0.659	Supported
H5: PEQ \leftarrow SQ	0.905	15.815***	0.819	Supported
H6: OQ \leftarrow SQ	0.929	16.990***	0.864	Supported

Note: Statistically significant at *** = .001; ** = .05; * = 0.10

5.3.5 Data Analysis Interpretation of Structural Equation Modelling for the Causal Path Model

5.3.5.1 Interpretation of Measurement Model of Causal Path Model

Based on the research model in Figure 3.1, Measurement Model 5 illustrated in Figure 4.6 was designed to examine the relationships between the five higher-order constructs (service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions) and the measured items. The preliminary measurement model is shown in Figure 5.15.

The preliminary model represented 20 items. The measured variances and covariances of the 20 measured items were $v = 210$ pieces of information ($20[20+1]/2 = 210$) and the number of estimated parameters in the model was $p = 50$

parameters (15 regression weights, 10 covariances, and 25 variances); the model was over-identified with 160 *df* (210 pieces of information - 50 parameters). The preliminary measurement model of the causal path was statistically significant at the .001% level. Except GFI (see Table 5A.10, Appendix 4), the model-fit-indices for all indicators were more sufficient than the relevant recommended thresholds presented in Table 4.5 ($\chi^2_{[160]} = 469.754$; $\chi^2/df = 2.936$; NFI = 0.927; CFI = 0.950; RMR = .036; and RMSEA = .087). The GFI value (0.850) was slightly lower than the 0.90 threshold suggesting that some modifications were needed to improve it.

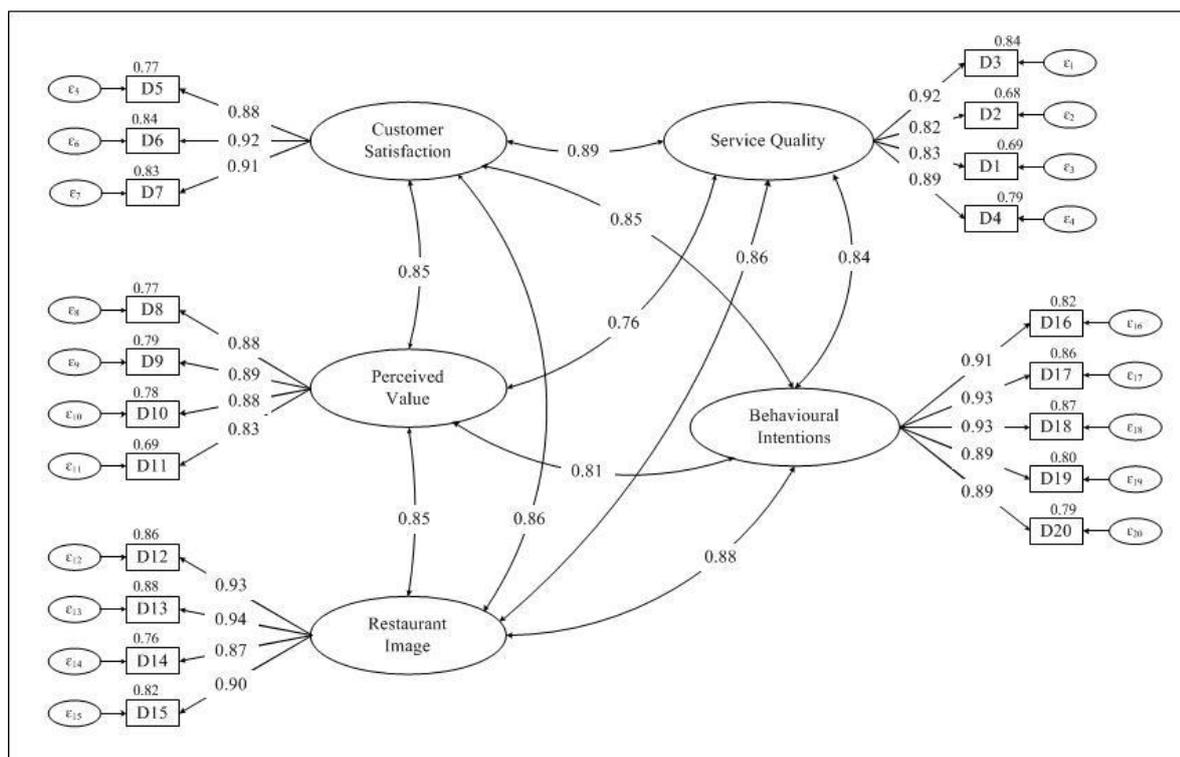


Figure 5.15: Measurement Model 5 – Preliminary Model for Causal Path

In reviewing the correlation estimates on all pairs, six pairs $PV \leftrightarrow CS$ (0.853), $PV \leftrightarrow RI$ (0.850), $SQ \leftrightarrow RI$ (0.765), $SQ \leftrightarrow BI$ (.839), $BI \leftrightarrow CS$ (0.852) and $PV \leftrightarrow BI$ (0.813) were less than the recommended value ($r \leq 0.85$) of Kline (2005) indicating the existence of discriminant validity. However, four pairs were higher than the recommended value: $SQ \leftrightarrow CS$ (0.888), $BI \leftrightarrow RI$ (0.884), $SQ \leftrightarrow RI$ (0.862) and $RI \leftrightarrow CS$ (0.864), therefore some modifications were needed in order to improve the discriminant validity of the model. In addition to the information provided by model-fit-indices and discriminant validity of this model, it may be concluded that the preliminary measurement model required some

modification. In reviewing the MI, four miss-specified items were identified (see Table 5.22). Other suggestions in the MI were ignored in this study because they could not be supported by strong, substantive and empirical rationale (see: Chinna, 2009; Hair et al., 2010). Based on the MI information, the preliminary measurement model for causal path was re-specified four times. Through the model modification process, three items remained for all constructs except behavioural intentions with four items.

Table 5.22: Suggestions for Improving the Model-Fit-Indices from the MI

Items	Cross loadings with	Modifications Index	Expected Par Change
D15	CS	6.077	-.032
	RI	5.831	-.031
	BI	11.482	.050
	SQ	5.748	.038
D4	SQ	11.159	-.059
D16	RI	10.363	.042
	BI	7.900	-.040
D10	CS	4.464	.030
	RI	6.943	.038
	PV	13.003	-.053

The modified measurement model represented sixteen items. The number of observed variances and covariances was $v = 136$ pieces of information ($16[16+1]/2 = 136$) and the number of estimated parameters was $p = 42$ parameters (11 regression weights, 10 covariances, and 21 variances); the model was over-identified with $94 df$ (136 pieces of information - 42 parameters). The modified measurement model is shown in Figure 5.16.

The modified measurement model was statistically significant at the .001% level and model-fit-indices sufficiently satisfied the relevant recommended thresholds as presented in Table 4.5 ($\chi^2_{[94]} = 249.157$; $\chi^2/df = 2.651$; NFI = 0.948; CFI = 0.967; RMR = .034; and RMSEA = .081), indicating that the model fitted the data. The GFI value (0.893) was little improved from the preliminary measurement model and was marginally adequate (Hair et al., 2006; Kim, 2003; Kline, 2005) (see Subsection 4.3.3.2.1). The modified measurement model was considered as the final measurement model for causal path, reflecting the best model fitting based on the aforementioned information of model fit and MI.

The improvement in model fit was also examined by subtracting the overall χ^2 statistics for the modified model from the preliminary model. Comparing the

preliminary model ($\chi^2_{[160]} = 469.754$) with the modified model ($\chi^2_{[94]} = 249.157$) yielded a difference in χ^2 value of 220.597 ($\Delta\chi^2_{[66]} = 220.597$). Since $\Delta\chi^2_{[66]} = 220.597 > \chi^2_{85.965, \alpha.05}$, the modified model was statistically significant and indicated an improvement in the model-fit-indices.

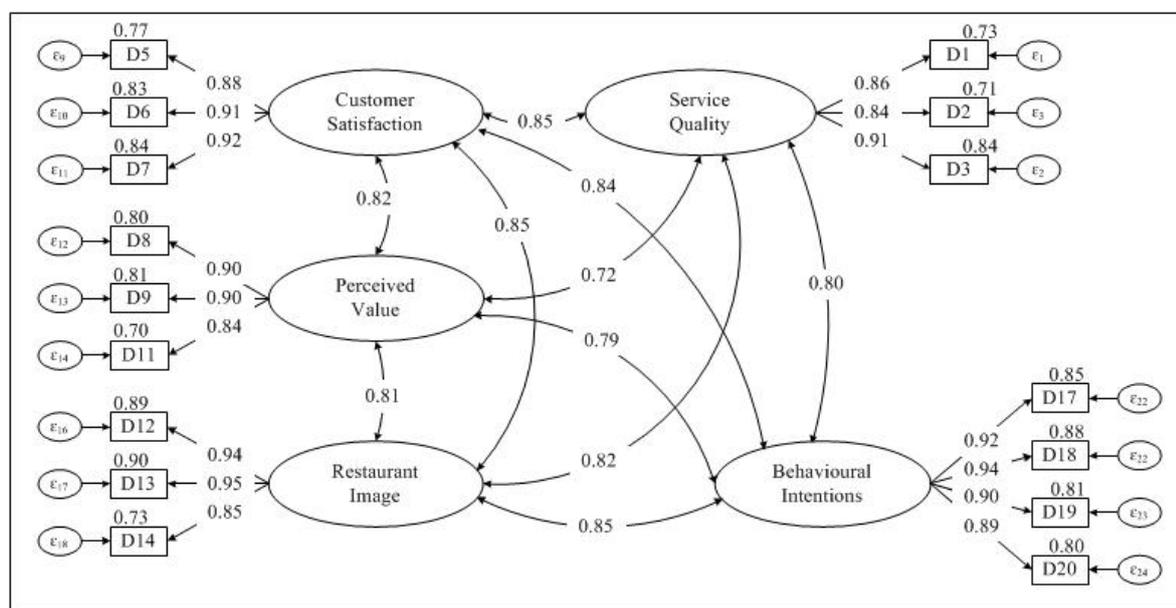


Figure 5.16: Measurement Model 5 – Modified Model for Causal Path

To verify construct validity, convergent and discriminant validities were measured (Janssens et al., 2008; Kline, 2005; Schumacker & Lomax, 2004). Unidimensionality was assessed. The standardized factor loadings ranged from 0.838 to 0.950, all well above the acceptable value (> 0.50) suggested by Bagozzi and Yi (1988) and statistically significant at the .001% level. This evidence supported the unidimensionality of each scale, which indicated that convergent validity was obtained. With unidimensionality satisfied, the reliability of the constructs must always be verified (Chinna, 2009; Hair et al., 2010; Janssens et al., 2008; Nokelainen, 2009). Reliability was verified with Cronbach alpha, composite reliability and AVE. Cronbach alpha for all constructs in the modified measurement model ranged from 0.907 to 0.952, which exceeded the threshold level of 0.60, indicating high internal consistency of the measurement scales (Churchill, 1979; Hair et al., 2006; Janssens et al., 2008). The results from the modified measurement model showed that composite reliability calculated using Equation 4.1 for all constructs ranged from 0.904 to 0.953 which exceeded the threshold level of 0.70. Using Equation 4.5, the calculated AVE values ranged from 0.758 to 0.868 which exceeded the minimum criterion

(AVE > 0.50). These five constructs indicated that the variance due to measurement error was less than the variance captured by the construct (Fornell & Larcker, 1981). This evidence supported the reliability of each scale, indicating both that convergent validity had been obtained and also therefore the high reliability and validity of the measurement items (Bagozzi & Yi, 1988; Chen, 2008; Fornell & Larcker, 1981). In reviewing the correlation estimates of all pairs, 10 pairs were less than the recommended value ($r \leq 0.85$) of Kline (2005) indicating the existence of discriminant validity.

In summary, the modified measurement model generally exceeded the criteria established in Table 4.5 for model-fit-indices (see Table 5A.10 in Appendix 4). In addition, all conditions required for examining the convergent and discriminant validities recommended by several researchers (Anderson & Gerbing, 1988a; Byrne, 2009; Chinna, 2009; Kline, 2005; Nokelainen, 2009; Schumacker & Lomax, 2004) were satisfactorily met. The modified measurement model represented the best model fit for measuring the service quality structure with the present data; therefore, the model was used for the structural model.

5.3.5.2 Interpretation of the Structural Model of Causal Path Model

Based on the research model illustrated in Figure 3.1 and the results of the modified measurement model, the structural model (see Structural Model 5 in Figure 4.11) was specifically designed initially to examine the relationships that might exist between the five constructs; (one exogenous variable; service quality and five endogenous variables; customer satisfaction, perceived value, restaurant image and behavioural intentions) (see Figure 5.20).

The structural model represented 16 measured items. The number of measured variances and covariances was $v = 136$ pieces of information ($16[16+1]/2 = 136$) and the number of estimated parameters was $p = 40$ parameters (19 regression weights and 21 variances); the modified model was over-identified with $96 df$ (136 pieces of information - 40 parameters).

All model-fit-indices were statistically significant at the .001% level and sufficiently satisfied the relevant recommended thresholds as summarized in Table 4.5 ($\chi^2_{[96]} = 307.653$; $\chi^2/df = 3.205$; GFI = 0.877; NFI = 0.936; CFI = 0.955; RMR = .062; and RMSEA = .093) (see Table 5A.11, Appendix 4). The value of GFI (0.877) was close to

the recommended 0.90 threshold, thus the model interpreted as marginally adequate (Hair et al., 2006; Kim, 2003; Kline, 2005) (see Subsection 4.3.3.2.1). As a result, the causal path model was determined as the final model to represent an adequate description of the causal path structure in the present sample. Thus, the modified structural model was used to examine Hypotheses 9 to 16, which in turn, satisfies Research Objective 4.

5.3.5.3 Hypothesis Testing

The proposed causal path structure was used to examine the possible relationship between five marketing constructs: service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions. Specifically, Hypotheses 9 to 16 were designed to satisfy Research Objective 4.

Hypotheses 9, 14 and 15 were formulated to examine the relationships between service quality, perceived value and restaurant image on customer satisfaction. Table 5.23 shows that the exogenous variables service quality, perceived value and restaurant image explained 83% of the variance of the endogenous variable customer satisfaction (supporting Hypotheses 9, 14 and 15). The most important determinant of customer satisfaction was service quality, with a value of 0.448 that is statistically significant at the .001% level. The second most important determinant of customer satisfaction was perceived value with 0.283, which is also statistically significant at the .001% level. Restaurant image was the third most important with 0.257, which is statistically significant at the .05% level.

Three Hypotheses, 12, 13 and 16, were formulated to examine the relationships between service quality, customer satisfaction and restaurant image and behavioural intentions. Table 5.23 shows that the exogenous variables customer satisfaction, service quality and restaurant image explained 78% of the variance of the endogenous variable, behavioural intentions (supporting Hypotheses 12, 13 and 16). The most important determinant of behavioural intentions was restaurant image, with a value of 0.384, which is statistically significant at the .001% level. The second most important was customer satisfaction with 0.343, which is also statistically significant at the .001% level, followed by service quality with 0.204, which is statistically at the .05% level.

Hypothesis 10 was formulated to examine the relationship between service quality and perceived value. Table 5.23 shows that the exogenous variable service quality explained 59% of the variance of the endogenous variable perceived value. Service quality

was statistically significant at the .001% level and had a causal effect of 0.770 on perceived value (supporting Hypothesis 10).

Hypothesis 11 was formulated to examine the relationship between service quality and restaurant image. Table 5.23 shows that the exogenous variable service quality explained 72% of the variance of the endogenous variable restaurant image. Service quality was statistically significant at the .001% level and had a causal effect of 0.851 on restaurant image (supporting Hypothesis 11).

Table 5.23: Structural Parameter Estimates

Outcome	Determinant	Standardized Coefficients Path (β)		Hypotheses	Assessment
		Direct Causal Path	Critical Ratio		
Customer satisfaction ($R^2 = 0.834$)	Service quality	0.448	5.235 ***	H ₉	Supported
	Perceived value	0.283	4.389 ***	H ₁₄	Supported
	Restaurant image	0.257	3.161 **	H ₁₅	Supported
Behavioural intentions ($R^2 = 0.781$)	Service quality	0.204	1.978 **	H ₁₂	Supported
	Customer satisfaction	0.343	3.455 ***	H ₁₃	Supported
	Restaurant image	0.384	4.557 ***	H ₁₆	Supported
Perceived value ($R^2 = 0.593$)	Service quality	0.770	12.224 ***	H ₁₀	Supported
Restaurant image ($R^2 = 0.724$)	Service quality	0.851	14.752 ***	H ₁₁	Supported

Note: Statistically significant at *** = .001; ** = .05; * = 0.10

5.4 Summary

This chapter has presented the results based on the research methodology outlined in Chapter 4. A preliminary examination of the dataset indicates that the questionnaire was reliable and valid. The results of the EFA (using PCA and VARIMAX rotation) of the 56 measurable items reduced the 12 subdimensions originally proposed to ten subdimensions, namely: interpersonal skills, professional skills, problem solving skills, restaurant ambience and aesthetics, layout and design, menu design, table setting and restaurant cleanliness, pleasant dining experience, food quality and menu variety. Each path in the conceptual research model was subsequently tested using SEM analysis. The 16 hypotheses were tested and the four research objectives were satisfied.

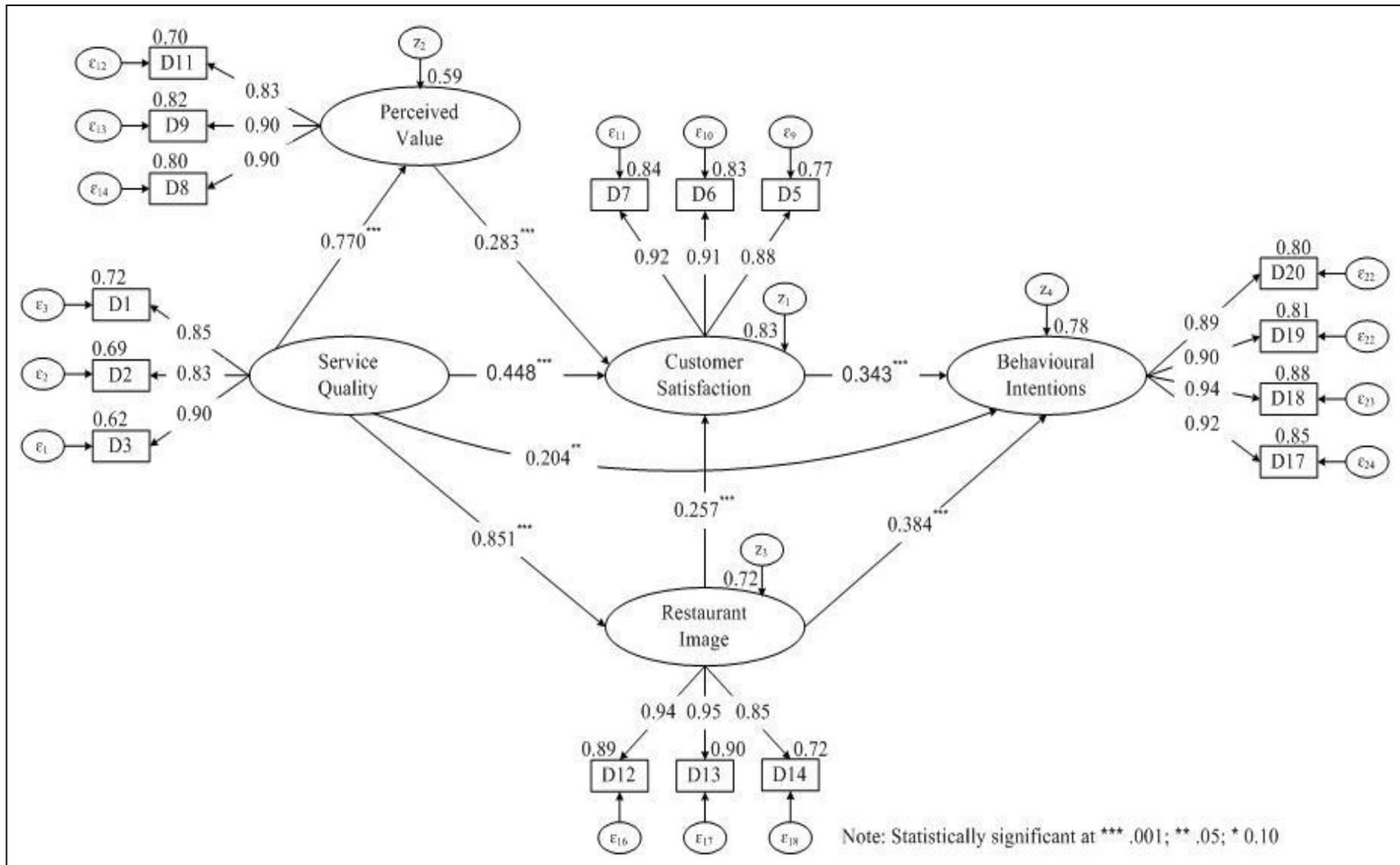


Figure 5.17: Structural Model 5 – Model for Causal Path

Table 5.24: Summary of the Finding

Hypotheses	Result
H1: There is a significant positive relationship between the subdimensions of interaction quality (H1 _a , H1 _b and H1 _c) and the interaction quality primary dimension.	<i>Supported</i> , interaction quality is comprised of three subdimensions (interpersonal skills, professional skills and problem solving skills), a first-order model.
H2: There is a significant positive relationship between the subdimensions of physical environment quality (H2 _a , H2 _b , H2 _c , H2 _d , H2 _e , H2 _f and H2 _g) and the physical environment quality primary dimension.	<i>Supported</i> , physical environment quality is comprised of four subdimensions (restaurant ambience and aesthetics, table setting and restaurant cleanliness, layout and design, and menu design), a first-order model.
H3: There is a significant positive relationship between the subdimensions of outcome quality (H3 _a , H3 _b and H3 _c) and the outcome quality primary dimension.	<i>Supported</i> , outcome quality is comprised of three subdimensions: (pleasant dining experience, food quality and menu variety), a first-order model.
H4: There is a significant positive relationship between the interaction quality primary dimension and restaurant patrons' overall service quality perceptions.	<i>Supported</i> , interaction quality has a strong influence on overall service quality perceptions, second-order model.
H5: There is a significant positive relationship between the physical environment quality primary dimension and restaurant patrons' overall service quality perceptions.	<i>Supported</i> , physical environment quality has a strong influence on overall service quality perceptions, second-order model.
H6: There is a significant positive relationship between the outcome quality primary dimension and restaurant patrons' overall service quality perceptions.	<i>Supported</i> , outcome quality has a strong influence on overall service quality perceptions, second-order model.
H7: Restaurant patrons vary in their perceptions of the importance of each of the subdimensions.	<i>Supported</i> , interpersonal skills, table setting and restaurant cleanliness, and food quality are the strongest indicator of interaction quality, physical environment quality and outcome quality, respectively.
H8: Restaurant patrons vary in their perceptions of the importance of each of the primary dimensions.	<i>Supported</i> , outcome quality being the most important of the primary dimensions followed by physical environment quality and interaction quality.
H9: Higher perceptions of service quality positively influence customer satisfaction.	<i>Supported</i> , service quality has a medium influence on customer satisfaction.
H10: Higher perceptions of service quality positively influence perceived value.	<i>Supported</i> , service quality has a strong influence on perceived value.
H11: Higher perceptions of service quality positively influence restaurant image.	<i>Supported</i> , service quality has a strong predictor of restaurant image.
H12: Higher perceptions of service quality positively influence behavioural intentions.	<i>Supported</i> , the effect of service quality on behavioural intentions is weak.
H13: Higher perceptions of customer satisfaction positively influence behavioural intentions.	<i>Supported</i> , customer satisfaction has a moderate influence on behavioural intentions.
H14: Higher perceptions of perceived value positively influence customer satisfaction.	<i>Supported</i> , perceived value has a weak influence on customer satisfaction.
H15: Higher perceptions of restaurant image positively influence customer satisfaction.	<i>Supported</i> , restaurant image has a small influence on customer satisfaction.
H16: Higher perceptions of restaurant image positively influence behavioural intentions.	<i>Supported</i> , restaurant image has a medium influence on behavioural intentions.

Chapter 6

Conclusions

This chapter reviews the findings of this study and draws conclusions based on the results presented in Chapter 5. The theoretical and managerial contributions, limitations and recommendations for future study are also discussed. A review of service marketing literature focusing especially on the hospitality and tourism industry was used to support the findings obtained from the data analyses.

6.1 Discussion

Sixteen formulated hypotheses were tested to satisfy the four research objectives stated in this study. Hypotheses 1 to 6 were tested to satisfy Research Objective 1, Hypothesis 7 was tested to satisfy Research Objective 2, Hypothesis 8 was tested to satisfy Research Objective 3 and Hypotheses 9 to 16 were tested to satisfy Research Objective 4 (see Table 5.13 for hypotheses statements).

Based on the four research objectives and 16 formulated hypotheses developed in this study, the following subsections discuss the results pertaining to the multidimensional and hierarchical model of service quality and the higher-order constructs developed for this study. The results of the hypotheses testing are summarized in Table 5.24.

6.1.1 Dimensionality of Service Quality

The findings of this study support a hierarchical structure of service quality in moderate upscale restaurants in Malaysia consisting of three primary dimensions: interaction quality, physical environment quality and outcome quality (supporting Hypotheses 4 to 6). The findings also support the presence of a multidimensional structure of service quality for moderate upscale restaurants in Malaysia (supporting Hypotheses 1 to 3). Specifically, based on the empirical results of this study, the multidimensional and hierarchical model of service quality for moderate upscale restaurants in Malaysia consists of 10 first-order dimensions, three second-order dimensions (interaction quality, physical environment quality and outcome quality) and one third-order dimension (service quality). The 10 subdimensions in the first-order model are composed of three subdimensions

measuring interaction quality (interpersonal skills, problem solving skills and professional skills), four subdimensions measuring physical environment quality (table setting and restaurant cleanliness, restaurant ambience and aesthetics, menu design, and layout and design) and three subdimensions measuring outcome quality (food quality, pleasant dining experience and menu variety), thus supporting Hypothesis 7. In addition, Subsections 6.1.1.1 to 6.1.1.3 discuss the hypotheses pertaining to Research Objective 2.

In responding to Research Objective 3, the findings confirm that in measuring restaurant patrons' overall perceptions of service quality in moderate upscale restaurants in Malaysia, outcome quality ($\beta = 0.929$) is the most important dimension, followed by physical environment quality ($\beta = 0.905$), and interaction quality ($\beta = 0.929$), thus supporting Hypothesis 8. The findings derived from testing the hypotheses on the dimensionality structure of service quality are discussed further.

6.1.1.1 Interaction Quality

The results obtained from the SEM statistical analyses confirm that there are significant and positive relationships between the three subdimensions (interpersonal skills, professional skills and problem solving skills) and their pertinent interaction quality primary dimension, which supports Hypothesis 1 and partially satisfies Research Objective 1. In addition, the findings suggest that in measuring restaurant patrons' perceptions of interaction quality in moderate upscale restaurants, employees' interpersonal skills ($\beta = 0.867$) are the strongest indicator of interaction quality, followed by problem solving skills ($\beta = 0.815$) and professional skills ($\beta = 0.804$), thus partially supporting Hypothesis 7 and partially satisfying Research Objective 2.

For service providers like restaurants, providing a good interaction between front-of-the-house employees and patrons is important (Chiang & Wang, 2011; Yoo et al., 2006). Good interaction between employees and restaurant patrons requires positive interpersonal skills (Chiang & Wang, 2011; Pettijohn et al., 1997; Yoo et al., 2006). In line with these authors' claims, this study showed that employees' interpersonal skills are the most important indicator in measuring restaurant patrons' perceptions of interaction quality. The study confirms that there is a significant relationship between employees' interpersonal skills and interaction quality, a result consistent with the findings of the focus group discussions and several other restaurant industry studies (Kivelä et al., 2000; Pettijohn et

al., 1997; Sulek & Hensley, 2004; Winsted, 2000; Yoo et al., 2006) indicating that interaction quality was important in the service delivery process and also had a significant effect on service quality perceptions. For example, Winsted's (2000) findings provide empirical evidence for the notion that the wait staffs' interpersonal skills such as courtesy, friendliness and helpfulness are important to restaurant patrons when they evaluate perceptions of service quality. In addition, employees' interpersonal skills help to create a good first impression for restaurant patrons who have never been to the restaurant and these personal traits may influence customer satisfaction.

Restaurant patrons are sensitive to how competently front-of-the-house employees deal with problems and complaints (Westbrook, 1981). As front-of-the-house employees interact with restaurant patrons they play an important role in dealing with problems and complaints and, in many cases, are able to solve those problems and complaints immediately (Kim et al., 2003b; Yoo et al., 2006; Zeithaml et al., 1996). Employees' problem solving skills are the next most important predictor in measuring restaurant patrons' perceptions of interaction quality in moderate upscale restaurants in Malaysia. This current study confirms that there is a positive and significant relationship between employees' problem solving skills and interaction quality. This result is also consistent with the results of the focus group discussions.

Employees' professional skills are also a significant predictor of the interaction quality in this study. The result confirms a significant relationship between the employees' professional skills and interaction quality, consistent with the results of the focus group discussions and also with several restaurant industry studies (Johns & Howard, 1998; Namkung & Jang, 2008; Soriano, 2003).

6.1.1.2 Physical Environment Quality

The findings of this current study confirm that there are significant relationships between the four subdimensions (restaurant ambience and aesthetics, layout and design, menu design, and table setting and restaurant cleanliness) and their pertaining physical environment quality primary dimension, thus supporting Hypothesis 2 and partially satisfying Research Objective 1. In addition, the result suggests that restaurant patrons evaluate their perceptions of physical environment quality by assessing these four subdimensions. Each of the subdimensions varied considerably in terms of its importance to the physical environment quality subdimensions. Table setting and restaurant cleanliness

($\beta = 0.920$) was the strongest indicator of physical environment quality, followed by restaurant ambience and aesthetics ($\beta = 0.863$), menu design ($\beta = 0.825$) and layout and design ($\beta = 0.715$), thus partially supporting Hypothesis 7 and partially satisfying Research Objective 2.

The findings confirm that the physical environment quality primary dimension is significantly related to the table setting and restaurant cleanliness subdimension. Although the findings of this current study suggest that the table setting and restaurant cleanliness subdimension is the most important indicator, this result is inconsistent with the results of the focus group discussions in which participants identified two separate subdimensions: “table setting” and “restaurant cleanliness”. Table setting and restaurant cleanliness were collapsed into a single subdimension after EFA. They were also found to be significant after the SEM analysis. The finding of this current study suggests that the quality and the appearance of the table setting (such as attractive chinaware and table linen) as well as the cleanliness of the table setting, dining room area and washroom area, are important and may influence restaurant patrons’ service quality perceptions of the physical environment in moderate upscale restaurants in Malaysia.

One plausible reason for a single dimension emerging from the analysis is that the patrons of moderate upscale restaurants consider these two dimensions (the table setting and restaurant cleanliness) as one dimension. This finding is inconsistent with that of Ryu and Jang (2008) who identified table setting as a single dimension and concluded that their finding may be attributed to the importance of table settings in upscale restaurants where a prestigious image is important. An elaborate and expensive table setting in an upscale restaurant is a strong indication of the restaurant’s high quality and often the focus of patrons when they are seated. Further, the findings of this study also add support to claims that the dimensionality of the service quality should be measured from the restaurant patrons’ point of view by Martínez and Martínez (2007) and Cronin and Taylor (1994). The findings of several studies also reveal that the table setting (Knutson, 2000; Pettijohn et al., 1997; Raajpoot, 2002; Ryu & Han, 2011; Ryu & Jang, 2007; Weiss et al., 2004) and restaurant cleanliness (Aksoydan, 2007; Barber & Scarcelli, 2009, 2010; Jaafar, Lumbers, & Eves, 2008; Josiam et al., 2007; Threemitaya, 2003) positively influence restaurant patrons’ service quality perceptions of the physical environment in the restaurant industry.

The findings suggest that the restaurant ambience and aesthetics subdimension is the second most important indicator in measuring restaurant patrons’ perceptions of

physical environment quality. The result confirms that there is a significant and positive relationship between restaurant ambience and aesthetics and physical environment quality. However, the finding of this current study is inconsistent with the results of the focus group discussions, which identified two subdimensions: “restaurant ambience” and “facility aesthetics”. Restaurant ambience and aesthetics were collapsed into a single subdimension after EFA and found to be significant after the SEM analysis.

On the other hand, the finding of this study is similar to that of Bitner (1992) which suggests the ambience dimension is related to elements of aesthetic appeal in the SERVICESCAPE (or physical environment quality in this study). Aesthetic factors are important because they influence ambience (Bitner, 1992; Wakefield & Blodgett, 1994) and aesthetics inspire sensations, relieve stress and stimulate appetite (Hornig, Chou, Liu, & Hsieh, 2011). In addition, Weiss et al. (2004) suggest that in moderate upscale restaurants the emphasis is on ambience and aesthetics such as the décor, music and lighting, as a selling point to restaurant patrons. Overall, the finding of this current study suggests that restaurant ambience and aesthetics influence restaurant patrons’ perceptions of service quality in moderate upscale restaurants. Other studies also found that restaurant ambience (Han & Ryu, 2009; Ryu, 2005; Ryu & Han, 2011; Ryu & Jang, 2007) and aesthetics (Han & Ryu, 2009; Ryu, 2005; Ryu & Han, 2011; Ryu & Jang, 2007) positively influence restaurant patrons’ perceptions of restaurant service quality.

The menu design subdimension is the third most important indicator of physical environment quality in this study. This result confirms that there is a significant positive relationship between menu design and the physical environment quality. This result is consistent with the results of the focus group discussions and research conducted by several researchers on the restaurant industry (Almanza, Ghiselli, & Jaffe, 2000; Bowen & Morris, 1995; Han, 2007; Heung et al., 2000; Huang, 2004; MacLaurin & MacLaurin, 2000) whose studies also reveal that the menu design factor is an important dimension of service quality. For example, Almanza et al. (2000) in an investigation of the importance of and preference for specific physical amenities in restaurants for senior citizens (defined as those over 50 years old) found, that older customers’ concern with the menu design was about the menu’s readability. In particular, the size of the print, glare, colours, background and contrast could influence the readability of the menu. The authors concluded that restaurateurs who meet senior patrons’ expectations may attract senior citizens who are often loyal restaurant

patrons. Their finding also suggests that the quality of the menu design is important and can influence patrons' perceptions of service quality.

The layout and design subdimension is the fourth most important indicator in measuring customers' perceptions of physical environment quality in this study. The result confirms that the physical environment quality is positively related to the layout and design. This result is consistent with the results of the focus group discussions and the findings of several researchers (Edwards & Gustafsson, 2008; Raajpoot, 2002; Ryu & Han, 2011; Turley & Milliman, 2000; Yüksel & Yüksel, 2002a), whose studies also show that layout and design positively influence service quality in the restaurant industry. To take one example, Yüksel and Yüksel (2002a) investigated what tourists wanted from a resort restaurant in Turkey, so that the restaurant operators there could tailor-make products/services for tourists in order to attract and retain customers. The results indicate that a number of service aspects should be taken into consideration when tourists are deciding on a restaurant, including location and availability of a non-smoking area. Overall, the finding of this current study suggests that the layout and design subdimension (e.g., smoking and non-smoking sections, spacious seating arrangement and convenient location) of the moderate upscale restaurant in Malaysia is important and can influence patrons' service quality perceptions of the physical environment.

6.1.1.3 Outcome Quality

The findings confirm that there are significant and positive relationships between the three subdimensions (food quality, pleasant dining experience and menu variety) and their pertaining outcome quality primary dimension, thus supporting Hypothesis 3 and partially satisfying Research Objective 1. In addition, the findings suggest that in measuring restaurant patrons' perceptions of outcome quality in moderate upscale restaurants in Malaysia, food quality was the strongest subdimension ($\beta = 0.889$) of outcome quality, followed by pleasant dining experience ($\beta = 0.882$) and menu variety ($\beta = 0.826$).

The findings of this current study suggest that the food quality subdimension is the most important indicator in measuring restaurant patrons' perceptions of outcome quality. On the basis of these findings it is important for moderate upscale restaurant to be able to deliver high quality food to their patrons; they are similar to the findings of Ryu and Han (2010) and Kim et al. (2006) which suggest that restaurants must maintain consistently

high food quality exemplified by serving tasty food, expertly prepared, and presented in an appetizing manner, in order to strongly influence customer satisfaction. The present findings are, moreover, consistent with those of other researchers (Auty, 1992; Dubé et al., 1994; Ha & Jang, 2010b; Josiam & Monteiro, 2004; Kim, Lee, et al., 2006; Kivelä et al., 2000; Mattila, 2001; Namkung & Jang, 2007; Ryu & Han, 2010; Soriano, 2002; Sulek & Hensley, 2004) whose studies reveal that food quality positively influences restaurant patrons' perceptions of service quality.

The findings of the current study suggest that the pleasant dining experience subdimension is the second most important indicator in measuring restaurant patrons' perceptions of outcome quality. The pleasant dining experience subdimension, was combined from valence and waiting time after EFA, and was found to be significant after the SEM analysis. The findings confirm that there is a significant positive relationship between the pleasant dining experience and outcome quality. One plausible reason for a single dimension emerging from the analysis is that patrons of moderate upscale restaurants demand not only good food but also a pleasant dining experience with, for example, a reasonable waiting time. A reasonable waiting time for services influences restaurant patrons' overall perceptions of service quality in moderate upscale restaurants in Malaysia.

The menu variety subdimension is the third most important indicator in measuring restaurant patrons' perceptions of outcome quality in this study. The findings confirm that there is a significant positive relationship between menu variety and outcome quality. This current study has identified menu variety as an important dimension of service quality in moderate upscale restaurants. To date, no other empirical study has identified menu variety as an important dimension of service quality in the restaurant industry.

The findings presented here provide empirical evidence that menu variety significantly affects restaurant patrons' perceptions of service quality, despite the fact that numerous previous studies have used menu variety when measuring the food quality dimension (see: Dubé et al., 1994; Ha & Jang, 2010b; Huang, 2004; Josiam et al., 2007; Kim, Moreo, & Yeh, 2006; Kivelä et al., 2000; Namkung & Jang, 2007; Pettijohn et al., 1997; Raajpoot, 2002). A plausible reason for this finding is that restaurant patrons in moderate upscale Malaysian restaurants want a wide selection of food so that they have greater choice. In addition, several studies (Johns & Tyas, 1996; Kivelä et al., 2000; Nasir & Pereira, 2008; Sulek & Hensley, 2004) suggest that restaurant patrons not only consider

a wide selection of food necessary, but restaurants must also have wide selection of dishes to meet special dietary needs.

6.1.2 The Relationships between the Construct Variables

The fourth research objective of this study was to examine the relationships that exist between service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions in moderate upscale restaurants in Malaysia as tested in Hypotheses 9 to 16. The following subsections present the discussion of the results for these relationships.

6.1.2.1 Customer Satisfaction

This study found that 83% of the customer satisfaction variance is explained by service quality, perceived value and restaurant image. In particular, the findings of this current study indicate that service quality, perceived value and restaurant image are important determinants of customer satisfaction in moderate upscale restaurants in Malaysia. This finding is supported by previous studies (Fornell et al., 1996; McDougall & Levesque, 2000; Ryu et al., 2008) which identified that service quality has a significant role in forming customer satisfaction, perceived value and restaurant image perceptions. Ryu et al.'s (2008) study involving quick-casual restaurants in the United States Midwest found that restaurant image and perceived value explained 58% of the variance in customer satisfaction. Furthermore, the findings of this current study are also supported by McDougall and Levesque (2000) who found that service quality and perceived value are the most significant drivers of customer satisfaction across four service industries: restaurants, auto services, hairstylists and dental services.

Although service quality, perceived value and restaurant image are important determinants of customer satisfaction, their degree of importance and the nature of the relationships between these variables vary. Service quality is a more important determinant of customer satisfaction than perceived value. This finding is supported by Fornell et al. (1996, p. 7), whose study empirically demonstrates that “customer satisfaction is more quality driven than value- or price-driven.” Specifically, the standardized coefficient path between service quality and customer satisfaction is $\beta = 0.448$, indicating that service quality has a positive effect on customer satisfaction, thus supporting Hypothesis 9. The results of this current study provide additional evidence that service quality is an

antecedent of satisfaction. The findings of this study are similar to those in the service marketing literature, including the foodservice literature (Abdelhamied, 2011; Brady & Robertson, 2001; Brady et al., 2001; Ha & Jang, 2010b; Hyun, 2010; Olorunniwo et al., 2006; Qin & Prybutok, 2008; Tam, 2000; Yap & Kew, 2006). For example, this positive finding is consistent with a study on floating restaurants on the Nile River in Cairo conducted by Abdelhamied (2011) who found that service quality positively influenced customer satisfaction ($\beta = 0.539$).

The standardized coefficient path between perceived value and customer satisfaction is $\beta = 0.283$, indicating that perceived value has a positive and significant effect on customer satisfaction in moderate upscale restaurants in Malaysia, thus supporting Hypothesis 14. This positive finding is consistent with the study by Qin and Prybutok (2008) on fast food restaurants in the United States suggesting that perceived value has a direct effect on customer satisfaction ($\beta = 0.18$). In addition, the positive relationship between perceived value and customer satisfaction is consistent with previous studies in the foodservice literature (Brady et al., 2001; Han & Ryu, 2009; Lee, Park, Park, Lee, & Kwon, 2005; Ryu et al., 2008; Ryu et al., 2012; Tam, 2000).

The standardized coefficient path between restaurant image and customer satisfaction is $\beta = 0.257$, indicating that restaurant image has a significant effect on customer satisfaction, thus supporting Hypothesis 15. The finding suggests that a favourable restaurant image is an antecedent of customer satisfaction in moderate upscale restaurants in Malaysia. Overall, the finding showed that customer satisfaction increases when restaurant image increases. That is supported by the findings of Ryu et al. (2008) (described above) suggesting that restaurant image has a direct effect on customer satisfaction ($\beta = 0.20$).

6.1.2.2 Perceived value

The standardized coefficient path between service quality and perceived value was $\beta = 0.770$ explaining 59% of the perceived value variance. This finding suggests that service quality is an important determinant of perceived value, thus supporting Hypothesis 10. The positive causal relationship between service quality and perceived value is supported by two previous studies on the restaurant industry (Brady et al., 2001;

Lee et al., 2005) and also by studies on the hotel and tourism industries (Clemes et al., 2009; Gallarza & Gil Saura, 2006; Petrick, 2004).

6.1.2.3 Restaurant Image

The standardized coefficient path between service quality and restaurant image was the highest among the relationships between the constructs in the model. The standardized coefficient path between service quality and restaurant image is $\beta = 0.851$ explaining 72% of the restaurant image variance. This finding suggests that service quality is an important determinant of restaurant image, thus supporting Hypothesis 11. One plausible reason is that the restaurant patrons of moderate upscale restaurants in Malaysia received superior service quality and formed a favourable restaurant image. The positive effect of service quality on image was also supported by studies of Clemes et al. (2009) and Hu et al. (2009) on the hotel industry in Taiwan and Mauritius, respectively. Overall, the finding of this study could be interpreted as the higher the restaurant patrons perceived the service quality to be, the better their mental impressions of the restaurant (Andreassen & Lindestad, 1998; Grönroos, 1982; Hu et al., 2009; Zeithaml, 1988).

6.1.2.4 Behavioural Intentions

Service quality, customer satisfaction and restaurant image were important determinants of behavioural intentions in moderate upscale restaurants in Malaysia as they explained 78% of the behavioural intentions' variance. In particular, the findings provide additional evidence that service quality has a direct effect on behavioural intentions (Brady & Robertson, 2001; Olorunniwo et al., 2006; Qin & Prybutok, 2008; Yap & Kew, 2006), as well as an indirect effect through customer satisfaction (Brady & Robertson, 2001; Brady et al., 2001; Qin & Prybutok, 2008; Yap & Kew, 2006). In addition, the findings suggest that restaurant image not only has a direct effect on customer satisfaction but also has an indirect effect on customer satisfaction that leads to positive future behavioural intentions. Overall, the findings suggest that when restaurant patrons in moderate upscale restaurants in Malaysia received superior service quality and formed a favourable restaurant image, it influenced their intention to dine in the restaurant again.

Service quality, customer satisfaction, and restaurant image are important determinants of behavioural intentions; however, their degree of importance and the nature of the relationships between these marketing constructs vary. Among these constructs,

restaurant image had the largest effect on behavioural intentions. Specifically, the standardized coefficient path between restaurant image and behavioural intentions is $\beta = 0.384$, indicating restaurant image has a significant effect on behavioural intentions, thus supporting Hypothesis 16. The findings suggest that a favourable restaurant image can lead to positive future behavioural intentions such as repeat patronage. The positive causal relationship between restaurant/store image and behavioural intentions is also consistent with previous studies on the restaurant industry (Ryu et al., 2008; Ryu et al., 1989) which suggest that restaurant image has a direct effect on behavioural intentions ($\beta = 0.21$).

The standardized coefficient path between customer satisfaction and behavioural intentions is $\beta = 0.343$, indicating that customer satisfaction has a significant effect on behavioural intentions (supporting Hypothesis 13). This finding supports the contention that satisfied restaurant patrons' lead to positive behavioural intentions such as increased visiting frequency and the intention to recommend the restaurant to friends and families. This finding is supported by Namkung and Jang (2007) in midscale and upperscale restaurants in a Midwestern and Eastern states in the United States suggesting that the customer satisfaction has a direct effect on behavioural intentions ($\beta = 0.35$). The positive causal relationship between customer satisfaction on behavioural intentions is also consistent with previous studies on the restaurant industry (Brady et al., 2001; Ha & Jang, 2010b; Han & Ryu, 2006; Lee et al., 2005; Qin & Prybutok, 2008; Ryu & Han, 2010; Ryu et al., 2008; Ryu et al., 2012; Tam, 2000; Yap & Kew, 2006).

The results indicated that customer satisfaction and restaurant image directly influence behavioural intentions. Behavioural intentions were positively affected by increases in customer satisfaction ($\beta = 0.343$) as well as restaurant image ($\beta = 0.384$). The results indicated that behavioural intentions to re-patronize the restaurant and recommend it to friends were influenced more strongly by restaurant image than by customer satisfaction. The positive relationship identified between restaurant image and behavioural intentions is likely to mean that restaurant patrons will have favourable behavioural intentions regarding re-patronizing the restaurant after leaving with a good impression of the quality of its service. This finding is similar to the finding by Clemes et al. (2009) and Kandampully and Suhartanto (2000) on studies in the hotel industry. This relationship has not been tested on the restaurant industry literature.

The results of this study also strengthen the assertion that service quality may have a direct effect on behavioural intentions. The standardized coefficient path between service quality and behavioural intentions is positive and significant ($\beta = 0.204$), indicating that service quality has a significant effect on behavioural intentions, thus supporting Hypothesis 12. However, the findings of this current study showing that service quality was the weakest determinant of behavioural intentions are similar to the findings of Olorunniwo et al. (2006) who reported on the small effect of service quality on behavioural intentions ($\beta = 0.10$) in United States middle-class restaurants. Nevertheless, this finding of the positive effect of service quality on behavioural intentions is consistent with other studies on the restaurant industry (Olorunniwo et al., 2006; Qin & Prybutok, 2008; Tam, 2000; Yap & Kew, 2006) as well as studies on other industries (Cronin et al., 2000; Dagger et al., 2007; Keillor et al., 2007; Pollack, 2009). For example, Dagger et al. (2007) reported an effect of service quality on behavioural intentions is $\beta = 0.37$ in sample 1 and $\beta = 0.42$ in sample 2 drawn from health customers in Australia. Cronin et al. (2000) also reported that there was a significant positive effect of service quality on behavioural intentions in six industries (spectator sports, health care, participation sports, long distance carriers, entertainment and fast food restaurants) and the standardized coefficient paths were between $\beta = 0.10 - 0.33$. Keillor et al. (2007) also reported significant and positive relationships on the effect of service quality on behavioural intentions in Australia, Germany, India, the Netherlands, Sweden and the United States from a sample of fast-food and grocery customers.

6.2 Implications

This section outlines the implications of this study from both a theoretical and managerial perspective.

6.2.1 Theoretical Implications

The first theoretical implication is the applicability of a comprehensive hierarchical and multidimensional modelling for the conceptualisation and measurement of service quality and the higher-order constructs in moderate upscale restaurants in Malaysia. This study presents a comprehensive evaluation of restaurant patrons' perceptions of service quality in moderate upscale restaurants in Malaysia through developing and estimating a

hierarchical and multidimensional model. In addition, the findings of this study support a hierarchical and multidimensional model for the conceptualisation and measurement of service quality in moderate upscale restaurants in Malaysia, similar to the hierarchical and multidimensional modelling developed by Brady and Cronin (2001) and Dabholkar et al. (1996) for other industries. The findings indicate that all of the four measurement models and the four structural models for measuring service quality and its dimensions have adequate model-fit-indices. In addition, the results of reliability and validity tests indicate that the measurement scales for measuring service quality and its dimensions exhibit adequate reliability and validity. However, it should be noted that the three primary dimensions and the subdimensions may not be generic for all service industries and cultures. For example, moderate upscale restaurants as opposed to fast food restaurants, and Klang Valley as opposed to Penang. Dimensional structures should be confirmed through the use of an appropriate qualitative or quantitative approach. Additionally, it is also valuable to compare the derived importance of any primary dimensions and subdimensions in this study with the new service quality dimensions identified in future study.

In response to the call for more investigations into the complex relationships between important service marketing constructs on an industry basis (Babakus & Boller, 1992; Caruana et al., 2000; Cronin & Taylor, 1992; Dabholkar et al., 1996; Dagger et al., 2007; Lee et al., 2003; Oh, 1998; Ryu et al., 2008) and within a single theoretical framework (Brady et al., 2005; Chang, 2009; Cronin et al., 2000; Suhartanto, 2011), the higher-order construct associate with the hierarchical and multidimensional modelling is also used to examine the relationships between service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions in moderate upscale restaurants in Malaysia. The comprehensive hierarchical modelling framework of this study provides robust findings and better understanding compared to any model examine only a single relationship (Brady et al., 2005; Chang, 2009; Cronin et al., 2000; Suhartanto, 2011). Besides, the single theoretical framework has been successfully tested in various service industry settings (Clemes et al., 2011; Clemes et al., 2010; Clemes et al., 2007; Clemes et al., 2009; Cronin et al., 2000; Dagger et al., 2007; Pollack, 2009; Shu, 2010). The comprehensive hierarchical modelling and measurement scale developed for moderate upscale restaurants in this study may serve as a useful framework for researchers seeking to determine the relationships between these five important marketing constructs in the

restaurant industry. The findings indicate that the measurement model and the structural model for measuring the five service marketing constructs have good model-fit-indices. In addition, the results of reliability and validity tests indicate that the measurement scales for measuring the relationships between the five service marketing constructs demonstrate good reliability and validity. Lastly, the investigations of the complex relationships of the five important service marketing constructs in this study provide additional valuable insights for future study of these constructs in the Malaysian restaurant industry.

The next theoretical implication of this current study is the validation of the use of the three primary dimensions (interaction quality, physical environment quality and outcome quality) to conceptualizing service quality in moderate upscale restaurants in Malaysia. The statistical analysis confirms that restaurant patrons in such restaurants evaluate overall service quality by assessing three primary dimensions: interaction quality, physical environment quality and outcome quality. The three primary dimensions identified in this study are consistent with those identified in other studies (Brady & Cronin, 2001; Clemes et al., 2011; Clemes et al., 2010; Clemes et al., 2009; Lu et al., 2009; Pollack, 2009; Shu, 2010). Specifically, this study identifies the comparative importance of the three primary dimensions in patrons' service evaluations in moderate upscale restaurants in Malaysia. Among the three noted primary dimensions, this current study shows that outcome quality is the most important primary dimension of overall service quality as assessed by restaurant patrons in moderate upscale restaurants in Malaysia, followed by physical environment quality and interaction quality. This finding provides empirical evidence for the inclusion of outcome quality and empirical support for numerous studies that claim outcome quality is important across various service industries like Domino Pizza restaurants (Richard & Allaway, 1993; Richard et al., 1994), banks, fast-food restaurants, trains/subways and hair salons (Powpaka, 1996), accommodation (Clemes et al., 2010; Clemes et al., 2009), spectator satisfaction (Clemes et al., 2011), and hairdresser/barber services and local phone service subscribers (Pollack, 2009).

The third theoretical implication of this current study is that it identifies new subdimensions of service quality in Malaysian moderate upscale restaurants. Further, this current study identified 10 subdimensions pertaining to the three primary dimensions of service quality in moderate upscale restaurants. The statistical analyses suggest that these ten subdimensions are highly important for restaurant patrons to be able to understand and evaluate service quality in moderate upscale restaurants in Malaysia. In particular, the

comparative importance of the ten subdimensions in restaurant patrons' service evaluation is also identified in this study. These 10 subdimensions also need to be confirmed in further empirical studies as they may vary across industries and cultures. For example, further research on the importance of menu variety as a dimension of service quality in the restaurant industry in Malaysia is needed.

6.2.2 Managerial Implications

In today's competitive market, the management of moderate upscale restaurants must retain their restaurant patrons through superior service performance. Increasing and maintaining service excellence in the restaurant industry is proven to enhance customer satisfaction and, in turn, should generate more profits for restaurant operators as it leads to positive behavioural intentions (Abdelhamied, 2011; Kivelä et al., 2000; Ryu et al., 2008). From a managerial perspective, the multidimensional and hierarchical model developed for this study provides an improved understanding of how restaurant patrons assess the service quality of moderate upscale restaurants in Malaysia. The management of these restaurants can use the dimensions of service quality identified in this study as a background for formulating their management strategies in the Malaysian restaurant market. For example, the results of this study indicate that restaurant patrons of moderate upscale restaurants in Malaysia perceive the food quality subdimension as the most important subdimension of outcome quality. The management of moderate upscale restaurants should allocate more resources to improve food quality, making an effort to understand what tastes Malaysian patrons have in Western foods as served in their restaurants and they should consistently monitor how their patrons evaluate the overall food taste. Moreover, the findings suggest that patrons of moderate upscale restaurants emphasize the importance of food quality, the settings in which they enjoy the food and the way the front-of-the-house staff deliver the service. The management of moderate upscale restaurants must correctly resource all the subdimensions of service quality (such as employees' professional skills, table setting and restaurant cleanliness and pleasant dining experience) as a strategy to increase the positive effects of restaurant patrons' evaluation of their restaurant experience and thus, encourage positive future behavioural intentions.

The results of this study reveal that outcome quality is the most important dimension in moderate upscale restaurants, followed by physical environment quality and then interaction quality. These findings suggest that the managers of moderate upscale

restaurants may initially want to focus their quality improvements on outcome quality, followed by physical environment quality and lastly interaction quality. Management should also be aware that the order of the importance of the primary dimensions may vary according to different geographic regions and cultural influences.

Modelling the higher-order constructs with the primary and subdimensions of service quality provides a holistic view for management of moderate upscale restaurants to use in their strategic-planning process. This information may assist management to develop and implement successful marketing strategies for the Malaysian market. In addition, the findings of this study provide valuable information for management who are already operating in, or preparing to enter, the moderate upscale restaurant industry in Malaysia.

6.3 Limitations of the Study and Recommendations for Future Study

There are several key limitations and recommendations for future studies that have emerged from this study. The first limitations in this study are the service marketing constructs and the relationships examined in the comprehensive theoretical framework were very limited. There could be other potential service marketing constructs or relationships that are important but were excluded from the theoretical framework. Future researchers may extend the current theoretical framework and examine whether there are other potential relationships apart from the relationships identified in this study in various service industries or in other countries.

The second limitation is related to the 10 subdimensions of service quality. The 10 subdimensions identified in this study may not be generic for all service industries outside moderate upscale restaurants and may also be subject to cultural differences as identified in other studies (Dagger et al., 2007; Ko & Pastore, 2005; Ko et al., 2007; Martínez & Martínez, 2007, 2008). For future studies, the service type of industry and cultural differences should be considered when applying these findings to other service industries and countries. Additionally, the future studies may also expand this study by comparing the relative importance of these subdimensions in various service industries and countries.

Thirdly, applying the present measurement items to different types of restaurants such as fast food and upscale restaurant should be approached with caution. Further research and replication of the measurements could strengthen the validity and reliability of the present measurements in different service settings and geography.

The fourth limitation of this study relates to the demographic profiles of the sample (e.g., gender, ethnic background and religion). Demographic profiles of the sample information are used in numerous studies to differentiate the market segments of the restaurant patrons' (Stafford, 1996). The demographic profiles of the sample can provide and identify differences among customer perceptions of the service quality dimensions and also the differences that exist in the relationships between the service marketing constructs (see: Chen et al., 2011; Clemes et al., 2010; Clemes et al., 2009; Kelley & Turley, 2001; Kivelä et al., 2000; Poon & Low, 2005; Skogland & Siguaw, 2004). However, this study did not analyse the information from demographics profiles of the sample. In future research, it would be advisable to incorporate the possible role of demographic differences since restaurant patrons' reactions to the service quality dimensions and the five service marketing constructs may vary depending on their demographic characteristics. Understanding restaurant patrons' differences for example, based on gender and ethnic background characteristics of restaurant patrons' reactions to service quality dimensions may lead to a deeper understanding of restaurant patrons' preferences in the restaurant industry, particularly in the moderate upscale restaurants. Additionally, in future studies, the inclusion demographic profiles of the sample may be useful for an improved understanding of the relationships between service quality, customer satisfaction, perceived value, restaurant image and behavioural intentions.

The fifth limitation of this study relates to the sampling. This study obtained a relatively large response ($N = 535$). However, the cross sectional sample was collected from restaurant patrons who had their lunch or dinner at four different moderate upscale restaurants (Hard Rock Café, T.G.I. Friday's, DÔME Café, and Victoria Station) in Klang Valley, Malaysia. Since the sample was confined to restaurant patrons of moderate upscale restaurants, the findings may not be generalized to other restaurants nor may the results be transferred to other geographical areas in Malaysia.

The sixth limitation of this study relates to the data collection method. This study used the mall/street intercept and convenience sampling approach (non-probability sampling method) to collect data, so the sample may not adequately represent the whole population of Malaysian moderate upscale restaurant patrons and the data obtained may lack external validity (Kim, 2007; Ryu & Han, 2010). Nevertheless, since exploratory research and research testing theory are used for this study, the convenience sampling design is a suitable method as it provides a fundamental base for further research in

Malaysia (Reynolds et al., 2003; Suhartanto, 2011). However, caution must be used when generalising the results of research from a convenience sample. For future studies, researchers should consider developing a systematic design such as probability sampling to better represent the target sample.

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Appendices

Appendix 1: Compilation of Factors and Items Measured in Foodservice Studies

Table 4A.1: Compilation of Factors and Items Generated for Designing Questionnaire

Item	(Namkung & Jang, 2007)	(Bartlett & Han, 2007)	(Keang & Bougoure, 2006)	(Sulek & Hensley, 2004)	(Soriano, 2003)	(Raajpoot, 2002)	(Stevens et al., 1995)	(Lee & Hing, 1995)	(Bojanic & Rosen, 1994)	(Cadotte & Turgeon, 1988)
Food quality	✓			✓	✓					✓
▪ Presentation & appearance	✓			✓	✓	✓				
▪ Portion size				✓		✓				✓
▪ Tastiness	✓	✓		✓	✓					
▪ Consistency	✓			✓						
▪ Freshness	✓			✓						
▪ Temperature	✓			✓						
▪ Hygiene & safety	✓	✓		✓						
▪ Healthy options	✓			✓						
▪ Speciality/signature		✓								
▪ Wide variety/selection	✓				✓	✓				
Menu cards	✓					✓	✓			
▪ Design						✓	✓			
▪ Attractive	✓						✓			
▪ Clarity of wordings										
▪ Easily readable	✓						✓			
Physical environment				✓		✓		✓		
▪ Décor (e.g., wall & dining area interior)	✓	✓		✓	✓	✓	✓	✓		
▪ Decoration on the table				✓	✓					
▪ Lighting		✓		✓	✓	✓		✓		
▪ Colour				✓		✓				
▪ Music				✓	✓	✓				
▪ Noise				✓	✓					✓
▪ Temperature				✓	✓	✓				

Author(s) Item	(Namkung & Jang, 2007)	(Bartlett & Han, 2007)	(Keang & Bougoure, 2006)	(Sulek & Hensley, 2004)	(Soriano, 2003)	(Raajpoot, 2002)	(Stevens et al., 1995)	(Lee & Hing, 1995)	(Bojanic & Rosen, 1994)	(Cadotte & Turgeon, 1988)
▪ Scents				✓		✓				
▪ Dining area	✓							✓		
▪ Attractive							✓			
▪ Size					✓	✓				
▪ Spacious and easy to move around							✓			✓
▪ Tables & seating arrangements	✓	✓		✓		✓				
▪ Equipment/furniture/facilities				✓	✓			✓		
▪ Quality						✓				
▪ Comfortable seats			✓	✓			✓			
▪ Provide lounge										
▪ Provide private room		✓								
▪ Waiting area				✓		✓				
▪ Furnishings (e.g., floor & carpeting)				✓				✓		
▪ Comfortable & easy to move around				✓	✓					✓
▪ Signage										
▪ Crowding				✓		✓				
▪ Parking area			✓		✓	✓	✓			✓
▪ Attractive building exterior					✓	✓	✓			
▪ Location		✓				✓				✓
Table Setting					✓			✓		
▪ Tableware (e.g., glassware, dinnerware)					✓			✓		
▪ Table linen (e.g., napkins, table cloth)					✓			✓		
▪ Table accessories (e.g., table number)					✓			✓		
Restaurant cleanliness		✓		✓	✓	✓	✓			✓
▪ Common area (e.g., dining area, toilets)		✓	✓	✓	✓	✓	✓			✓
▪ Equipment (e.g., dining utensils)		✓	✓	✓	✓					✓
▪ Employees (e.g., grooming & conduct)		✓	✓	✓	✓					✓
Employees		✓	✓	✓	✓		✓	✓	✓	
▪ Interpersonal skills		✓	✓	✓			✓			✓
▪ Professional		✓	✓	✓			✓	✓	✓	✓
▪ Service skills (e.g., serving food)		✓	✓	✓			✓	✓	✓	✓
▪ Knowledge		✓	✓	✓	✓		✓	✓	✓	✓
▪ Handling complaints & problems		✓	✓	✓	✓		✓	✓		✓

Author(s)	(Namkung & Jang, 2007)	(Bartlett & Han, 2007)	(Keang & Bougoure, 2006)	(Sulek & Hensley, 2004)	(Soriano, 2003)	(Raajpoot, 2002)	(Stevens et al., 1995)	(Lee & Hing, 1995)	(Bojanic & Rosen, 1994)	(Cadotte & Turgeon, 1988)
Item										
▪ Qualification					✓		✓			
▪ Interaction		✓	✓	✓	✓		✓	✓	✓	
▪ Behaviour			✓	✓			✓	✓	✓	✓
▪ Friendliness			✓	✓				✓	✓	
▪ Appearance		✓	✓				✓	✓	✓	✓
Convenient operation hours					✓			✓	✓	✓
Waiting time (e.g., wait to be seated)		✓		✓	✓		✓	✓		
Reservation					✓					✓
Accurate		✓	✓					✓	✓	
▪ Billing/record							✓	✓	✓	✓
▪ Served (e.g., food) as order or promise		✓	✓				✓	✓		
Price - value for money		✓	✓		✓	✓	✓			✓
Concept									✓	
Image			✓				✓		✓	

* Some of these items were not explicitly given these names in the individual studies and generalisations of terms have been adopted in order to review these studies in a common frame.

Appendix 2: Final Version of Cover Letter and Questionnaire



Commerce Division

PO Box 84, Lincoln University,
Canterbury 7647, New Zealand

Telephone 64 3 325-2811

Facsimile 64 3 325-3847

www.lincoln.ac.nz

Dear Respondents,

I am a PhD candidate in the Commerce Division at Lincoln University, Canterbury, New Zealand. For my doctoral thesis, I am conducting a study to measure the relationship between customers' perception of service quality and their future behaviour (e.g., return to the restaurant and recommend to friends) towards moderate upscale restaurant in Malaysia. The findings of this study will contribute to the service marketing literature and assist restaurant management in future marketing activities.

You are invited to participate in a survey and your participation is completely voluntary. If you choose to complete the survey, it will be understood that you have consented to participate in the research project and to publication of the results of the research project. Only aggregate responses to all questions will be published in the thesis.

In order to be eligible to answer the questions, you must be 18 years or older, and fully understand the information about the research and the contents of the questions. All of your responses to this questionnaire are anonymous. You are not required to provide your name for this study and I assure you that your responses will be safely stored in a locked office and only used for data analysis. This questionnaire will take approximately 10 to 15 minutes to complete. Upon completion, please **hand it back to the person in charge** of the research.

Your kind assistance is absolutely vital to the success of this study. In case you have any questions or concerns with this study, please do not hesitate to contact me at 002 64-3-325-3838 ext 8496 or e-mail at mohiz@lincoln.ac.nz. Alternatively, you may contact my research supervisors, Mr. Michael D. Clemes on 002 64 3 – 325 3838 ext 8292 (clemes@lincoln.ac.nz) or Dr. Baiding Hu, on 002 64 3 – 325 3838 ext 8069 (hub3@lincoln.ac.nz).

Thank you very much for your co-operation and assistance.

Best regards,

Zurinawati Mohi
PhD Candidate
Commerce Division
Lincoln University

*Note: 002 International Dialling Code 64 Country Code for New Zealand

This research project has been reviewed and approved by the Lincoln University Human Ethics Committee.

INSTRUCTIONS: The following statements have been designed to obtain your opinion on several aspects of a moderate upscale restaurant in Malaysia. This questionnaire contains five (5) Sections (A–E). Please answer all the questions in each section. Sections A–D contain a series of statements that relate to **your overall dining experiences at a moderate upscale restaurant** (e.g., T.G.I. Friday's, Victoria Stations, Dôme Café, and Hard Rock Café). If you strongly agree with the statement please tick (✓) 7; if you strongly disagree with the statement please tick (✓) 1.

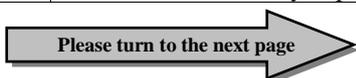
Section A		Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
A moderate upscale restaurant has ...								
1.	... employees with a very pleasant attitude (e.g., polite, courteous, and friendly).	1	2	3	4	5	6	7
2.	... employees who are sympathetic and reassuring if something are wrong.	1	2	3	4	5	6	7
3.	... employees who are clean, neat and appropriately dressed.	1	2	3	4	5	6	7
4.	... employees with a very pleasant behaviour (e.g., attentive, caring, and helpful)	1	2	3	4	5	6	7
5.	... employees that make an extra effort to handle special requests.	1	2	3	4	5	6	7
6.	... employees that is knowledgeable and able to provide information about menu items, food ingredients, and methods of preparation.	1	2	3	4	5	6	7
7.	... employees that listen to me and speak in a language that I can understand.	1	2	3	4	5	6	7
8.	... employees that are well trained and experienced (e.g., serving food).	1	2	3	4	5	6	7
9.	... employees that make an effort to inform customers about speciality (e.g., soup of day), promotions (e.g., cake of the month) or dishes unavailable that day.	1	2	3	4	5	6	7
10.	... employees that is able to answer my questions quickly.	1	2	3	4	5	6	7
11.	... employees who are sensitive to customers individual needs and wants.	1	2	3	4	5	6	7
12.	... employees that is capable of handling problems and complaints, rather than always relying on policies and procedures.	1	2	3	4	5	6	7
13.	... employees that are empowered to handle problems and complaints.	1	2	3	4	5	6	7
14.	When I have to wait for service, I receive an apology.	1	2	3	4	5	6	7
15.	The employees of a moderate upscale restaurant deliver superior services.	1	2	3	4	5	6	7
16.	Overall, I am satisfied with the interaction between customers and employees in a moderate upscale restaurant.	1	2	3	4	5	6	7
17.	Overall, I am satisfied with the interaction between employees in a moderate upscale restaurant.	1	2	3	4	5	6	7

Section B		Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
A moderate upscale restaurant has...								
1.	... an interior décor (e.g., pictures and flowers) that is very attractive and provides pleasant surroundings.	1	2	3	4	5	6	7
2.	... a colour scheme (e.g., wall painting) that is fashionable.	1	2	3	4	5	6	7
3.	... dining table which is of good quality and very comfortable.	1	2	3	4	5	6	7
4.	... a comfortable seats and easy to move around.	1	2	3	4	5	6	7
5.	... a seating arrangement that provides diners with adequate space.	1	2	3	4	5	6	7
6.	... suitable background music.	1	2	3	4	5	6	7
7.	... lighting that creates a comfortable atmosphere.	1	2	3	4	5	6	7
8.	... a comfortable dining room temperature.	1	2	3	4	5	6	7
9.	... pleasant dining room aromas.	1	2	3	4	5	6	7

Please turn to the next page 

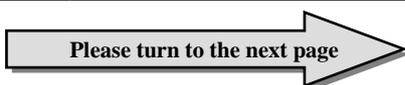
		Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
A moderate upscale restaurant has ...								
10.	... a comfortable waiting lounge.	1	2	3	4	5	6	7
11.	... both smoking and non-smoking sections.	1	2	3	4	5	6	7
12.	... signage that is obvious and easy to follow.	1	2	3	4	5	6	7
13.	... an attractive exterior.	1	2	3	4	5	6	7
14.	... ample parking spaces.	1	2	3	4	5	6	7
15.	... a convenient location.	1	2	3	4	5	6	7
16.	... an attractive menu that reflects the restaurant's theme, image and price range.	1	2	3	4	5	6	7
17.	... a menu that is easy to read.	1	2	3	4	5	6	7
18.	... a menu that uses appetizing words/pictures and is easily understood.	1	2	3	4	5	6	7
19.	... a menu that has items written in a foreign language, with explanations.	1	2	3	4	5	6	7
20.	... good quality and clean tableware (e.g., glasses, plates, and cutlery) that reflects the restaurant's overall theme and image.	1	2	3	4	5	6	7
21.	... attractive and neat table linen (e.g., tablecloths, napkins) that reflects the restaurant's overall theme and image.	1	2	3	4	5	6	7
22.	... attractive table accessories (e.g., salt and peppershakers, and table numbers) that reflect the restaurant's overall theme and image.	1	2	3	4	5	6	7
23.	... table setting (e.g., glasses, plates and napkins) that is hygienically handled by the employees.	1	2	3	4	5	6	7
24.	... a rest room that is thoroughly clean neat, and well maintained.	1	2	3	4	5	6	7
25.	... a dining area that is virtually attractive and clean.	1	2	3	4	5	6	7
26.	In general, a moderate upscale restaurant has good physical environment that matches its theme, image and price range.	1	2	3	4	5	6	7
27.	Overall, I am satisfied with the physical environment of a moderate upscale restaurant.	1	2	3	4	5	6	7

Section C		Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
A moderate upscale restaurant offers ...								
1.	... some unique food (specialty/signature dishes) that is not available elsewhere and unable to prepare at home.	1	2	3	4	5	6	7
2.	... a wide variety of menu to choose from.	1	2	3	4	5	6	7
3.	... a wide selection of alcoholic and non-alcoholic beverages to complement the food served	1	2	3	4	5	6	7
4.	... a choice food and beverages that is prepared according to the requirements of my religion.	1	2	3	4	5	6	7
5.	... a choice of food and beverages that caters for my dietary needs.	1	2	3	4	5	6	7
A moderate upscale restaurant serves								
6.	... food that is hygienically prepared and served at the appropriate temperature.	1	2	3	4	5	6	7
7.	... food that is fresh and cooked properly.	1	2	3	4	5	6	7
8.	... attractive and tempting food.	1	2	3	4	5	6	7
9.	... food that meets my expectation.	1	2	3	4	5	6	7



		Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
10.	I believe a moderate upscale restaurant tries to give me a good dining experience.	1	2	3	4	5	6	7
11.	The waiting time for services is reasonable at a moderate upscale restaurant.	1	2	3	4	5	6	7
12.	Normally, I do not wait a long time to be seated.	1	2	3	4	5	6	7
13.	Overall, I am satisfied with the food quality of a moderate upscale restaurant.	1	2	3	4	5	6	7
14.	I believe a moderate upscale restaurant knows the type of experience its customers want.	1	2	3	4	5	6	7
15.	At the end of dining at a moderate upscale restaurant, I feel that I receive and experience what I want in my dining.	1	2	3	4	5	6	7
16.	A moderate upscale restaurant has employees that serve me at the time they promise.	1	2	3	4	5	6	7
17.	Normally, I do not wait longer for service than I expect.	1	2	3	4	5	6	7
18.	Overall, I anticipate that a moderate upscale restaurant will provide a fast service and try to minimize the waiting time.	1	2	3	4	5	6	7
19.	Overall, I have an excellent experience when I visit moderate upscale restaurant.	1	2	3	4	5	6	7

	Section D	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
1.	A moderate upscale restaurant provides prompt and quick service.	1	2	3	4	5	6	7
2.	Employees of a moderate upscale restaurant help each other maintain speed and quality of service.	1	2	3	4	5	6	7
3.	I am satisfied with the service quality of a moderate upscale restaurant.	1	2	3	4	5	6	7
4.	Overall, the service quality of a moderate upscale restaurant could be considered superior to similar class and category of restaurants.	1	2	3	4	5	6	7
5.	Normally, I am highly satisfied with the food and beverages I order.	1	2	3	4	5	6	7
6.	A moderate upscale restaurant has operating hours that are convenient.	1	2	3	4	5	6	7
7.	Overall, I am pleased I choose to dine in a moderate upscale restaurant.	1	2	3	4	5	6	7
8.	A moderate upscale restaurant provides an accurate check/bill for their customers.	1	2	3	4	5	6	7
9.	The price is reasonable for the quality of food, beverages and services provided.	1	2	3	4	5	6	7
10.	The food and beverage items on the menu are worth the money.	1	2	3	4	5	6	7
11.	Overall, I am satisfied with the value I receive from a moderate upscale restaurant.	1	2	3	4	5	6	7
12.	I have always had a good impression of a moderate upscale restaurant.	1	2	3	4	5	6	7
13.	A moderate upscale restaurant has an excellent reputation.	1	2	3	4	5	6	7
14.	The image of a moderate upscale restaurant has more impact on my restaurant choice than the actual quality of a restaurant.	1	2	3	4	5	6	7
15.	Overall, I am satisfied with the image portrayed by a moderate upscale restaurant.	1	2	3	4	5	6	7
16.	Normally, I say positive things about a moderate upscale restaurant.	1	2	3	4	5	6	7



		Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
17.	I will recommend a moderate upscale restaurant to my friends and my family.	1	2	3	4	5	6	7
18.	I strongly believe that a moderate upscale restaurant deserves my loyalty.	1	2	3	4	5	6	7
19.	I would consider a moderate upscale restaurant as my first dining choice.	1	2	3	4	5	6	7
20.	I will revisit a moderate upscale restaurant on my next dining out occasion.	1	2	3	4	5	6	7

Section E – Demographic Profiles

All your responses in this Section will be kept strictly confidential. Please answer **ALL** questions. Please choose **ONE** answer only, by ticking where appropriate, or fill-in the information as required.

1. Gender	<input type="checkbox"/> Male	<input type="checkbox"/> Female	
2. Age group	<input type="checkbox"/> 18 – 24 <input type="checkbox"/> 45 – 54	<input type="checkbox"/> 25 – 34 <input type="checkbox"/> 55 – 64	<input type="checkbox"/> 35 – 44 <input type="checkbox"/> Over 64
3. Marital status	<input type="checkbox"/> Single <input type="checkbox"/> Divorced	<input type="checkbox"/> Married <input type="checkbox"/> Widowed	<input type="checkbox"/> Separated
4. Ethnic background	<input type="checkbox"/> Malay <input type="checkbox"/> Bumiputera (<i>Please specify</i>) _____	<input type="checkbox"/> Chinese <input type="checkbox"/> Other (<i>Please specify</i>) _____	<input type="checkbox"/> Indian
5. Religion	<input type="checkbox"/> Islam <input type="checkbox"/> Christian	<input type="checkbox"/> Buddhist <input type="checkbox"/> Other (<i>Please specify</i>) _____	<input type="checkbox"/> Hindus
6. Highest level of education	<input type="checkbox"/> Primary School <input type="checkbox"/> Secondary School	<input type="checkbox"/> Diploma <input type="checkbox"/> Bachelor	<input type="checkbox"/> Master <input type="checkbox"/> Ph. D
7. Occupation	<input type="checkbox"/> Professional <input type="checkbox"/> Government officer <input type="checkbox"/> Student <input type="checkbox"/> Housewife	<input type="checkbox"/> Trades person <input type="checkbox"/> Business owner/Self-employed <input type="checkbox"/> Retired <input type="checkbox"/> Unemployed	
8. Which of the following represents your monthly household income ?	<input type="checkbox"/> Below RM3,000 <input type="checkbox"/> Between RM3,001 – RM6,000	<input type="checkbox"/> Between RM6,001 – RM9,000 <input type="checkbox"/> More than RM9,001	
9. What is the primary reason you normally dine out?	<input type="checkbox"/> Family outing <input type="checkbox"/> Outing with friends	<input type="checkbox"/> Business purposes <input type="checkbox"/> Special occasion	
10. Who do you normally dine out with?	<input type="checkbox"/> Family <input type="checkbox"/> Spouse <input type="checkbox"/> Partner	<input type="checkbox"/> Friends <input type="checkbox"/> Business Associate <input type="checkbox"/> Alone	
11. On average, how much do you spend per person when you dine out?	<input type="checkbox"/> Less than RM50 <input type="checkbox"/> Between RM101 – RM150	<input type="checkbox"/> Between RM51 – RM100 <input type="checkbox"/> More than RM151	
12. How often do you dine at a moderate upscale restaurant?	<input type="checkbox"/> First time visit <input type="checkbox"/> Once a week	<input type="checkbox"/> 2 to 3 times each month <input type="checkbox"/> Once a month	<input type="checkbox"/> Once or twice every 6 months <input type="checkbox"/> Once or twice every 12 months

Thank you for your kind assistance and time. I wish you a very good day! ☺

Appendix 3: Normality Test

Table 5A.1: Skewness and Kurtosis ($N = 535$)

Item No.	Skewness	Kurtosis	Items No.	Skewness	Kurtosis
A1	.283	-.937	C1	-.315	-.659
A2	.038	-.897	C2	-.114	-.766
A3	.320	-.857	C3	-.294	-.559
A4	-.012	-.511	C4	-.225	-.715
A5	-.141	-.522	C5	-.092	-.828
A6	.108	-.226	C6	-.213	-.858
A7	.234	-.315	C7	-.283	-.753
A8	.056	-.336	C8	-.153	-1.069
A9	-.013	.138	C9	-.182	-.881
A10	.252	.091	C10	-.246	-.894
A11	-.106	.239	C11	-.048	-1.088
A12	-.906	1.885	C12	-.178	-.936
A13	-.778	1.805	C13	-.144	-.698
A14	.052	-.887	C14	-.145	-.609
A15	-.537	1.919	C15	-.053	-.780
A16	-.147	-.557	C16	-.053	-.557
A17	-.071	-.669	C17	-.107	-.703
B1	-.309	-.867	C18	-.213	-.575
B2	-.316	-.651	C19	-.067	-.843
B3	-.293	-.778	D1	-.106	-.581
B4	-.169	-1.056	D2	-.206	-.598
B5	-.167	-.786	D3	-.050	-.725
B6	-.342	-.642	D4	-.173	-.760
B7	-.191	-.897	D5	-.148	-.711
B8	-.307	-.650	D6	-.092	-.903
B9	-.218	-.746	D7	-.087	-.828
B10	-.163	-1.069	D8	-.196	-.635
B11	-.137	-.961	D9	-.121	-.684
B12	-.075	-.931	D10	-.230	-.671
B13	-.043	-.568	D11	-.174	-.591
B14	.171	-.830	D12	-.160	-.891
B15	.028	-.470	D13	-.132	-.979
B16	-.128	-.420	D14	-.246	-.782
B17	-.216	-.554	D15	-.142	-.916
B18	-.257	-.569	D16	-.094	-.948
B19	-.178	-.652	D17	-.139	-.988
B20	-.307	-.703	D18	-.145	-1.037
B21	-.113	-.932	D19	-.158	-.985
B22	-.087	-.797	D20	-.319	-.829
B23	-.274	-.776			
B24	-.170	-1.003			
B25	-.155	-1.084			
B26	-.224	-.911			
B27	-.283	-.633			

Appendix 4: Results of the Construct Validity and Model-fit-indices
Table 5A.2: Results of the Measurement Models for Interaction Quality

Category	Item/Construct		Preliminary Model Indices Obtained	Modified Model Indices Obtained
Factor Loadings	Interpersonal Skills	A5	0.712	0.848
		A4	0.711	0.844
		A1	0.810	0.639
		A3	0.788	0.619
		A2	0.663	0.657
		A14	0.444	Deleted
	Professional Skills	A6	0.753	0.772
		A7	0.704	0.655
		A10	0.650	0.579
		A8	0.715	0.744
		A11	0.591	0.600
	Problem Solving Skills	A9	0.678	0.671
		A12	0.629	0.650
		A13	0.669	0.640
		A15	0.836	0.846
R²	Interpersonal Skills	A5	0.507	0.719
		A4	0.505	0.713
		A1	0.656	0.408
		A3	0.621	0.383
		A2	0.440	0.432
		A14	0.197	Deleted
	Professional Skills	A6	0.567	0.596
		A7	0.495	0.429
		A10	0.422	0.336
		A8	0.511	0.553
		A11	0.350	0.360
	Problem Solving Skills	A9	0.460	0.451
		A12	0.396	0.422
		A13	0.448	0.410
		A15	0.699	0.715
Critical Ratio	Interpersonal Skills	A5	6.569***	10.608***
		A4	6.570***	10.511***
		A1	6.838***	8.957***
		A3	6.757***	8.705***
		A2	6.497***	- ^a
		A14	- ^a	Deleted
	Professional Skills	A6	10.174***	10.054***
		A7	9.675***	9.031***
		A10	9.073***	8.176***
		A8	9.821***	9.872***
		A11	8.375***	8.336***
	Problem Solving Skills	A9	- ^a	- ^a
		A12	9.963***	9.836***
		A13	9.986***	9.524***
		A15	- ^a	- ^a
Correlations	Interpersonal Skills ⇔ Professional Skills		0.730	0.687
	Professional Skills ⇔ Problem Solving Skills		0.669	0.658
	Interpersonal Skills ⇔ Problem Solving Skills		0.821	0.720

Category	Item/Construct	Preliminary Model Indices Obtained	Modified Model Indices Obtained
Construct Validity	Interpersonal Skills		
	Composite Reliability	0.847	0.847
	Average Variance Extracted	0.488	0.531
	Professional Skills		
	Composite Reliability	0.840	0.832
	Average Variance Extracted	0.468	0.454
	Problem Solving Skills		
	Composite reliability	0.758	0.841
	Average variance extracted	0.514	0.516
Model-fit-indices	Recommended Threshold		
χ^2	None	402.054***	230.852***
df	None	87	72
χ^2/df	Between 1.00 – 5.00	4.621	3.206
RMR	Smaller than 0.10	.047	.046
RMSEA	Smaller than 0.10	0.119	.093
GFI	Larger than 0.90	0.818	0.889
NFI	Larger than 0.90	0.793	0.877
CFI	Larger than 0.90	0.829	0.911

Note: Statistically significant at *** = .001; ** = .05; * = 0.10
a: Not estimated when loading set to fixed value (i.e., 1.0)

Table 5A.3: Results of the Structural Model of Interaction Quality

Category	Item/Construct	Modified Model Indices Obtained	
Factor Loadings	Interpersonal Skills ← IQ	0.867	
	Professional Skills ← IQ	0.804	
	Problem Solving Skills ← IQ	0.815	
	Interpersonal Skills	A5	0.849
		A4	0.845
		A1	0.638
		A3	0.618
		A2	0.656
	Professional Skills	A6	0.771
		A7	0.654
		A10	0.578
		A8	0.743
		A11	0.598
	Problem Solving Skills	A9	0.663
		A12	0.650
A13		0.640	
	A15	0.853	
R²	Interpersonal Skills ← IQ	0.751	
	Professional Skills ← IQ	0.647	
	Problem Solving Skills ← IQ	0.664	
	Interpersonal Skills	A5	0.720
		A4	0.714
		A1	0.407
		A3	0.382
		A2	0.431
	Professional Skills	A6	0.595
		A7	0.428
		A10	0.334
		A8	0.552
		A11	0.358
	Problem Solving Skills	A9	0.439
		A12	0.422
A13		0.410	
	A15	0.727	
Critical Ratio	Interpersonal Skills ← IQ	8.889***	
	Professional Skills ← IQ	8.905***	
	Problem Solving Skills ← IQ	11.424***	
	Interpersonal Skills	A5	10.623***
		A4	10.529***
		A1	8.936***
		A3	8.687***
		A2	- _a
	Professional Skills	A6	10.499***
		A7	9.343***
		A10	8.395***
		A8	10.250***
		A11	8.532***
	Problem Solving Skills	A9	- _a
		A12	10.077***
A13		9.736***	
	A15	- _a	

Category	Item/Construct	Modified Model Indices Obtained
Model-fit-indices	Recommended Threshold	
χ^2	None	231.141 ***
df	None	73
χ^2/df	Between 1.00 – 5.00	3.166
RMR	Smaller than 0.10	.047
RMSEA	Smaller than 0.10	.092
GFI	Larger than 0.90	0.889
NFI	Larger than 0.90	0.877
CFI	Larger than 0.90	0.911

Note: Statistically significant at *** = .001; ** = .05; * = 0.10

a: Not estimated when loading set to fixed value (i.e., 1.0)

Table 5A.4: Result of the Measurement Models for Physical Environment Quality

Category	Item/Construct		Preliminary Model Indices Obtained	Modified Model Indices Obtained
Factor Loadings	Restaurant Ambience & Aesthetics	B7	0.878	0.882
		B1	0.839	0.822
		B3	0.874	0.876
		B2	0.848	0.835
		B6	0.855	0.859
		B8	0.873	0.868
		B9	0.848	Deleted
		B4	0.806	0.811
	Table Setting & Restaurant Cleanliness	B24	0.836	0.827
		B25	0.855	0.846
		B20	0.841	0.849
		B23	0.852	0.858
		B22	0.849	0.821
		B21	0.880	0.863
	Layout & Design	B14	0.712	Deleted
		B5	0.838	0.878
		B11	0.924	0.974
		B15	0.678	0.592
		B13	0.717	Deleted
		B12	0.813	Deleted
Menu Design	B18	0.893	0.913	
	B16	0.802	Deleted	
	B19	0.833	0.836	
	B17	0.873	0.862	
R²	Restaurant Ambience & Aesthetics	B7	0.771	0.778
		B1	0.704	0.676
		B3	0.764	0.767
		B2	0.719	0.698
		B6	0.731	0.738
		B8	0.763	0.754
		B9	0.719	Deleted
		B4	0.649	0.657
	Table Setting & Restaurant Cleanliness	B24	0.699	0.683
		B25	0.731	0.715
		B20	0.708	0.720
		B23	0.726	0.736
		B22	0.720	0.674
		B21	0.775	0.745
	Layout & Design	B14	0.508	Deleted
		B5	0.703	0.770
		B11	0.854	0.949
		B15	0.460	0.351
		B13	0.514	Deleted
		B12	0.661	Deleted
Menu Design	B18	0.797	0.834	
	B16	0.643	Deleted	
	B19	0.694	0.699	
	B17	0.762	0.744	
Critical Ratio	Restaurant Ambience & Aesthetics	B7	16.952***	17.121***
		B1	15.827***	15.419***
		B3	16.864***	16.975***
		B2	16.070***	15.775***

Category	Item/Construct	Preliminary Model Indices Obtained	Modified Model Indices Obtained	
		B6	16.331***	16.507***
		B8	16.765***	16.656***
		B9	16.060***	Deleted
		B4	- ^a	- ^a
	Table Setting & Restaurant Cleanliness	B24	- ^a	- ^a
		B25	17.402***	19.331***
		B20	16.657***	16.260***
		B23	17.144***	16.758***
		B22	16.804***	15.510***
		B21	17.787***	16.642***
		Layout & Design	B14	12.344***
	B5		15.211***	10.606***
	B11		17.748***	10.809***
	B15		11.556***	- ^a
	B13		12.541***	Deleted
	B12		- ^a	Deleted
	Menu Design	B18	18.006***	18.236***
		B16	14.993***	Deleted
		B19	- ^a	- ^a
B17		16.996***	16.646***	
Correlations	Layout & Design ⇔ R. Ambience & Aesthetics	0.737	0.684	
	Menu Design ⇔ R. Ambience & Aesthetics	0.692	0.669	
	Menu Design ⇔ Layout & Design	0.698	0.586	
	Layout & Design ⇔ Table Setting & R. Cleanliness	0.687	0.612	
	Menu Design ⇔ Table Setting & R. Cleanliness	0.791	0.791	
	Table Setting & R. Cleanliness ⇔ R. Ambience & Aesthetics	0.795	0.792	
Construct Validity	R. Ambience & Aesthetics			
	Composite Reliability	0.955	0.948	
	Average Variance Extracted	0.728	0.724	
	Table Setting & R. Cleanliness			
	Composite Reliability	0.941	0.937	
	Average Variance Extracted	0.727	0.712	
	Layout & Design			
	Composite Reliability	0.905	0.865	
	Average Variance Extracted	0.617	0.690	
	Menu Design			
Composite Reliability	0.913	0.904		
Average Variance Extracted	0.724	0.759		
Model-fit-indices	Recommended Threshold			
	χ^2	None	890.181***	382.809***
	<i>df</i>	None	246	143
	χ^2/df	Between 1.00 – 5.00	3.619	2.677
	RMR	Smaller Than 0.10	.066	.056
	RMSEA	Smaller Than 0.10	0.102	.081
	GFI	Larger Than 0.90	0.763	0.863
	NFI	Larger Than 0.90	0.858	0.920
	CFI	Larger Than 0.90	0.892	0.948

Note: Statistically significant at *** = .001; ** = .05; * = 0.10
a: Not estimated when loading set to fixed value (i.e., 1.0)

Table 5A.5: Results of the Structural Model of Physical Environment Quality

Category	Item/Construct	Structural Model Indices Obtained	
Factor Loadings	Restaurant Ambience & Aesthetics ← PEQ	0.863	
	Layout & Design ← PEQ	0.715	
	Menu Design ← PEQ	0.825	
	Table Setting & Restaurant Cleanliness ← PEQ	0.920	
	Restaurant Ambience & Aesthetics	B7	0.882
		B1	0.825
		B3	0.874
		B2	0.837
		B6	0.858
		B8	0.869
		B4	0.810
	Layout & Design	B5	0.877
		B11	0.975
		B15	0.593
	Menu Design	B18	0.913
		B19	0.837
		B17	0.862
	Table Setting & Restaurant Cleanliness	B24	0.830
		B25	0.848
		B20	0.845
B23		0.856	
B22		0.825	
B21	0.863		
R²	Restaurant Ambience & Aesthetics ← PEQ	0.745	
	Layout & Design ← PEQ	0.511	
	Menu Design ← PEQ	0.680	
	Table Setting & Restaurant Cleanliness ← PEQ	0.846	
	Restaurant Ambience & Aesthetics	B7	0.777
		B1	0.680
		B3	0.764
		B2	0.701
		B6	0.737
		B8	0.755
		B4	0.657
	Layout & Design	B5	0.769
		B11	0.951
		B15	0.352
	Menu Design	B18	0.834
		B19	0.700
		B17	0.743
	Table Setting & Restaurant Cleanliness	B24	0.688
		B25	0.720
		B20	0.714
B23		0.732	
B22		0.681	
B21	0.745		
Critical Ratio	Restaurant Ambience & Aesthetics ← PEQ	12.897***	
	Layout & Design ← PEQ	8.135***	
	Menu Design ← PEQ	12.361***	
	Table Setting & Restaurant Cleanliness ← PEQ	13.966***	
	Restaurant Ambience & Aesthetics	B7	17.090***
		B1	15.470***
		B3	16.913***
		B2	15.807***
		B6	16.466***

Category	Item/Construct	Structural Model Indices Obtained	
		B8	16.648***
		B4	_ ^a
	Layout & Design	B5	10.622***
		B11	10.778***
		B15	_ ^a
	Menu Design	B18	18.212***
		B19	_ ^a
		B17	16.623***
	Table Setting & Restaurant Cleanliness	B24	_ ^a
		B25	19.377***
		B20	16.230***
		B23	16.776***
		B22	15.660***
B21		16.685***	
Model-fit-indices	Recommended Threshold		
χ^2	None	400.312***	
<i>df</i>	None	145	
χ^2/df	Between 1.00 – 5.00	2.761	
RMR	Smaller than 0.10	.060	
RMSEA	Smaller than 0.10	.083	
GFI	Larger than 0.90	0.855	
NFI	Larger than 0.90	0.917	
CFI	Larger than 0.90	0.945	

Note: Statistically significant at *** = .001; ** = .05; * = 0.10

a: Not estimated when loading set to fixed value (i.e., 1.0)

Table 5A.6: Results of the Measurement Models for Outcome Quality

Category	Item/Construct		Preliminary Model Indices Obtained	Modified Model Indices Obtained
Factor Loadings	Pleasant Dining Experience	C17	0.857	0.861
		C10	0.801	Deleted
		C12	0.774	0.734
		C15	0.877	0.892
		C11	0.836	0.803
		C16	0.886	0.896
	Food Quality	C14	0.851	0.858
		C7	0.899	0.899
		C8	0.892	0.892
		C9	0.864	0.864
		C6	0.912	0.912
		C5	0.792	0.779
	Menu Variety	C4	0.918	0.932
		C2	0.888	0.899
		C3	0.611	0.586
C1		0.692	Deleted	
R^2	Pleasant Dining Experience	C17	0.735	0.742
		C10	0.641	Deleted
		C12	0.600	0.539
		C15	0.770	0.795
		C11	0.699	0.645
		C16	0.785	0.803
	Food Quality	C14	0.724	0.737
		C7	0.807	0.809
		C8	0.795	0.796
		C9	0.747	0.746
	Menu Variety	C6	0.832	0.831
		C5	0.627	0.608
		C4	0.842	0.869
		C2	0.789	0.808
		C3	0.373	0.344
C1	0.478	Deleted		
Critical Ratio	Pleasant Dining Experience	C17	- ^a	- ^a
		C10	15.969***	Deleted
		C12	15.222***	14.094***
		C15	18.954***	19.487***
		C11	17.314***	16.271***
		C16	19.416***	19.889***
	Food Quality	C14	17.729***	17.932***
		C7	23.009***	22.992***
		C8	22.164***	22.119***
		C9	20.449***	20.389***
	Menu Variety	C6	- ^a	- ^a
		C5	11.786***	9.620***
		C4	13.049***	10.461***
		C2	12.731***	10.412***
		C3	9.306***	- ^a
C1	- ^a	Deleted		
Correlations	Dining Exp. ⇔ Food Quality		0.799	0.784
	Food Quality ⇔ Menu Variety		0.759	0.734
	Dining Exp. ⇔ Menu Variety		0.752	0.729

Category	Item/Construct	Preliminary Model Indices Obtained	Modified Model Indices Obtained
Construct Validity	Pleasant Dining Experience		
	Composite Reliability	0.944	0.960
	Average Variance Extracted	0.708	0.799
	Food Quality		
	Composite Reliability	0.940	0.940
	Average Variance Extracted	0.795	0.796
	Menu Variety		
	Composite Reliability	0.889	0.882
	Average Variance Extracted	0.622	0.657
Model-fit-indices	Recommended threshold		
χ^2	None	382.318***	184.774***
df	None	101	73
χ^2/df	Between 1.00 – 5.00	3.785	2.531
RMR	Smaller than 0.10	.056	.044
RMSEA	Smaller than 0.10	0.105	.078
GFI	Larger than 0.90	0.849	0.909
NFI	Larger than 0.90	0.903	0.946
CFI	Larger than 0.90	0.926	0.967

Note: Statistically significant at *** = .001; ** = .05; * = 0.10
a: Not estimated when loading set to fixed value (i.e., 1.0)

Table 5A.7: Results of the Structural Models for Outcome Quality

Category	Item/Construct	Modified Model Indices Obtained	
Factor Loadings	Pleasant Dining Experience ← OQ	0.882	
	Menu Variety ← OQ	0.826	
	Food Quality ← OQ	0.889	
	Pleasant Dining Experience	C17	0.862
		C12	0.734
		C15	0.892
		C11	0.803
		C16	0.896
		C14	0.858
	Menu Variety	C5	0.779
		C4	0.932
		C2	0.899
		C3	0.586
	Food Quality	C7	0.899
		C8	0.892
		C9	0.864
C6		0.912	
R²	Pleasant Dining Experience ← OQ	0.777	
	Menu Variety ← OQ	0.682	
	Food Quality ← OQ	0.791	
	Pleasant Dining Experience	C17	0.742
		C12	0.539
		C15	0.795
		C11	0.645
		C16	0.803
		C14	0.737
	Menu Variety	C5	0.608
		C4	0.869
		C2	0.808
		C3	0.344
	Food Quality	C7	0.808
		C8	0.796
		C9	0.746
C6		0.831	
Critical Ratio	Pleasant Dining Experience ← OQ	14.056***	
	Menu Variety ← OQ	8.796***	
	Food Quality ← OQ	15.246***	
	Pleasant Dining Experience	C17	- ^a
		C12	14.195***
		C15	19.781***
		C11	16.453***
		C16	20.141***
		C14	18.137***
	Menu Variety	C5	9.620***
		C4	10.461***
		C2	10.411***
		C3	- ^a
	Food Quality	C7	23.152***
		C8	22.286***
		C9	20.519***
C6		- ^a	

Category	Item/Construct	Modified Model Indices Obtained
Model-fit-indices	Recommended threshold	
χ^2	None	184.774***
<i>df</i>	None	74
χ^2/df	Between 1.00 – 5.00	2.497
RMR	Smaller than 0.10	.044
RMSEA	Smaller than 0.10	.077
GFI	Larger than 0.90	0.909
NFI	Larger than 0.90	0.946
CFI	Larger than 0.90	0.967

Note: Statistically significant at *** = .001; ** = .05; * = 0.10

a: Not estimated when loading set to fixed value (i.e., 1.0)

Table 5A.8: Results of the Measurement Model for Primary Dimensions

Category	Item/Construct	Measurement Model Indices Obtained	
Factor Loadings	Interaction quality	A17	0.952
		A16	0.880
	Physical environment quality	B26	0.913
		B27	0.928
	Outcome quality	C18	0.884
		C13	0.857
C19		0.928	
R²	Interaction quality	A17	0.907
		A16	0.774
	Physical environment quality	B26	0.834
		B27	0.862
	Outcome quality	C18	0.782
		C13	0.734
C19		0.861	
Critical Ratio	Interaction quality	A17	- ^a
		A16	19.211
	Physical environment quality	B26	21.841
		B27	- ^a
	Outcome quality	C18	22.453
		C13	20.292
C19		- ^a	
Correlations	Physical Environment Quality ⇔ Interaction Quality		0.708
	Physical Environment Quality ⇔ Outcome Quality		0.842
	Interaction Quality ⇔ Outcome Quality		0.774
Construct Validity	Interaction quality		
	Cronbach alpha		0.911
	Composite reliability		0.913
	Average variance extracted		0.841
	Physical environment quality		
	Cronbach alpha		0.917
	Composite reliability		0.918
	Average variance extracted		0.848
	Outcome quality		
	Cronbach alpha		0.917
	Composite reliability		0.920
	Average variance extracted		0.792
Model-fit-indices	Recommended threshold		
	χ^2	None	32.243**
	<i>df</i>	None	11
	χ^2 / df	Between 1.00 – 5.00	2.931
	RMR	Smaller than 0.10	.018
	RMSEA	Smaller than 0.10	.087
	GFI	Larger than 0.90	0.962
	NFI	Larger than 0.90	0.981
CFI	Larger than 0.90	0.987	

Note: Statistically significant at *** = .001; ** = .05; * = 0.10

a: Not estimated when loading set to fixed value (i.e., 1.0)

Table 5A.9: Results for the Structural Model for Primary Dimesions

Category	Item/Construct	Modified Model Indices Obtained	
Factor Loadings	Interaction quality ← SQ	0.812	
	Physical environment quality ← SQ	0.905	
	Outcome quality ← SQ	0.929	
	Interaction quality	A17	0.949
		A16	0.883
	Physical environment quality	B26	0.912
		B27	0.925
	Outcome quality	C18	0.885
		C13	0.856
		C19	0.931
R²	Interaction quality ← SQ	0.659	
	Physical environment quality ← SQ	0.819	
	Outcome quality ← SQ	0.864	
	Interaction quality	A17	0.901
		A16	0.779
	Physical environment quality	B26	0.833
		B27	0.856
	Outcome quality	C18	0.784
		C13	0.732
		C19	0.867
Critical Ratio	Interaction quality ← SQ	13.967***	
	Physical environment quality ← SQ	15.815***	
	Outcome quality ← SQ	16.990***	
	Interaction quality	A17	- _a
		A16	19.249***
	Physical environment quality	B26	22.012***
		B27	- _a
	Outcome quality	C18	22.742***
		C13	20.480***
		C19	- _a
Model-fit-indices	Recommended threshold		
χ^2	None	34.553**	
<i>df</i>	None	12	
χ^2/df	Between 1.00 – 5.00	2.879	
RMR	Smaller than 0.10	.021	
RMSEA	Smaller than 0.10	.086	
GFI	Larger than 0.90	0.960	
NFI	Larger than 0.90	0.979	
CFI	Larger than 0.90	0.986	

Note: Statistically significant at *** = .001; ** = .05; * = 0.10

a: Not estimated when loading set to fixed value (i.e., 1.0)

Table 5A.10: Results of the Measurement Models for Causal Path

Category	Item/Construct		Preliminary Model Indices Obtained	Modified Model Indices Obtained
Factor Loadings	Service quality	D4	0.891	Deleted
		D3	0.916	0.915
		D2	0.823	0.840
		D1	0.829	0.855
	Customer satisfaction	D6	0.916	0.913
		D5	0.877	0.877
		D7	0.911	0.918
	Perceived value	D11	0.833	0.838
		D10	0.882	Deleted
		D9	0.891	0.901
		D8	0.879	0.896
	Restaurant image	D13	0.939	0.950
		D12	0.927	0.941
		D14	0.871	0.853
		D15	0.905	Deleted
	Behavioural intentions	D19	0.894	0.901
		D18	0.933	0.937
		D17	0.927	0.924
		D16	0.907	Deleted
		D20	0.891	0.895
R²	Service quality	D4	0.794	Deleted
		D3	0.839	0.837
		D2	0.677	0.706
		D1	0.687	0.732
	Customer satisfaction	D6	0.839	0.834
		D5	0.768	0.769
		D7	0.831	0.842
	Perceived value	D11	0.695	0.703
		D10	0.778	Deleted
		D9	0.794	0.812
		D8	0.773	0.802
	Restaurant image	D13	0.882	0.902
		D12	0.859	0.885
		D14	0.759	0.728
		D15	0.818	Deleted
	Behavioural intentions	D19	0.800	0.812
		D18	0.870	0.878
		D17	0.860	0.853
		D16	0.822	Deleted
		D20	0.795	0.801
Critical Ratio	Service quality	D4	- ^a	Deleted
		D3	22.287***	- ^a
		D2	17.652***	18.257***
		D1	17.788***	18.923***
	Customer satisfaction	D6	23.998***	24.071***
		D5	21.438***	21.723***
		D7	- ^a	- ^a
	Perceived value	D11	- ^a	- ^a
		D10	17.743***	Deleted
		D9	18.137***	18.096***
		D8	17.754***	17.945***
	Restaurant image	D13	25.493***	21.959***

Category	Item/Construct	Preliminary Model Indices Obtained	Modified Model Indices Obtained	
		D12	24.476***	21.566***
		D14	21.254***	_a
		D15	_a	Deleted
	Behavioural intentions	D19	22.009***	22.521***
		D18	24.305***	24.576***
		D17	23.859***	23.640***
		D16	22.522***	Deleted
		D20	_a	_a
Correlations	SQ ⇔ CS	0.888	0.854	
	PV ⇔ CS	0.853	0.819	
	PV ⇔ RI	0.850	0.806	
	BI ⇔ RI	0.884	0.850	
	SQ ⇔ PV	0.765	0.715	
	SQ ⇔ RI	0.862	0.817	
	SQ ⇔ BI	0.839	0.804	
	RI ⇔ CS	0.864	0.853	
	BI ⇔ CS	0.852	0.840	
	PV ⇔ BI	0.813	0.790	
Construct Validity	Service quality			
	Cronbach alpha	0.922	0.907	
	Composite reliability	0.923	0.904	
	Average variance extracted	0.749	0.758	
	Customer satisfaction			
	Cronbach alpha	0.930	0.930	
	Composite reliability	0.929	0.930	
	Average variance extracted	0.813	0.815	
	Perceived value			
	Cronbach alpha	0.926	0.908	
	Composite reliability	0.927	0.910	
	Average variance extracted	0.760	0.772	
	Restaurant image			
	Cronbach alpha	0.950	0.935	
	Composite reliability	0.951	0.939	
	Average variance extracted	0.830	0.838	
	Behavioural intentions			
	Cronbach alpha	0.960	0.952	
	Composite reliability	0.960	0.953	
	Average variance extracted	0.829	0.868	
Model-fit-indices	Recommended threshold			
	χ^2	None	469.754***	249.157***
	df	None	160	94
	χ^2/df	Between 1.00 – 5.00	2.936	2.651
	RMR	Smaller than 0.10	.036	.034
	RMSEA	Smaller than 0.10	.087	.081
	GFI	Larger than 0.90	0.850	0.893
	NFI	Larger than 0.90	0.927	0.948
	CFI	Larger than 0.90	0.950	0.967

Note: Statistically significant at *** = .001; ** = .05; * = 0.10

^a: Not estimated when loading set to fixed value (i.e., 1.0)

Table 5A.11: Results of the Structural Model of Causal Path

Category	Item/Construct	Structural Model Indices Obtained	
Factor Loadings	Restaurant image ← Service quality	0.851	
	Perceived value ← Service quality	0.770	
	Customer satisfaction ← Service quality	0.448	
	Customer satisfaction ← Restaurant image	0.257	
	Customer satisfaction ← Perceived value	0.283	
	Behavioural intentions ← Customer satisfaction	0.343	
	Behavioural intentions ← Service quality	0.204	
	Behavioural intentions ← Restaurant image	0.384	
	Service quality	D3	0.904
		D2	0.829
		D1	0.847
	Customer satisfaction	D5	0.875
		D6	0.911
		D7	0.916
	Perceived value	D11	0.834
		D9	0.904
		D8	0.896
	Restaurant image	D13	0.951
		D12	0.942
		D14	0.851
Behavioural intentions	D19	0.900	
	D18	0.937	
	D17	0.922	
	D20	0.895	
R²	Restaurant image	0.724	
	Perceived value	0.593	
	Customer satisfaction	0.834	
	Behavioural intentions	0.781	
	Service quality	D3	0.817
		D2	0.688
		D1	0.718
	Customer satisfaction	D5	0.766
		D6	0.829
		D7	0.839
	Perceived value	D11	0.696
		D9	0.817
		D8	0.804
	Restaurant image	D13	0.904
		D12	0.886
		D14	0.724
	Behavioural intentions	D19	0.810
		D18	0.877
		D17	0.851
		D20	0.801
Critical Ratio	Restaurant image ← Service quality	14.752***	
	Perceived value ← Service quality	12.224***	
	Customer satisfaction ← Service quality	5.235***	
	Customer satisfaction ← Restaurant image	3.161**	
	Customer satisfaction ← Perceived value	4.389***	
	Behavioural intentions ← Customer satisfaction	3.455***	

Category	Item/Construct	Structural Model Indices Obtained
	Behavioural intentions ← Service quality	1.978**
	Behavioural intentions ← Restaurant image	4.557***
	Service quality	D3
		D2
		D1
	Customer satisfaction	D5
		D6
		D7
	Perceived value	D11
		D9
		D8
	Restaurant image	D13
		D12
		D14
	Behavioural intentions	D19
		D18
		D17
		D20
Model-fit-indices	Recommended threshold	
χ^2	None	307.653***
df	None	96
χ^2/df	Between 1.00 – 5.00	3.205
RMR	Smaller than 0.10	.062
RMSEA	Smaller than 0.10	.093
GFI	Larger than 0.90	0.877
NFI	Larger than 0.90	0.936
CFI	Larger than 0.90	0.955

Note: Statistically significant at *** = .001; ** = .05; * = 0.10

^a: Not estimated when loading set to fixed value (i.e., 1.0)