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**AN INVESTIGATION OF THE RELATIONSHIPS BETWEEN SERVICE
QUALITY, CUSTOMER SATISFACTION, PERCEIVED VALUE AND
BEHAVIOURAL INTENTIONS**

**JACKIE LAI MING TAM
Doctor of Philosophy**

**ASTON UNIVERSITY
OCTOBER 2000**

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ASTON UNIVERSITY

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SUMMARY

Customer satisfaction and service quality are two important concepts in the marketing literature. However, there has been some confusion about the conceptualisation and measurement of these two concepts and the nature of the relationship between them. The primary objective of this research was to develop a more thorough understanding of these concepts, and a model that could help to explain the links between them and their relationships with post-purchase behaviour. A preliminary theoretical model was developed, based on an exhaustive review of the literature. Following exploratory research, the model was revised by incorporating "Perceived Value" and "Perceived Sacrifice" to help explain customer's post-purchase behaviour. A longitudinal survey was conducted in the context of the restaurant industry, and the data were analysed using structural equation modelling. The results provided evidence to support the main research hypotheses. However, the effect of "Normative Expectations" on "Encounter Quality" was insignificant, and "Perceived Value" had a direct effect on "Behavioural Intentions", despite expectations that such an effect would be mediated through "Customer Satisfaction". It was also found that "Normative Expectations" were relatively more stable than "Predictive Expectations". It is argued that the present research significantly contributes to the marketing literature, and in particular the role of perceived value in the formation of customers' post-purchase behaviour. Further research efforts in this area are warranted.

Key words:

Service Quality, Customer Satisfaction, Perceived Value.

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Chapter 1 Introduction

1.1 Rationale of the Research

The service sector plays a significant role in most economies. According to Bateson (1995), services currently account for 58 % of the total world-wide GNP. As competition intensifies, many service firms are seeking ways to differentiate themselves from competitors. Senior management are interested in delivering high quality service, as they believe this will have direct impact on customer satisfaction and repurchase behaviour. Concurrently, as consumers become better educated they also become more sophisticated and demand better quality services. The importance of service and its significant contribution to the economy is expected to rise as manufacturers and companies selling goods also provide service to augment their product offerings.

In response, academic interest regarding the strategic benefits of service quality has been growing. Service quality has been widely recognised as a competitive tool to differentiate a firm's offerings in the marketplace (Ghobadian et al. 1994; Clow and Vorhies 1993; Brown and Swartz 1989; Parasuraman et al. 1988; Legg and Baker 1987). It can also strengthen a firm's competitive position and improve its profitability (Reicheld and Sasser 1990). Further, Buzzell and Gale's (1987) study provided evidence to support the notion that superior quality contributes to increased market share and profits. Zahorik and Rust's (1992) study also showed the effect of quality on profits in the service sectors.

Closely related to quality is customer satisfaction. The concept of customer satisfaction occupies a central position in marketing thought and practice (Churchill and Surprenant 1982). Much work has been conducted on the antecedents and consequences of satisfaction. Studies have found that satisfaction is a significant determinant of repeat sales, word-of-mouth and customer loyalty (Liljander and Strandvik 1995; Anderson and

Sullivan 1993; Swan 1988; Woodside et al. 1989; Bearden and Teel 1983; La Barbera and Mazursky 1983).

The importance of expectations in the evaluation of satisfaction and service quality are documented in the literature. Expectations also play a major role in consumer decision making process (Raaij 1991; Spreng, Dixon and Olshavsky 1993). In the pre-purchase stage, expectations influence consumer decisions on which brand or type of product or service to buy. During consumption, expectations can be affected by other customers, the attitude of service personnel, interior design and equipment. In the post-purchase stage, expectations form the basis of evaluations of satisfaction (Kurtz and Clow 1998).

As competition further intensifies, many firms have realised that merely satisfying customers is not enough. There is evidence suggesting that even satisfied customers can switch to a competitor's offerings (Jones and Sasser 1995). Reichheld (1993) suggested that customer satisfaction might not lead to retention. His study reported that between 65 percent and 85 percent of customers who switched to other suppliers had expressed that they were satisfied or very satisfied with their former supplier. Mittal and Lasser (1998) indicated that about 20 to 30 percent of highly satisfied customers also expressed the tendency to switch.

In recent years, many firms have started shifting their focus from customer acquisition to customer retention. These firms aim to build a long-lasting relationship with their customers. It has been suggested that keeping customers cost less than attracting new customers (Fornell and Wernerfelt 1987; Reichheld and Sasser 1990). Delivering superior service has been suggested as one of the means to strengthen ties between firms and customers. In the recent literature, researchers have placed greater emphasis on service encounters due to the inseparability of the production and consumption of most services. Bitner and Hubbert (1994), Oliver (1993), and Grönroos (1993) assert that each encounter provides an opportunity for a firm to demonstrate its commitment to quality. These researchers contend that management cannot afford to treat each service encounter

as a discrete transaction. Instead, management should view each encounter as a chance to strengthen the relationships with their customers. This is particularly true in highly competitive markets where customers are confronted with many choices. Firms have to strive hard to gain customer loyalty.

Firms are increasingly concerned with customer post-purchase behaviour. Service quality and satisfaction are posited to have effects on this behaviour. However, researchers have acknowledged that actual purchase behaviour is difficult to predict. Ajzen and Fishbein (1980) suggest that a person will generally act in accordance with predisposed intentions, and Engel et al. (1986) also suggest that intention is the determinant of actual purchase.

Despite the fact that consumer satisfaction and service quality have been extensively studied, only a few empirical studies have examined the relationship between them, and their effects on behavioural intention (Anderson and Sullivan 1993; Cronin and Taylor 1992; Bolton and Drew 1991; Bitner 1990; Woodside et al. 1989). Furthermore, the results of these studies are not conclusive due to the lack of consensus on the definition and operationalisation of the two concepts. A considerable effort has been devoted to studying the role of expectations in the formation of satisfaction (Tse and Wilton 1988; Cadotte et al. 1987; Prakash and Lounsbury 1984). However, different standards of expectation have been suggested to distinguish between consumer satisfaction and service quality (Oliver 1993; Iacobucci et al. 1994; Parasuraman et al. 1988), little empirical research has been conducted.

This research attempts to examine the effects of different comparison standards on satisfaction and service quality, and the relationship between service quality, satisfaction and behavioural intentions. It will also examine the influence of recent experience on customer comparison standards.

1.2 Objectives of the Research

The objectives of this research are to integrate the theory and prior empirical research on service quality and customer satisfaction into a comprehensive model that can explain the causal relationship between these variables, and to investigate their effects on behavioural intentions.

The research is designed specifically to address the following issues:

1. How is customer satisfaction different from service quality? What is the nature of the relationship between these two constructs?
2. What are the influences of service quality and satisfaction on behavioural intention? How effective are service quality and satisfaction in capturing customer loyalty?
3. What are the effects of different comparison standards on service quality and satisfaction? How stable are consumer's comparison standards over their prior experience?

1.3 Significance of the Research

Service quality and customer satisfaction are both important concepts, but a review of the literature identifies some confusion about how these two constructs are conceptualised and measured, and their causal direction. There is a need to clarify these issues, and the findings of this research are expected to offer both theoretical and practical contributions to the field studied.

Theoretical Contributions

The concept of customer satisfaction occupies a significant role in marketing theory. On the other hand, service industries continue contributing to the world-wide economies, and service quality has been used as a strategic tool. However, service quality has been conceptualised as very similar to customer satisfaction and yet the two concepts are theoretically different. Considering the importance of service quality and customer satisfaction in the marketing literature, it is important to increase our understanding of these two concepts. They are discussed in an exhaustive scope of literature, but integration of these two research streams is rare. Thus, this study synthesised theory and research, compared and contrasted the similarities and differences between customer satisfaction and service quality, and examined the theoretical linkage between them. The aim is to advance knowledge in both fields.

The importance of customer satisfaction in the marketing literature is attributed to its ability to predict post-purchase behaviour. However, it has been noted that satisfaction does not necessarily lead to repurchase intention. There are other factors, such as service quality and perceived value that can better help explain post-purchase behaviour. This study aims to develop a comprehensive model that incorporates customer satisfaction, perceived value and service quality, and ascertains their influence on post-purchase behaviour. These three concepts have each been shown to affect post-purchase behaviour, and investigating them simultaneously can enhance our understanding of their explanatory power with regards to post-purchase behaviour. Further, expectations play a major role in the consumer decision making process, and knowing the stability of expectations over recent experience can advance our knowledge on consumer purchase decision.

Managerial Contributions

The significance of this study to management is readily apparent. Management would be interested to know what types of comparison standards consumers use to assess service quality, in order to better formulate their communication programs. Secondly, a deeper understanding of what determines customer satisfaction and service quality is vital to determine how service should be designed and managed. Thirdly, there is limited empirical research on service encounters despite its tendency to draw academic and practitioner attention over the past decade. Lastly, since customer satisfaction has been used as the means to achieve the business goals of most companies, it is important that management understand how customer satisfaction is related to post-purchase behaviour, and can formulate effective marketing strategies.

1.4 Scope of the Research

The study was conducted in the context of restaurant dining in Hong Kong. The reason for choosing the restaurant industry was that restaurants offer both tangible and intangible elements, as most product offerings combine tangible and intangible elements. Further, the literature suggests that customers in such establishments could well have both active and passive expectations. According to Raaij (1991), passive expectations do not result in active information processing, and they reside permanently and passively in memory. Bolton and Drew (1991b) and Oliver (1989) have argued that for some services such as public utilities and cable television, consumers may hold passive expectations. If this is the case, then consumer evaluations of continuously provided services will rely solely on perceived performance, and disconfirmation of expectations will not occur unless a breakdown event occurs. Restaurants were specifically chosen for this study because the quality of service varies across the industry. Consumers are familiar with restaurant service and they are likely to possess different levels of expectations prior to consumption.

Additionally, competition is fierce in the Hong Kong restaurant industry. Diners have many choices, and if they find the services provided are not satisfactory, they can easily find other providers. The switching cost for consumers is minimal. Furthermore, restaurants have already been selected as the research object in satisfaction research (Cadotte et al. 1987; Prakash and Lounsbury 1984; Swan and Trawick 1981) and in service quality research (Liljander and Stranvik 1995; Sweeney et al. 1992; Lehtinen and Lehtinen 1991).

1.5 Limitations of the Research

The study is focused on one industry, and therefore the general applicability of the results may be limited by the characteristics of the service chosen. Most service quality research has treated service quality as a global judgement, and administered the expectation and perceived performance statements at the same time. However, the measurement of expectations may have been adjusted by the experience of the customers. In order to avoid this problem, the expectation statements in this study were administered prior to customers entering the restaurant and when customers left the restaurant. The remaining parts of the questionnaire were used to obtain customers evaluations of service performance and satisfaction, and their intended behaviour. The pre-measures and post-measures were administered over a relatively short time span and recall effects may occur. Further, the pre-measures might have sensitised the respondents to evaluate the service differently, therefore a control group was used to gauge whether the pre-measures heightened respondent sensitivity toward their evaluations of the service performance. The respondents in the control group were required only to complete the post-purchase measures. Efforts were made to minimise any possible bias that might have arisen during the conduct of the study, and they are discussed in section 5.3.4

Chapter 2 - Literature Review

2.1 Introduction

Service quality has been viewed and studied in a very similar manner to the expectancy-disconfirmation model in the consumer satisfaction literature. The purpose of this chapter is to provide a comprehensive review of the theories and past research on satisfaction and service quality. First, the conceptualisations of these two concepts are reviewed, and previous research on consumer satisfaction and service quality is critically examined. Second, the dimensions of service quality and measurement issues are discussed. Third, the similarities and differences between the two concepts are identified. Fourth, the nature of the relationship between satisfaction and service quality is proposed. Finally, on the basis of findings drawn from the literature review this chapter attempts to link the two concepts together into a coherent model.

2.2 Consumer Satisfaction

Although, much work has been conducted on the subject of consumer satisfaction, notions of how it is defined and measured differ widely. The following sections present a review of how consumer satisfaction has been conceptualised and how it is measured. Previous studies on the antecedents and consequences of satisfaction are also explored.

2.2.1 Definitions of Consumer Satisfaction

Howard and Sheth (1969) provided an early definition of consumer satisfaction. They viewed satisfaction as “the buyer’s cognitive state of being adequately/inadequately rewarded for the sacrifice undergone”. Churchill and Surprenant (1982) conceptualised satisfaction as “an outcome of purchase and use resulting from the buyer’s comparison of the rewards and costs of the purchase in relation to the anticipated consequences”. The

preceding definitions recognised that value is an important variable in determining satisfaction, and consumers were considered rational. Satisfaction resulted from a cognitive process of comparing the rewards against the cost incurred. However, Oliver (1981) defined satisfaction as “a summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer’s prior feelings about the consumption”. His definition suggests that satisfaction is an affective response resulting from a comparison process. All these definitions construe satisfaction as an end-state.

Still other researchers view satisfaction as an on-going process. Yi (1990) suggests that the process-oriented approach seems useful in that “it spans the entire consumption experience and points to an important process which may lead to customer satisfaction with unique measures capturing unique components of each stage”. This line of argument is also supported by Tse et al. (1990), who view consumer satisfaction as a subjective process of consumption experience. Wilton and Nicosia (1986) partially supported this view. They contended that satisfaction should not be viewed as a static, measurable variable but as an extended system of interactions surrounding the acts of purchase, consumption and repurchase.

The emerging consensus in the literature views satisfaction as an affective or emotional response resulting from a cognitive evaluation. In other words, consumers compare their expectations to their perceptions of performance (Oliver 1980; Westbrook 1987; Woodruff et al. 1983; Cadotte 1987; Rust and Oliver 1994). Such conceptualisations of consumer satisfaction incorporate both process and end-state views.

2.2.2, Consumer Satisfaction as Attitude

Some researchers assert that satisfaction is a special kind of consumer attitude (Czepiel and Rosenberg 1977; Woodside et al. 1989). LaTour and Peat (1979) stated that “given

that satisfaction and attitude are both evaluative responses to products, it is not clear whether there are any substantive difference between the two”.

However, Oliver (1981) contended that satisfaction is conceptually different from attitude. He viewed satisfaction as “an evaluation of the surprise inherent in a product acquisition and or consumption experience”. The surprise or excitement is of finite duration, and satisfaction soon decays into an attitude towards the purchase. Further, Westbrook and Oliver (1981) argued that satisfaction is an evaluation of the totality of the purchase situation relative to expectations, whereas attitude is a liking for the product that lacks the element of comparison. Similarly, Day (1984) contended that satisfaction is a transient emotion and cannot be considered an attitude, because the latter comprises persistence and stability over time. Yi (1990) argued that if the two constructs are the same, then they should have the same determinants and consequences, but the analyses of consequences in prior studies indicated that there is a clear distinction between the two constructs. Thus, there is some consensus among researchers that customer satisfaction and attitudes are distinctive concepts.

2.2.3 Psychological Theories

There are various theories in the literature attempting to explain the effects of expectations and disconfirmation on perceived product or service performance and satisfaction. Anderson (1973) provided a discussion of the four psychological theories and they are summarised as follows.

Cognitive Dissonance (Assimilation Theory)

This theory posits that when an individual receives two ideas which are psychologically dissonant, they attempt to reduce their mental discomfort by changing or distorting one or both of the ideas to make them more consonant. If consumers feel that the product or

service performance does not match their expectations, they will try to reduce this psychological tension either by adjusting their perceptions of the performance to make them more consistent with expectations or by revising their expectations until they are closer to perceptions.

Contrast Theory

This theory suggests that when a consumer's expectations are not matched by actual performance, they will exaggerate the difference between the perceived performance and the expected performance. In other words, if the perceived performance falls below expectations, it will lead to lower evaluations of performance, but if the perceived performance exceeds expectations, it will lead to a higher evaluation of performance.

Generalised Negativity

According to this theory, a positive or negative discrepancy between expectations and performance will result in a generalised negative hedonistic state, causing the product to receive a more unfavourable rating than if it had coincided with expectations. Even if the actual performance of the product or service exceeds the consumer's expectations, they will evaluate it less favourably than if they had no prior expectations. This theory suggests that companies should create expectations which are consistent with the actual product or service performance.

Assimilation-Contrast Theory

As its name suggests, this theory combines both theories of assimilation and contrast by positing that there are zones or latitudes of acceptance and rejection in consumer perceptions. If the disparity between expectations and product or service performance falls into the consumer's latitude of acceptance, they will tend to assimilate the difference

by rating the product or service more in line with expectations. However, if the discrepancy between expectations and perceived performance is so large that it falls into the rejection zone, then a contrast effect comes into play, and the consumer magnifies the perceived disparity between product or service performance and expectations.

The results of Anderson's (1973) study of ball-point pen usage provided evidence for an assimilation-contrast effect. Anderson found that the product-ratings were assimilated toward expectations until the "very high" condition, when a contrast effect took place, which caused a downturn of expectations. Other studies have found evidence supporting assimilation-contrast theory (Clow et al. 1998; Boulding et al. 1993). Chapter 3 includes a discussion of these studies. On the other hand, Olshavsky and Miller (1972) found that higher expectations produced higher performance, and thus supported for cognitive dissonance theory.

2.2.4 Expectancy-Disconfirmation Paradigm

A majority of consumer satisfaction research has been based on the expectancy-disconfirmation paradigm (Yau 1994; Bolton and Drew 1991; Tse and Wilton 1988; Swan 1988; Day 1984; Churchill and Surprenant 1982; Swan and Trawick 1981; Oliver 1980; Olshavsky and Miller 1972). Most of these studies have focused on consumer satisfaction with products. Researchers have pointed out that little empirical work has been conducted on consumer evaluations of services (Singh 1991; Jayanti and Jackson 1991; Webster 1991). The reason that services have not been investigated extensively by the consumer satisfaction researchers may be due to the fact that services are more difficult to measure and examine in experiments. Services are intangible, experiential and multifunction in nature, and can be very sensitive to extraneous variables which may not be easily controlled in laboratory experiments. In addition, the costs and difficulties associated with establishing a natural service environment might have also limited the use of experiments in consumer satisfaction research. However, as technology advances

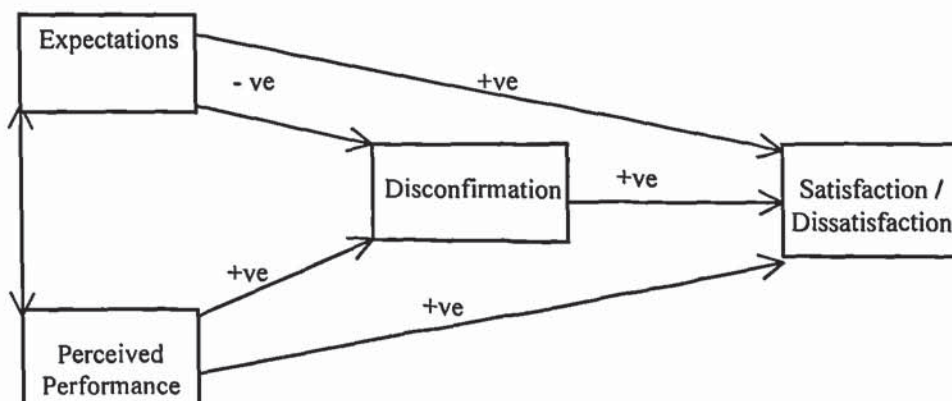
computer simulation could now portray the service more clearly and realistically than before.

The expectancy-disconfirmation paradigm posits that customer satisfaction is determined by the expectations and the direction and magnitude of disconfirmation. According to Oliver (1977), disconfirmation is considered to have an independent, additive effect on satisfaction. It is treated as a cognitive, psychological construct encompassing a consumer's subjective evaluation of the difference between expectations and perception of a product or service's performance (Oliver 1980). The model assumes that satisfaction is the outcome of a four-step process. First, expectations are formed prior to the purchase of a product or service. Second, the performance of a product or service is evaluated. Third, expectations are compared with the perceived performance. Fourth, the degree of disconfirmation determines the level of satisfaction.

Based on the adaptation level theory, Oliver (1980) posited expectations as adapted standards, which provide a frame of reference for consumer's evaluative judgements. Perceived performance is compared with prior expectations, and if the perceived performance exceeds expectations, then positive disconfirmation occurs, which in turn raises the level of satisfaction. On the other hand, if the perceived performance falls below expectations, negative disconfirmation occurs, which lowers the level of satisfaction. Hence, disconfirmation has a positive effect on satisfaction. Oliver (1997) further explained that the direct link between expectations and satisfaction represents the assimilation effect. He argued that customers would assimilate satisfaction judgements toward their prior expectations. Spreng et al. (1993) partially concurred with this view. They argued that when consumers are unable or unwilling to evaluate the performance of a product, for example vitamin tablets, expectations would play a major role in satisfaction judgements. Yet, there is mixed empirical evidence as to whether expectations directly affect satisfaction (Yi 1990).

Expectations and disconfirmation are negatively related. If expectations are high, they are more likely to be negatively disconfirmed. Similarly, perceived performance and disconfirmation are positively related. If the perceived performance is high, positive disconfirmation is expected. Prior studies have shown that perceived performance has a direct positive effect on satisfaction (Churchill and Suprenant 1982; Gupta and Stewart 1996). The relation between expectations and perceived performance is less clear. Oliver (1997) stated that “the actual correlation between expectations and performance cannot be specified beyond the assumption that a relationship exists. This is because expectations-performance relation is idiosyncratic to the product or service being investigated”. Two opposing theories have been used to explain the effect of expectations on perceived performance. Assimilation theory suggests that the evaluations of performance will move in the directions of expectations, whereas contrast theory suggests that evaluations of performance move in the opposite direction. Indeed, the relationship between expectations and perceived performance may depend on the type of product or service being investigated, the usage situation, and the degree of importance or the level of involvement the consumers attach to the product or service. The expectancy-disconfirmation paradigm is depicted in Figure 2.1

Figure 2.1 Expectancy-Disconfirmation Model



(Source: Adapted from Oliver 1997)

2.2.5 Categories of Expectations

Expectations provide a frame of reference against which satisfaction judgements are made. The theoretical support for the role of expectations in determining satisfaction comes from Helson's adaptation level theory (1964). It has been suggested that marketers who wish to understand and favourably influence consumer satisfaction with their offerings need to understand and influence consumer expectations (Anderson 1973). Spreng et al. (1993) also asserted that consumer expectations play two important roles in the determination of satisfaction. First, expectations play a critical role in the consumer's decision to purchase a product or service. Second, when the consumer is unable to judge the product or service performance, expectations may play a major role in the judgement process: for example in the previously mentioned evaluation of vitamin tablets.

The core concept of marketing focuses on satisfying customers' needs and wants at a profit (McCathy and Perreault 1999). However, some researchers have argued that level of needs and wants are ambiguous. Spreng and Olshavsky (1993) have attempted to link high level values and product attributes through the means-end chain model while others have simply rephrased the comparison standard as to what customers actually wanted (Myers 1991).

Although various types of expectations can be found in the consumer satisfaction literature, those with the most references are predictive expectations. Miller (1977) introduced a classification scheme which used four different kinds of comparison standards; expected (will be), deserved (should be), ideal (can be) and minimum tolerance (must be). Woodruff et al. (1983) considered the latter three normative standards of performance, and suggested using past-experience as the base of comparison.

LaTour and Peat (1979) criticised the use of predictive expectations in consumer satisfaction research. One of the criticisms associated with the use of predictive expectations is illustrated in the following situation. When consumers are forced to

purchase a brand of which the performance they do not anticipate favourably (for example, when there is only one brand available), even though prior expectations may be confirmed by post-purchase evaluations, the consumer may still be dissatisfied with the product's performance. However, the expectancy-disconfirmation model would fail to account for the consumer dissatisfaction in this situation. These researchers proposed three comparison standards based on Thibaut and Kelly's (1959) comparison level theory. These were the consumer's prior experiences with similar products, situationally-produced expectations, and the experience of other consumers who serve as referent persons. They asserted that for each attribute there is a comparison level in determining overall satisfaction, and that each discrepancy would be weighted by the importance a customer attaches to that attribute dimension.

Along these lines, Woodruff et al. (1983) argued that consumer expectations are drawn from the breadth of experience that they have with the focal brand, similar brands, or a product class competing for attention from their needs. These were labelled experienced-based norms. Moreover, it was also suggested that customer subjective disconfirmations only operate when perceived performance lies outside the "zone of indifference". One of the explanations given for the existence of such a zone is that people's perceptual limitations can cause some imprecision when confirmation or disconfirmation cognition is made. An alternative conceptual rationale is derived from assimilation-contrast theory, which posits that there is a latitude of acceptance in consumer perceptions (Olshavsky and Miller 1972; Olson and Dover 1979). According to assimilation-contrast theory, consumer judgements of performance will tend to assimilate or move toward their original expectation level if the discrepancy between expectations and product or service performance is not significant (see section 2.2.4).

According to Miller (1977), "ideal" represents the level of a product or service performance for which a consumer would ideally would hope: it reflects what performance "can be". It may be based on previous product experiences, learning from

advertisements, or word-of-mouth communication (Liechty and Churchill 1979; Miller 1977).

Prakash and Lounsbury (1984) have empirically investigated the role of three types of expectations in determining satisfaction. In their schema, “predictive expectations” refers to consumer beliefs about how a brand is likely to perform on certain attributes, “normative expectations” refers as how a brand should perform to completely satisfy the consumer, and “comparative expectations” refers to consumer expectations about a brand as compared to similar brands. The latter expectation derives from Thibaut and Kelly’s (1959) comparison level theory. Their results showed that both the normative and comparative expectations were better in predicting satisfaction and repurchase intentions than predictive expectations. Disconfirmation of normative expectations correlated more highly with overall satisfaction.

Cadotte et al. (1987) conducted a study using a best brand norm, a product norm, and focal brand expectations as a frame of references with restaurant patrons. They found that these three expectations were distinct constructs and their ability to predict satisfaction depended on the usage situation. Product norm and best brand norm disconfirmation were found to be better in predicting satisfaction in high situational involvement than they were for low situational involvement.

Tse and Wilton’s (1988) study compared three types of comparison standards; predictive expectations, and ideal and equity standards. They operationalised equity as “performance that should be reasonably expected if you invested \$50 of your own money in purchasing the product”. However, other researchers referred this as a “deserved” standard (Liljander and Strandvik 1993). The results of Tse and Wilton’s (1988) study indicated that “predictive expectations” have a direct positive effect on satisfaction whereas the “ideal” has an indirect negative effect on satisfaction through perceived performance. Predictive expectations and ideals were suggested to be two different constructs contributing separately to the customer satisfaction formation process.

However, “equity” failed to produce any direct or indirect effects on satisfaction. This finding is surprising because equity theory posits that consumer inputs do play a role in the satisfaction formation. One possible explanation is that the participants in the experiment did not rely on price alone to form expectations. An alternate explanation is that the results may be attributed to the method adopted in the study. Nevertheless, the results of the study suggested that customers might use multiple comparison standards in determining satisfaction (Refer to section 4.3.2 for a detailed discussion of equity theory).

Spreng and Olshavsky (1993) conceptualised desires differently than in prior studies. They defined desires as “the attributes, levels of attributes and benefits that the consumer believes will lead to or are connected with higher-level values”. According to these authors, consumers’ higher level values trigger them to seek products that provide certain benefits, which in turn specify the attributes and levels of attributes desired in the product. In their experiments with camera products, attributes were identified via the means-end chain model, and participants were asked to indicate their desire level for each of the three attributes. The word “congruency” was used in place of “disconfirmation” and was operationalised as the algebraic difference between expectations and perceived performance. The results showed that desire congruency had a stronger effect on satisfaction than performance, whereas expectation congruency had no effect on satisfaction and performance. These researchers replicated a similar study in 1996. In the latter study, which investigated purchases of video cameras, satisfaction was conceptualised as two dimensions, those of information satisfaction and attribute satisfaction. Information satisfaction was defined as satisfaction with the information of each aspect of the product, and attribute satisfaction was defined as satisfaction with the attribute of the product. Their results showed that desire congruency was a determinant of satisfaction. Desire was found to have a negative effect on satisfaction. Expectation was found to have a positive effect on satisfaction through perceived performance, and a negative effect on satisfaction through expectancy congruency. Confirmatory factor analysis indicated that desires and expectations are distinct constructs.

A study conducted by Bolting and Woodruff (1988) showed that customers can differentiate between a focal brand, favourite brand, and a product norm (a typical brand in the product class). Further, the results of their study suggested that the effects of these comparison standards on satisfaction depended on the level of involvement. They posited that different usage occasions arouse different states of consumer involvement, which may moderate reactions to the evaluation process.

Myers (1991) argued that meeting customers' expectations is only a minimum standard, and that a better comparison standard would be what the customer "wanted". He explained that people could want more than they expect to get from the current offerings. His study on new car dealerships showed that "disconfirmation of wants" explained more variation of overall satisfaction than disconfirmation of expectations. "Disconfirmation of wants" and "disconfirmation of expectations" were operationalised as the difference scores. His results showed the "wants disconfirmation" yielded a high correlation with overall satisfaction. Multiple regression analysis also derived similar results. Therefore, the author suggested that the "wants disconfirmation" was a better measure of overall satisfaction. However, there are some methodological problems in this study. The results could be attributed to the fact that the respondents tended to respond to the "wants" statements at the high end of the scale, to the extent that the disconfirmation of wants dominated the performance ratings.

Gupta and Stewart (1996) introduced the notion of category expectations, which are the level of service the brands considered would generally be likely to offer, and brand expectations, or the level of service a specific service firm would be likely to offer. The results drawn from a simulated service encounter provided evidence to support the hypothesis that consumers use multiple standards, and that these standards have differential effects on satisfaction. Brand expectations were found to be better predictors of satisfaction, while category expectations were better predictors of behavioural outcomes. Category expectations played an important role in predicting behavioural intentions, but brand expectations appeared to have little influence on these variables. The

authors explained that behavioural intentions were expressed in the context of available alternatives, therefore the intention to repurchase or recommend a particular brand would depend on what the category has to offer. Perceived performance was a stronger determinant of satisfaction than disconfirmation of brand or category expectations. One of the significant findings in this study was that the meeting of customer expectations may generate satisfaction but does not guarantee repeat purchase. The availability of alternatives may play an important role in determining repurchase behaviour.

2.2.6 Passive versus Active Expectations

For some products or services, consumer expectations are active. Raaij (1991) argued active expectations are readily available in memory. Oliver and Winer (1987) explained that active expectations are those that are at the high level of consciousness, and consumers can cognitively anticipate the likelihood of a product or service's performance. Passive expectations are generally true assumptions about objects and events, and are probably not processed until disconfirmed. Bolton and Drew (1991b) and Oliver (1989) suggested that for continuously provided services such as cable television and public utilities, consumers are likely to generate "passive expectations". They argued that because these expectations are not processed actively by customers until a breakdown event occurs, disconfirmation of the expectations may not actually occur. Thus, performance becomes the primary determinant of customer satisfaction judgements.

2.2.7 Types of Disconfirmation

Disconfirmation occupies a central position in the formation of consumer satisfaction. It arises from the discrepancy between prior expectations and perceived performance. It has been suggested that the magnitude and direction of the disconfirmation generate the level of satisfaction (Oliver 1980).

However, the measurement of disconfirmation varies among researchers. Yi (1990) identified three types of disconfirmation: “objective disconfirmation”, “inferred disconfirmation” also known as “subtractive disconfirmation”, and “perceived disconfirmation”.

Objective Disconfirmation

Objective disconfirmation is the discrepancy between expectation and objective performance. The objective performance is the product performance level assumed to be common to all consumers. However, Yi (1990) suggested that the objective disconfirmation approach is not appropriate as a predictor of consumer satisfaction, because satisfaction is a subjective, psychological state. Further, it is difficult to measure service performance objectively because services are intangible and variable according to the person who perform the service or the time of day at which the service is performed. Even when the same personnel perform the service, different consumers may perceive it differently. Thus, it is hard to establish objective measure in services.

Inferred Disconfirmation

This approach assumes that the effects of a post-experience comparison on satisfaction can be expressed as a function of the algebraic difference between product or service performance and a comparison standard (LaTour and Peat (1979). This approach has received support from studies in industrial and cognitive psychology, where simple algebraic rules of psychological variables have been found to represent human information processes adequately over a wide variety of situations (Tse and Wilton 1988). Service quality researchers (Parasuraman et al. 1988) adopted this approach in measuring perceived service quality. (Section 2.3.5 provides a detailed discussion of the measurement of perceived service quality). Prakash (1984) found that the difference score measures have low reliabilities and low correlations with the criterion measure of overall satisfaction. Peter et al. (1993) suggested that researchers should be more cautious with

the use of difference scores. (Refer to section 2.3.5 for a detailed discussion of this approach).

Perceived Disconfirmation

In other work, Churchill and Surprenant (1982) and Oliver (1980) have attempted to capture the consumer's summary judgement of overall disconfirmation on a scale with end labels of "better than expected" and "worse than expected". According to Oliver, the perceived disconfirmation encompasses the set of psychological processes that may mediate perceived product or service performance discrepancies. Tse and Wilton (1988) asserted that such processes are likely to be important in situations when product performance cannot be judged discretely.

Oliver (1980) suggested that inferred disconfirmation may lead to an immediate satisfaction judgement, whereas perceived disconfirmation represents "an intervening distinct cognitive state resulting from the comparison process and preceding a satisfaction judgement". Hence, perceived disconfirmation is likely to offer richer explanations of the complex processes underlying satisfaction formation.

Tse and Wilton (1988) found that perceived disconfirmation better predicted satisfaction than inferred disconfirmation. However, the results of the Swan et al. (1981) indicated otherwise. Satisfaction was found to be more closely related to inferred disconfirmation than to perceived disconfirmation, but these researchers suggested that the results could be influenced by the measurement adopted in their study.

Yi (1990) provided several theoretical reasons for using perceived disconfirmation rather than inferred disconfirmation measures. He pointed out that the problems associated with using inferred disconfirmation is that it could lead to a consistency bias in response, since the same scale is used twice and a ceiling effect might cause difficulty in capturing the disconfirmation (Swan and Trawaick 1981). Another problem with the inferred

disconfirmation measure is lack of reliability and validity (Prakash 1984). Moreover, if inferred disconfirmation is used with expectations and perceived performance as predictors of satisfaction, the model will be over-specified since the inferred disconfirmation is determined entirely by these two constructs (Tse and Wilton 1988).

2.2.8 Perceived Performance

Churchill and Surprenant (1982) were among the first to examining the effects of expectations, disconfirmation and perceived performance on satisfaction. Most prior studies concentrated on investigating the effects of expectations and disconfirmation on satisfaction. In Churchill and Surprenant's (1982) study, a plant product and a video disc player were considered. They found that for the plant product, satisfaction was influenced by expectations, perceived performance and disconfirmation. However, for the video disc player, satisfaction was determined solely by perceived performance. They concluded that the effects of expectations, disconfirmation and perceived performance on satisfaction might differ for durable and non-durable products. Anderson (1973) also suggested that consumer reactions to the expectation-performance disparity may be different for highly personal, expensive products than for less personal, lower cost and less ego-related products. Johnson and Fornell (1991) further proposed that individual differences and product category differences may affect satisfaction evaluations via expectations and perceptions of performance.

Liljander and Strandvik's (1993) study found that performance alone has a strong effect on satisfaction. In their 1995 study, they also found that perceived performance was a better predictor of satisfaction than either inferred or perceived disconfirmation. These authors claimed that management might better concentrate on influencing customer experiences than altering expectations. The results of previous studies, such as Churchill and Surprenant's (1982) study with a video disc player, Prakash and Lounsbury's (1984) study with hamburger restaurants and beer, Tse and Wilton's (1988) study with a miniature record player, and Patterson's (1993) study with high involvement products,

have all shown that performance was the best determinant of satisfaction. Only in Jayanti and Jackson's (1991) study of a hairdressing service was the disconfirmation of expectations reported to have a stronger effect on satisfaction than perceived performance.

2.2.9 Measurements of Consumer Satisfaction

Many earlier studies used a simple, single item to measure consumer satisfaction. For example, LaBarbera and Mazursky (1983) used an overall satisfaction scale with "completed satisfied" to "not at all satisfied" anchored at the end-points, with the rationale that this would improve the response rate. However, Oliver (1980) argued that satisfaction may not be an unidimensional concept, and it is better measured by using a battery of questions to tap different forms of satisfaction. Westbrook (1980) criticised the use of a single item rating scale to measure consumer satisfaction, and argued that such measures commonly yielded a very skewed distribution of responses. Yi (1990) suggested that researchers should be cautious when using single item measures, because reliable estimates obtained in past studies are lower than those obtained with multi-measures. It is apparent that marketing researchers are in favour of using multi-item measures over their single item counterparts, as the former can reduce measurement error and enhance reliability.

Westbrook and Oliver (1981) investigated the reliability and validity of five different scales: likert, semantic differential, graphic, verbal and porter. They explained that the porter scale is the sum of differences between ideally desired and perceived performance. In other words, porter was a scale measuring ideal disconfirmation. These authors used it as an inferential measure of satisfaction. However, as explained in section 2.2.7, disconfirmation is a distinct concept that has an independent effect on satisfaction, and it should be viewed as an antecedent of satisfaction. Westbrook and Oliver's (1981) results showed that likert and semantic differential scales performed better than other scales in terms of reliability and validity.

Hausknecht (1990) provided a comprehensive review of the measurement scales used in consumer satisfaction research. Consumer satisfaction measures are classified as “evaluative” and “emotional”. The former measure contains a list of response categories ranging from “very satisfied” to “very dissatisfied”, and the latter measure contains the elements encompassing an individual’s feeling towards the purchase. The work of Babin and Griffin (1998) attempted to show that satisfaction and dissatisfaction does not lie in a single continuum, however there is no theoretical basis supporting the notion that satisfaction and dissatisfaction should be treat as two separate constructs.

2.2.10 Consequences of Consumer Satisfaction

In the 1970’s, the expectancy-disconfirmation paradigm was used as the basis of consumer satisfaction research. The results of some studies showed that satisfaction is influenced mainly by disconfirmation, and to a lesser degree by prior expectations. Others found that perceived performance is the sole determinant of satisfaction. In the 1980’s, the consequences of consumer satisfaction started receiving attention. Research has then been conducted which examines the relationship between satisfaction and profits (Fornell and Wernerfelt 1988; Rust and Zahorik 1993), and post-purchase behaviour (Bearden and Teel 1983; Anderson and Sullivan 1993).

La Barbera and Muzursky’s (1983) study was among the first to show that satisfaction played a significant role in mediating intentions and actual behaviour in a longitudinal study. Bearden and Teel (1983) extended the expectancy-disconfirmation model to include consumer complaint behaviour. The results of their longitudinal study showed that expectations and disconfirmation influenced customer satisfaction, and that it was negatively related to complaint activity. Halstead (1989) examined the relationships among expectations, disconfirmation, satisfaction and post-purchase behaviour using cross-sectional data. Their results revealed that expectations and disconfirmation have an effect on satisfaction as well as repurchase intentions and complaint activities. Anderson and Sullivan (1993) analysed data from a large-scale study of customer satisfaction with a

wide array of goods and services among Swedish consumers. They found that repurchase intention was strongly related to satisfaction, and that satisfaction was found to be a function of perceived quality and disconfirmation. These researchers have equated perceived quality to perceived performance.

However, there are other researchers who have suggested that satisfaction does not necessarily lead to loyalty. Jones and Sasser (1995) posit that the relationship between satisfaction and loyalty varies according to the degree of competition in the market. When consumers are confronted with many choices, mere satisfaction is not enough to keep them loyal. For this reason, it is risky to rely solely on the results of satisfaction surveys for service improvement strategies as customers of companies with reasonably service quality find it difficult to respond negatively to satisfaction evaluations. Further, Peterson and Wilson (1992) cautioned that the self-report satisfaction ratings may be overstated due to individuals attempting to minimise their regret over purchase decisions.

Anderson et al. (1994) investigated the relationship between customer satisfaction and economic benefits at the firm level. They found that there is a trade-off between customer satisfaction and market share. In their cross-sectional analysis, customer satisfaction declined as market share grew, and they concluded that the two are not always compatible goals. They explained that in the short run, gains in market share may come from attracting customers with preferences more distant from the target market. However, it was not clear whether the decline in satisfaction was mainly found with the existing customers, or the new customers, or both. These researchers posited that customer satisfaction and market share is positively related in the long run.

There are not many studies linking customer satisfaction with a firm's financial performance. One of the most recent studies was conducted by Bernhardt et al. (2000), in the context of fast food restaurants. Their study revealed that there was a positive and significant relationship between changes in customer satisfaction and changes in the financial performance of the firm. They found that those restaurants with increased

customer satisfaction mean scores achieved greater percentage increases in average monthly profits than those with stable or decreased customer satisfaction mean score.

2.2.11 Limitations of Previous Studies

Many studies conducted in the past have manipulated expectations, usually through product information or advertisements. It is questionable whether such a communication could establish real expectations in a short period of time. The expectations generated may be very vague, and their effects on satisfaction are minimal. Further, Oliver (1997) argued that expectations were explicitly manipulated in prior studies. The discrepancy between respondent expectations and perceptions was inferred by researchers, and hence could not be treated as an independent concept.

In past studies, the role-playing method was commonly employed. Subjects were asked to read a description about the product or the product's advertisement, then they were asked to answer questions as if they were about to buy and use the product. This can certainly enhance internal validity through the facility to control and manipulate a subject's experience. However, the role-playing method may not be able to generate the intense emotional response that is thought to characterise extreme levels of consumer satisfaction (Spreng and Olshavsky 1993).

2.2.12 Consumer Satisfaction Defined

In this research, *consumer satisfaction is defined as a temporal emotional response resulting from a cognitive evaluation of a service encounter*. To state it precisely, consumer satisfaction is an emotional response which results from a cognitive process of comparing the expectations against perceptions of performance. This definition concurs with that given by Oliver (1981) in which consumers compare perceptions of performance against their predictive expectations, and this disconfirmed expectation determines the level of satisfaction.

2.2.13 Conclusion

Psychological theories have been used to explain the effects of expectations, disconfirmation and perceived performance on satisfaction. These theories suggest that when consumers perceive a product or service performance different from their prior expectations, a psychological comfort or discomfort will result. Consumers will then try to reinstate their psychological equilibrium either by revising their expectations or adjusting their perceptions of performance.

The literature documents that consumers may use multiple comparison standards in determining satisfaction. Further, the effects of these comparison standards on satisfaction may vary across individuals. For example, if customers attach great importance to certain products they may more easily to experience disconfirmation, and hence satisfaction tends to be more sensitive to disconfirmation (Anderson and Fornell 1994). In addition, Johnson and Fornell (1991) explained that when customers have no experience and past performance information is not available, expectations may be vague and indirect and so customers may turn to related or more general category products as the reference for comparison. But as experience and past performance information accumulate, expectations will more easily form. There is empirical evidence to suggest that the effects of expectations, disconfirmations, and perceived performance on satisfaction vary across products. It is generally posited that the effect of expectations on customer satisfaction depends on the types of products or services, usage situation, level of involvement, and consumer expertise and familiarity with the product or service.

Prior studies have shown that predictive and normative expectations are two distinctive constructs. The “ideal” standard has been classified as just one type of normative expectation. However, this standard has been difficult to operationalise (Holbrook 1984; Tse and Wilton 1988). One possible reason is that respondents do not understand what is meant by the term “ideal” (Myres 1991). Does it mean the best offering (an “available ideal”) or some hypothetical level that does not exist but may be possible (a “possible

ideal”)? Further, researchers have frequently reported that ideal standard data were highly skewed. Respondents consistently checked the top end of a rating scale for the ideal level. Hence, a high correlation between perceived performance and ideal disconfirmation reported in the studies may be due to the lack of variability in the ideal. Further, when the ideal disconfirmation is largely dominated by perceived performance, it is not surprising to find that ideal disconfirmation is also highly correlated with overall satisfaction, because perceived performance is highly associated with consumer satisfaction.

In reviewing past studies on the effects of expectations, disconfirmation and perceived performance on satisfaction, the findings are mixed. There are several possible explanations. First, researchers have defined and operationalised these concepts differently. For instance, Tse and Wilton (1988) operationalised equity as “performance that should be reasonably expected if you invested \$50 of your own money in purchasing the product”, whereas Liljander and Stranvik (1993) interpreted this as deserved standards. Others have defined “desires” as the high level values through the means-end chain model (Spreng and Olshavsky 1991). Second, differences in the results may be attributed to different measurements of disconfirmation. For instance, different measurements of ideal disconfirmation may produce different effects on satisfaction. Third, measuring expectations in a post-purchase context can be problematic, because expectations can be perceptually distorted by the consumer as suggested by assimilation theory.

There is still no consensus among researchers regarding the method that is most appropriate to measure disconfirmation. The subtractive and perceived approaches both appear to work well if the values for comparison standards are variable. If the values for comparison standards have little variability, then the perceived approach is better than subtractive approach. Moreover, satisfaction has been expressed as a function of the performance and expectations ratio (Oliver 1980). However, all prior studies posited that an additive effect exists between expectations, disconfirmation of expectations, and perceived performance. There is no empirical research has examined the multiplicative

form of disconfirmation. In regard to the measurement of satisfaction, researchers are in favour of using multi-item measures over single item measures. Moreover, it has been suggested that satisfaction measures should include more affective elements. Likert and semantic differential scales were found to be more reliable and valid. The literature suggests that most researchers view satisfaction as an unidimensional construct. Some studies have used product performance ratings or disconfirmation ratings as proxies for customer satisfaction. Although, there are associations among customer satisfaction, performance and disconfirmation, customer satisfaction is a distinctive concept, and performance and disconfirmation ratings should not be used as surrogates for customer satisfaction.

Consumer satisfaction has long drawn the interest of researchers because of its significance in influencing post-purchase behaviour. Most consumer satisfaction research in the past has been based on the expectancy-disconfirmation model. Researchers have extended this model to include multiple comparison standards and post-purchase behaviour. Different comparison standards were found to have different effects on satisfaction and post-purchase behaviour.

There is empirical evidence which suggests that satisfaction does not necessarily lead to loyalty (Jones and Sasser 1995; Reichheld 1993). It is recognised that in highly competitive markets, satisfaction is necessary but not sufficient to generate repeat purchases. Still, work in this area is limited, and studies are needed to provide a better understanding of the satisfaction formation process and its relation to post-purchase behaviour.

2.3 Service Quality Research

In the late 1970s and early 1980s, a stream of research on services marketing was undertaken in response to the growing importance of service economies. Shostack's (1977) paper was among the first to address the applicability of traditional product marketing techniques to services. From then on, a vast amount of papers have been published in the service literature. This rich literature has enhanced our understanding of the unique features of services, as opposed to goods. These features include the fact that service is a performance; that customers are involved in production; that quality is more difficult to control than with goods, as service must take place under real time conditions; that services cannot be inventoried; and that distribution channels are non-existent or compressed (Lovell 1996). After recognising these unique features, researchers have helped expand the traditional marketing mix to include people, process and physical evidence (Booms and Bitner 1981). Blueprinting technique (Shostack 1984), service script concept (Smith and Houston 1983), and critical incident techniques (Nyquist et al. 1985) have been introduced in services literature to aid service marketers in the design, evaluation and control of their service offerings.

Service quality research began in the early 1980s and became an important research topic because of its relationship to profitability (Zahorik and Rust 1992), customer retention (Reicheld and Sasser 1990) and behavioural intentions (Parasuraman et al. 1994). Grönroos (1984) proposed one of the first conceptual models of service quality. According to this model, the quality of a service as perceived by customers is the result of a comparison between expectations of the service and perceptions of performance. This view is similar to the expectancy-disconfirmation model used in consumer satisfaction research. Parasuraman et al. (1985) developed a gap model which posits that the pitfalls of service quality are due to the gaps associated with the identification, specification, marketing and delivery of services within a firm. These authors (1988) also designed a multi-items scale known as "SERVQUAL" for measuring perceived service quality. Subsequently, a large number of replication studies of SERVQUAL have been conducted in a variety of countries on service settings such as fast food restaurants (Lee and Ulgado 1997), advertising services (Quester and Romaniuk 1997), lodging services (Getty and Thompson 1994), retail banks (Lewis 1991), information services (Triplett et al. 1995), and medical services (Brown and Schwartz

1989). Researchers have critically examined the usefulness and validity of the scale. The results of their efforts have encouraged many suggestions and approaches for improving service quality measurement (Carman 1990; Cronin Taylor 1992; Babakus and Boller 1992; Teas 1993; Brown et al 1993; Smith 1995; Buttle 1996, Lewis and Mitchell 1990). The following sections examine the meaning of quality and service quality, and consider previous studies on the measurement of service quality. The strengths and weaknesses of various measurement instruments are compared, and areas for future research are discussed.

2.3.1 The Concepts of Quality

From the Quality Management Perspective

The definitions of quality in the literature are diverse. The manufacturing approach to quality is conformance to a set of predetermined requirements or specifications. Quality is then judged by linking predetermined specifications to the absence of defects in production. However, this approach has been criticised, because it neglects the needs of customers (Garvin 1988; Price 1994). Customers are a firm's source of revenue, and they are the ones who decide to buy the product. Unfortunately many firms do not realise this until when they begin to see their customers shifting to the competitors.

In the 1980s, the focus of quality shifted from the manufacturer-based approach to the customer-oriented approach. Many different definitions of quality have been offered in the quality management literature. Feigenbaum (1983) defined quality as "the total composite product and service characteristics of marketing, engineering, manufacture and maintenance through which the product and service in use will meet the expectations of the customer". However, Wille (1992) claimed that quality should not just be limited to meeting the customers' expectations. Crosby's (1984) defined quality as "conformance to requirements", which means product or service must be designed to meet specific requests. Deming (1986) opined that "consumers are the most important part of the production line and quality should be aimed at the needs of the consumers, present and future". He considered quality as dynamic in nature. This is true, because customer needs and wants are always changing, and they are continually adjusting their expectations through their experience of using other

products or services. Therefore, perceptions of quality should not be confined to the present. Juran (1989) defined quality as “fitness for use”. This definition implies that the product or service should be designed to fit customer intentions, and should be free from deficiencies.

It is apparent that in a highly competitive market, when there are more firms striving to pursue for the same customer, simply meeting customer expectations is not enough. There is strong evidence to suggest that satisfied customers can switch to a competitor’s offerings (Jones and Sasser 1995; see section 2.2.11). Firms have more than just satisfying their customers to encourage loyalty. One of the approaches that goes beyond satisfying customers is the strategy to exceed customer expectations by offering a superior product or service (Hooley 1993). Deming (1986) also argued that a satisfied customer may switch, but a customer who is delighted by what you have provided will become a loyal customer and brings friends with them.

From the Marketing Perspective

Marketing scholars suggest that quality should not be restricted to meeting customer expectation. Monroe and Krishnan (1985) defined perceived product quality as the perceived ability of a product to provide satisfaction “relative” to the available alternatives. This definition suggests that quality is an antecedent of satisfaction and “available alternatives” serve as the base for comparison. Buzzell and Gale (1987) added to this argument the view that perceived quality is a customer’s evaluations of a product’s performance relative to competing products. They contended that quality is assessed by customers, and the quality of a particular product or service is whatever the customers perceive it to be. However, the approach that the Strategic Planning Institute used in assessing relative quality appeared to be contradictory with these suggestions. In the SPI study, relative quality was assessed from the management perspective rather than from that of the customer. Product performance dimensions were identified, evaluated and compared with a competitor’s product by the management staff. This is considered an internal measure of perceived quality, which is similar to the manufacturing-based approach. A major weakness of this approach is that there may be differences in perceptions of performance between management and users.

Kotler and Armstrong (1996) suggested that quality consists of two dimensions: level and consistency. They argued that few customers would want or afford high levels of quality, and that firms should strive to deliver a level of quality which consistently matches target market needs and the quality of competing products.

Lewis and Booms (1983) also argued that “quality is conforming to customer expectations on a consistent basis”. This definition conforms to Crosby’s (1984) “conformance to requirements”, Feigenbaum’s (1983) “meeting the expectations of the customer” and Kotler’s consistency dimension. Grönroos (1993) also holds a similar view, and has argued that “as long as the expectations of customers are met, the quality of a service is good or acceptable. When experiences are below expectations, the quality of the service becomes poor”.

Lehtinen and Lehtinen (1991) defined service quality as customer’s subjective interpretations of his or her experience. This definition is based on the consumer’s subjective judgements without an explicit standard. This view was partially supported by Cronin and Taylor’s (1992) perception that service quality is best measured by consumer perceptions of performance.

On the other hand, a number of scholars defined quality as customer perceptions of excellence or superiority (Holbrook and Corfman 1985; Peters 1987; Zeithaml 1988; Bitner 1990). Zeithaml (1988) defined perceived quality as “consumers’ judgement about the superiority or excellence of a product”. Quality was viewed as a higher order construct and a global judgement similar to attitude. Researchers who concurred with this view include Olshavsky (1985), Holbrook and Crofman (1985), Bitner (1990), Carman (1990), Bolton and Drew (1991) and Boulding et al. (1993).

Although researchers have different views on how quality is conceptualised, the consensus among them is that quality is a relative concept and should be defined as user-based rather than manufacturer-based. In reviewing the literature, three different conceptualisations of quality have been identified: “*meeting consumers’ expectations*”, “*delivering the level of quality which matches that of competitors on a consistent basis*”, and “*a degree of excellence or superiority*”.

2.3.2 The Concept of Service Quality

Service quality has been viewed as an elusive and abstract construct that is difficult to define and measure (Garvin 1983; Parasuraman et al. 1988; Brown and Swartz 1989; Carman 1990). It is harder to evaluate service performance because of its unique features: intangibility, inseparability, heterogeneity and perishability (Parasuraman et al. 1985). Further, services possess a high proportion of experience and credence properties than physical goods. Experience properties are those service attributes which can only be discerned after or during consumption, such as the experience of a package tour. Credence properties are the characteristics of a service which consumer may find difficult to evaluate even after purchase and consumption, such as the knowledge and competence of medical staff (Zeithaml 1981).

One of the most accepted definitions of perceived service quality is that it represents the discrepancy between consumers expectations and the actual performance the consumers perceived that they received (Czepiel 1980; Lewis and Booms 1983; Grönroos 1984; Parasuraman et al. 1988). However, the manner in which this should be operationalised is still a debate in the literature. Expectations have also been defined and operationalised differently among researchers. Grönroos (1984) conceptualised expectations as consumer beliefs about the future performance of a service outlet. This is similar to predictive expectations as defined in the consumer satisfaction literature. Parasuraman et al. (1988) defined expectations as what customers desire of a service, and they operationalised this as the level of service customers expect that a company should deliver. In 1991, they rephrased their description of expectations to “what customers expect an excellent company would deliver” on the ground that the “should” statements encouraged respondents to rate on the high end of the scale. Later in 1991, they introduced “desired” and “adequate” standards.

Indeed, there may be more than one level of expectation that consumers use to assess service quality. Different levels of quality arise when different types of expectations are defined. It is agreed that consumers make an assessment of the quality of a service on the basis of comparison. In other words, there is a point of reference consumers use to judge whether a service is good or bad. In order to provide managerial value to practitioners, it is important to find out the type of expectations that are used by consumers.

Bonner and Nelson (1985) raised the question whether quality is a global or product-service specific concept. Parasuraman et al. (1988) viewed quality as a global judgement similar to attitude, and cultivated and maintained over a long period of time. They developed a measurement instrument that they claimed can be used to assess the quality of service across a broad spectrum of service industries. This measurement instrument is discussed in the section 2.3.4. However, Bonner and Nelson (1985) argued that quality is a product-specific concept. They viewed quality as an attribute-based measure, and posited that the attributes used to assess the quality of a product or service vary from one category to the other. Other scholars (for example, Carman 1990; Babakus and Boller 1992) support the latter view.

2.3.3 Service Quality Models

Grönroos (1984) proposed a conceptual model of perceived service quality. According to this model, the quality of a service is the result of a comparison between customer's predictive expectations and their perceptions of performance. The model depicts quality as consisting of functional and technical dimensions. Functional quality is concerned with how the customer receives the service, and technical quality measures what the customer actually receives from the service. Company image is viewed as the third quality dimension which will be influenced by the other two, and it can also be used as a shelter when negative experience occurs. Grönroos' conceptual model of service quality is presented in Figure 2.2.

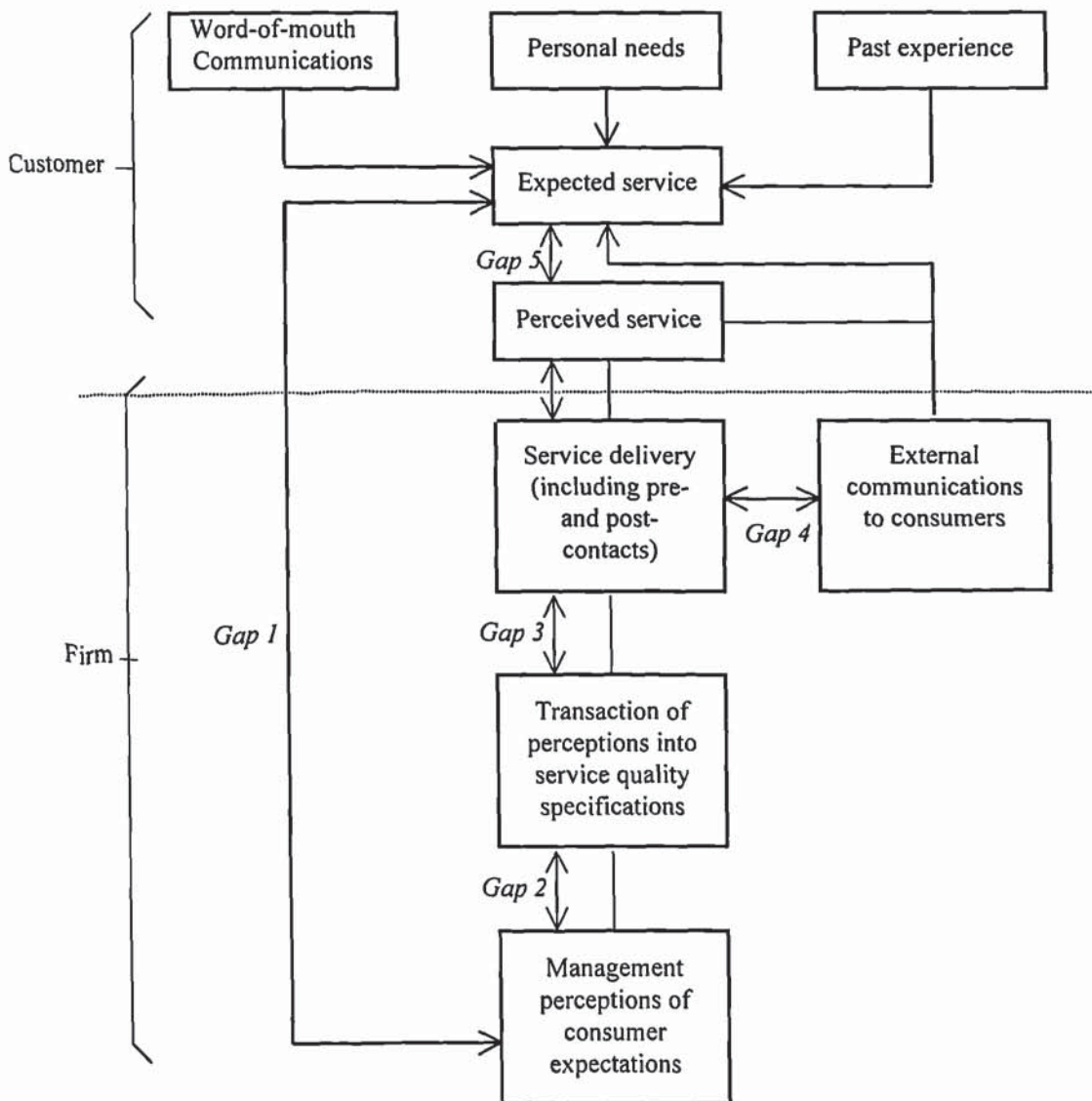
Figure 2.2 Grönroos' Service Quality Model



(Source: Grönroos 1984)

Parasuraman et al. (1985) conceptualised perceived service quality as the discrepancy between perceived performance and expectations. They developed the five gap model which suggests that consumer's perceived performance may fall short of expectations due to the gaps associated with the design, marketing and delivery of services within a firm. The model is a useful framework for identifying potential sources of service quality problems. It is easy to understand and has significant managerial implications. Perceived service quality is viewed as the sum of the differences between perceived performance and expectation. The calculation process has raised a substantial debate in the literature. This is discussed in section 2.3.5. Figure 2.3 depicts the gap model.

Figure 2.3 Five Gap Model



(Source: Adapted from Parasuraman et al. 1985)

2.3.4 Dimensions of Service Quality

Researchers have generally agreed that there are two primary dimensions of service quality; “Process Quality” and “Outcome Quality” as posited by Berry et al. (1985), and Grönroos’ (1984) “Technical Quality” and “Functional Quality”. Process quality is judged by the customer during the consumption of the service, it is similar to Grönroos’ functional quality, which represents the way service are delivered. Outcome quality is judged after the service is performed, it is similar to technical quality and involves what the customer actually receives from the service. Grönroos (1984) argued that technical quality is necessary but it is not a sufficient for a competitive edge. In order to make the service offering more favourable than those of competitors, he urged firms to place greater emphasis on the process of the service, in particular the buyer-seller interaction.

Haywood-Farmer (1990) recognised three distinct attributes of services, they are physical facilities and processes, people’s behaviour, and professional judgement. According to this author, the relative importance of each attribute can be used to explain a firm’s position with respect to the degree of customer contact or interaction intensity, labour intensity and service customisation. For example, with utility services, customer contact and interaction with the service personnel is minimal, hence the important determinant of quality is the physical process.

Lehtinen and Lehtinen (1991), on the other hand, suggested that service quality has three dimensions: physical quality, interactive quality and corporate quality. Physical quality is the dimension of quality originating in the physical elements of service, such as buildings and enabling equipment. Interactive quality derives from the interaction between service personnel and the customer, as well as the interaction between customers. Corporate quality refers to an organisation’s image, and it is more stable than the other two dimensions: this concept is similar to Grönroos’ “image quality”. Grönroos considered both technical quality and functional quality as determining image quality, which in turn influences the consumer’s perception of service quality (See Figure 2.2 in section 2.3.3). According to Grönroos (1984), image quality can be used as a shelter when negative service experience occurs. However, it is also true that experience will influence how a customer perceives the firm’s image, and this

feedback loop has not been depicted in his model. The two primary dimensions are summarised in Table 2.2.

Table 2.1 Dimensions of Service Quality

Dimensions of Service Quality	Grönroos (1984)	Berry et al. (1985)
How the customer receives the service	Functional Quality	Process Quality
What the customer gets as an outcome of the service	Technical Quality	Outcome Quality

2.3.5 Measurements of Service Quality

The SERVQUAL Scale

The “SERVQUAL” scale developed by Parasuraman et al. (1988) has been a popular instrument among researchers and practitioners for measuring perceived service quality (see, for instance, Brown and Swartz 1989; Saleh and Pyan 1991; Headley and Miller 1993; Bojanic and Rosen 1994; Liljander and Strandvik 1995). The service quality attributes were identified through extensive focus group interviews with consumers of long distance telephone, banking, repair and maintenance and brokerage services. After rigorous testing and scale purification, the original ten dimensions were condensed to five dimensions of service quality. Perceived service quality is the sum of the differences between perceived performance minus normative expectations across all the attributes. The service is considered of higher quality if the sum is positive or zero, and of lower quality if the sum is negative. These researchers claimed that the scale could be applied across a broad spectrum of services. The scale has been well accepted and widely adopted by practitioners because it is simple to understand and use.

The SERVQUAL Formula of Parasuraman et al.:

$$PSQ_j = \sum (P_{ij} - E_i)$$

where PSQ_j = quality gap for company j

Σ = summation over all attributes

P_{ij} = perception of performance for company j on attribute i

E_i = expectation of excellence for attributes i

(Source : Adapted from Parasuraman et al. 1991)

The 22 attributes of the “SERVQUAL” scale have been condensed to the five dimensions of reliability, assurance, tangibles, empathy and responsiveness. Parasuraman et al. (1988) found that the “reliability” dimension is the most important in influencing a consumer’s overall perception of service quality. It is interpreted as a firm’s ability to perform the promised service dependably and accurately. The authors suggested that the outcome quality contains the reliability dimension, and that the process quality includes the tangibles, empathy, assurance and responsiveness dimensions.

On the other hand, academics have devoted considerable attention to how perceived service quality should be measured. If the scale is to be used widely, then scale validation and evaluation are crucial. Thus, a substantial number of studies have been conducted on assessing the reliability and validity of the “SERVQUAL” scale. The following sections present a discussion of the problems associated with using this scale.

Dimensionality

Although the 22 attributes have been widely used by researchers (for example., Brown and Swartz 1989; Saleh and Ryan 1991; Cronin and Taylor 1992; Headley and Miller 1993; Liljander and Strandvik 1995), the results of previous studies suggested that the number of service quality dimensions is not unique, and it varies depending on the types of the service under investigation (Carman 1990; Babakus and Boller 1992). Carman’s findings suggest that the wording and subjects of individual items need to be customised to each service setting. Further, Babakus and Boller’s study showed that all negative items loaded heavily on one factor, and the other items did not load on the expected factors. These authors argued that because services vary greatly, it is difficult to develop a generic instrument that can be

applied to all service industries. They suggested that the instrument should accommodate the unique features of specific service industries. These researchers recapitulated Bonner and Nelson's (1985) view that quality should be product or service specific (See section 2.3.2). Other studies that did not support the five dimensions of service quality include those of Cronin and Taylor (1992), Headley and Miller (1993), Spreng and Singh (1993), Lam (1995) and Johns and Tyas (1996).

Timing of Administration of Expectations Measures

Some researchers strongly favour the perceived performance measure over the difference scores measure, because the perceived performance is twice as efficient, and the practical problem associated with administering the expectations prior to consumption can be avoided.

Carman (1990) and Babakus and Boller (1992) reported the difficulty in collecting expectation data before purchase. However, the two sets of expectations and perceived performance statements in the SERVQUAL instrument were administered at the same time, and not related to a specific encounter. According to Parasuraman et al., the SERVQUAL scale is intended to ascertain a customer's overall perception of service quality, and therefore is designed to capture cumulative perceptions of a firm's service quality and not a temporal perception. Still, there are other researchers using the scale in evaluating service quality at an encounter level (Getty and Thompson 1994; Bojanic and Rosen 1994; Headley and Miller 1993, Brown and Swartz 1989). Others have used perception components in their study (Gotlieb 1994; Richard and Allaway 1995; Kelly and Davis 1994; Mittal and Lasser 1998).

Carman (1990) argued that expectations are a dynamic phenomenon and they change with experience. There is a risk that if expectations are measured after consumption, expectations will be adjusted by perceptions of the actual service provided. He and other researchers suggested that using a one item approach such as "better than" would prevent the potential problems associated with the difference scores, and it would be less confusing and simpler for respondents. Babakus and Boller (1992) also reported that ideal expectations had a ceiling effect, and as a result difference scores were dominated by the perception scores.

In response, Parasuraman et al. (1991) have revised the original version of SERVQUAL. Their negatively worded statements were abandoned, as these authors also found that they may have confused respondents. Some wordings of the original items were adjusted. In addition, the “should” terminology was rephrased in the expectation statements to “excellent companies would provide”. They reported that the “should” terminology encouraged respondents to focus on the high end of the scales.

On the other hand, Clow and Vorhies (1993) asserted that expectations should be measured prior to the consumption of the service. The results of their study showed that administering both expectations and perceived performance measures at the same time would yield biased results. As these authors explained, a ceiling effect may occur when both expectations and perceived performance were measured at the same time. The view of these researchers was consistent with that of Babakus and Boller (1992).

Issues of Reliability and Validity

One major weakness of the SERVQUAL scale is the low reliability inherent in its difference scores (Prakash 1984). Several studies have pointed out the pitfalls of using difference scores (Brown et al. 1993; Peter et al. 1993; Teas 1993). Peter, Churchill and Brown (1993) explained that the reliability of difference score decreases when the reliability of either or both component scores decrease, or when the correlation between the component scores increases. That is, if the reliabilities of either expectations or perceived performance or both are low, then the reliability of the difference score is also expected to be low. On the other hand, if there is a high correlation between expectations and perceived performance, this will also lower the reliability of the difference score. For example, assuming that the average reliability of the two components is 0.70, if their correlation is 0.40, the reliability of difference scores is only 0.50. However, if the correlation between the two components is 0.10, the reliability of difference scores increases to about 0.6 - 0.70 (See Figure 2.4). These authors argued that difference scores are typically less reliable than the direct measure because the component measures are expected to be correlated. The relationships among the reliability of difference score, the reliability of the components, and the correlation between the components are depicted in Figure 2.4. Discriminant validity, spurious correlation, and

variance restriction are also associated with using the difference scores. The formula for calculating the reliability of difference scores is shown below. The reliability of difference scores were reported to be lower compared with the direct measures (Parasuraman et al. 1994) (See table 2.3).

Formula for Calculating the Reliability of difference scores:

$$r_D = \frac{s_1^2 r_{11} + s_2^2 r_{22} - 2r_{12}s_1s_2}{s_1^2 + s_2^2 - 2r_{12}s_1s_2}$$

where r_D = reliability of difference scores

r_{11} = reliability of the first component

r_{22} = reliability of the second component

s_1^2 = variance of the first component

s_2^2 = variance of the second component

r_{12} = correlation between the first and second components

(Source : Peter, Churchill and Brown 1993)

Figure 2.4 Reliability of Difference as a Function of the Reliability of the Components and the Correlation between them



(Source : Peter, Churchill and Brown 1993)

Brown, Churchill and Peter (1993) conducted a study that examined various measurements of perceived service quality. These measurements included the direct measure, the performance-based measure and the difference scores measure. These authors used predictive standards, on the basis that normative standards were reported to yield consistently high ratings in the Parasuraman et al. (1991) study. The direct measure of perceived service quality was found to perform marginally better than the difference scores measure, and the reliability coefficient was 0.94 compared to 0.96. The performance-based measure yielded a reliability coefficient of 0.96. The results provided evidence for convergent validity of all three measures, as the

correlations with the global measure of service quality were all above 0.60. With regard to predictive validity, the direct measure yielded a correlation of 0.32 with behavioural intentions compared to 0.26 for the difference scores measure and 0.31 for the performance-based measure. They found that the direct score measure possessed a better discriminant and nomological validity than the difference scores measure, and was twice as efficient. However, their findings show no strong evidence that the direct and performance measures are significantly better than the difference scores measure in the assessment of reliability and validity.

Quester and Romaniuk (1997) examined the SERVQUAL and SERVPERF scales in the context of advertising services. Factor analysis was performed, followed by orthogonal rotations. After several iterations, five dimensions were derived from the SERVQUAL and SERVPERF scales respectively. Regression analysis was used to assess the predictive ability of both scales for overall service quality. The results were very close: for SERVQUAL scale the R^2 was 0.49, and for the SERVPERF scale the R^2 was 0.504. Reliability coefficients were not reported in their study. Similar studies were found in the literature. The findings of Lam's (1995) study showed that the performance-based measures outperformed the difference scores measure on the prediction of overall quality and behavioural intentions.

The reliability of a scale involves determining the consistency of independent or comparable measures of the same object or group (Churchill 1995). There are several methods used in assessing a scale's reliability. Cronbach's alpha and split-halves tests are used to evaluate the internal consistency among the items of the scale. A test-retest reliability measure is used to assess whether the scale administered to the same respondents at two different points in time would produce similar results.

Most of the prior studies mentioned are focused on the assessment of reliability. The literature revealed two test-retest studies. The study of Triplett et al. (1995) adopted the original SERVQUAL (1988) as their research instrument in the context of information services. Their longitudinal study showed that the number of dimensions of service quality varied over the four consecutive years of the study, ranging from 3 to 5 dimensions. The Cronbach alphas were found to range from 0.57 to 0.92. Responsiveness, reliability and

tangibility were reported to be more stable over time, but empathy and assurance appeared too volatile over time and across respondents. Lam and Woo's (1997) study provided similar results. They used convenience samples and investigated the service quality of retail banks, restaurants, supermarkets and retail chains. The test-retest coefficients for expectations and perceived performance ranged from 0.76-0.80 and 0.33-0.62 respectively. The authors claimed that the ideal standard possessed stability and was free from memory effect. However the perceived performance measure fluctuated considerably, even in a one week test-retest interval.

The above studies cast doubt on the reliability and validity of the Parasuraman et al. (1988) SERVQUAL scale, and questioned whether it and the SERVPERF scale suggested by Cronin and Taylor (1992) actually measured service quality in the same manner as attitude. Attitude as defined by Kotler and Armstrong (1996) is "a person's consistently favourable/unfavourable evaluations, feelings and tendencies toward an object or idea". Parasuraman et al. (1988) claimed that quality is similar to attitude, and is developed and maintained over a long period of time. However, results of the Triplett et al. (1995) study, and Lam and Woo's (1997) study, showed that customer evaluations of service quality did not maintain over a long period of time. However, there may be other factors that could have accounted for the results: for example, the research design and wordings used in the instruments may have contributed to the differences observed in the test-retest results. Nevertheless such findings shed light on the question of whether their measurements captured the enduring nature of service quality. Woo (1998) suggested using perceptions of service quality as a segmentation basis in services. In the light of his results reported in 1997, it is questionable to use an unstable measure such as perceptions of service quality as a basis for segmentation.

Furthermore, heterogeneity is a unique characteristic of service. The performance of service may vary from one service provider to another within a single firm. Even the same service provider, performance may vary from time to time. Therefore, consumer evaluations of service are subject to change, in particular those services which are labour intensive. It is not surprising to find that in the Triplett et al. (1995) study, empathy and assurance attributes were more volatile over time and across respondents. As for products, their performance is

more consistent, hence consumer evaluations of products and their attitudes towards products can be consistent over a relatively long period of time, and are less situationally orientated.

Another point that needs more attention is that most of the service quality studies conducted in the past have used mail surveys as the data collection method. When a respondent replies to a mailed questionnaire, they may recall the most recent experience with the service firm, and use it as the base for evaluations. In this case, the evaluations of the firm's service quality is rather transaction-specific. Therefore, researchers have to be careful with the words they use in the research instrument, and ensure that the instrument does indeed measure what it intends.

Alternative Measurements of the Components of Perceived Service Quality

In consumer satisfaction literature, different conceptualisations and operationalisations of expectations have been suggested and investigated. Although service quality literature is growing, it is still small when compared to the consumer satisfaction literature. In particular, the question of how expectations are operationalised and measured did not receive much attention until the recent studies of Zeithaml et al. (1993), Boulding et al. (1993), Teas (1993) and Iacobucci et al. (1994).

Predictive expectations concern one specific service outlet, and normative standards, as distinguished from transaction-specific standard used in consumer satisfaction research, refer to the entire industry, (Parasuraman et al. 1991). Parasuraman et al. (1986) explained that expectations in service quality contexts represent what a consumer desires, which can be viewed as a distinct value with little or no uncertainty surrounding it, whereas prediction connotes a degree of uncertainty surrounding the mean.

Other researchers have used importance scales to measure expectations. Lewis (1991) compared U.S. and U.K. consumer expectations and perceptions of service quality at retail banks. The statements contained in the research instrument were largely based on the SERVQUAL items, and items generated through personal interviews and a literature review. However, expectations were measured on an importance scale ranging from "very important"

to “no importance” and perceptions were measured using a likert scale ranging from “strongly agree” to “strongly disagree”. Ennew et al. (1993) also measured the “expected quality of attribute” on an importance scale with the anchor labeled “very important”, and the high-end “not important”. It appears that these expectation statements measured the importance of the service attributes rather than consumer expectations of service quality.

Cronin and Taylor (1992) examined alternative measures of service quality, which included the SERVQUAL scale, a weighted SERVQUAL scale, perceived performance, and weighted perceived performance. They found that performance-based measures were more reliable, and possessed stronger predictive validity than the other measures. Also, their results did not support the five dimensions of service quality. These researchers (1994) later contended performance is a better measure of service quality, but they did not deny that expectations can have unique effects on consumer perceptions of service quality, and suggested that further research was needed to explore appropriate comparison standards. In their defence of using the SERVPERF scale as a measure of perceived service quality, they had also emphasised that management must be cautious when using the results of performance-based measures as input for strategic planning. A close examination of their results reveals that the SERVPERF scale performed marginally better than the SERVQUAL scale in banking and pest control services. In dry cleaning and fast food services, the SERVPERF scale was found to perform slightly better than the SERVQUAL scale for explaining variation in the overall measure of service quality.

Cronin and Taylor’s SERVPERF Formula:

$$PSQ_j = \sum P_{ij}$$

Where PSQ_j = quality for company j

\sum = summation over all attributes

P_{ij} = perception of performance for company j on attribute i

(Source: Adapted from Cronin and Taylor 1992)

Teas (1993) questioned the validity of the gap measurement. According to Parasuraman et al. (1986), the higher the perceptions minus expectations score, the higher is the level of perceived service quality. Teas argued that this is true only if that the service feature being assessed is a vector attribute. However, ideal point attitudinal models suggest that perceived quality might decrease as perceptions of performance exceed the ideal point, due to the decreasing utility of the performance. For example, with the courtesy and attention of waitpersons, customers may be annoyed when the attention received is beyond the ideal level. Teas proposed a modified quality that has accounted for the influence of ideal.

Teas' Modified Quality Formula:

$$MQ = -1 [|P - I| - |E - I|]$$

where MQ = modified quality

P = perceptions of performance

I = ideals

E = expectations

(Source: Adapted from Teas 1993)

Further, Teas argued that there are seven ways of producing the same gap score. For example, a gap score of zero can result from P=1, E=1 or P=2, E=2, P=3, E=3 up to P=7, E=7. He questioned whether these "tied" values are expected to correspond equally to perceived service quality. In other words, when consumers expect a high quality service from firm A, say an expectation rating of 7, and expect a low quality service from firm B, say an expectation rating of 1, do consumers perceive both firms provide the same high quality service when perceptions of performance match expectations? The answer is obviously no. However, this case will not happen if both firms operate in the same service industry and normative standards are used in the comparison, because the consumers would assign the same rating on the normative standard measurements. However, this case will occur when both firms operate in different service industries.

Building on the definition of quality as a relative concept, Teas (1993) proposed a Normed Quality Model, which accounts for the relative importance of attributes and incorporates The classic ideal point concept. The Normed Quality Model is depicted below:

$$NQ_i = -1 [\Sigma W_j (| A_{ij} - I_j | - | A_{ej} - I_j |)]$$

where NQ_i = normed quality for object i

W_j = importance of attribute j as a determinant of perceived quality

A_{ij} = the individual's perceived amount of attribute j processed by object i

I_j = the ideal amount of attribute j as conceptualised in classic ideal point attitudinal models

A_{ej} = the individual's perceived amount of attribute j processed by the excellence norm

(Source: Adapted from Teas 1993)

It should be noted that if infinite classic ideal points are assumed, then the Normed Quality Model can be expressed as:

$$NQ_i = \Sigma W_j (A_{ij} - A_{ej})$$

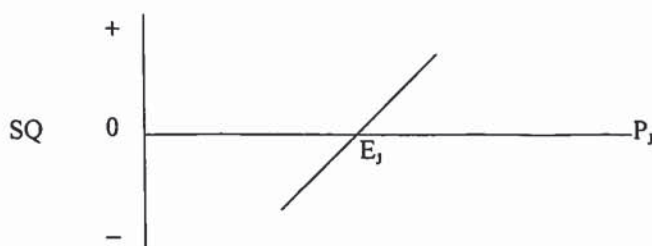
Thus, the structure of the model is similar to the SERVQUAL model, except that it accounts for the relative importance of attributes, and normative expectations are operationalised as "excellence norms".

In response to Cronin and Taylor's (1992) criticisms, Parasuraman et al. (1991) argued that the SERVQUAL scale is preferable to SERVPERF on the grounds that it can help management to pinpoint any service shortfalls or excesses. They also stated that the five dimensions are interrelated and overlap to some degree, but their factor analysis technique did not allow for the interrelations among the five dimensions. In response to Teas' (1993) criticism, Parasuraman et al. argued that the feasible ideal point represents the level of service the consumer considers possible for the best service company and exceed this standard might

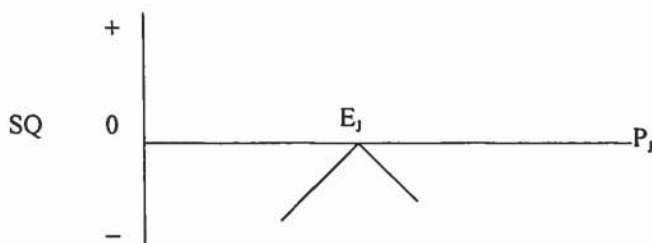
still be viewed favourably by the customer. Thus, they considered most of the 22 attributes using this interpretation under vector assumptions. The relationship between performance and service quality under three different ideal point assumption is depicted as follows:

Figure.2.5 The Relationship between Performance and Service Quality under Three Different Ideal Point Assumption

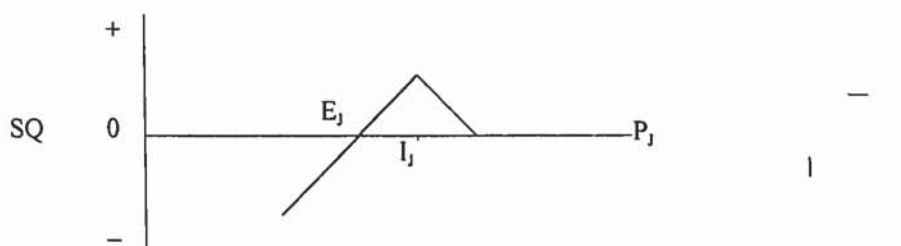
Case A: Attribute j is a vector attribute and, therefore, the general form of the function below holds regardless of how the expectation standard (E_j) is defined.



Case B: Attribute j is a classic ideal-point attribute and E_j is interpreted as the classic ideal point (i.e. $E_j = I_j$)



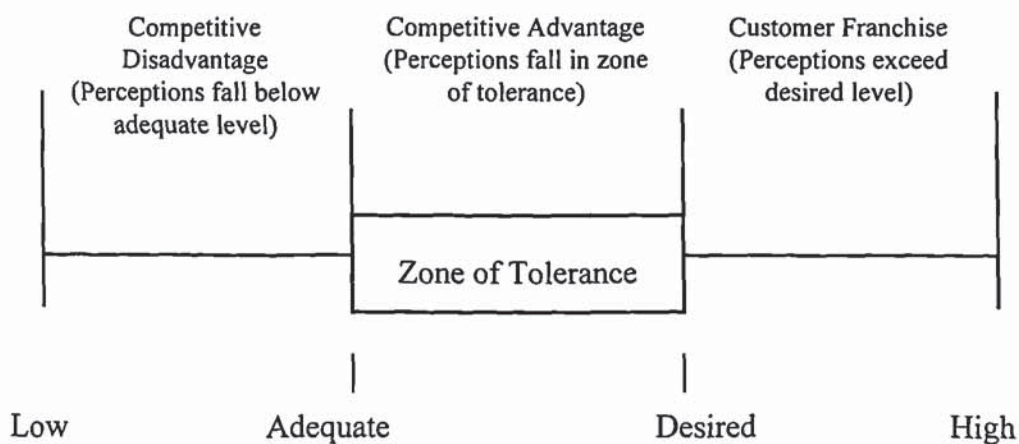
Case C: Attribute j is a classic ideal-point attribute and E_j is interpreted as the feasible ideal point (i.e. $E_j < I_j$)



(Source: Adapted from Parasuraman et al. 1994)

Parasuraman et al. (1991) proposed two alternative measures of expectations: “desire” and “adequate” levels. Between these levels is a “tolerance zone”. The adequate service level represents the minimum performance level expected by customers after they consider a variety of individual and situational factors. The desired level is the service that customers hopes to experience, or a blend of what the customer believes “can be” and “should be”. They argued that firms operating below adequate levels are at a competitive disadvantage, and customers are likely to switch. Firms performing above adequate service levels can gain a temporary competitive advantage, but this level can be easily elevated by competitors. Therefore, they suggested that firms should exploit opportunities to exceed the desired level. However, this may not be profit wise because consumers do not always want the highest quality service. There are other factors they will consider, such as price or convenience.

Figure 2.6 Customer Perceptions of Service Performance

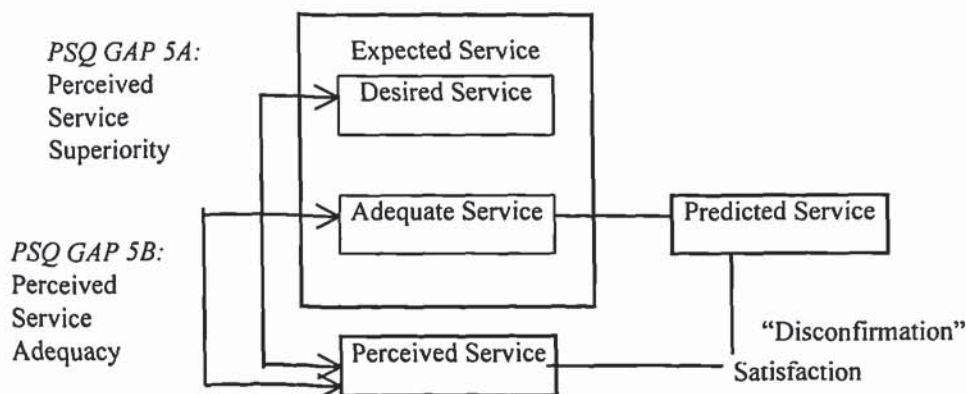


(Source : Adapted from Parasuraman et al. 1991)

Zeithaml et al. (1993) identified the nature and determinants of the “desire” and “adequate” standards through focus group interviews with consumers. According to these authors, perceived service superiority results from a comparison of desired service expectations with perceived service, and perceived service adequacy results from a comparison between adequate service expectations and perceived service. Predictive expectations are posited to affect the assessment of service quality through its influence on the adequate level. However, these researchers offered no explanation for this proposition. According to the expectancy-disconfirmation paradigm, disconfirmation is defined as the discrepancy between predicted

service and perceived service, which should have an independent effect on consumer satisfaction. Their conceptual framework is depicted in Figure 2.7.

Figure 2.7 Comparison between Customer Evaluation of Perceived Service Quality and Satisfaction



(Source: Zeithaml et al. 1993)

Parasuraman et al. (1994) compared the alternative measures of service quality, namely the difference scores, direct score of perceived relative to desired, and adequate respectively and performance-based scores. Their results showed that there was a good evidence of predictive, convergent and discriminant validity among these scales. The performance scale was found to outperform the other scales in terms of predicting overall evaluations of service. A significant relationship was found between service quality and behavioural intentions.

Brown (1997) contended that service quality measures should have managerial value, on the grounds that it is the management who uses the results of service quality studies to revise or develop service strategies. The author introduced “norms” as the frame of reference, and he suggested that comparisons of perceived service against norms could assist management in identifying those areas which require immediate attention. According to Brown, “norms” refers to the distribution of scores obtained on a measure by similar entities, that is those firms offering similar services. He suggested that these data could allow a firm to see how it is performing relative to its competitors. His view of the “norm” standard considers all firms offering similar services. However, in some industries, restaurants for example, it would be

difficult to establish “norm” distribution because there are more than one thousand restaurant operators offering similar services.

Boulding et al. (1993) conducted an experimental and field study on the relationship between the disconfirmation of predictive expectations and normative expectations to different types of behavioural intentions. They defined predictive expectations as those characteristics of the service that consumers consider likely to occur, and normative expectations as those characteristics which consumers consider the service should be able to achieve. The normative expectations were operationalised as feasible ideals. They showed that “will” and “should” expectations were different constructs, and their results suggested that a firm should increase the “will” expectations level and decrease the “should” expectations in order to elevate perceptions of quality. However, this strategy may be dangerous because it narrows the zone of tolerance, and may lead to higher chances of dissatisfaction, which in turn influence post-behaviour. In accord with previous studies, the overall service quality and behaviour were found to be affected solely by the participant’s current perception of the service, and not their current expectation. Table 2.2 summarises the previous studies on the service quality studies.

Table 2.2 Comparison of Previous Service Quality Studies

Authors	Sample Size, Characteristics, & Services Under Investigation	Questionnaire (Content and response Scale)	Comparison Standards	Measurement Method	Data Collection Method	Reliability and Validity Assessment Methods
Babakus and Boller (1992)	Systematic random sampling of 689 residential electricity and gas service customers, which represents a response rate of 29.0 %	22 SERVQUAL items	"Should be"	Differences scores	Self-administered	Reliability assessment - sub-scale 0.67-0.83 similar to those reported in Parasuraman et al. (1988) Factory analyses were performed – two dimensional factor solutions were derived. Confirmatory factor analysis did not provide a good fit for a five dimensional measurement model Concurrent validity - the correlations of SERVQUAL scores and perception scores with the overall quality were 0.59 and 0.66 respectively
Brown et al. (1993)	Convenience samples of 230 undergraduate students using financial services	A modified SERVQUAL scale. Each item was rephrased as in the form of the "HOW" phrase	"Would Be"	1. Difference scores 2. Non-difference scores	Self-administered	Reliability coefficient - for the difference scores was 0.94 - for the non-difference scores was 0.96 Convergent validity – correlations of the non-difference scores and difference scores with the global measure of service quality were all 0.60 or above Discriminant validity – correlations of the non-difference scores and difference scores with consumer discontent were very small Nomological validity – correlations of perceptions scores, difference scores and non-difference scores with behavioural intentions were 0.31, 0.26 and 0.32 respectively
Carman (1990)	Customers of dental services, hospital services, retail tire services, and placement centre; for the formal two services, the sample size exceed 600, for the placement centre, the sample size was 82 and for the retail tire service, the sample size was 74	Modified SERVQUAL items. Items were accommodated to the characteristics of services under investigation and new items were added.		Expectations were administered only to the customers of placement center	Self-administered	Reliability assessment : sub-scales : 0.51 – 0.94 Factor analysis was performed separately on each sample data, six to eight factors were derived. Validity – not examined

Table 2.2 (Continued)

Authors	Sample Size, Characteristics, & Services Under Investigation	Questionnaire (Content and Response scale)	Comparison Standards	Measurement method	Data Collection Method	Reliability and Validity Assessment Methods
Cronin and Taylor (1992)	Customers of banking, pest control, dry cleaning and fast food services. Sample sizes were 188, 175, 178 and 189 respectively	22 SERVQUAL items, Likert scale ranging from "strongly agree" to "strongly disagree"	"Should be"	1. Difference scores; 2. Perceptions scores; 3. Weighted difference scores; 4. Weighted perceptions	In-home interviews	Reliability assessment : sub-scales : 0.74 – 0.83 Principal-axis factor analysis followed by oblique rotation revealed a single factor solution. The five dimension structure was not confirmed using confirmatory factor analysis Convergent validity – high correlations were found among the four measures of service quality Discriminant validity – higher correlations were found among the service quality measures than with the satisfaction measure and purchase intentions measure SERVPERF measures exhibited a stronger predictive ability than those of SERVQUAL; Satisfaction exhibited a stronger effect on purchase intentions than service quality
Lam (1995)	Customers of retail banks; sample size 227	SERVQUAL scale, 22 items ranging from "strongly agree" to "strongly disagree"	"excellence"	1. Difference scores 2. Perceptions scores	Self-administered	Reliability assessment: sub-scales: expectations 0.634 – 0.877; perceptions : 0.761-0.902 Predictive validity: the correlations of perceptions scores and difference scores with behavioural intentions were 0.745 and 0.622 respectively The correlation of perception scores and difference scores with overall quality rating were 0.811 and 0.687 respectively
Parasuraman et al. (1988)	200 customers of telephone companies, securities brokerages, banks, and repair and maintenance firms	22 SERVQUAL items (positive and negative wordings) Likert scale, ranging from strongly agree to strong disagree	"Should be"	Differences scores	Self-administered	Principal axis factor analysis followed by oblique rotation. FIVE dimensions were derived. Cronbach's alphas sub-scale 0.52 - 0.84 total scale 0.87- 0.90 Convergent validity – the correspondence between SERVQUAL score and overall quality score was examined using ANOVA Concurrent validity - the association between SERVQUAL scores and "conceptually" related variables was examined using regression analysis

Table 2.2 (Continued)

Authors	Sample Size, Characteristics, & Services Under Investigation	Questionnaire (Content and response Scale)	Comparison Standards	Measurement Method	Data Collection Method	Reliability and Validity Assessment Methods
Parasuraman et al. (1991)	290-497 customers from companies, as in the previous study	22 SERVQUAL items (all positive wordings) Likert scale as in the previous study	"Excellence"	Difference scores	Mail survey	Principal axis factor analysis followed by oblique rotation. FIVE dimensions were derived (six if tangibles were split into two dimensions) Cronbach's alpha Sub-scale 0.80-0.93 Same validity assessment methods were used as in the previous study
Parasuraman et al. (1994)	Customers of retail chains, auto insurance companies, life insurance companies, and computer manufacturers Overall response rate - 25 %	22 SERVQUAL items 9 point scale ranging from 1=low to 9=high	"Adequate" "Desired"	1. Direct measure of perceptions relative to desired (MSS) 2. Direct measure of perceptions relative to adequate (MSA) 3. Difference scores measure of (MSS) and (MSA)	Mail survey	Principal axis factor analysis followed by oblique rotation Cronbach's alpha sub-scale 0.75-0.96 (for all three measures) Reliability coefficient (using the formula suggested by Peter et al. (1993), sub-scale 0.65-0.92 (for the difference score measure) Confirmatory factor analysis - Five dimensions were confirmed but there were also evidence suggesting that responsiveness, assurance and empathy may merge into one single dimension. Convergent and predictive validity - the perception scale outperformed the other scales. Associations were found between behaviour measures and the three different measures of service quality
Queser and Romaniuk (1997)	Advertising services; 182 advertisers	SERVQUAL and SERVPERF scales; original 22 items with 2 additional items to customise the service under investigation		1. Difference scores 2. Perception scores	Mail survey	Factor analysis followed by orthogonal rotations, after several iterations, five dimensions were derived. Reliability - not examined Convergent validity - high correlation between SERVQUAL and overall measures, and SERVPERF and overall measures Discriminant validity - both measures correlated with overall measure of service quality than satisfaction Predictive validity - SERVQUAL $R^2 = 0.49$ - SERVPERF $R^2 = 0.504$

Table 2.2 (Continued)

Authors	Sample Size, Characteristics, & Services Under Investigation	Questionnaire (Content and Response scale)	Comparison Standards	Measurement Method	Data Collection Method	Reliability and Validity Assessment Methods
Triplett et al. (1995)	Information services; the study was conducted over a period of four years from 1989-1992; sample size ranged from 125 to 210 across the four years	modified SERVQUAL scale; 7 point Likert scale ranging from "strongly agree" to "strongly disagree"	"should be"	Difference scores	Mail survey	Factor analysis followed by oblique rotations. The number of factors and dimensionality of the factors were varied across the four years of study. Reliability assessment : sub-scale : 0.57 – 0.92 Validity – not examined
Teas (1993)	Customers of three majors discount stores; sample size 120	Service quality measures include : SERVQUAL(1988&1991) Normed quality, Evaluated performance (i.e. disconfirmation of ideals") p ^s – perceived performance measure using likert scale was used in the SERVQUAL scale p ^d – perceived performance measure using semantic differential scale was used in Normed quality and Evaluated performance scales W – importance measure	"should be" "excellence" "ideals"	Difference scores	Personal interviews	Reliability – not examined Criterion validity was assessed by calculating the correlation between each of the service quality measures and the global quality measure respectively Construct validity was assessed by calculating the correlation between each of the service quality measures and the global store preference measure respectively Evaluated performance possessed high criterion validity and construct validity than the other service quality measures The weighted service quality models performed poorly compared to the unweighted service quality models Results of exploratory research indicate that expectations lack discriminant validity

2.3.6 The Role of Expectations in Service Quality Evaluation

The importance of expectations in the evaluations of service quality has been documented in the service literature (Lewis and Booms 1985; Sweeney et al. 1992; Zeithaml et al. 1993; Clow et al. 1996). Customer expectations, which some prefer to call “standards” (Iacobucci et al. 1994) serve as the benchmark upon which the quality of a service is evaluated. It is generally agreed that marketers can influence customer evaluations of service either through managing their expectations or elevating their perceptions of performance. In accord with this view, Clow and Vorhies (1993) suggested that the long-term success of service firms depend on the skilful management of service expectations.

There is disagreement among researchers on the conceptualisation and operationalisation of the “expectation” construct. The utility value of measuring standards in ascertaining customer judgements of the service was also questioned. The highly skewed distribution of the “normative expectations” data, and the independent role of perceptions of performance in predicting post-purchase behaviour, have been discussed in the preceding section.

Despite the conflicts among researchers on the role of comparison standards in the measurement of service quality, none denied that customer expectations play an important role in the selection and evaluation of a firm’s service. Service firms have to communicate and educate their customers, so that realistic and accurate expectations are formed prior to and during the consumption of a service. The worst case scenario is when firms try to influence customer purchase decisions and over-promise on their ability to deliver services. In this case, customer perceptions of performance fall below their expectations. They feel disappointed, and are more likely to switch or engage in negative word-of-mouth communications. In turn, this will have a negative effect on the firm’s image, and profits in the long run.

Webb (1998) conducted a segmentation analysis of customers on the basis of service quality expectations for police service. Demographics were found to have an effect on consumer expectations of service. Sweeney et al. (1992) examined the influence of various cues on consumer expectations of service quality. The service manner of employees and opinions of

friends and relatives were shown to have greatest influence on expectations and selection of restaurant services. On the other hand, Bitner (1990) suggested that customer expectations of an impending service encounter is affected by their prior experience and their attitude towards the service. Clow and Vorhies (1993) assessed the stability of expectations, and the effect of previous experience on consumer expectations. They found that expectations were relatively stable over time. They observed that there was a change of expectations of respondents following either a negative or positive experience. However, there was no indication as to whether it was an upward shift or a downward shift for both negative and positive experienced customers. Further, it could be that the interval between the prior and post measures was too long, and that other factors and situations caused the shift in expectations. Nevertheless, they contended that expectations should be measured prior to the consumption of a service, and evaluations of experience should be taken afterwards, because consumers adjust their prior expectations following the experience of a service. In addition, a ceiling effect may exist when both measures are taken at the same time, because consumers tend to indicate that their expectations are greater than they actually were before the service encounter.

In sum, the literature does not have a conclusive answer on the timing of the administration of expectations. The answer depends on the purpose of the investigation. If the purpose is to ascertain consumer perceptions of service quality with a specific service encounter, then Clow and Vorhies' suggestions appear to be warranted.

2.3.7 Conclusion

This literature review identifies many different interpretations of service quality. In general, researchers agree that service quality is a relative concept and it should be measured from the customer perspective. It is the customer's standards of service quality that provide the basis for establishing the internal standards for service firms.

Quality has been conceptualised as "*meeting consumer expectations*", "*delivering the level of quality that matches with that of competitors on a consistent basis*" and "*a degree of*

excellence or superiority". Along this line, service quality is defined as the discrepancy between the customer's normative standards and perceptions of performance.

However, when the importance of the expectation component in service quality assessment has been documented in the literature, there has been no consensus among researchers on how expectations of service quality should be conceptualised and measured. Most researchers suggest that service quality should not just be the "meeting consumers' expectations" as competition intensifies. Parasuraman et al. (1988) were among the first to conceptualise "expectations" as normative standards, and measured perceived service quality as the sum of the differences between normative standards and perceived performance. Their measurement method has triggered a sequence of debates in the literature. Section 2.3.5 presents a thorough review and analysis of the service quality studies.

The performance-based measure advocated by Cronin and Taylor (1992) as an indication of perceived service quality is growing popular in the service literature (see, for example, Kelly and Davis 1994; Richard and Allaway 1995; Mittal and Lasser 1998). The advantages of using the performance-based measure are that it is twice as efficient in terms of data collection, and that it provides better measurement properties than the difference scores measure. Furthermore, a growing number of researchers, including Grönroos (1993), Bolton and Drew (1991), and Dabholkar (1993), agree that service quality can be tied to perceptions of performance. Others have suggested using a direct approach ("better than") for assessing service quality (Carmen 1992; Brown et al. 1993).

In response to the criticisms raised among researchers regarding the difference scores measure, the original SERVQUAL authors suggested that performance-based measurement is appropriate if the primary purpose of measuring the construct is to explain the variance on some dependent construct, such as behavioural intentions. They argued strongly that difference scores have greater managerial implications than performance-based scores.

In reviewing the past service quality studies, it can not be conclusively suggested that direct or performance-based measures are superior to difference scores in terms of reliability and validity (See section 2.3.5). The results of some studies suggested that difference score

measures performed equally well as the other measures. Peter et al. (1993) explained that the correlation between expectations and perceived performance attenuates the reliability of the difference score. However, if normative standards are used as the basis for comparison, then the correlation between normative standards and perceived performance is expected to be weak, unless all respondents perceive that the firm provides services which correspond to their ideal levels.

Some studies showed that performance-based measures varied considerably. Due to the nature and characteristics of services, these results are not astonishing. What appears to be surprising is Parasuraman et al. (1988) and Cronin and Taylor (1992) claimed that their measures are derived from the conceptualisation of service quality, which is considered in a similar manner to attitude. Such claims remain questionable. According to Churchill (1995), attitudes are composed of four basic features: “predisposition to respond to an object”, “persistence over time”, “a latent variable that produces consistency in behaviour”, and “a preference regarding the outcomes involving the objects, evaluation of the objects, positive and negative feelings for the object”. Attitude is expected to be consistent over time, but the interactive nature of services has raised the question of whether service quality can be viewed as an attitude.

Despite an increasing number of researchers using performance-based measurements for assessing perceived service quality, this form of measure does not appear to be consistent with how service quality is conceptualised in the literature. If researchers agree that perceived service quality is a relative concept, then a comparison process is involved in the judgement of the quality of a service. In order for consumers to judge whether a service is excellent or poor, there must be some form of standards or a reference point to guide their judgements. Indeed, if service quality is truly viewed from the consumer’s perspective, then the type of standards consumers commonly use in evaluating the quality of a service needs to be further explored. Another problem which arises in the literature is that it currently assumes that consumers derive perceptions of service quality from the calculation of difference scores. However, there may be alternative form of relationship between perceived performance and expectations (Oliver 1981).

The timing of expectation measurement administration varied between studies. There is no consensus among researchers as to when the expectations should be administered. The answer to this question depends on the purpose of the investigation. Further, the existing service quality models treat service quality as a static phenomenon, whereas some researchers have suggested that perceptions of service quality are dynamic in nature and change following consumer experience of a firm. It is posited that perceptions of service quality are affected by past experiences, marketing communications, image of the firm, and other forms of communication. However, perceptions of service quality have to take account of the time factor, and it is hypothesised that recent consumer experience has the strongest influence on the overall perceptions of service quality. It is posited that consumer perceptions of a firm's service quality will be adjusted following experience of the firm. If the experience is positive, then perceived service quality is expected to be adjusted upward, but if the experience is negative, perceived service quality may be adjusted downward or remain about the same. This depends on whether the consumer can find other factors attributable to the negative experience. Grönroos (1984) suggested that the stronger the image of the firm, the easier it is for the consumer to find other factors that are attributable to the negative experience. He posited that image can act as a shelter when negative experience occurs.

Service quality is highly associated with consumer satisfaction. However, there is some disagreement as to how these constructs are related. The next section presents a review of past studies on the relationship between customer satisfaction and service quality, and examines the similarities and differences between these two constructs. The next section will discuss how these two constructs can be combined into a coherent model based on the findings of the literature review.

2.4 Consumer Satisfaction and Service Quality Research

It has long been recognised that consumer satisfaction and service quality are two highly related concepts, yet their exact relationship has not been presented clearly in the literature. Parasuraman et al. (1988) distinguished satisfaction from service quality using different standards of expectation. According to these authors, consumer expectations were usually conceptualised in the consumer satisfaction literature as predictions of what is likely to happen during transaction. In contrast, they viewed expectations as desires or wants of consumers: that is, what consumers feel a service provider “should” offer rather than “would” offer. They asserted that satisfaction and service quality were conceptually different because individual expectations are defined in different ways (See section 2.3.2). Furthermore, these researchers followed Oliver’s (1980) view on attitude and satisfaction, and conceptualised “satisfaction as more situation or service transaction-specific and quality is a global judgement, similar to attitude, developed and maintained over a long period of time, during which multiple service encounters are experienced. The two are related in that incidents of satisfaction over time result in perception of service quality”. This is the predominant view of satisfaction and perceptions of quality in the service literature (Patterson and Johnson 1993).

2.4.1 Two Different Schools of Thoughts

At the outset of this research, there are only a few studies which have empirically investigated the relationship between service quality and satisfaction, and their effect on post-purchase behaviour. The results of these studies were confounding and inconsistent (Woodside et al. 1989; Cronin and Taylor 1992; Bolton and Drew 1991). Some researchers suggest that service quality is an antecedent of satisfaction (Swartz and Brown 1989; Gummesson 1991; Cronin and Taylor 1992; Oliver 1993; Anderson and Fornell 1994; Kelly and Davis 1994; Ravald and Grönroos 1996), but others adhered to the view that satisfaction precedes service quality (Parasuraman et al. 1988; Carman 1990; Bitner 1990; Bolton and Drew 1991; Patterson and Johnson 1993; Athiyaman

1997). There is a lack of general agreement among researchers about the nature of the relationship between the two constructs. Adding to this confusion, some researchers have simply viewed satisfaction and service quality as equivalent constructs (Brogowicz et al. 1990; Spreng and Singh 1993; Liljander and Strandvik 1993) and practitioners often use the terms interchangeably.

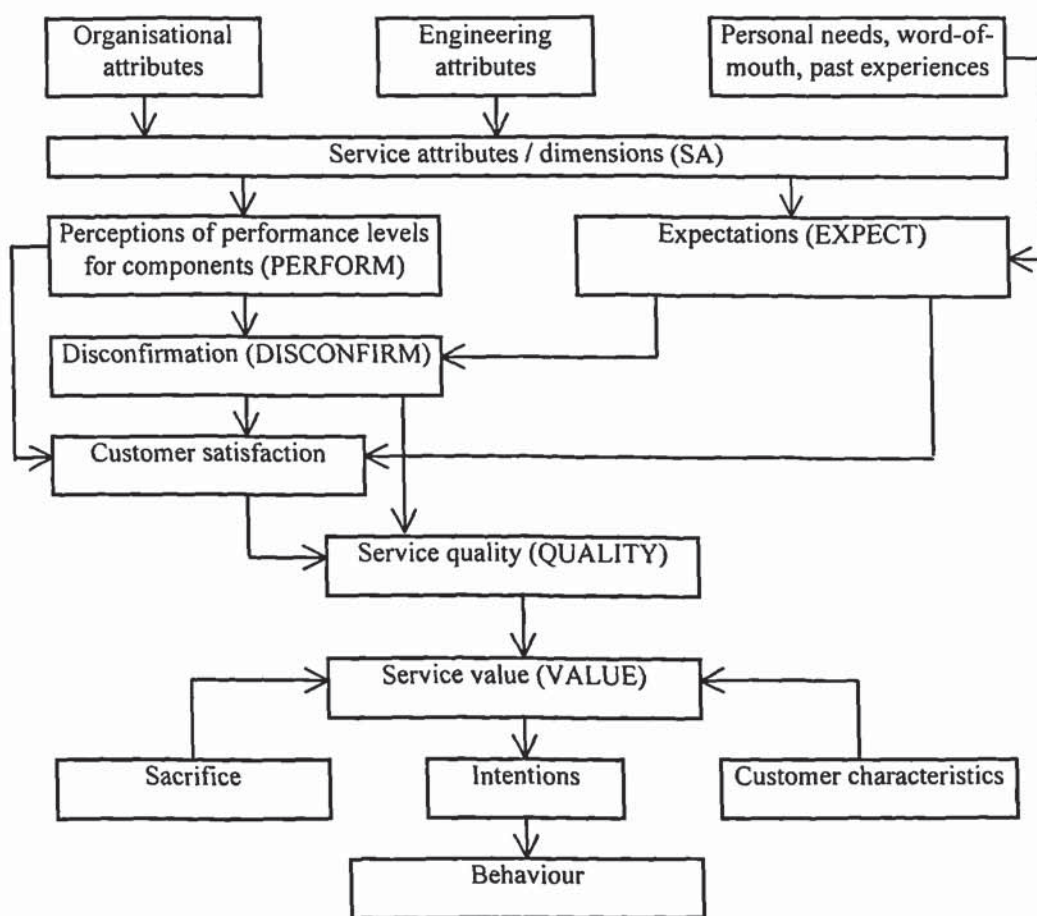
In the service literature, perceived service quality has been viewed as a cumulative perception or global judgement. Parasuraman et al. (1988), Bitner (1990), Bolton and Drew (1991) and Boulding et al. (1993) interpreted perceived service quality as an enduring attitude, or a stable perception which is adjusted as customers experience satisfaction with specific instances of the service over time. Thus, service quality is viewed a consequence of satisfaction.

On the other hand, Woodside et al. (1989) viewed customer satisfaction as a special form of consumer attitude. In their research framework based on the service script concept suggested by Smith and Houston (1983), they modelled perceived service quality as an antecedent of satisfaction. Cronin and Taylor's (1992) study supported this notion. Their results also showed that satisfaction has a stronger impact on purchase intentions than perceived service quality. However, in 1994 Iacobucci et al. re-examined Taylor and Cronin's work, and reported that their structural equation modelling could not yield information about the directionality between satisfaction and service quality. They found that the revised model, which posited satisfaction as a consequence of service quality, fitted the data equally well.

Researchers have attempted to integrate service quality, customer satisfaction and behavioural intentions into a coherent model. However, the role of disconfirmation in their models is not clear. For example, in Bolton and Drew's (1991) conceptual model, the one disconfirmed expectation variable is posited as a predictor of both satisfaction and perceived quality. Satisfaction is determined by expectations, perceived performance and disconfirmation, which in turn influence perceived service quality. Service value is

determined by perceived service quality, sacrifice, and customer characteristics. According to these authors, perceived value is a trade-off between what the customer gives and receives. Perceived service quality is viewed as the “received” component and sacrifice is interpreted as the “given” component (See also the Zeithaml et al. (1993) framework in figure 2.8).

Figure 2.8 A Multistage Model of Customer’s Assessments of Service Quality and Value

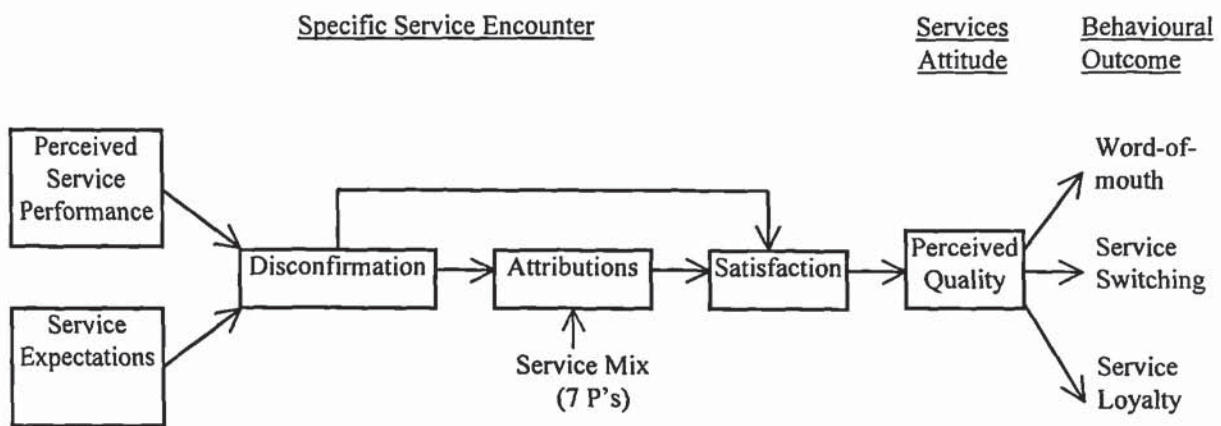


(Source: Adapted from Bolton and Drew 1991)

Teas (1993) explained that the confusion of the causal relationship between satisfaction and service quality is due to the lack of consensus on the definition and operationalisations of the two constructs. He pointed out that service quality has been

viewed as a global judgement in most service quality research, in contrast to the transaction-specific focus in most customer satisfaction research. Bitner's (1990) model illustrated how perceived service quality is related to customer satisfaction in specific service encounters.

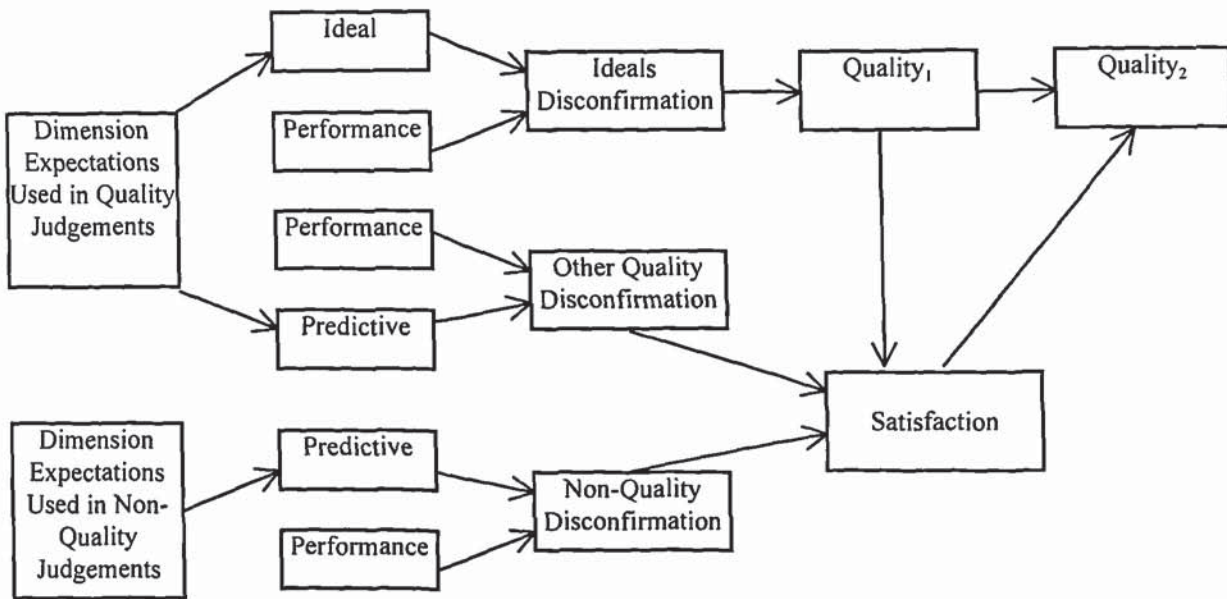
Figure 2.9 Bitner's Model of Service Encounter Evaluation



(Source: Adapted from Bitner 1990).

Oliver (1993), Teas (1993), and Parasuraman et al. (1994) attempted to integrate the perceived service quality and satisfaction by proposing that perceived service quality is of both a transactional and global nature. Oliver's (1993) model suggests that perceived encounter quality influences encounter satisfaction, which in turn reinforces or extinguishes prior quality perceptions. According to Oliver, satisfaction results from the disconfirmation of predictive expectations regarding quality-specific and non-quality specific attributes. However, in his model satisfaction is not related to ideal disconfirmation, except through service quality perceptions. The satisfaction literature, in contrast, claims that there is evidence suggesting that ideal disconfirmation has an effect on satisfaction (Tse and Wilton 1988). The hypothesised linkages in Oliver's model, as depicted in Figure 2.10, have not been empirically verified (see also the discussion of the similarities and differences of consumer satisfaction and service quality in section 2.4.2).

Figure 2.10 Oliver's Encounter Quality and Satisfaction Model



(Source: Adapted from Oliver 1993)

Teas (1993) suggested two perceived service quality concepts: “transaction-specific quality” and “relationship quality”. At the transaction level, satisfaction is a function of perceived transaction-specific quality, and at the global level perceived relationship-quality is a function of transaction-specific satisfaction. Parasuraman et al. (1994) proposed a transaction-specific framework and a global framework. They concurred with Teas’ view, and proposed that satisfaction with a transaction is a function of a customer’s assessment of service quality, product quality and price. These authors included both service quality and product quality as antecedents of satisfaction, on the grounds that all market offerings possess a mix of service and product features. The global impression of a firm’s service quality is determined by aggregated transaction-specific satisfaction with the firm. Thus, the latter view belongs to the school of thought which holds that “satisfaction leads to overall quality perceptions” as embraced by service quality researchers (Carman 1990; Bitner 1990; Bolton and Drew 1991; Patterson and Johnson 1993). The roles of service quality, product quality and price evaluations in determining

transaction-specific satisfaction are considered to be an important area for further research. The conceptual framework of Parasuraman et al. is depicted in Figure 2.11.

Figure 2.11 Components of Transaction-specific and Global Evaluations



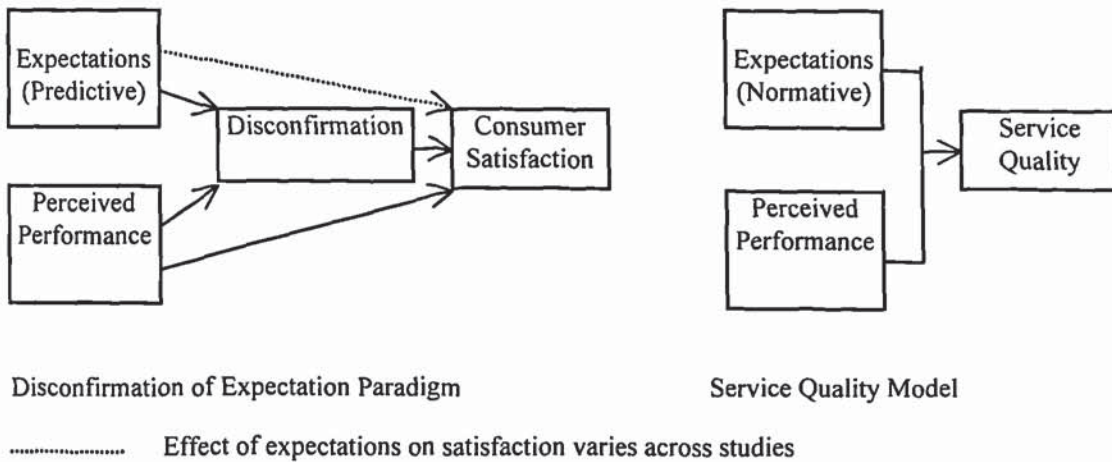
(Source: Parasuraman et al. 1994)

2.4.2 Conceptual Similarities and Differences between Service Quality and Satisfaction

Consumer satisfaction and service quality appear to be similar, because both stem from a comparison of consumer expectations and perceptions of performance. Yet, in the traditional disconfirmation of expectations paradigm, disconfirmation serves as a driving force which determines the level of satisfaction (Oliver 1980). However, according to Grönroos (1990) and Parasuraman et al. (1988), the discrepancy between expectations

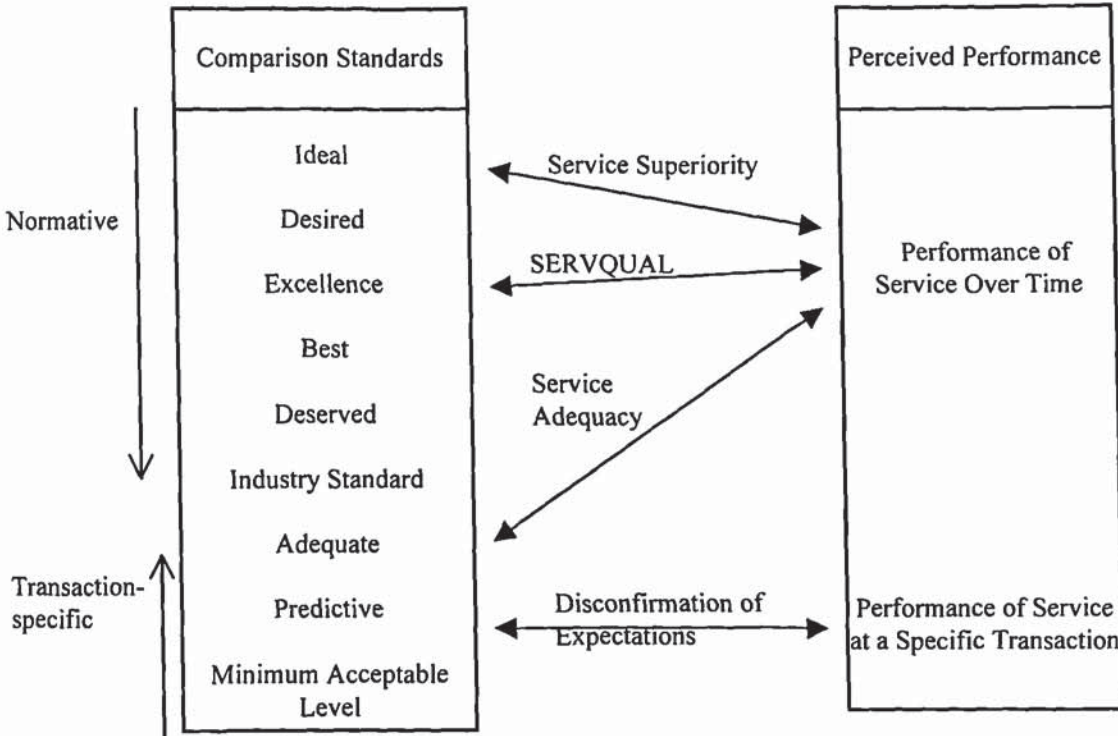
and perceptions of performance is a measure of perceived service quality. The difference of the two research models is depicted in figure 2.12.

Figure 2.12 Comparison of the Expectancy-disconfirmation Paradigm and the Perceived Service Quality Model



In the recent literature, there appears some consensus among researchers on the differences between these two constructs (Teas 1993; Oliver 1993; Patterson and Johnson 1993; Daholkar 1993; Iacobucci et al. 1994; Parasuraman et al. 1994). Oliver (1993) identified a number of key elements that distinguish between service quality and customer satisfaction. He explained that the dimensions underlying quality judgements are rather specific, whereas satisfaction can result from any dimension, whether or not it is quality related. He also suggested using different comparison standards for assessing service quality and satisfaction, but asserted that this proposition should be empirically verified. Figure 2.13 diagrammatically presents the comparison standards used in service quality and consumer satisfaction research.

Figure 2.13 Comparison of the Standards used in Service Quality and Consumer Satisfaction Research



Satisfaction has important antecedents such as equity, mood, and attribution, whereas quality has fewer conceptual antecedents. Rust et al. (1996) viewed perceived service quality as a rational perception, and satisfaction as an emotional or feeling reaction. The satisfaction state includes contentment, surprise and pleasure. Researchers generally agreed that the satisfaction state is comprised of both evaluative and affective elements (Woodruff et al. 1991; Dabholkar 1993; Rust and Oliver 1994).

Some researchers suggest that quality perceptions do not require customer experience with the service, whereas satisfaction judgements do. For example, customers can form perceptions of quality by relying on secondary sources such as consumer reports, or on word of mouth or marketers' communications (Oliver 1993; Patterson and Johnson 1993; Liljander and Strandvik 1994). However, this explanation is hard to accept, because according to the most accepted definition of perceived service quality, quality perceptions

require customer experience with the service and they are posited as a function of the customer's experience (see section 2.3.2). The conceptual differences between satisfaction and service quality are summarised in table 2.3.

Table 2.3 Comparison of the Differences between Service Quality and Consumer Satisfaction

	Consumer Satisfaction	Perceived Service Quality
Expectations	Predictive	Normative
Attributes	Not Necessarily Quality Related	Quality Related
Dependency of experience (*)	Necessary	Not Necessary
Evaluation	Cognitive and Affective	Cognitive
Antecedents	Equity, Mood, Attribution Expectations, Disconfirmation, perceived performance	Fewer (Excellence, perceived performance)
Outcome	An Emotional Response	A Rational Judgement

Source: Adapted from Oliver (1997)

(*) Perceived service quality as defined in the service literature requires customer experience with the service.

2.4.3 Studies of Service Quality and Consumer Satisfaction Research

Studies have been conducted which examine the effects of customer satisfaction or service quality on behavioural intentions, but relatively few have been combined perceived service quality with the satisfaction formation model.

The causal relationship between consumer satisfaction and service quality has raised a substantial interest among researchers. Gotlieb et al. (1994) examined the relationship between customer satisfaction and service quality in the context of medical services. They argued that with low-involvement products, consumers might only want a minimum

acceptable level of quality, and anything above that minimum level will have little influence on behavioural intentions. Therefore, they argued the effect of perceived quality and the effect of satisfaction on behavioural intentions was best examined in the context of high involvement products. In their study, performance-based measures of perceived quality, and the service quality construct, were represented by a single index derived from averaging the items in the multi-item scales. Perceived quality was found to influence satisfaction more strongly than vice versa.

Ruyter et al. (1997) also assessed the relationship between satisfaction and service quality in the context of medical service. Predictive expectations were considered on the basis that medical service is complex and non-transparent, and these authors argued that realistic normative expectations might not be formed. Using two-stage least squares, quality was found to be an antecedent of satisfaction. Perceived performance was the most important indicator of service quality, and exhibited a direct effect on satisfaction and indirect effect on service quality. Expectations were shown to have no effect on service quality and satisfaction. According to the authors, low perceived service quality may also result in high satisfaction. In their study, the satisfaction data were highly skewed. They argued that consumers may not necessarily buy the highest quality service, other factors such as convenience, price and availability of service may enhance satisfaction but not affect customer perceptions of service quality.

Three models of service satisfaction were examined by Jayanti and Jackson (1991), namely the disconfirmation of expectations paradigm, a performance-based model, and a third model which accounted for individual differences, such as perceived risks and involvement. The individual difference model provided the poorest fit among the three.

Taylor and Cronin (1994) were among the first to combine service quality with the satisfaction model, and assessed their relation empirically using two different samples in health care settings. The results of their study were mixed. Perceptions of performance were found to influence satisfaction in the second sample but not in the first. This is

surprising because in their 1992 study, they strongly argued that performance-based measurement is an appropriate method for measuring service quality. They explained that the results of the 1994 study might be attributed to the characteristics of the service then under investigation. They further explained that consumers might lack the knowledge with which to adequately evaluate the performance of service providers. A non-recursive relationship was found between service quality and satisfaction.

Spreng and Mackoy (1996) examined the effects of two different comparison standards on service quality and satisfaction in the context of the advisory service at a university. They operationalised “desire” as “the level of service students want to receive” and “predictive” as “the level of service the student believed they would actually receive”. There were a total of ten attributes used in the study. Desire congruency was operationalised as the direct measure score “exactly as I desire” multiplied by the perceived performance score. However, these authors offered no explanations or justification for the method used. It is not clear why desire congruency has a multiplicative effect on “exactly as I desire” and “perceived performance”. Desire congruency and expectation disconfirmation were found to have a significant affect on satisfaction, but expectation disconfirmation did not affect the overall service quality.

2.4.4 The Differences in the Measurement of Service Quality and Satisfaction

Drew and Bolton (1990) have discussed the difficulties in the operational separation of both constructs when they are viewed as both transaction-specific and global. A review of the literature identifies three studies attempting to investigate the measurement issues of service quality and satisfaction.

Spreng and Singh (1993) conducted a study to assess the SERVQUAL scale, and the relationship between service quality and satisfaction among students who had used retail bank services. The reliability of the difference scores for each service dimension was

found to be relatively low, but all were above 0.60. Three items were used to measure the overall service quality on a seven-point scale, with the end points labelled “extremely poor/extremely good”, “very low/very high”. Four items were designed to reflect satisfaction as an emotional response, with the end points labelled “very satisfied/very dissatisfied”, “very pleased/very displeased”, “terrible/delighted” and “frustrated/contended”. The results of confirmatory factor analysis showed that the model was a poor fit when the three overall service quality measures were restricted to load on one factor and the four satisfaction measures on another factor. However, when the satisfaction item with the end points labelled “very satisfied/very dissatisfied” was allowed to load on both constructs, the fit of the model improved significantly.

Bitner and Hubbert (1994) used the critical incident method to investigate whether service encounter satisfaction, overall satisfaction, and perceived service quality, can be operationalised differently. They interviewed two hundred and forty-two airline travellers. Confirmatory factor analysis was performed on the quantitative data. The qualitative responses were analysed separately. Service encounter satisfaction was shown to be the most distinguishable construct. The items used to assess encounter satisfaction were emotional in content and the response categories ranged from “terrible” to “delighted”, and “happy” to “unhappy”. The items used to gauge the overall satisfaction and the response categories were labelled “very satisfied” and “very dissatisfied” at the end points, and the items used to measure overall service quality were anchored “excellent” and “poor” at the end points.

The results of the above studies show that when satisfaction is expressed in affective terms, service quality and satisfaction are two distinct factors. In past studies, researchers have typically used a single-item “very satisfied to very dissatisfied” scale for measuring satisfaction (see, for example, LaBarbera and Mazursky 1983; Cronin and Taylor 1992). There has not been sufficient attention paid to the emotional nature of the construct. It is apparent that future research should utilise more affective and multiple item measures to gauge consumers’ satisfaction of a consumption experience.

Dabholkar (1995) conducted a study which examined whether consumers can distinguish satisfaction measures from service quality measures in the context of retailing. Satisfaction was measured as an emotional response, and service quality was measured as a rational judgement. Confirmatory factor analysis was performed. The results showed that for recent customers, which were those who had shopped at the stores for less than two years, a two factor model fitted better than a one factor model. However, for long term customers, which were those who had shopped at the store for more than two years, the results showed that a one factor model fitted better.

2.4.5 Perceived Service Quality Defined

The definitions of service quality adopted in this study adhere closely to those defined by Oliver (1997). *Perceived encounter quality is defined as an overall judgement which results from the comparison between customers perceptions of service performance and their normative standards.* Perceived encounter quality judgement is derived from customer cognitive evaluations of a service. This is also consistent with the general view that consumer satisfaction is an emotional response which results from a cognitive process (Woodruff 1983; Rust and Oliver 1994). *Global quality is defined as a summary judgement which results from customer's satisfying or dissatisfying service experiences over time.* It is dimension free, and specific quality attributes are not evaluated (Oliver 1997).

2.4.6 Conclusion

Consumer satisfaction and service quality are two important concepts in marketing, but how these concepts are conceptualised, and the nature of relationship between them, have raised a substantial debate in the literature. This chapter presented a thorough and rigorous review of the literature on consumer satisfaction and service quality. The preceding two sections reviewed the meanings, measurements and research on consumer satisfaction and service quality. The last section focused on the similarities and

differences between these two concepts, and reviewed the studies that integrated them in a coherent model.

The expectancy-disconfirmation paradigm dominated early consumer satisfaction research. The gap methodology used in measuring perceived service quality is similar, as both models consider expectations and perceptions of performance as antecedents. In the services literature, satisfaction and service quality are distinguishable on the basis of different comparison standards. Satisfaction is tied to a specific service at a point in time, whereas service quality is tied to a firm's service over time. Normative standards, as distinguished from transaction-specific standards, have been used in service quality studies. They have also been used in consumer satisfaction research, and there is evidence to suggest that consumers may use more than one comparison standard in their satisfaction judgements.

In the recent literature, there appears to be agreement that service quality can be viewed as both transactional and global in nature. In the past, different researchers have offered different conceptualisations of service quality, and thus the sequential order of consumer satisfaction and service quality measurement has been a controversial issue. The mixed results found in the literature are due to inconsistent use of terms and definitions among researchers. This makes the comparison and interpretation of the results of different studies rather difficult.

The general consensus among researchers regarding the nature of relationship between consumer satisfaction and service quality is that at the transactional level, customer perceptions of service quality determine the level of satisfaction, which in turn influences overall perceptions of the firm's service quality.

Expectations play an important role in consumer selection and evaluation of a firm's service. However, the literature displays little consensus on how the expectations component of service quality models should be operationalised. If service quality is to be

used as a means of creating competitive advantage, then it is surely reasonable to link it with normative rather than predictive standards. In previous studies, the distribution of “excellence” data has been reported in a highly skewed manner, and respondents described themselves as extremely pleased even when the aggregated P-E scores were negative. This has raised the question whether “ideals” and “excellence” should be used as a measure of normative standards. Further, Teas (1993) has indicated that if the vector assumption of a service attribute is violated, then exceeding “ideal” level may lead to a deterioration in perceptions of service quality. Moreover, little research has been conducted on the role of service quality expectations in the formation of behavioural intentions. Thus, there is a need to find a better approach to operationalise the comparison standard, and examine its effects on the behavioural consequence.

Research that has examined the causal relationship between satisfaction and service quality has tied service quality to perceptions of performance. There is strong evidence suggesting that quality leads to satisfaction, rather than vice versa. Although, there is one study showing that the relationship may be non recursive, the authors explained that one of the possible reasons for the result is that respondents may not be able to distinguish satisfaction and service quality measures. However, the literature provides some evidence suggesting that consumers can distinguish between these two measures when satisfaction is measured as an emotional response, and service quality as a rational judgement.

An examination of literature identifies only two models that have combined the satisfaction formation model with service quality measurements. Both studies were conducted in the context of medical services. However, the comparison standards used in these studies were different: one study used the “predictive” standard, and the other used the “normative” standard. The results of these studies cannot be compared directly.

The problem that has confronted many researchers and practitioners is how to effectively discern the similarities and differences of the two concepts. Perceived service quality has been defined as the discrepancy between a customer’s perception of performance and

their expectations of a service. Disconfirmation has been defined in a similar manner. Most agree that service quality is a relative concept, and levels of quality depend on which comparison standards a consumer uses to make the judgement. There can be “ideal quality”, “acceptable quality” or “adequate quality” (See figure 3.13). However, in highly competitive markets there is strong reason to link perceived service quality to normative standards, especially when firms use service quality as a strategy to gain or maintain a competitive advantage.

On the basis of the literature review, consumer satisfaction and service quality can be seen as two different, but highly related concepts. This research will attempt to combine service quality with the satisfaction formation model, and examine their effects on behavioural consequence. In contrast, most previous research focused on the relation of either service quality or satisfaction to behavioural intentions. The next chapter presents the development of a theoretical framework, by drawing on the theories and studies of consumer satisfaction and service quality.

Chapter 3 Development of Theoretical Framework

3.1 Introduction

This chapter presents a discussion on the development of the theoretical framework for the present study. Definitions of the concepts are presented, followed by a discussion of the development of the hypotheses. A preliminary theoretical framework was derived through the organisation and integration of theories and previous research on service quality and satisfaction.

3.2 Importance of Service Encounters

The literature has recognised the importance of service encounters (Czepiel 1980, 1990; Grönroos 1993; Bitner and Hubbert 1994). Grönroos (1990) viewed the service encounter as “the moment of opportunity”. He argued that each service encounter offers a service firm the opportunity to demonstrate the quality of its services to customers.

However, interpretations of service encounters vary amongst researchers. Suprenant and Solomon (1987) defined the service encounter as a “dynamic interaction between a customer and service provider”. This conceptualisation focuses on the interpersonal elements surrounding the interactions between customer and service provider. Similarly, Czepiel et al. (1985), and Bitner et al., (1990) viewed such encounters as “specific interactions between customers and service firm employees”.

Shostack (1985) defined the service encounter as “a period of time during which a consumer directly interacts with a service”. This definition encompasses all aspects of the service firm within which the customer may interact, including its personnel, its physical facilities and other visible elements. It does not restrict the encounter to the interpersonal interactions between the customer and employees. In line with this view, Brown and

Swartz (1989) stated that customers have been found to evaluate not only the interaction with the service contact persons but also the entire service process. They claimed that customers pay particular attention to the visible aspects of a service system. Walker (1995) accorded with this view, claiming that “*such an encompassing view is not only conceptually sound but also practitioner focussed, in that variables in the service delivery environment are often controllable factors of a firm’s marketing mix*”.

Shostack’s definition of service encounter appears to be relevant in the context of restaurant service, which is a high contact service in which both the physical environment and employees’ service manner and attitudes will influence customer evaluations. Thus, Shostack’s definition is adopted in this study.

3.3 Conceptual Definitions

Prior to the discussion of hypothesis formulation, it is important to provide a definition of each concept in order to clarify and discuss how they are related to each other.

Service Encounter is defined as all aspects of the service firm within which the customer interacts, including its personnel, its physical facilities, and other visible elements (Shostack 1985).

Predictive expectations are defined as customer’s anticipation of the level of service that will be provided by a specific firm (Churchill and Surprenant 1982).

Normative expectations are defined as customer expectations of the best offering that is currently available. This is also referred to as the feasible ideal (Parasuraman et al. 1994, Oliver 1997).

Perceived performance is defined as customer perceptions of the service provided by a specific firm (Grönroos 1984).

Disconfirmation is defined as the discrepancy between predictive expectations and perceived performance (Oliver 1980).

Perceived service quality is defined as the discrepancy between normative expectations and perceived performance (Parasuraman et al. 1988).

Perceived encounter quality is defined as an overall judgement, which results from an evaluative process of comparing the normative expectations against perceived performance.

Customer satisfaction is defined as a temporal emotional response which results from the evaluation of the overall quality of a service encounter (Oliver 1993).

Perceived global quality is defined as a cumulative judgement which results from the customer's satisfying/dissatisfying service experiences over time (Parasuraman et al. 1988).

Behavioural intentions are defined as the customer's intention to engage in post-purchase activities, such as recommendations to others and likelihood of re-purchase (Zeithaml et al. 1996)

3.4 Development of Hypotheses

In the current philosophy of social science, when customer satisfaction and service quality are two separate constructs they must be separable in definition and measurement, and should have unique antecedents and different effects on consequent variables. The following sections provide the theoretical basis for distinguishing between the two constructs and their measurement, antecedents, and effects on consequent variables. Furthermore, opinions of consumers will provide supplementary evidence to suggest that they are distinctive concepts (see section 4.2.1).

Customer satisfaction, as defined in section 2.3, is an emotional response resulting from an evaluative process of comparing perceived performance against expectations. Satisfaction can be considered an emotional state has been documented in the earlier literature (Oliver 1981; Woodruff 1983; Day 1984). Oliver (1981) asserted that satisfaction is characterised by the “*surprise*” a customer experiences during and after the consumption of a service. While other researchers suggested that the comparison process would lead to a state of psychological disequilibrium and the customer would need to engage in internal and external activities to restore the equilibrium (Tse et al. 1990). Section 2.2.4 presented a discussion of the psychological theories attempting to explain the internal activities of the customer when perceived performance does not match with expectations. For instance, the internal activities may include adjusting prior expectations or perceptions of performance. External activities may include post-purchase word-of-mouth communication and complaints.

The concept of service quality can be viewed as transaction and relation in nature. The difference between the two is the former refers to the service experience at a specific transaction and the latter results from many service experiences accumulated over time. At the global level, quality is a more enduring concept, whereas at the transaction level, perceived encounter quality is a cognitive judgement derived from a comparison process similar to the process for satisfaction. Ajzen and Fishbein (1980) suggested that the cognitive judgements trigger affective responses, which in turn affect consequent behaviour. As perceived service quality is viewed as a cognitive judgement, it is expected to have an effect on customer satisfaction.

The literature suggests using different comparison standards to distinguish service quality and customer satisfaction (Parasuraman et al. 1988; Oliver 1993; Iacobucci et al. 1994). In consumer satisfaction studies, different types of standards have been used to understand the process of satisfaction formation, whereas only normative standards have been used in service quality studies. Customer satisfaction formation has also been study through the expectancy-disconfirmation paradigm, equity theory (Adams 1963),

comparison level theory (Thibaut and Kelly 1959) and attribution theory (Weiner 1985). The experienced norms suggested by Woodruff et al. (1983) as the standard for which perceived service is compared is based on LaTour and Peat's (1979) modified comparison level theory. Equity has been used as a standard that consumers use to appraise interactions with sellers. Attribution has been shown as a mediating variable between satisfaction and disconfirmation (Folker 1984; Bitner 1990). In contrast, fewer variables have been identified as antecedents of service quality. Image has been proposed by Grönroos (1984) to have an impact on perceived service quality, but his proposition remains untested. Teas (1993) introduced a "Normed Quality Model" which has accounted for the relative importance of attributes and the influence of ideal points. However, one may argue that because the concept of customer satisfaction was developed much earlier than the concept of service quality, it is not surprising to find that more variables have been identified as antecedents of satisfaction. The following table summarises the antecedents of customer satisfaction and service quality.

Table 3.1 Comparison of Customer Satisfaction and Service Quality Models

Models of Customer Satisfaction	Models of Service Quality
Expectations, disconfirmation and perceptions of performance (Expectancy-disconfirmation paradigm)	Normative expectations, perceptions of performance (Parasuraman, Zeithaml and Berry's gaps model 1988)
Experience-based norms (LaTour and Peat's Modified Comparison level theory 1979)	Image (Grönroos' perceived service quality 1984)
Equity theory (Adams 1963) Attribution (Weiner's Attribution model 1985)	Normed Quality Model (Teas 1993)

Prior research has shown that the effect of customer satisfaction on re-purchase intention is stronger than that of service quality (Cronin and Taylor 1992; Liljander and Strandvik 1995). This implies that a change in customer satisfaction does not lead to the same post-purchase behaviour as a change in service quality. Therefore, it is dangerous for researchers and practitioners to treat both concepts as identical. With regard to the measures of customer satisfaction and service quality, the results of empirical studies suggest that the customer satisfaction measure contains affective elements, whereas the service quality measure contains evaluative elements (See section 2.4.4.).

Since both concepts have been the focus of strategy development, it is important to distinguish them, and to understand precisely how they are different. Although both are a result of comparison processes, the literature review suggested that their antecedents, their measures and effects on consequent variables are different. Further, in section 4.2.1, the findings of the depth-interviews with consumers provide some insights as how the two concepts are different. On the basis of the preceding discussion, the following hypothesis is proposed:

H₁: perceived encounter quality and customer satisfaction are two distinct constructs.

There are various standards of expectations in consumer satisfaction literature. Miller (1977) classified expectations into four categories: expected (will be), deserved (should be), ideal (can be) and minimum tolerance (must be). The first category is a predictive expectation that is defined as a consumer's anticipations about the level of service performance that they would most likely receive. Such expectations can be formed through past experience, a firm's advertising, point-of-sales material, price, or word-of-mouth communication. They can also be influenced by situations. For example, customers expect to wait longer for service in crowded restaurants.

According to Woodruff et al. (1983), the latter three of Miller's classifications are normative expectations. Normative expectations are different from customer predictions

of a firm's service, and they may comprise customer experiences with similar services, and other services in the service class. Normative expectations are hypothesised to be more stable than predictive expectations, because predictive expectations are transient in nature. Further, normative expectations are harder to modify, as customers may use their prior experiences to set the level of service that they expect. Although researchers have not reached a consensus as how the normative expectations should be operationalised, they generally agree that predictions and normative expectations are two different constructs (Tse and Wilton 1988; Boulding et al. 1993; Spreng et al. 1996). The following two hypotheses are thus proposed:

H₂: Normative expectations and predictive expectations are two distinct constructs.

H₃: Normative expectations are relatively more stable than predictive expectations over time.

Past research has shown that satisfaction is influenced by expectation and disconfirmation (Oliver 1980; Bearden and Teel 1983; Woodruff, Cadotte and Jenkins 1983; Tse and Wilton 1988). Empirical evidence also suggests that consumers may use more than one expectation standard prior to satisfaction judgement, although the effect of normative expectations on satisfaction varies among studies (Liljander and Strandvik 1993; Tse and Wilton 1988; Cadotte et al. 1987; Prakash and Lounsbury 1984). One reason for the inconsistent findings may be that different researchers have defined and operationalised normative expectations differently. Furthermore, the types of products or services being investigated may have contributed to the different results.

Disconfirmation has occupied a central position in the satisfaction formation model. It is a crucial intervening construct, representing the customer's evaluation of a service performance (Churchill and Surprenant 1982). Most studies found that the effect of expectations on satisfaction is mediated through disconfirmation. It is posited that predictive expectations and disconfirmation have a negative relationship. That is, the higher a consumer's predictive expectations, the less likely that the performance will

meet or exceed their expectations, and the more likely that these expectations will be negatively disconfirmed. Prior studies have shown that predictive expectations have a negative effect on disconfirmation (Cadotte et al. 1987; Patterson 1993; Spreng et al. 1996). Conversely, the results of Anderson and Sullivan's (1993) study showed that expectations were positively correlated with disconfirmation. Although these authors expected a negative relationship to be found between expectations and disconfirmation, they explained that the positive relationship was due to the aggregation of responses at the firm level. They further explained that the deviations of performance from expectation experienced by different individuals cancel each other out at the aggregate level.

The literature has documented that consumers may use more than one expectation standard in determining satisfaction (Prakash and Lounsbury 1984; Cadotte et al. 1987; Tse and Wilton 1988; Spreng and Olshavsky 1993; Spreng et al. 1996). In the view of the fact that different researchers have defined and operationalised normative expectations differently, it is difficult to compare the results obtained in these studies.

There is ample evidence to suggest that disconfirmation and satisfaction are positively related. The results of studies are in agreement, despite the types of products being investigated, and differences in research methods. The higher a consumer perceives a performance to meet their predictive expectations, the more likely that they will be satisfied. Similarly, the higher a consumer perceives the performance to meet their normative expectations, the more likely that they will perceive the service is of high quality and be satisfied. The preceding discussion suggests the following hypotheses:

H₄: Normative expectations will have a negative effect on perceived service quality.

H₅: Predictive expectations will have a negative effect on customer satisfaction.

H₆: Customers whose perceptions of performance match or exceed predictive expectations are more satisfied with the service than customers whose perceptions of performance fall short of predictive expectations.

H₇: Customers whose perceptions of performance match or exceed normative expectations perceive that the service is of higher quality than customers whose perceptions of performance fall short of normative expectations.

The major variables of interest in customer satisfaction research have been expectations and disconfirmation (see, for example, Swan and Trawick 1980; Oliver 1980; Bearden and Teel 1983; Cadotte et al. 1987; Halstead 1989). Churchill and Surprenant (1982) were among the first to include perceived performance in the expectancy-disconfirmation paradigm, and to examine its effect on satisfaction. They conducted two experiments, one involving videodisc players, and the other hybrid plants. The effects of expectations, disconfirmation and perceived performance on satisfaction varied according to the types of product. For the video disc player, satisfaction was solely determined by perceived performance, whereas for the plant product satisfaction was affected by both disconfirmation and perceived performance.

The results of Churchill and Surprenant's (1982) study drew attention to the previously neglected impact of perceived performance on satisfaction. For some products and services, consumers may determine their satisfaction on the basis of what they perceive rather than their prior expectations. Their results also indicated that the higher a consumer perceived the performance of a service or product, the more likely the perceived performance would out-weigh their expectations. In the other studies that included perceived performance in the model, a strong relationship was found between perceived performance and satisfaction (Tse and Wilton 1988; Patterson 1993; Anderson and Sullivan 1993; Gupta and Stewart 1996). Yet not all researchers agree that perceived performance has a direct effect on satisfaction. Spreng et al. (1996) found that this effect was completely mediated by the disconfirmation of expectations. Apart from Spreng's (1996) study, there is no further empirical evidence to suggest that perceived performance does not directly affect satisfaction.

Disagreement exists among researchers over the use of gap scores to measure perceived service quality. Some service quality researchers suggest that perceived service quality can be tied to perceptions of performance (Grönroos 1993; Dabholkar 1993; Cronin and Taylor 1992). In consumer satisfaction research, researchers very often used perceptions of product performance as a measure of product quality perceptions (Churchill and Surprenant 1982; Anderson and Sullivan 1993; Anderson, Fornell and Lehmann 1994). However, Parasuraman et al. (1993) defended the inclusion of expectation statements, on the basis of their diagnostic value and the practical implications derived from the difference scores. In the present research, the discrepancy between normative expectations and perceived performance is defined as perceived service quality. Prior studies have shown that perceived performance has a stronger predictive impact on the evaluation of overall quality than difference scores, and it is suggested that perceived performance has a positive effect on encounter quality. From the preceding discussion, the following hypotheses have been developed:

H₈: Perceived performance will have a positive effect on perceived encounter quality.

H₉: Perceived performance will have a positive effect on satisfaction.

Service quality has been viewed as a determinant of satisfaction at the transactional level (Swartz and Brown 1989; Gummerrsson 1991; Oliver 1993; Ravald and Grönroos 1996). If consumers perceive that a service received is of high quality, then satisfaction results. On the other hand, if consumers perceive that a service received is of low quality, then dissatisfaction results. Researchers generally agree that encounter quality perceptions determine satisfaction, which in turn influences global quality perceptions (Rust et al. 1996; Parasuraman et al. 1994; Oliver 1993; Teas 1993). However, this proposition has not been empirically verified in the literature. It is posited that encounter quality will influence satisfaction, and both will positively affect the overall perceived quality:

H₁₀: Perceived encounter quality will have a positive effect on satisfaction.

H₁₁: Perceived encounter quality will have a positive effect on perceived global quality.

H₁₂: Satisfaction will have a positive effect on perceived global quality.

The concept of customer satisfaction has a long history in marketing thought. It is a major outcome of marketing activity (Churchill and Surprenant 1982). Dates back in 1965, Cardozo asserted that customer satisfaction leads to repeat purchase and favourable word of mouth publicity. Swan and Trawick (1981), and Anderson (1982), found that there was a strong positive relationship between customer satisfaction and return intentions. Beaden and Teel (1983) reported that satisfaction was negatively related to complaint behaviour, and positively related to post-purchase attitude, which in turn affected intention. Similar findings were reported in Anderson and Sullivan's (1993) study. Customer satisfaction was an important determinant of re-purchase intentions, which in turn were expected to affect future profitability.

While many studies have focused on the behavioural consequence of customers purchasing using product or service after a satisfactory or dissatisfactory experience, Rust and Zahorik (1993), and Anderson, Fornell and Lehmann (1994), were among the first to examine the influence of customer satisfaction on market share and profitability. Surprisingly, Anderson et al. (1994) found that there was a trade-off between customer satisfaction and market share. Since their data were cross-sectional, they explained that in the short run analysis market share might be gained at the expense of seeking customers with preferences more distant from the target market. They suggested that in the long run, customer satisfaction and market share were expected to be positively related. Rust and Zahorik (1993) illustrated the effects of customer satisfaction on retention and market share in the context of retail banking.

In the 1990s, as competition further intensified, there was some evidence showing that satisfaction does not necessarily lead to loyalty. Jones and Sasser (1995) argued that the relationship between satisfaction and loyalty might depend on the degree of competition. Concurrently, many service firms have started to seek ways to differentiate their offerings from competition. Service quality has been suggested as one of the means to establish a

competitive advantage. That the strategic benefits of service quality include positive word-of-mouth and loyalty behaviour has been found in prior studies (Woodside et al. 1989; Headley and Miller 1993; Zeithaml et al. 1996).

There are only a few studies have been investigated the effects of both satisfaction and service quality on behavioural intentions (Taylor and Baker 1994). On the basis of the preceding discussion, it is suggested that the more a consumer feels satisfied with the service, the more likely that they will intend to repurchase the service and recommend it to other people. Overall perceived service quality is also posited to have a positive effect on consumer repurchase and recommendation intentions. Thus, the following hypotheses are proposed:

H₁₃: Satisfaction will have a positive effect on behavioural intentions.

H₁₄: Global quality will have a positive effect on behavioural intentions.

Although a customer's past experience with a service firm is presumed to be a determinant of expectations, less attention has been devoted to examining the dynamic nature of expectations in consumer satisfaction research. The focus of prior studies was the satisfaction formation process, in which expectations were frequently manipulated using the role-playing method. In contrast, a few studies have been identified as examining the stability of consumer expectations of service quality (Clow et al. 1998; Johnson and Mathew 1997; Wragg 1994; Clow and Vorhies 1993; Boulding et al. 1993). Predictive expectations were used in the Clow et al. (1998) study and Clow and Vorhies' (1993) study. The latter study reported that there was a shift in expectations for those respondents whose expectations had not been met. The shift was more obvious for those respondents who had a negative experience, for whom expectations of the ten service attributes were found to have changed following a negative experience, whereas for those respondents who had a positive experience, only two service attributes were found to have changed. Similar findings were reported in the Clow et al. (1998) study. The results of the 1998 study suggest that expectations tend to drop lower following a positive

experience and increase following a negative experience. The authors explained that the results were consistent with the cognitive dissonance theory: that is, consumers who had a negative experience tended to shift their expectations higher than their evaluations of the experience. Consumers who had a positive experience tended to drop their prior expectations lower to justify their overall judgement that the service exceeded their expectations. However, the results and explanations provided by these authors appear to be congruent with assimilation-contrast theory more than cognitive dissonance theory (see the discussion of psychological theories in section 2.2.4). According to cognitive dissonance theory, the consumer would attempt to reduce the psychological discomfort by changing or distorting either perceptions of performance, or expectations, or both, to make them more consonant. However, their results indicate that expectations tend to be higher following a negative experience, and lower following a positive experience. The findings offer support for the assimilation-contrast effect.

Boulding et al. (1993) utilised both “will” and “should” expectations in their laboratory experiment and field survey. Their results suggested that an increase in customer predictive expectations would lead to a higher perception of quality, whereas an increase in customer normative expectations would cause a lower perception of the service received. Thus, their results also suggested an assimilation-contrast effect. However, the stability of expectations was not reported. Wragg (1994) provided evidence suggesting that service quality expectations of tangibles are relatively more unstable than those of intangibles. His finding is surprising, because one would expect that intangible elements, such as the attitudes of employees and speed of service, vary more than the tangible elements, and therefore the quality expectations of intangibles would expect to be fluctuated more. However, there is no further evidence to support either of these two assertions. Johnson and Mathews (1997) reported that consumer predictive expectations were positively related to the frequency of purchases, but no association was found between normative expectations and frequency of purchases.

Since normative expectations are posited to be more stable than predictive expectations (see H₃), they are suggested to be independent at a specific transaction. Hence, previous consumer experience is posited to have no influence on normative expectations. Predictive expectations are postulated to be influenced by previous encounter experience: that is, if consumers feel dissatisfied with a service at time t, then this will have an effect on the level of service they expect to be provided from the same firm at time t+1. Similarly, consumer perceptions of global quality are also hypothesised to have a greater positive effect on predictive than on normative expectations. Thus, the following hypotheses can be derived from the preceding discussion:

H₁₅: Satisfaction at time t will relate with predictive expectations at time t+1.

H₁₆: Satisfaction at time t will not relate with normative expectations at time t+1.

H₁₇: Global quality at time t will relate with predictive expectations at time t+1.

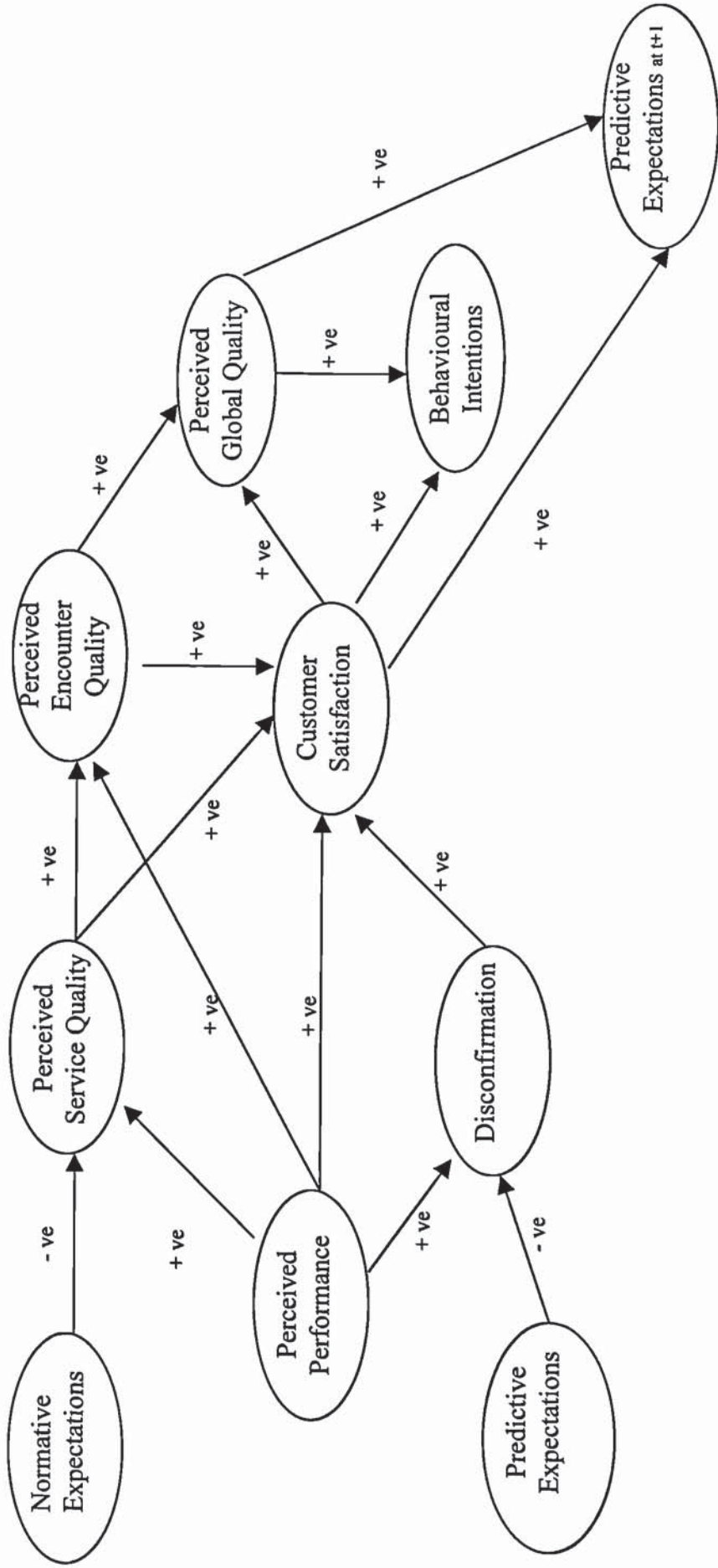
H₁₈: Global quality at time t will not relate with normative expectations at time t+1.

The hypotheses developed in preceding sections are summarised in table 3.2. Figure 3.1 presents a preliminary theoretical framework depicting the hypothesised linkages among the constructs.

Table 3.2 Summary of the Hypotheses Statements

Hypotheses Statements
H ₁ : Perceived encounter quality and customer satisfaction are two distinct constructs.
H ₂ : Normative expectations and predictive expectations are two distinct constructs.
H ₃ : Normative expectations are relatively more stable than predictive expectations over time.
H ₄ : Normative expectations will have a negative effect on perceived encounter quality.
H ₅ : Predictive expectations will have a negative effect on customer satisfaction.
H ₆ : Customers whose perceptions of performance match or exceed predictive expectations are more satisfied with the service than customers whose perceptions of performance fall short of predictive expectations.
H ₇ : Customers whose perceptions of performance match or exceed normative expectations perceive that the service is of higher quality than customers whose perceptions of performance fall short of normative expectations.
H ₈ : Perceived performance will have a positive effect on perceived encounter quality.
H ₉ : Perceived performance will have a positive effect on customer satisfaction.
H ₁₀ : Perceived encounter quality will have a positive effect on customer satisfaction.
H ₁₁ : Perceived encounter quality will have a positive effect on perceived global quality.
H ₁₂ : Customer satisfaction will have a positive effect on perceived global quality.
H ₁₃ : Customer satisfaction will have a positive effect on behavioural intentions.
H ₁₄ : Perceived global quality will have a positive effect on behavioural intentions.
H ₁₅ : Customer satisfaction at time t will relate with predictive expectations at time t+1.
H ₁₆ : Customer satisfaction at time t will not relate with normative expectations at time t+1.
H ₁₇ : Global quality at time t will relate with predictive expectations at time t+1.
H ₁₈ : Global quality at time t will not relate with normative expectations at time t+1.

Figure 3.1 Theoretical Framework for Relating Encounter Quality, Customer Satisfaction and Behavioural Intentions



Chapter 4 Exploratory Research & Theory Development

4.1 Introduction

This research employed both qualitative and quantitative methodologies. The use of triangulating methodologies in theory construction and testing was as recommended by Deshpande (1983). The qualitative methodology involved depth interviews with consumers, and the quantitative methodology involved a systematic process of data collection and the application of structural equation modelling in testing the hypothesised relationships.

This chapter describes the qualitative approach of mainly depth interviews with consumers followed by a further review of the relevant literature. Depth interviews were utilised to learn more about the meanings of service quality and customer satisfaction from the consumer perspective. The findings reveal that service quality, product quality, and perceived value, are significant factors in influencing customer satisfaction. Hence, the theoretical framework was revised accordingly based on the findings of the exploratory research and the subsequent literature review. The major focus of the framework is the relationships among service quality, perceived value and customer satisfaction, and their influence on behavioural intentions.

4.2 Methodology

4.2.1 Depth-Interviews with Consumers

An exhaustive literature review identified the existing knowledge gap between consumer satisfaction and service quality. The preceding chapter attempted to bridge the gap between these two concepts by integrating theories and previous research in both areas. The following discussions present the procedures and the results of an exploratory study. The intent of this exploratory study was to gain a deeper understanding of the meanings

of satisfaction and service quality from the consumer perspective, and to discover any important areas that might have been overlooked in prior studies.

Depth interviews were utilised because of their flexibility and easier to control the time spent on each question. They allow researchers to probe responses such that a deeper understanding of a respondent's views can be secured (Tull and Hawkins 1993). Other advantages of using depth interviews over focus group interviews include the fact that respondents feel free to reply to the questions and are not influenced by other people's responses. Further, in a group interview, there may be some people unwilling to speak in front of others while some people may conform their opinions to the opinions of others (Calder 1994). Morgan (1997) also suggests that focus group interviews provide less depth and details about the opinions of a respondent than in individual interviews. As the purpose of this exploratory study was to acquire the meanings of service quality and customer satisfaction from the consumer perspective, individual views and reactions are important, and hence depth interviews were deemed appropriate.

The depth-interviews were conducted in an unstructured manner with full and part-time students of a large university, and with employees of a large corporation in Hong Kong. Although this sample was selected on a convenience basis, the interviewees were mature and experienced consumers. Convenience samples are adequate if the emphasis is on generating ideas and insights (Churchill 1995). Notwithstanding, the limitation of a convenience sample is that the results obtained can not be used to generalise to a larger population.

The research population was the customers of the restaurants under investigation, whose ages were between 18 to 50. In this exploratory research, thirty interviews were conducted and the age of the respondents ranged from twenty to forty. This age group falls in the range of the target group for this research. Each interview lasted for between twenty minutes and an hour. Broad, open-ended questions were asked, and respondents were requested to provide their views on these questions, and were then probed for more detailed answers. Respondents were informed at the beginning of the interview that there

was no right or wrong answer for each question. They were free to express their own views with regard to the meanings of service quality and customer satisfaction. If the respondents replied that the two concepts were different, they were asked to provide a consumption experience that illustrated this difference. Their opinions were recorded by hand. Data analysis involved identifying the key phrases and words used by the respondents in the interviews, and developing and categorising the data based on the researcher's judgements. Notwithstanding such qualitative analysis is exploratory and it is not intended to draw firm conclusions from the results. It served as a source for generating more insights about the research issues and developing hypotheses which later to be tested through empirical research. Appendix 4.1 contains the list of questions.

4.2.2 Findings

The interviews revealed that most of the respondents used service attributes such as friendliness, efficiency, responsiveness, and knowledge for their interpretations of service quality. According to Zeithaml (1988), these attributes are intrinsic cues, and consumers often use them as quality indicators. Respondents were probed for their opinions as to how they judge whether a service is of high or low quality. Many responded that their judgements of the quality of a service were derived from a comparison process of the performance of a focal brand with a "standard" that had been established through past experience. These experiences included consumption of similar services offered by competitors, and the best of similar services that had been experienced. In addition to past experience, some respondents mentioned that advertising and word of mouth communication also contributed to the formation of this standard. For those services which consumers are familiar with and frequently purchase, it appears that past experience has a stronger influence on the formation of the standard.

Buzzell and Gale (1987), and Kotler and Armstrong (1996), have suggested using competitor services as the basis for assessing quality. Buzzell and Gale (1987) referred this as "relative quality" (see section 2.3.1). Similarly, in consumer satisfaction research Woodruff et al. (1983) suggested using experienced norms as the baseline for evaluation

of a product or service (see section 2.2.5). The findings of the exploratory research appear to be consistent with their suggestions. Furthermore, many respondents expressed the likelihood of making comparisons within the same product class. For instance, when evaluating the service quality of a fast food restaurant, they would use their prior experiences with fast food restaurants as the reference point. Some respondents indicated that they would not use their “ideals” as the basis in the evaluation of service quality, because they thought the “ideals” were unrealistic and infeasible.

When the respondents were asked to describe their satisfaction with a service, a variety of responses were obtained. Most expressed the notion that customer satisfaction was very subjective, and that it varied among individuals. Some respondents considered that satisfaction was a feeling, for example whether they felt happy and comfortable during and after the consumption of a service whereas some responded that as long as the service provided matched with what their expectations they would feel satisfied. Respondents were probed for a detailed elaboration of expectations, and some expressed that satisfaction meant meeting their minimal requirements. Prior to consumption of a service, consumers form an expectation as what the service will be like, and if the service performance matches with their expectations then consumers will feel satisfied. This is consistent with the suggestions of expectancy-disconfirmation theory. It is, therefore, not surprising to find that other studies reported that satisfied customers also have the tendency to switch to other sellers (see, for instance, Jones and Sasser 1995). When customers express their satisfaction with a service, this does not imply that the service is of high quality. It might simply mean that the service meets their minimal requirements, or the service performs as expected. However, there are other firms offering similar services that also meet customer expectations, and this suggests that satisfaction is not an effective predictor of loyalty.

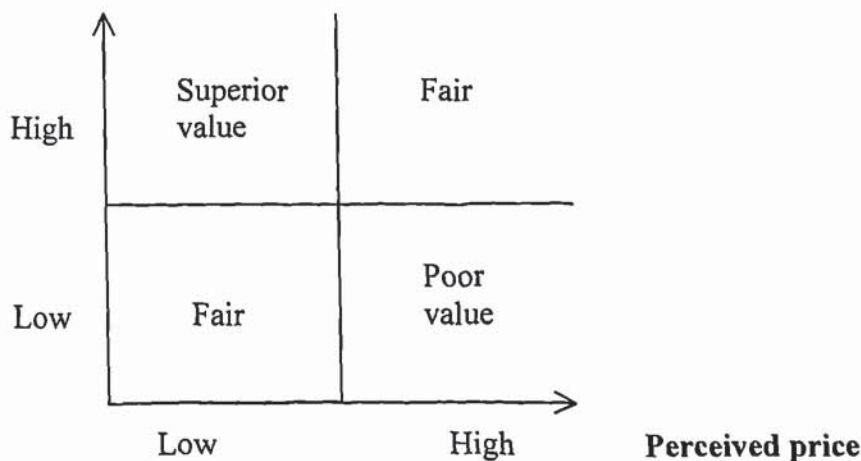
A significant number of respondents expressed their opinion that satisfaction was dependent on what was received relative to what was given up. A respondent remarked that “if two service providers are providing the same standard of service, if one of them is charged at a lower price than the other, I would be more satisfied with the service

provider that charged lesser and would have a stronger intention to come back”. In the interviews, price was mentioned as a prominent factor in determining satisfaction. Another respondent said that she perceived the service at Peninsula, “a five star” hotel, was of high quality, but she would not be satisfied consuming at that hotel because of the high costs involved. Another respondent replied that “customer satisfaction is determined by many elements, price is one of these elements. If the price of the service is not satisfactory, then I would not feel satisfied in spite of the quality of the service”. Yet another respondent expressed the opinion that satisfaction is determined by what is received against with what is paid. The notion of satisfaction is closely associated with the equity of exchange and perceived value.

Perceived value appears to be a determinant of customer satisfaction. A consumer may feel satisfied with a service that is of reasonable quality, but if the price of that service is too high, the consumer will not feel satisfied. This view of perceived value concurs with one of the definitions suggested by Zeithaml (1988): “*value is what I get for what I give*”. Figure 4.1 presents the four categories of perceived performance and price .

Figure 4.1 Categories of Perceived Price and Performance

Perceived performance

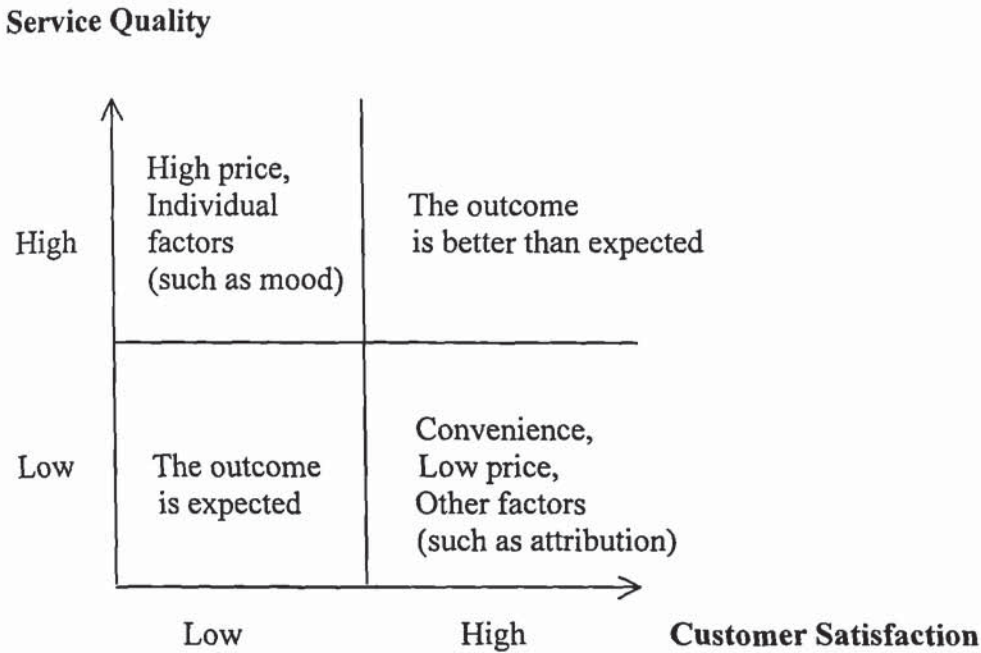


Respondents were asked to reply using their own description of whether there is any difference between service quality and customer satisfaction. A majority of the respondents viewed customer satisfaction and service quality as highly related but different concepts. Most expressed the opinion that customer satisfaction was influenced by the quality of the service provided by a firm. A respondent replied that “customer satisfaction is an outcome and is driven by many factors other than service quality whereas service quality is a factor influencing the degree of satisfaction, other determinants include price, mood, acceptance among friends”. Another respondent expressed the view that “satisfaction is a subjective feeling. It is largely influenced by the service providers”. This respondent was asked to further elaborate her answer, and replied: “for example, I would feel more happier to receive a service from someone who I am familiar with than from the other service providers who I am not so familiar with, although I may perceive the performance of these service providers are about the same”. The opinions of these respondents partially support Oliver’s (1993) assertion that customer satisfaction is determined by both quality specific and non-quality specific attributes.

There were some respondents who voiced the opinion that service quality is different from customer satisfaction. One responded that “service quality represents the standard of service that is agreed by a majority of consumers whereas customer satisfaction is a subjective feeling and it is likely to vary more than service quality”. Another respondent said that his satisfaction towards a service is influenced by his mood: if he is in a bad mood, then he is more likely to feel dissatisfied with the service, even for those services consumed daily in which the quality of service is very consistent.

In conclusion, the results of the interviews lead to the suggestion that it is possible for a customer to perceive that a service is of high quality and not feel satisfied and vice versa. This may be attributed to high price, or individual as well as situational factors. The combination of four possible outcomes is depicted in figure 4.2.

Figure 4.2 Categories of Service Quality and Customer Satisfaction



4.3 The Conceptualisation of Perceived Value

Although exploratory, the qualitative data generated through depth interviews with consumers provided supplementary evidence to suggest that customer satisfaction and service quality are two distinctive concepts. Higher service quality does not necessarily mean higher customer satisfaction. Many respondents mentioned that their satisfaction towards a service did not depend only on the quality of the service, but also on what they give up (mostly in monetary terms) in return for the level of service received.

The literature documents that perceived value is a trade-off between perceived benefits and perceived sacrifices (Monroe 1991). Other researchers have considered perceived benefits as the “get” component, or the level of service that the customer receives, and perceived sacrifices as the “give” component, or which the customer has given up (Zeithaml 1988). Surprisingly, the role of perceived value has been left relatively unexplored in the field of services marketing (Ruyter et al. 1997). Although, earlier definitions of customer satisfaction have suggested that value is an important factor (See

section 2.2.1 on the definitions of customer satisfaction), only in the recent literature has the concept of perceived value received growing attention (Cronin et al. 1997; Patterson and Spreng 1997; Raval and Grönroos 1996).

Parasuraman et al. (1994) stated that transaction satisfaction is based on customer evaluation of service quality, product quality, and price. Very often price is considered as a measure of what the customer has given up to obtain a service, such that the inclusion of price in the satisfaction formation process leads to a cognitive judgement of perceived value. It is also noted that non-monetary costs, such as time costs, search costs, psychic costs, are also considered as part of consumer perceptions of sacrifice (Zeithaml 1988). The next section provides a review of the literature on perceived value and its relation with customer satisfaction.

4.3.1 Conceptual Definitions

Perceived sacrifice is defined as what the customer perceives is given up to obtain a service. This includes both monetary price and non-monetary costs. In short, they are the costs of using a service, including time, monetary costs and search effort (Zeithaml and Bitner 1996).

Perceived value is defined as a customer's overall assessment of the utility of a service, based on the perceptions of performance and perceived sacrifice (Zeithaml and Bitner 1996).

4.3.2 The Role of Perceived Value in the Customer Satisfaction Formation Process

In early definitions of consumer satisfaction, such as the one suggested by Howard and Sheth (1969), consumer satisfaction is viewed as "*the buyer's cognitive state of being adequately/inadequately rewarded for the sacrifice undergone*". Churchill and Surprenant (1982) viewed it as "*an outcome of purchase and use resulting from the*

buyer's comparison of the rewards and costs of the purchase in relation to the anticipated consequences". These definitions entail a trade-off between "give" and "get" components on a transactional basis. In agreement with the suggestions in the literature, Fornell and Wernerfelt (1987) viewed dissatisfaction as a state of cognitive or affective discomfort caused by an insufficient return relative to the resources spent by the consumer during the consumption process.

The above definitions indicate that the costs of using a service are an important part of the satisfaction process, yet little work has explicitly examined the role of value in the satisfaction formation model. Equity is defined in some ways as similar to the value concept. Equity theory has been applied to investigations of the exchange of social relationships, exchanges between employee and employer (Adams 1963), and exchanges between buyers and sellers (Oliver and DeSarbo 1988; Oliver and Swan 1989). The notion of equity encompasses more than just comparison of rewards and costs: it involves an individual's perceptions of the proportion of rewards and costs relative to the proportion of rewards and costs of others (Adams 1963). According to Adams (1963), equity can be expressed as:

$$\frac{\text{Rewards}_{\text{buyer}}}{\text{Costs}_{\text{buyer}}} \quad \alpha \quad \frac{\text{Rewards}_{\text{others}}}{\text{Costs}_{\text{others}}} \quad (\text{Others can be seller or other buyer})$$

(Source: Adapted from Adams 1963)

Equity and perceived value are both a comparison of the trade-off between benefits (rewards) and sacrifice (costs). The major difference is that equity is based on the notion that consumers will compare their reward to costs ratio with the seller or other buyer's reward to costs ratio. Perceived value, on the other hand, is the consumer's evaluation of the benefits received relative to perceived sacrifices.

$$\text{Perceived value} = f(\text{perceived benefits, perceived sacrifices})$$

Zeithaml (1988) stated that perceived value is subjective and individual, and varies among consumers. Consistent with this view, Ravald and Grönroos (1996) claimed that a customer's perceived value of a service is highly situation specific. They argued that different consumers have different personal values, needs, preferences and financial circumstances, and therefore even though two individuals perceive the quality of a service to be the same, their perceptions of the value of the service may be different.

Holbrook (1994) viewed customer value as an interactive relativistic preference experience. He further explained that value is relativistic in the sense that it is comparative, personal and situational. This appears to be consistent with the views of Zeithaml (1988) and other researchers. Preference is interpreted as favourable disposition, liking, or positive affect, which results from an individual's experience of interacting with some object.

The Link of Perceived Value to Purchase Intentions

Monroe and Chapman (1987) proposed a conceptual model that depicted the relationships between perceived sacrifice, quality, and value. The effects of perceived sacrifice and quality on the willingness to buy were hypothesised to be mediated through perceived value. These authors suggested that the more that perceptions of quality exceed perceptions of sacrifice, the higher the perceived value. Some of Monroe and Chapman's propositions were examined by Chang and Wildt in 1994. In this study, experiments were conducted with students in two hypothetical situations, one with the purchase of apartments, and the other with the purchase of personal computers. Perceived value was found to be a primary factor influencing purchase intentions, and it was also found to have mediated the relationships of perceived price and perceived quality with purchase intentions for both products. Perceived price and quality were found to have a direct but weak influence on purchase intentions. Furthermore, Cronin et al. (1997) included non-monetary costs, such as the time, effort, and risks associated with a particular purchase as measures of perceived sacrifice. Their results showed that perceived value explained variance in purchase intentions significantly more than either perceived performance or

perceived sacrifice across different service settings. However, the major weakness of their study is that they used a single overall evaluative statement as a measure of perceived value, and this may have reduced the reliability of the result.

The Link of Perceived Value to Customer Satisfaction

The importance of perceived value for consumer purchase intentions were acknowledged in the earlier literature (Zeithaml 1988). Although earlier definitions of customer satisfaction have recognised the role of perceived value in the customer satisfaction formation process, it is in recent years that studies have empirically investigated the role of perceived value in the formation of customer satisfaction (see Howard and Sheth's (1969) definition in section 2.2.1).

Spreng et al. (1993) reported that prior satisfaction studies placed their focus only on the "benefits" of using a service, and explicitly neglected a consideration of the "sacrifice" component. Price is a major marketing element. According to Kotler (1991), it is the only element in the marketing mix that produces revenues, as the other elements produce costs. However, from a consumer perspective, price is a major factor affecting their satisfaction judgements of a service.

Crosby and Stephens (1987) investigated the effect of price on satisfaction, but their results showed that satisfaction was not related to the price of insurance while the levels of technical quality and relationship "service" variables were held constant. Their results may be attributed to the nature of the service under investigation. Life insurance is a highly intangible and complex service, the actual benefits of which can not be realised at the time of service provision. Tse and Wilton's (1988) study showed that satisfaction was not affected by the expectations that formed the basis of the price of a product. Oliver and DeSarbo's (1988) study also showed that the effect of equity on satisfaction was not as strong as perceived performance, disconfirmation or expectation. They explained that equity is an interpersonal phenomenon, but satisfaction in their study was framed in terms

of an investment outcome, and the effect of equity on satisfaction was not significantly strong.

Spreng et al. (1993) proposed a conceptual model suggesting that perceived value is a determinant of consumer satisfaction. It is the only model identified in the literature that incorporates expectations, perceived performance and disconfirmation of expectations and desires. The effects of the latter two variables on satisfaction were postulated to mediate through perceived value. However, in the traditional satisfaction models both variables are suggested to have a direct effect on satisfaction. They argued that consumers might still be satisfied when the service does not meet their desires, because the discrepancy may be offset by perceived reductions in sacrifices. However, these propositions remain untested. Ravald and Grönroos (1996) noted recent efforts on the use of service quality to enhance customer satisfaction. They asserted that perceived value is an important concept, and argued that firms can enhance the perceived value of a service by either delivering better service or reducing customer perceptions of the costs associated with using the service. According to these researchers, it is important to consider customer sacrifice when designing a service offering. They argued that a firm can gain a competitive advantage by adding extra value to the service offering at a competitive price.

Patterson and Spreng (1997) acknowledged the importance of the linkages of perceived value and satisfaction with market share, relationship marketing and repurchase intentions. They examined the relative impact of performance attributes on consumer value perceptions in the context of professional services. Perceived value was operationalised in terms of performance and price, and it was found to have a strong and significant impact on satisfaction, which in turn affected repurchase intentions. The effect of value on repurchase intentions was shown to be completely mediated by satisfaction.

Most satisfaction models treat perceived value as an antecedent of satisfaction. Yet, Bolton and Drew (1991) suggested that perceived value was a consequence of satisfaction, but little explanation was given. Their model posits that customer

satisfaction affects perceived service quality, which in turn affects service value (see figure 2.7). Perceived value is also hypothesised to be influenced by perceived sacrifice and consumer characteristics. Their results showed that the effects of disconfirmation and performance on service quality were different than those bearing on perceived value, and thus claimed that service quality and perceived value are distinctive concepts. Anderson et al. (1994) distinguished customer satisfaction and service quality along the price dimension, and argued that customer satisfaction is dependent on price, whereas the quality of a service is not generally considered to be dependent on price. This appears to be consistent with the results revealed from the depth interviews with consumers.

Research has empirically investigated the relationship between perceived quality and purchase intentions or customer satisfaction and purchase intentions, but little work has been conducted on the perceived quality and value in the process of satisfaction formation. Surprisingly, only Bolton and Drew's (1991) study attempted to integrate all these three highly related concepts into a coherent model. However, the potential flaw in their study is the measurements of the constructs. For example, they used "income" as an indirect measure of "perceived sacrifice". Their explanation was that an individual's budgetary constraints are influenced by their income. It is also not clear why perceived value is treated as a consequence of customer satisfaction in their model.

Although service quality, customer satisfaction, and perceived value have each been suggested and used as a strategic variable to explain post-purchase behaviour, this present study is the first attempt to incorporate them into a single model, and examine how they contribute to the formation of behavioural intentions.

4.4 Hypotheses Statements

Perceived value as defined in this research is a trade-off between perceived performance and perceived sacrifice. Perceived performance represents customer's perceptions of the service provided by a specific firm, which includes all the physical and service attributes surrounding the consumption of that service. Perceived sacrifice is

defined the cost that the consumer gives up to obtain the service, and include monetary costs, time and effort. Although, the literature review identifies that there are other non-monetary costs such as psychic costs as suggested by Zeithaml (1988), time and effort are the non-monetary costs most often mentioned in the depth interviews, and they are considered to be relevant in the context of restaurant service.

According to the definition of perceived value and the findings of the literature review, it is hypothesised that the more that customers perceive they have received, the higher the perceived value, whereas the more the customers perceive they have to sacrifice, the lower the perceived value. Customer satisfaction is affected by many factors, such as perceived encounter quality, disconfirmation, perceived value and perceived performance in a specific transaction. The costs of using the service are an important part of the satisfaction process, but they are posited as mediated through perceived value. If the level of service received exceeds the costs, then the customer will perceive it to be of high value, which in turn results in greater satisfaction. Thus, the preceding discussion leads to the formulation of the following hypotheses:-

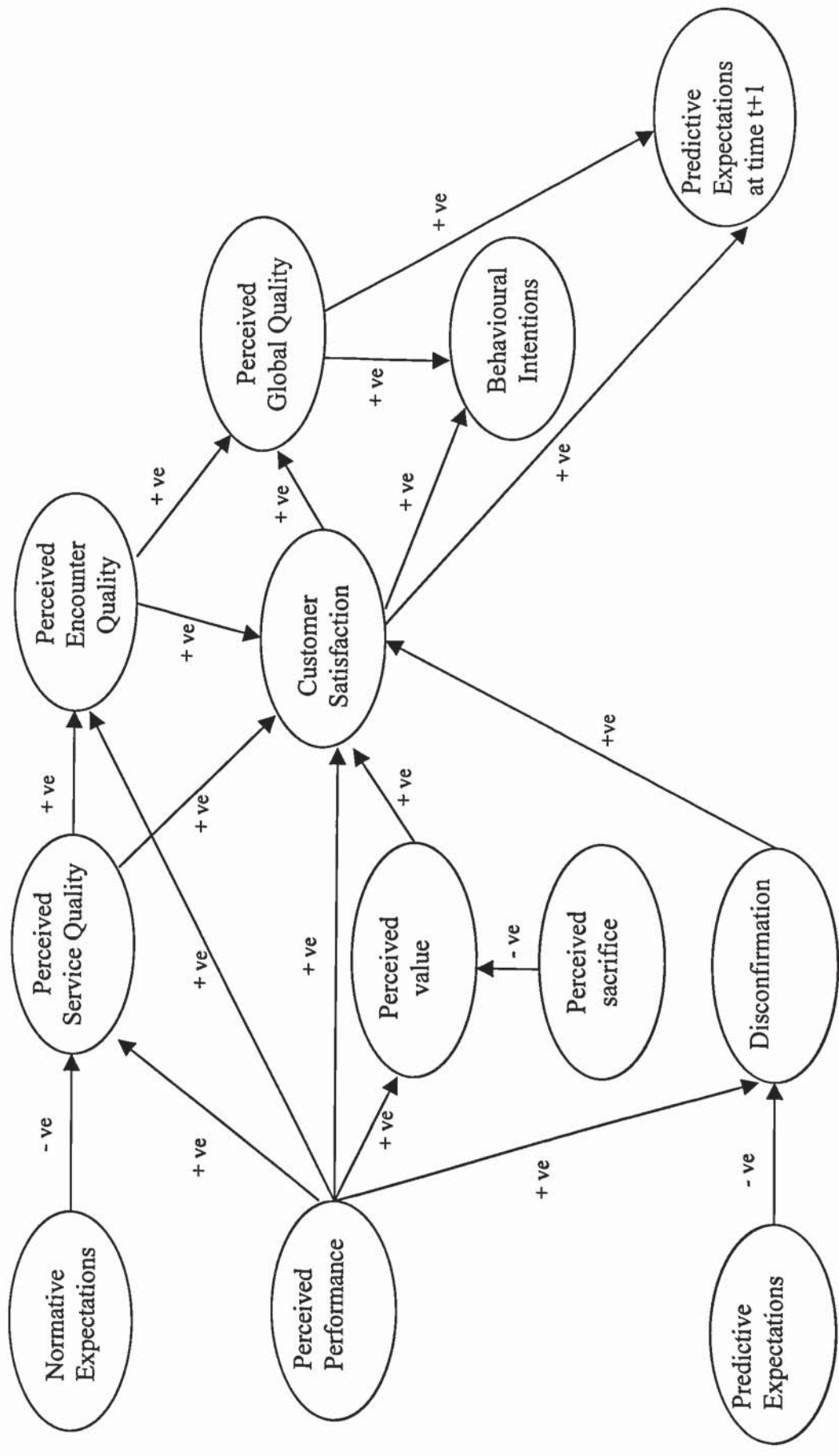
H₁₉: Perceived performance will have a positive effect on perceived value.

H₂₀: Perceived sacrifice will have a negative effect on perceived value.

H₂₁: Perceived value will have a positive effect on customer satisfaction.

Figure 4.3 depicts the revised theoretical framework.

Figure 4.3. Theoretical Framework for Relating Encounter Quality, Customer Satisfaction, Perceived Value and Behavioural Intentions



4.5 Conclusion

The theoretical framework was developed by drawing on theories and studies of customer satisfaction and service quality. It was then revised on the basis of the findings generated from depth interviews with consumers, and from a further review of the relevant literature. Theoretically, customer satisfaction and service quality are two distinctive concepts, and the literature suggests that the two can be distinguished using different comparison standards. In addition, customers considered the two to be different. Satisfaction was related to the rewards and costs associated with the consumption of a service, and was considered a very subjective judgement, whereas evaluation of the quality of a service is made relatively independent of cost.

According to the Holbrook (1994), customer value is the fundamental basis for all marketing activity. Surprisingly, the role of perceived value in consumer behaviour has received far lesser attention than service quality and customer satisfaction. Although research has shown that there is a strong association of perceived value with customer satisfaction, and perceived value with purchase intentions, the work in this area is very limited. Therefore, the present study has integrated the concepts of perceived value, perceived service quality, and customer satisfaction into a coherent model, in an attempt to enhance our understanding of the relationships of these concepts with post-purchase behaviour. The following two chapters describe in details the methods adopted to testify the hypothesised linkages identified in chapters 3 and 4.

Chapter 5

Investigation of the Linkages between Customer Satisfaction, Service Quality and Perceived Value

5.1 Introduction

The preceding chapter presented a theoretical framework that was refined according to qualitative data and a subsequent review of related literature. This chapter describes the methods employed to generate the data and the modelling procedures used in testing the hypothesised relationships. It begins with an overview of the restaurant industry in Hong Kong, then details the procedures adopted in constructing the research instrument. Data collection methods and sampling procedures are presented. Lastly, the chapter explains the use of structural equation modelling, discusses the testing procedure, and reports the findings.

5.2. Overview of the Restaurant Industry

An overview of the restaurant industry in Hong Kong is presented in this section. The academic literature on the Hong Kong restaurant industry is limited, and government statistics and economic analysis reports are the major sources of information in the discussion. Although the study is focused on one service industry, this industry has some common characteristics with other service industries, such as hotels, airlines, and retailing, in that their total offerings comprise of products, people and a physical environment. The reasons for selecting the restaurant industry as the service setting were provided in section 1.4.

The Hong Kong economy has shifted from a manufacturing base to a service base. By 1995, the service sector accounted for 84 percent of GDP, and 79 percent of total employment. Within the service sector restaurants, together with wholesale, retail, the

import-export trade, and hotels accounted for 27 percent of GDP in 1995, and shared 35 percent of the total employment in 1996. The second largest contributor were the financing, insurance, real estate, and business services, followed by community, social and personal services (Census and Statistics Department of the Hong Kong Government 1996).

Since China adopted an economic reform and open-door policy in 1978, substantial economic benefits came to both China and Hong Kong. With the rapid economic growth of the past 20 years, the restaurant industry also experienced a high growth rate. Restaurant receipts recorded double-digit annual growth for four consecutive years from 1987 to 1990, and grew by a further 9.1 percent in 1991 and 18.1 percent in 1992. The number of restaurants increased by 10.9 percent in 1990 and 11.7 percent in 1991. Among them, Chinese restaurants and fast food shops experienced the most rapid growth. Yet, the accelerated expansion of the restaurant industry resulted in over-capacity. The Chinese restaurants were the first to suffer from intensive competition. Their market share fell 3.9 percent between 1990 and 1992. During the past few years, keen competition has driven out many of the marginal competitors, and those who survive are focused on improving the quality of food and services (Economic Research Department of The bank of East Asia, Ltd. 1997). In response to competition, and the changing tastes and preferences of consumers, restaurants have spent effort to enhance food presentation, extend menus to include special dishes, as well as re-design the layouts, and interior and exterior decoration (Yau and Lee 1996).

The lifestyles of Hong Kong people have changed considerably over the past ten years. With increased in the number of working couples and single professionals, one of the changes in lifestyles is that more people are dining out. In 1990, the average Hong Kong household spent 56 percent of its food budget on eating out. This figure is twice the level of the Japanese (25 percent) and three times higher than Americans (17 percent) (Li and Mahmood 1995). As consumers become more experienced and better informed, they demand better service and become increasingly value-conscious. In hospitality literature,

food quality and food types have been frequently reported as the most important choice variables (Kivela 1997; Pettijohn et al. 1997; Auty 1992).

According to the Census and Statistics Department of The Hong Kong Government, “restaurants” can be group in five categories: Chinese restaurants, non-Chinese restaurants, fast food shops, bars and other Eating and Drinking Places. Kivela’s (1997) exploratory study identified four categories of restaurants in Hong Kong: fine dining/gourmet, theme/atmosphere, family/popular, and convenience/fast food. Food stalls, noodle shops and dai pai dongs were excluded in this study. The fine dining restaurants specialise in *haute cuisine*, and offer a varied menu and table service. The ambience of these restaurants is intended to support a formal dining experience. “Theme” restaurants are growing popular in Hong Kong. People going to the “theme” restaurants are seeking an exclusive atmosphere rather than simply a good meal (Planet Hollywood is a prime example). The style of these restaurants can replicable from one location to the next, and they are “internationalised” (Kivela 1997). Family/popular restaurants offer table service and extensive traditional Chinese menu items. Fast food/quick-service restaurants offer limited menu items, provide efficient service, and serve food to diners at a self-service counter. The restaurants chosen in this study are the popular chains where the quality of food and the quality of service surrounding the tangible product are considered as equally important.

5.3 Research Design and Methodology

The complexity and dynamic aspect of the theoretical model dictates that this chapter report the first phase of a longitudinal study. The Objective of the study was to assess the relationships between encounter quality, perceived value and customer satisfaction. The next chapter will report the second phase of the longitudinal study, which aimed to investigate the effects of recent experience on different comparison standards.

There are two types of survey, one is cross-sectional, where the data are collected at a single point in time and the other type is longitudinal, where the data are collected at two or more different points in time. Cross-sectional surveys are frequently used in marketing research: for example, in SERVQUAL studies respondents were asked to complete the set of expectation statements and the set of performance perception statements at the same time. Their purpose was to ascertain accumulative customer evaluations of the quality of a service. The cross-sectional type of survey involves less costs and time in data collection compared with a longitudinal survey. However, there are some problems associated with administering both statements at the same time. For example, a ceiling effect may occur, when respondents assign a score on the perceptions of performance statement consistently lower than the expectations statements, or adjust their expectations following the service experience. As this research is focused on specific transaction quality and customer satisfaction, it is more appropriate to administer the set of expectation statements at an earlier point in time than the post-purchase responses. Although, pre-measures may alert the respondents to evaluate the service received more critically, cautionary steps have been taken to minimise the possible bias. These steps are discussed in section 5.3.4

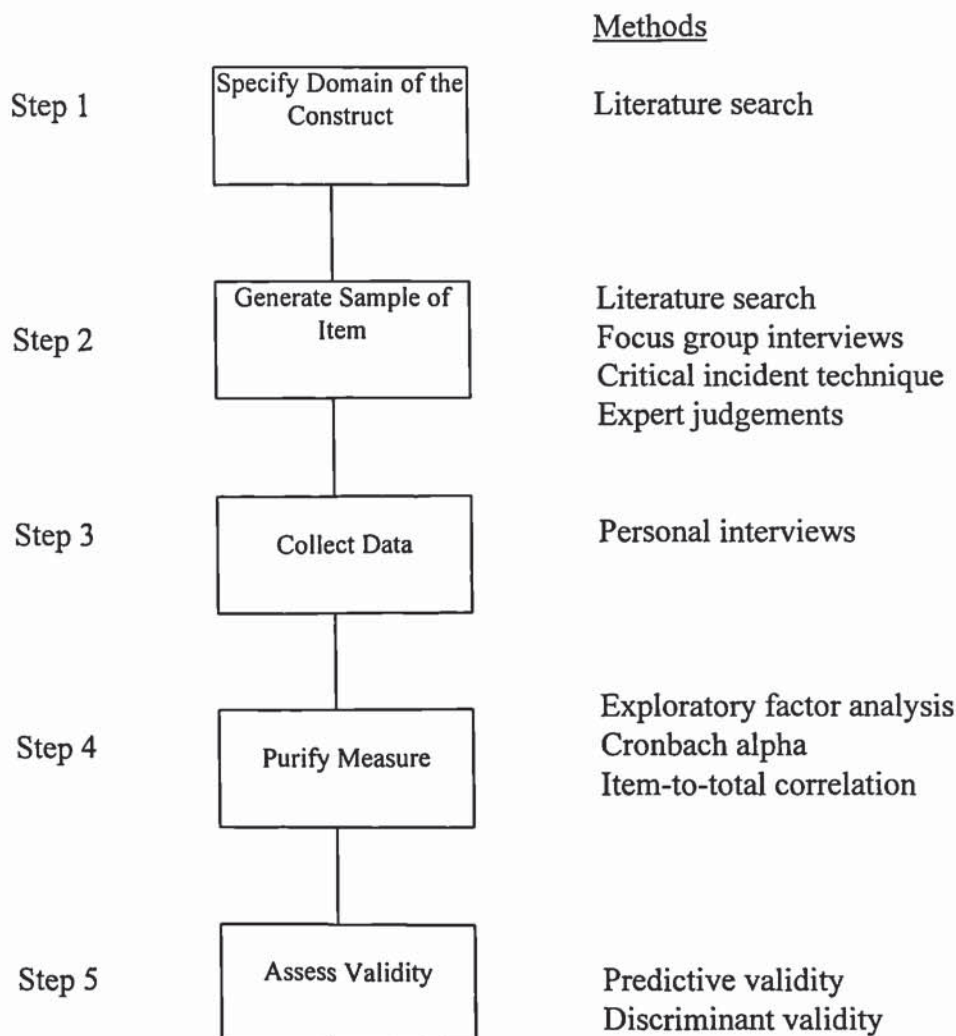
In the following sections, the methods used in developing the research instrument are discussed and followed by a report of the pilot study. Then, the procedures used in selecting the respondents, and the data collection method adopted in the main field survey are presented. The last section discusses data analysis and findings.

5.3.1 Development of Research Instrument

The literature review identifies the SERVQUAL and SERVPERF scales as two well-known instruments for measuring service quality. Both instruments were originally designed to measure service quality at the global level (See section 2.3.5). Stevens et al. (1995) revised the SERVQUAL instrument in order to make it applicable to the restaurant industry. They referred to this revised construct as “DINESERV”. The final

version of DINESERV contains 29 items, which are similar to the statements used in SERVQUAL. However, the major weakness of the DINESERV scale is that most of the items relate to employees and the tangible aspects of the restaurant. The food attributes, which should also be considered as an important component of the restaurant's services, are neglected. Furthermore, the scale was developed and validated in United States. Douglas and Craig (1983) pointed out that there is a danger of using an "emic" measure which was developed in one culture and assumed that it would work as an "etic" measure. They argued that it is important to establish the construct validity of a standardised measure in another culture. Hence there is a need to construct a scale that includes the attributes that consumers would use to judge the quality of a restaurant's services. The scale development procedure employed in this research follows the guidelines suggested by Churchill (1979). This procedure is widely recognised in the marketing literature, and has been used by many researchers including Parasuraman et al. (1988), Webster (1993), Getty and Thompson (1994) and Bush et al. (1997). Figure 5.1 depicts the steps and methods used in the development of the scale.

Figure 5.1 Steps in Developing Measures



(Source : Adapted from Churchill 1979)

Step 1 – Domain Specification

This step involves specifying the domain of the construct that is to be measured (Churchill 1995). This has been achieved through the literature review in chapters 2 and 3. It is re-iterated here that the scope of restaurant service quality includes all aspects of the restaurant with which the customer may interact, including its personnel, its physical facilities, and other visible elements.

Step 2 - Generate an Initial List of Items

The initial step at this stage is to identify the items that are relevant and applicable in the restaurant industry. The initial list of items was generated through the literature review, focus group interviews with consumers, and critical incident technique. Intensive efforts were devoted to reviewing the literature on service marketing, hospitality and catering. In addition, a focus group interview with consumers was carried out to learn how consumers assess the quality of a restaurant service, and what kind of service they would like to receive. Focus group is one of the most frequently used techniques in marketing research, and has proven useful in generating information for structuring consumer questionnaires (Churchill 1995). Although, it is a qualitative method, it provides some insights as to which aspects of a restaurant service should be assessed in this research. The purpose of the focus group interview was to generate items that participants would use to evaluate the quality of restaurant service, and it was not aimed at uncovering the underlying reasons for the items suggested. In contrast with the depth interviews utilised in the preceding chapter, the purpose was to secure an in-depth answer from each interviewee.

The focus group consisted of eight participants and they were recruited from mature students enrolled in a part-time course at a large university in Hong Kong. These students were working adults and had extensive dining experience. They expected to share similar behavioural and demographic characteristics with the primary target markets for restaurant services. Four open-end questions were addressed to the group, and participants were encouraged to respond to the questions. The four questions were: (1) How do you assess the quality of a restaurant service? (2) What kind of service you would like to receive at a restaurant? (3) Which aspects of a restaurant's service are particularly important to you? (4) What factors determine your satisfaction towards a restaurant's service? The emphasis of the group discussion was on the attributes that consumers use to evaluate the quality of a restaurant's service. The discussion was not intended to provide new research hypotheses, or to clarify any research issues. The responses were recorded and later, they were sorted into categories according to

similarities of the attributes, namely quality of food, employee attitudes and behaviour, and the settings in which service is provided. Table 5.1 presents the findings.

Table 5.1 Attributes of Restaurant Service

Food Quality and Delivery	Physical Environment
<ul style="list-style-type: none"> - good taste - attractive presentation - fresh and nutritious - smells good - looks appealing - large portion - a variety of choices - served within an acceptable time period 	<ul style="list-style-type: none"> - the dining area is clean and hygiene - the tables are nicely organised and layout - the utensils are clean and hygienic - attractive decoration - attractive tableware - comfortable chairs - comfortable lighting, temperature and ventilation
Serving Staff	
<p>Service Attitudes</p> <ul style="list-style-type: none"> - welcomes customers on their arrival - willing to serve customers - willing to handle customer special requests - serves customers sincerely - pays attention to customer needs <p>Competence</p> <ul style="list-style-type: none"> - possesses adequate skills - knows about the menu items and methods of cooking - provides efficient service <p>Courtesy</p> <ul style="list-style-type: none"> - polite and friendly - approachable <p>Appearance</p> <ul style="list-style-type: none"> - neat and tidy uniforms - attractive uniforms 	

Table 5.1 (Continued)

Communication

- informs customers about how long until the food will be ready
- provides explanation when there is a delay in preparation of the food
- offers suggestions to customers when required
- takes the initiative to find out customer needs

In addition, the critical incident technique (CIT) was used to identify the relevant attributes. This technique was introduced by Flanagan (1954), as a device for identifying critical job requirements, and it has been applied across a wide range of disciplines. In recent marketing literature, it has been used as a tool for identifying “*fundamentally necessary factors*” leading to extreme satisfaction or dissatisfaction (Bitner, Booms and Tetreault 1990). According to these researchers, the idea underlying the use of CIT for analysing retail services is that factors inducing extreme affective reactions have the most impact on consumer attitudes and behaviour. They suggest that there are four criteria that must be met in the application of CIT.

The four criteria are as follows:

1. The incident must involve firm-customer interaction, including the role of human and non-human service elements
2. It must be very satisfying or dissatisfying from the customers’ point of view
3. It must be a discrete episode
4. It must have sufficient details that can be visualised by the interviewer.

The purpose of the CIT in the present study was to identify the quality attributes that lead to extremely satisfactory or dissatisfactory dining experience. This technique has also been suggested as one of the potential sources in items generation (Churchill 1995; Oliver 1997). A total of forty interviews were conducted. Among the incidents reported, half were satisfactory, and the other half were dissatisfactory. Each respondent was asked: (1) to think of a time when they had a satisfactory or dissatisfactory dining experience at a restaurant, (2) to describe that experience, (3) whether they would continue to dine at the restaurant and recommend that others do so, and (4) to obtain the demographic data including gender, age and education level. Appendix 5.1 contains the list of questions used to gather the information regarding the satisfactory and dissatisfactory incidents. The intention of critical incident technique was to identify the relevant factors that led to the incident. A sample of these incidents is shown in table 5.2.

Table 5.2 Samples of Satisfactory and Dissatisfactory Incidents

Satisfactory incidents	Dissatisfactory incidents
<p>“The staff of the restaurant were very friendly and when we could not decide on what to order, the waitress suggested some dishes to us, and we found those dishes were very delicious and they were not expensive at all.”</p>	<p>“I have reserved a table for a group of eight persons, however when we arrived at the restaurant, we were told that they lost my reservation. Although, the manager said he would give us the top priority to have a table, we still waited for about 45 minutes.”</p>
<p>“The waiters were very nice and helpful and were willing to meet our special requests. They were like a friend and wanted to ensure that we were satisfied with what we have ordered”.</p>	<p>“The waiters chatted among themselves and they did not pay attention to their customers. When I asked one of the waiters to check my food order, he replied impolitely “you need to wait for a while, the food takes time to cook”</p>
<p>“The waiter noticed that one of the dishes we ordered had been misplaced. He asked whether we would want to select another dish from the menu. Although, we did not complain, he kept apologising, and offered us a free drink for compensation.</p>	<p>“We ordered about six different dishes and a daily soup. We waited for a long time and then were informed that some of the dishes were not available. As a result, we had to change four of the dishes that we had originally ordered. The daily soup was expected to be served first but came near the end of the meal. There was no apology or explanation from the waiters.”</p>
<p>“The dishes were very special and tasty and the environment was very comfortable. A photo frame was given to us as a gift when we left the restaurant. It was a surprise. We got more than we expected”.</p>	<p>“We found a fly in one of our dishes and complained to the manager. He just asked us whether we wanted to order a new dish. There was no apology from him. He didn’t really seem to care about his customers.”</p>
<p>“The staff of the restaurant were very nice and they greeted us sincerely. They served us enthusiastically and were willing to adapt their menu items to meet our specific needs.”</p>	<p>“We had been waiting a long time for our food, we asked the waiter and waitress to check our order. They simply replied “the food is being prepared” but there were no further actions taken by them.</p>

The interviews revealed that the factors which led to the satisfactory and dissatisfactory incidents were mostly associated with the attitudes and behaviour of service personnel. Some of the dissatisfactory incidents were caused by a failure in the service delivery: for example, the customers waited for a long time because an order was misplaced. If the situation is not handled properly, it will intensify customer dissatisfaction, and thereby the responsiveness and attitude of the service personnel are crucial factors. If the service personnel acknowledges the problem, makes a sincere apology, and tries their best to resolve the problem and offers some compensations, this can attenuate the degree of dissatisfaction and the customer may even remember the service experience as satisfactory. On the other hand, if the service personnel ignore the problem, they can increase the customer's dissatisfaction.

Based on the literature review, focus group interview with consumers, and the critical incident technique, a total of 50 items were generated. These items appeared to be relevant to the restaurant services. Two experienced restaurant managers served as judges to evaluate the list of items in terms of relevancy and coverage. Some of the wordings in the items were revised on the basis of their comments.

In deciding the number of scale points, Bagozzi (1994) suggests using 5 to 7 scale points, as this tends to promote satisfactory properties with regard to the underlying distribution of responses. Whitley (1996) argued that with a scale using fewer than 5 points, people may feel that they cannot give accurate ratings, and with more than 9 they will feel they are being asked to make impossibly fine distinctions. In marketing studies, 7 scale points are the most commonly used, and hence the fifty items were measured using a 7-point rating scale, with anchors at 7 (excellent) and 1 (poor).

The reason for using a reversed scale was to keep the respondent alert and to avoid "yea-saying" responses or carry over effects (Churchill 1979). However, in a long questionnaire, respondents may find the reversed scale difficult to comprehend and thus they misread the wording and labels. Therefore, when the questionnaire is long, the

disadvantages of including reversed scales probably outweigh the advantages. Parasuraman et al. (1991), have changed all their negatively worded statements into positively worded statements for the reason given previously. Therefore, the reversed scale was not used in order to minimise errors when respondents answered the questionnaire.

The questionnaire also included items which measured perceived encounter quality, customer satisfaction, perceived sacrifice, perceived value, and behavioural intentions for the purpose of evaluating the validity of the scale. Encounter quality scale was constructed based on Teas' (1993) six item quality scale. As one of the items measured customer perceived value rather than quality, it was not used. In result, five items with bipolar adjectives addressing high quality, industry standard, best to worse, excellence and superiority were used. This quality scale had also been used in Oliver's (1994) study. Customer satisfaction was measured using four semantic differential scales with bipolar adjectives addressing satisfaction, pleasant, enjoyment and happiness. The former two measures have been frequently used in prior satisfaction studies, and the latter two measures were identified in the exploratory research. Perceived sacrifice and value scales were developed based on Zeithaml's (1988) definitions. Perceived sacrifice was measured using seven items concerning the price, time and effort that customers perceived to have sacrificed to obtain the service. Perceived value was measured by asking customers to evaluate the overall service in the light of "price paid", "time spent", and "efforts used in coming to the restaurant". These scales were especially constructed for this study. Behavioural intentions were measured using the items adapted from the Zeithaml et al. (1996) study, including re-purchase intention, word of mouth communication, preference, and loyalty. The item labelled "likely to complain when problem arises" was removed from the behavioural intention scale because the results of a previous study showed that it yielded a low reliability (Tam 2000).

As the study was conducted in Hong Kong, the questionnaire was translated into Chinese and was pre-tested with twenty consumers prior to the pilot study. The purpose of this

measure was to identify any ambiguous wording, and to find out whether respondents had any difficulties in answering the questions. Respondents generally commented that some of the attributes were very similar: for example food presentation and appeal, taste and flavour, fat content and nutritional value. The inclusion of items that are largely redundant would have incurred only data collection costs (Sudman and Blair 1998). Furthermore, too many items might have introduced a respondent fatigue effect and accelerated a drop out rate, thus the major consideration regarding the number of items was that they should capture all important aspects of a restaurant's service, as well as keeping the questionnaire in an appropriate length. As a result, those attributes that appeared to be redundant were removed from the questionnaire, and the five item encounter quality scale was reduced to a three item scale, as the respondents reported that they could not distinguish the excellence and superiority items from the high and low quality items.

The layout of the questionnaire followed the guidelines suggested by Bagozzi (1994). The questions of similar content were organised together so as to maintain the focus of the respondent. Headings and underlines were also used to convey categories of questions so as to reinforce how information was stored and processed in memory. Personal and sensitive questions such as age and income were placed last in the questionnaire. Table 5.3 contains the list of the attributes identified in the literature review, focus group interview, and the critical incident technique. Table 5.4 contains the items used to measure perceived sacrifice, perceived value, perceived encounter quality, customer satisfaction and behavioural intentions respectively. The actual design and layout of the questionnaire (both English and Chinese) can be found in Appendices 5.2 and 5.3 respectively.

Table 5.3 List of Restaurant Attributes

a. Food attributes			
- taste	- appealing (*)	- temperature	- nutritious
- portion	- smell (*)	- freshness	- hygiene
- presentation	- flavour (*)	- fat content (*)	- food variety
- uniqueness of dishes			
b. Menu			
- readability of menu		- design of menu	
c. Food Delivery			
- speed of food delivery		- order of food delivery	
d. Serving Staff			
Service Attitudes			
- willing to serve customers			
- willing to answer customer questions (*)			
- willing to handle customer special requests			
- serving customers sincerely			
- assisting customers in locating the table & seats			
Competent			
- experienced and competent at doing their job			
- knows about the menu items and methods of cooking			
- possess the ability to provide efficient service			
- possess the ability to answer customer questions clearly and completely			
Communication			
- informs customers about how long until the food will be ready			
- offers suggestions to customers when required			
- takes the initiative to find out what customer needs			
Courtesy			
- polite and friendly			
- approachable and easy to contact			

Problem Recovery

- informs customers promptly when the food is not available
- provides explanation when there is a delay in preparation of the food
- expends effort to solve problems when they arise

Appearance

- neat and tidy uniform
- attractive uniform appearance

e. Dining Environment

- atmosphere
- interior decoration
- layout
- indoor temperature
- air quality (*)
- comfortable
- hygiene
- lighting

f. Utensils, Table Cloth and Napkins

- appearance
- clean (*)
- hygiene
- presentation

g. Seats and Table

- appearance
- comfortable

(*) – attributes excluded from the questionnaire

Table 5.4 Scales of Perceived Sacrifice, Perceived Value, Encounter Quality, Customer Satisfaction and Behavioural Intentions

Perceived Sacrifice Measurement									
a. Time Spent									
Please rate on the following scales, <u>the time</u> you perceived to have spent in waiting to be served.									
Little time	1	2	3	4	5	6	7	A long time	
Lower than I expected	1	2	3	4	5	6	7	Higher than I expected	
b. Monetary Costs									
Please rate on the following scales, <u>the price</u> you perceived to have paid for the service received at this specific encounter (including food, service and environment)									
Cheap	1	2	3	4	5	6	7	Expensive	
Reasonable	1	2	3	4	5	6	7	Unreasonable	
Lower than I expected	1	2	3	4	5	6	7	Higher than I expected	
In comparison with other similar restaurants, how did you perceive the price of the service at this specific encounter (including food, service and environment)?									
Cheaper than other restaurants	1	2	3	4	5	6	7	Expensive than other restaurants	
c. Location									
Did you find <u>the location</u> of the restaurant easily accessible?									
Easily accessible	1	2	3	4	5	6	7	Not easily accessible	
Scales developed based on Zeithaml's (1988) definition of perceived sacrifice (Psychic costs are excluded)									

Perceived Value Measurement

a. Based on the service you have received (including food, service and environment), how did you perceive the price you have paid?

Not worthwhile at all 1 2 3 4 5 6 7 Very worthwhile

b. Based on the service you have received (including food, service and environment), how did you perceive the time you have spent in waiting to be served ?

Not worthwhile at all 1 2 3 4 5 6 7 Very worthwhile

c. Based on the service you have received (including food, service and environment), how did you perceive the efforts you have made in coming to the restaurant?

Not worthwhile at all 1 2 3 4 5 6 7 Very worthwhile

(*) – scales developed based on Zeithaml's (1988) definition of perceived value

Perceived Encounter Quality Measurement

Please rate on the following scales, the overall quality of the service you received at this specific encounter (including food, service and environment).

One of the worst	1	2	3	4	5	6	7	One of the best
Low quality	1	2	3	4	5	6	7	High quality
Lower than the standard of this industry	1	2	3	4	5	6	7	Higher than the standard of this industry

Scales adapted from Teas's (1993) study

Customer Satisfaction Measurement

How did you feel about the overall service experience (including food service, and environment) at this specific encounter?

Very unpleasant	1	2	3	4	5	6	7	Very pleasant (*)
Very dissatisfied	1	2	3	4	5	6	7	Very satisfied
Very Unhappy	1	2	3	4	5	6	7	Very Happy
I did not enjoy it at all	1	2	3	4	5	6	7	I enjoyed it very much (*)

Scales adapted from the consumer satisfaction literature.

(*) – Scales generated from the earlier exploratory research

Behavioural Intentions Measurement

How likely are you to engage in the following activities?

1. I will consume at this restaurant more frequent
2. I will recommend the restaurant to others
3. I would consider this restaurant the first choice if I had to choose again
4. I will say favourable things about the restaurant to others
5. I will be a loyal customer of this restaurant

Respondents were rated on a 7-point scale, with 1 anchored “definitely will not” and 7 anchored “definitely will”

Scales adapted from Zeithaml’s (1996) study

Step 3 – Data Collection

The purpose of this stage was to purify the items with the sample that matches the demographic characteristics of the research target population. The sample size was determined by two criteria: the size required for the application of statistical analysis

(Green et al. 1988), and similar sample sizes used in previous studies (Sudman 1976). In order to apply factor analysis, Hair et al. (1998) suggest that a sample size should be 4 to 5 times the number of variables. In addition, the literature review identifies that a sample size of 200 is commonly used in scale development studies in the marketing area (Parasuraman et al. 1988; Stevens et al. 1995). The questionnaire was administered by personal interviews with two hundred consumers who had a dining experience at a restaurant in the past month. Quota sampling was adopted so that the sample would reflect the composition of the target population by sex and age.

The interviews were conducted near the premises of the restaurants in the Hong Kong, Kowloon, and New Territories districts. Respondents were selected on a judgmental basis, were asked to recall their most recent dining experience, and to evaluate the performance of the restaurant in which they consumed. Some respondents terminated the interview without completing all the questions. Efforts were made to secure two hundred completed responses. Some respondents mentioned that they had not paid attention to some of the restaurant attributes listed in the questionnaire and were hesitant to evaluate them. Their comments were noted and considered when developing the final questionnaire used in the main field survey. Table 5.5 contains the demographic characteristics of the sample in the pilot study.

Table 5.5 Demographic Profile of the Sample in the Pilot Study

Demographics	Number	Percentages
Sex		
Male	81	40.5
Female	119	59.5
Age		
18 – 25	39	19.5
26 – 30	36	18.0
31 – 35	40	20.0
36 – 40	38	19.0
41 – 45	24	12.0
46 – 50	23	11.5

Marital Status		
Single	89	44.5
Married	109	54.5
Divorced	2	1.0
Education Attainment		
Primary or below	19	9.5
Secondary	92	46.0
Post-secondary	26	13.0
Tertiary or above	56	28.0
Others	7	3.5
Occupation		
Profession / Executive	29	14.5
White Collar	81	40.5
Student	18	9.0
Retired	2	1.0
Self-employed	5	2.5
Managerial	13	6.5
Blue Collar	13	6.5
Housewife	29	14.5
Unemployed	8	4.0
Others	2	1.0
Personal Monthly Income		
\$5,000 or below	55	27.5
\$5,001 - \$10,000	22	11.0
\$10,001 - \$15,000	54	27.0
\$15,001 - \$20,000	20	10.0
\$20,001 - \$25,000	14	7.0
\$25,001 - \$30,000	14	7.0
\$30,001 or above	21	10.5

Step 4 - Items Analysis and Purification

The purpose of this stage was to improve the scale by discarding ineffective items. It was revealed in the interviews that many respondents had not encountered any service failures in the recent dining experience, and that they were unable to evaluate the items relating to problem recovery. It was decided that the three items measuring problem recovery

capabilities should be removed from the analysis. Exploratory factor analysis was performed on the remaining forty items to discover the underlying dimensions that constitute a restaurant service. Principal Component Analysis is one type of exploratory factor analysis aiming to transform an original set of variables into a substantially smaller set of uncorrelated variables that represent most of the information in the original set of variables (Dunteman 1994). The Kaiser-Meyer-Olin measure of sampling adequacy (0.92) and the Bartlett test of sphericity (Chi-square = 5642, $p=0.000$) indicated the presence of some shared variance among the items, thus principal component analysis proceeded comfortably.

Varimax rotation was performed to facilitate the interpretation of the components (Hair et al. 1998). The Oblique rotation method was also performed, but the results showed that the rotated factor loading matrix was not as clear and as easier to interpret as the rotated factor loading matrix generated through varimax. Therefore, the varimax rotation method was used in spite of previous service quality studies which had chosen to use oblique rotation to allow for inter-correlations among the dimensions. Eigenvalue greater than one and scree test were used as the criteria to determine the number of factors (Stewart 1981). The first factor analysis extracted eight factors accounting for 68.7 percent of the total variation. Items that had a loading of less than 0.30 were considered ineffective, and were removed from further analysis (Spector 1994). Some items were heavily loaded on more than one factor (>0.30), and were deleted to improve the interpretation of the rotated factor loading structure.

Each factor generated was treated as a sub-scale. Item-to-total correlations and Cronbach alpha were calculated for each sub-scale as well as for the total scale. The item-to-total correlation measures the correlation between the item score and the sub-scale score without the item. Items that had a low correlation with the sub-scale score were removed to increase the internal consistency among the items on the sub-scale. Factor analysis was performed again and item-to-total correlations and Cronbach alpha values were re-computed. The process was repeated until a clear rotated factor-loading structure was

obtained. After several iterations of the analyses, a pool of 25 items resulted, which represented six dimensions. A label was given to each factor, based on the content of the items that loaded heavily on the respective factor. The six factors accounted for 70.1 percent of the total variance. The first factor, labelled “Service Attitudes”, accounted for the largest percent of the variation (39.8 percent), and was followed by “Environmental Factors” (8.6 percent), “Food Taste & Variety” (6.9 percent), “Staff Competent” (5.5 percent), “Staff Appearance” (4.9 percent) and “Food Delivery & Order” (4.3 percent). Table 5.6 presents the factor loadings and Cronbach alpha values.

Table 5.6 Results of Exploratory Factor Analysis of Perceptions of Restaurant’s Service Performance

Restaurant Attributes	Loadings
Factor 1 : Service Attitudes ($\alpha =0.91$)	
- polite and friendly	0.8644
- serving customers sincerely	0.8181
- willing to serve customers	0.8006
- inform customers about how long until the food will be ready	0.7373
- take the initiative to find out what customers need	0.6831
- offer suggestions to customers when required	0.4711
Factor 2 : Environmental Factors ($\alpha=0.86$)	
- interior decoration	0.7971
- restaurant layout	0.7582
- indoor temperature	0.7240
- comfortable	0.7126
- hygiene in the dining area	0.7036

Table 5.6 (Continued)

Factor 3 : Food Taste & Variety ($\alpha=0.80$)	
- food taste	0.8299
- food presentation	0.7382
- nutritional value	0.5739
- food portion	0.5384
- food variety	0.5217
- food uniqueness	0.5199
Factor 4 : Staff Competent ($\alpha=0.84$)	
- possess the ability to provide efficient service	0.7000
- know about the menu items and methods of cooking	0.6980
- posses the ability to answer customers questions clearly and completely	0.6735
- experienced and competent at doing their job	0.5161
Factor 5 : Staff Appearance ($\alpha=0.80$)	
- neat & tidy uniforms	0.7118
- attractive uniforms	0.6252
Factor 6 : Food Delivery & Order ($\alpha=0.78$)	
- order of food delivery	0.7941
- speed of food delivery	0.7726
Cronbach alpha value for the total scale is 0.94	

Spector (1994) suggested that exploratory factor analysis is a good technique for studying the dimensionality of a scale. The factors generated can be indicators of separate

constructs or of different aspects of a single rather heterogeneous construct. The answer to whether a scale is unidimensional or multidimensional lies in the researcher's purpose. With this study, customer evaluation of service performance was treated as a multidimensional construct. For validation purposes, the twenty-five items were then averaged to form a composite measure of perceived performance, and the score of the composite measure was used to correlate the scores of the other measures (See the discussion of reliability and validity assessments in section 5.3.5).

Exploratory factor analysis was conducted separately on perceived sacrifice items, perceived value items, encounter quality items, customer satisfaction items and behavioural intentions item. As expected, each factor analysis resulted in a single factor solution, except for perceived sacrifice. The factor analysis of perceived sacrifice items resulted in a three factor solution. This result was expected, as perceived sacrifice was measured by three aspects of costs, including monetary and non-monetary costs. The seven items were averaged to form a scale to measure perceived sacrifice. The reliability of this seven-item perceived sacrifice scale was moderate ($\alpha=0.74$). The higher the scale value, the greater the perceived costs. Similarly, perceived value was formed using the average score of the three perceived value items ($\alpha=0.81$). The higher the scale value, the more worthy the service. The encounter quality scale, customer satisfaction scale and behavioural intention scale were formed following the same procedure. The reliability of these scales are high: $\alpha = 0.83$ for encounter quality, $\alpha = 0.90$ for customer satisfaction, and $\alpha = 0.91$ for behavioural intention. Table 5.7 presents the Cronbach alpha values and the results of factor analysis.

Table 5.7 Results of Factor Analysis

Items	Loadings
Perceived Sacrifice ($\alpha=0.74$)	
Factor 1 : Perceived monetary cost ($\alpha=0.87$)	
- expensive	0.8903
- higher than I expected	0.8531
- unreasonable	0.8147
- higher than other similar restaurants	0.8021
Factor 2 : Perceived time spent ($\alpha=0.89$)	
- higher than I expected	0.9374
- a lot of time	0.9352
Factor 3 : Perceived effort	
- not easily accessible	0.9893
Perceived Value ($\alpha=0.81$)	
- time spent waiting to be served	0.8856
- efforts made in coming to the restaurant	0.8572
- price paid for the service	0.8175
Perceived encounter quality ($\alpha=0.83$)	
- high quality	0.8832
- higher than the standard of this industry	0.8415
- one of the best	0.7933
Perceived customer satisfaction ($\alpha=0.90$)	
- very pleasant	0.9342
- very happy	0.9305
- I enjoyed it very much	0.8469
- very satisfied	0.8052
(Note : for the above items, only the adjectives at one end of the scales were presented. For more details of the scales, please refer to table 5.4 or Appendix 5.2)	

Table 5.7 (Continued)

Behavioural Intentions ($\alpha=0.91$)	
- I would consider this restaurant the first choice if I had to choose again	0.9001
- I will recommend the restaurant to others	0.8840
- I will be a loyal customer of this restaurant	0.8563
- I will say favourable things about this restaurant to others	0.8537
- I will consume at this restaurant more frequently	0.8113

Spector (1994) suggested that factor analysis can be used for scale validation, although he argued strongly that additional evidence should be collected. The factors are formed in such a way that a group of items interrelates with one another more strongly than they relate to other groups of items. The items that inter-correlate relatively high are assumed to reflect the same construct, and items that inter-correlate relatively low are assumed to reflect different constructs. This idea is quite similar to convergent validity and discriminant validity.

Based on the above argument, factor analysis was performed on all the items measuring perceived sacrifice, value, encounter quality, and customer satisfaction and behavioural intentions. It was expected that seven factors should emerge, and the respective items should be heavily loaded on the intended scales. However, the results show that six factors emerged using eigenvalue greater than one as the criterion. The items measuring perceived sacrifice, perceived value and behavioural intentions were heavily loaded on their intended scales. However, the items measuring perceived encounter quality and customer satisfaction were heavily loaded on a single factor. This may suggest that the perceived encounter quality and customer satisfaction scales lack discriminant validity. Factor analysis was performed again, specifying a seven factors solution. A close examination of the rotated factor loading matrix reveals that all the items were loaded heavily on their intended scales except one item, which measured satisfaction with end-

points labelled “very satisfied” and “very dissatisfied”. It was loaded heavily on both encounter quality and customer satisfaction factors. This measure is the most commonly used in marketing studies for measuring customer satisfaction (Hausknecht 1990).

The studies of Spreng and Singh (1993), and Bitner and Hubbert (1994), reported similar results, and these researchers suggested that the measure of customer satisfaction should contain more affective items in order to make it distinguish from the quality measure (See section 2.4.4). It is not too surprising to find that encounter quality and customer satisfaction are not distinguishable from the customer self-reported responses, as both constructs are highly related. In theory, a higher quality perception will yield greater customer satisfaction. However, it is also possible that during the measurement process, the sequence of the questions may incur carry-over effects, as the satisfaction measures were followed the encounter quality measures in the questionnaire. Therefore, in an attempt to minimise the carry-over effects, the sequence of the measures was revised and a graphic scale used in the main questionnaire.

Step 5 - Assessments of the Scale’s Validity

It is important to ensure that the scale developed for measuring perceived performance is measuring what it intends. When a scale measures things other than what the researcher intends, measurement errors obviously occur (Whitley 1996). Measurement errors arise due to the imperfections in the measuring instrument, and come in two types: random and systematic errors (Churchill 1995). Systematic errors affect the measurement in a constant way. As a result, the observed score is stable but it is inaccurate as an indicator of the true score. Random errors fluctuate each time a measurement is taken, and thus lead to lower reliability estimates. Random errors may be attributed to the transient aspects, such as a respondent’s mood at the time of the interview, or measurement situations such as whether a respondent is accompanied by other people when the questionnaire is administered (Churchill 1979). The intention of multiple item scales is to minimise random errors (Bagozzi 1994). According to the law of large numbers, the use

of multi-items can offset biases that might be caused by the situational factors and variations within a respondent. Furthermore, Whitley (1996) argued that the use of multi-items ensures that all components of the construct are represented in the scale, thus maximising the scale's degree of reliability and validity. The relationship between the true score and measurement errors can be represented by a mathematical equation:

$$X_t = X_o + X_r + X_s$$

where X_t = true error

X_o = observed error

X_r = random error

X_s = systematic error

Gronlund (1988) suggested that the validity of a scale is not measured but inferred from available evidence. Such evidence includes the degree of reliability, content validity, criterion validity, convergent validity, discriminant validity and nomological validity. Each of these categories is discussed in the following.

Reliability Assessment

There are two primary methods used in assessing the reliability of a scale (Bagozzi 1994). The first is the internal consistency method, which involves ascertaining the degree of agreement between two or more measures of the same theoretical concept obtained at the same point in time. Cronbach alpha is a common method for assessing internal consistency among the items on a scale. An alternate method used in assessing the reliability of a scale is the test-retest, which concerns the consistency of repeated measures of the same theoretical concept over time. However, Churchill (1979) argued against test-retest reliability, on the basis that respondents can memorise their responses, and might respond to an item the same way in the second administration as they did in the first. Given that service is heterogeneous, and previous research shows that the test-retest

correlation is relatively low (see section 2.3.5), test-retest reliability is not assessed. The Cronbach alpha values for the sub-scales and the total scale ranged from 0.78 to 0.94 (see Table 5.6). These values were considered acceptable according to Robinson et al. (1991). As a rule of thumb, the alpha value should be at least 0.70 for a scale to demonstrate internal consistency (Nunnally 1978).

Validity Assessment

Reliability is necessary but not alone sufficient for validity assessment (Nunnally and Bernstein 1994). There are four types of validity most pertinent to marketing scales: content, criterion, discriminant, and nomological validity. Content validity is concerned with relevance and representative nature of scale items in capturing all aspects of a restaurant service. Assessing a scale's content validity is qualitative, and the key to content validity lies in the procedures that are used to develop the scale (Churchill 1995). The rigorous literature review, focus group interviews, and critical incident technique in the present study generated the exhaustive list of items that was inspected by two experts, thus the scale can be considered to possess content validity.

Criterion validity addresses the degree to which scores on one measure predict or correlate with scores on another measure. In contrast, discriminant validity requires that a measure does not correlate too high with a measure from which it is supposed to differ (Churchill 1995). Criterion validity was assessed by examining the association between perceived performance and perceived encounter quality. Discriminant validity was assessed by examining the association between perceived performance and perceived sacrifice. Correlation analysis was performed, and the results showed that the correlation between perceived performance and perceived encounter quality was 0.6526 ($p=0.00$). In addition, regression analysis was also performed using the six components of the perceived performance as the independent variables, and the perceived encounter quality as the dependent variable. The results of the regression analysis showed that the six components of perceived performance explained fifty percent of the variation of

perceived encounter quality. Both results suggested that the scale possessed criterion validity. The correlation between perceived performance and perceived sacrifice was 0.0066 ($p = 0.926$), indicating that the perceived performance scale possessed good discriminant validity as it did not correlate strongly with the measure from which it was supposed to differ.

Nomological validity addresses the degree to which a construct behaves as predicted with measures of other conceptually related constructs. Nomological validity was determined in the present study by correlating perceived performance with customer satisfaction. Perceptions of restaurant service performance were expected to be positively related to customer satisfaction. In other words, when all other things are equal, higher perceptions of restaurant service performance will yield a higher level of customer satisfaction. The correlation was 0.6521, thus nomological validity was supported. Convergent validity was not assessed, as it requires that independent methods should be used to measure the same construct. The logic is that if the same construct is measured by two alternative methods, their scores are expected to be highly correlated. If the correlation between the scores is weak, it implies there is little evidence of convergent validity (Churchill 1995). But the problem with adding an alternative method to measure perceived performance is it would double the length of the questionnaire, and respondents would feel it troublesome to rate the same attribute on two different scales.

5.3.2 The Research Instrument

The preceding sections discussed the methods and procedures used to develop scales for measuring perceived performance, perceived sacrifice, perceived value, perceived encounter quality, customer satisfaction, and behavioural intentions. A scale was especially designed to measure perceptions of service performance in a restaurant context, as the literature review identified some weaknesses amongst the existing scales. The other scales were mostly adapted from the literature or generated from exploratory research.

The literature clearly documents how predictive expectations should be operationalised. Predictive expectations are defined as the customer's anticipation of the level of service that will be provided by a specific firm. Prior to entering a restaurant, customers should be asked to indicate the performance of the twenty-five attributes they expected the restaurant to possess, and their expectations of the restaurant's overall service performance. As for the type of comparison standard to be used for measuring service quality, there are some inconsistencies among researchers (See section 2.3.5 & 2.3.6). The section which follows provides some explanations as to why the best brand norm was selected as the quality standard.

Using the “Best Brand Norm” as the Quality Standard

The review of literature and findings of the exploratory research suggest that when customers make their judgements of service quality, they compare the service they have received against some form of standards. In other words, comparison standards are used as reference points in guiding customer judgements. Comparison standards can be either implicit or explicit. The former refers to customer's own standards, and the latter to customer perceptions of standards as specified by service firms or researchers. For the implicit comparison standards, customers are allowed to choose their own guides to judge the quality of a service. However, there are some limitations when using implicit comparison standards for strategy development, due to the fact that individual customer standards can vary considerably within an individual as well as across customers. For example, in judging the quality of a service, customers may choose a similar firm's performance as the reference point in one specific encounter, while in the next encounter they may choose one of the best firms in the industry as the reference point. On the other hand, explicit comparison standards are also measured from customer perspective, but researchers or service firms explicitly define the level of standards they want to measure. Explicit comparison standards are the most frequently employed in research as they provide some guides to strategy formation.

Perceived encounter quality as defined in this study is the result of customer comparisons of normative standards with perceived performance. The literature review identifies that “ideal”, “desired”, “excellent” have been operationalised as the normative standards. Boulding et al. (1993) considered the “ideal” standard as an enduring want which might remain unaffected by exposure to marketing, competitor communications and past experience. According to Zeithaml et al. (1991), the “desired” level supports the normative standard, and is similar to Miller’s (1977) definition of deserved service. However, the “deserved” level as defined by Miller incorporated both costs and rewards. It reflected the level of performance a customer feels “ought to be” or “should be” in light of their “investment”. Parasuraman et al. (1991) reported that the “should” statements generated a high skewed distribution. In their later research, they changed the statements from “should be” to “excellent companies would provide”. However, asking respondents about what should happen could prompt an idealist answer. Later in 1994, they introduced two levels of service quality expectations: “Adequate” and “Desired”. Myres (1991) suggested that the concept of “ideals” can have two possible meanings. One is a hypothetical level that does not exist but may be possible (i.e., a possible ideal), and the other is the best offering that is available in the market (i.e., an available ideal).

Over the past years, researchers have contended that quality expectations should be realistic, experiential, and provide a managerial value to marketers. Below is a summary of the views of the researchers.

1. Monroe and Krishman (1985) defined perceived quality as *the perceived ability of a product to provide satisfaction relative to available alternatives*.
2. Buzzell and Gale (1987) defined “*perceived quality*” as *customer’s evaluations of a product’s performance relative to competing products*.
3. Zeithaml (1988) argued that evaluations of quality usually take place in a comparative context, and the judgement is determined within a consumer’s evoked set. She

suggested that *a product's quality be evaluated as high or low depending on its relative excellence or superiority among products or services that are viewed as substitutes by the consumer*. Similar argument has also been found in consumer satisfaction literature. Woodruff et al. (1982) stated that the nature and amount of a consumer's experience with an evoked set of brands are important determinants of the satisfaction process.

4. Carman (1990) suggested that *service quality expectations involve "norms" and that these "norms" are based on past experience*.
5. Woodruff et al. (1983) argued that *norms are not intended to capture unrealistic desires*. Norms are constrained by the consumer's experience with real products and brands, and thus they are not likely to be unattainable ideals.
6. Bolton and Drew (1991) hypothesised that *quality depends on the customer's evaluation of the current provider relative to a competing firm*.
7. Kotler & Armstrong (1996) argued that few customers would want or afford high levels of quality, therefore *firms should strive to deliver a quality level consistency that matches target market needs and those of competing products*.
8. Brown (1997) viewed *perceived quality as a customer's comparison of perceived service against norms*. The author defined "norms" as the distribution of scores obtained on a measure by firms offering similar services.

From the above, we can see that there is some consensus among the researchers regarding the normative expectations. Normative expectations should be realistic and experiential. Indeed, if quality is to be employed as a strategy to create a competitive advantage, it is deemed appropriate to use the "available best offering" as the standard for comparing the performance of a specific firm. Thus, the "best brand norm" as defined in this research is

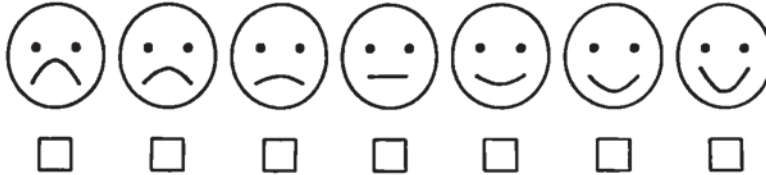
the best within a service class, which is determined by previous consumer experience. Oliver (1996) argued that such a standard falls close to the “feasible ideals”.

The research instrument of this study consisted of two parts. The first part included two sets of comparison standard statements, and the second part contained a set of items measuring customer perceptions of performance, customer satisfaction, perceived sacrifice, perceived value, perceived encounter quality, perceived global quality and behavioural intentions. In the first part of the questionnaire, respondents were first asked to indicate the level of service they expected would be provided by the “best” restaurant, and the level of service they expected would be received from the restaurant under investigation. The comparison standards were measured on a 7 point rating scale with anchors at 7 (excellent) and 1 (poor). In addition, respondents were also requested to indicate the frequency of their consumption at the restaurant under investigation.

In the second part of the questionnaire, a set of perception statements was measured followed by customer satisfaction, perceived sacrifice, perceived value, perceived encounter quality, behavioural intention, perceived global quality, and demographic measures. The measures were presented in this sequence in the questionnaire in an attempt to minimise carry over effects. Furthermore, the wording of scale items for encounter quality and global quality were underlined in order to achieve sufficient distinction to establish high discriminant validity among them. In addition, one of the customer satisfaction measures was a graphic scale. This was aimed at tapping the affective feelings of respondents towards the overall service experience (Hausknecht 1990). Both parts of the questionnaire contained an identification number for matching purposes.

Table 5.8 A Graphical Scale for Measuring Customer Satisfaction

Please mark on one of the seven faces below the position which most reflects your feelings towards this overall service experience.



The final research instrument did not include the importance measures, as the role of such measures in the assessment of service quality is not clear. Parasuraman et al. (1991) introduced importance weights to the SERVQUAL instrument. Respondents were asked to allocate 100 points across the five SERVQUAL dimensions and these points were used to derive the weighted average service quality score. However, Cronin and Taylor (1992) reported that the weighted service quality measure performed worse than the unweighted service quality measure in the performance of predictive validity. Similarly, Teas (1993) found that weighted service quality measures did not improve the validity of unweighted service quality measures. On the other hand, Taylor (1995) contended that if service quality is to be viewed as a form of attitude, then the importance weights should contribute to the service quality evaluations. He proposed using conjoint-based analysis, or the weighted multidimensional scaling technique, to incorporate the importance weights in the evaluations of service quality. However, the proposition that service quality is a form of attitude has not been empirically verified. Considering that importance weightings have failed to add explanatory value to the service quality models in previous studies, importance measures were not assessed in this study (Angur et al. 1999; Taylor and Cronin 1995; Wraggs 1994; Teas 1993; Cronin and Taylor 1992).

It was important to include all the relevant measures in the questionnaire whilst keeping it at a reasonable length. If questionnaires are too long, the response rate will drop, and

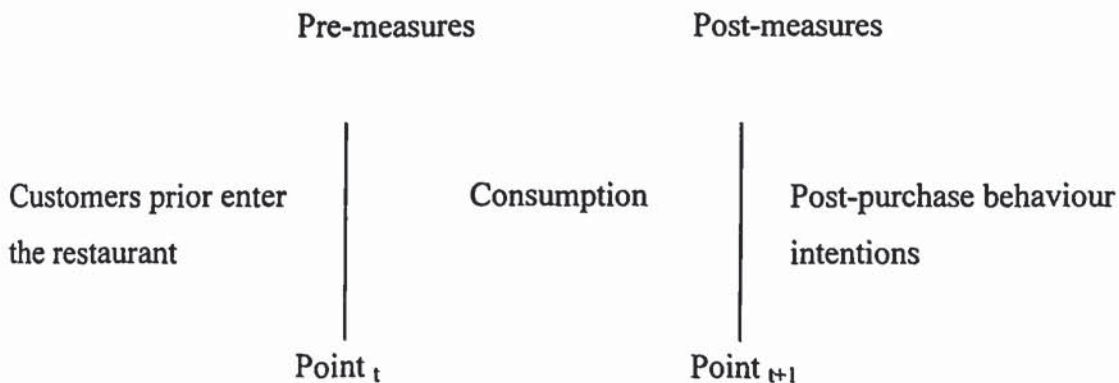
respondents who do reply might make mistakes. Bagozzi (1994) suggests that in order to employ structural equation modelling, there should be at least 4 items per latent variable when a single latent variable is examined, or at least 2 items per latent variable when 2 or more latent variables are investigated. This relates to an identification issue, and section 5.4 will provide a detailed discussion on the theory and application of structural equation modelling. The measures designed in the present study satisfied this criterion. All the questions in the questionnaire were written in a simple and comprehensive way for easy understanding. Pre-testing of the questionnaire was conducted with twenty consumers. The first part of the questionnaire on average took about 10-12 minutes to complete, whereas the second part of the questionnaire on average required 15-18 minutes. The actual design and layout of the questionnaire can be found in Appendices 5.4 and 5.5.

5.3.3 The Longitudinal Field Survey

A longitudinal field survey was designed to collect data to test the hypothesised relationships in the research model. This section describes in detail the methods used to collect the data and the sample composition. The next section discusses the theory and application of the LISREL modelling, and the results of analysis.

Many service quality studies conducted in the past used cross-sectional data to evaluate consumers global perceptions of service quality, and both expectation and perception statements were measured at the same time (Parasuraman et al. 1991; 1994b; Cronin and Taylor 1992; Liljander and Strandvik 1995; Johns and Tyas 1996). As this research focused on perceptions of encounter quality and customer satisfaction, expectations that were measured after the service was received may have been retrospectively adjusted, and hence the validity of the study would be lowered. In this research, consumer expectations were measured prior to their consumption of the service, and their evaluations of the service were obtained after their consumption. This research design also fits the view that service quality is dynamic in nature. The time intervals between the pre and post-measures were about one to two hours. Because the data collection was taken at two points in time, a longitudinal survey was designed as depicted below.

Figure 5.2 Design of the Longitudinal Survey



Whitley (1996) has discussed some potential problems associated with longitudinal research. These potential problems are mostly related to the use of multiple assessments over time, and they are discussed below:

1. The mortality effect

This occurs when participants drop out of the study over time. There are several possible reasons, one of which is that participants may have lost interest in the study, and thus refuse to continue to provide data. Another reason for mortality is that participants may have moved. Whitley (1996) argued that random attrition poses few problems, and only when attrition is non-random, can biased samples jeopardise the accuracy of the results. One way of ensuring that the sample is representative is by comparing the characteristics of the dropouts with those of the participants who completed the research.

2. The test sensitisation effect

This occurs when participant responses to a question are affected by an earlier response. For example, participants may recall what they responded to in the pre-measures, and hence may reply the post-purchase evaluations in a consistent manner (Churchill 1995). This effect of an earlier response on a later response is anticipated to be small in this research, based on the assumption that a human's memory capacity is limited. There were in total twenty-five attributes, and participants encountered these for the first time when they responded to the pre-measurement. It would have been unlikely that they could remember their earlier responses after the meal experience. Nevertheless, in an attempt to minimise this effect, participants were informed at the beginning of the interview that this was academic research, and were requested to provide responses that best corresponded with their true expectations or feelings at the time of the interview.

3. The test reactivity effect

This occurs when participants who are asked to answer a question about behaviour actually affect that behaviour. In other words, participants may become more alert about “behaviour” than in normal conditions. With this research, after participants were exposed to the pre-measures they may have been more alert to the service received, and evaluated the service more critically than they would have without exposure to the pre-measures. Therefore, a control group was placed into this research to determine the effect of the responses to the pre-measures on the post-purchase evaluations.

4. Instrument variation

When research shows that one measure is not as valid as originally thought, this might threaten the validity of the study. If the measure is subsequently changed, then this change may account for the difference in the measurement. Whitley (1996) advised researchers to retain the old measure, and add a new measure to the study. In this research, the measures developed for the main field survey were pre-tested and validated. Thus, instrument variation was not a potential threat to the validity of the study.

5. The history effect

This occurs when an event external to the research affects an assessment, so that it is difficult to determine whether changes from one assessment to another are due to the causal variables under investigation, or due to the external event. This effect can be easily controlled in a laboratory experiment, but it is difficult to control or isolate in a field survey. In this research, however, the interval of the service experience was about one to two hours, and some events or instances can happen inside the restaurant that may affect participant evaluations of the service. For example, the presence of other customers may have an impact on participant

evaluation of the restaurant's service. When participants wanted to enjoy a quiet dinner with their friends or families, but were assigned to sit at a table next to a group of noisy customers and there was no other tables available, this may have an effect on their evaluations of the overall service experience. There is an awareness in this research that external events may happen during the conduct of the study which can jeopardise its validity. In order to minimise the history effect, participants were clearly instructed to provide the responses that corresponded to their opinions and feelings of the restaurant's service.

In addition to the above extraneous variables, there were three potential sources of invalidity for the study. The first was maturation. Participant opinions may change as a result of the passage of time rather than the causal variables under investigation. For example participants may become tired, and this can affect their evaluations of the service experience. The second potential source of difficulty was selection bias. This can arise from the way the participants are selected (Churchill 1995). In an attempt to avoid selection bias, the participants in this research were selected by a systematic process (See section 5.3.5). The last factor that could potentially have jeopardised the validity of the study is the use of incentives. However, in Swan's (1981) study, there was no evidence indicating incentives caused a biased sample.

5.3.4 Sample Design

Family/popular Chinese chain restaurants were selected in this study. The reasons for selecting these restaurants have been explained earlier (See section 1.5). In the summer of 1998, letters were sent to the management of these restaurants to solicit their support and co-operation with the study. However, they rejected the researcher's request. Therefore, interviews could only be conducted outside the restaurants. These restaurants were scattered over Hong Kong island, Kowloon and New Territories. This spread was aimed at achieving a more representative sample. The research population was the customers of the chosen restaurants, whose ages were between 18 to 50.

There were two major considerations in determining the sample size. The first involved time and budget. The second was that the sample size had to be large enough to employ structural equations modelling, and draw valid conclusions. Anderson and Gerbing (1988) mentioned that the sample size needed to obtain meaningful parameter estimates. These authors suggested that a sample size of 150 or more should be required to obtain parameter estimates that have standard errors small enough to be of practical use. In their 1984 study, they found that a sample size of 150 was sufficient to obtain a converged and proper solution for models with three or more indicators per factor. As for marketing studies, the sample size of 200 is commonly used. Considering time and financial constraints, 200 was set as the target sample size for this research.

5.3.5 Data Collection Methods

Personal interviews were utilised, and interviews were held between 11:00 – 2:30 p.m., and 6:00 – 9:30 p.m. The survey was conducted over a four month period. The participants were selected by following a systematic process designed to minimise any personal judgement involved in the selection. Customers coming to the restaurants were approached by the fieldworker at about 5 - 10 minute intervals. They were briefly told about the purpose of the research, and were invited to take part in the study. As Hong Kong consumers are generally very reluctant to take part in surveys, customers were told that a gift would be provided to them as a token of appreciation for their participation. They did not know what the gift was unless they asked the fieldworker. It would have been extremely difficult to achieve the target sample size without using some incentives, especially for research using pre and post-measure statements. If the customers agreed to participate, they were then told about the data collection procedure, and were requested to provide responses which best reflected their true opinions.

Problems Encountered in Data Collection

There were some difficulties with soliciting the expectation data prior to the service encounter, and with completing the perception statements after consumption. When

customers agreed to take part in the study, they were told that they would be interviewed twice: the first interview took place prior to the service encounter, and the second immediately after customers left the restaurant. The problem encountered was that respondents took part in the first interview and completed the pre-measures statement, but did not return for the second interview. There are a number of reasons for this: customers may have forgotten about the scheduled interview, may have been in a hurry, may have lost interest in the study, or may have felt tired and left without notifying the fieldworker. It certainly took a long time to obtain a set of completed pre-measure and post-measure statements. In some cases, the second interviews were conducted very late in the evening.

In order to overcome the above two major problems, the data collection method was altered slightly. It was decided that personal interviews should be used to obtain the pre-measure responses, but post-purchase evaluations were self-administered. The participants were given the second part of the questionnaire with a return envelope, and a cover letter requesting them to complete and return the questionnaire within a week. Because the participants were requested to fill the questionnaire by themselves, it was important at the time of the first interview to ensure that they understood all the questions, and had no difficulties in reading. They were informed that a gift would be sent to them as a token of appreciation when the second part of their questionnaire was received. An identical number was written on the pre-measures questionnaire and post-measures questionnaire, for the purpose of later correlation. The pre-measure questionnaire contained a few demographic questions.

A separate sample of fifty respondents was drawn from the same restaurants on the days when the main field survey was carried out. The fifty respondents were only required to answer the post-purchase questionnaire and they did not receive the gift. There is more discussion of this sample in section 5.3.7

It was estimated that roughly one out of four customers approached agreed to take part in the study. There were some instances when respondents terminated half way through the

first interview. In total, 255 respondents completed the pre-measures questionnaire, but only 217 had returned the post-measures questionnaire. Of those 217 returned questionnaires, there were 8 either with many unanswered questions or in which the demographic characteristics did not correspond to earlier responses. These eight questionnaires were excluded, and the remaining 209 completed responses were used for analysis. 115 of the 209 respondents were willing to provide their names and addresses for the next phase of the study (See Chapter 6).

5.3.6 Characteristics of the Respondents of the Sample

The sample consisted of 37.3 percent males, and 62.7 percent females. About 43.5 percent were aged 18 – 30, and 44.7 percent had attained secondary level of schooling. The median personal income was between \$10,001 and \$15,000. In comparison with the Hong Kong Population in 1996, the sample consisted of relatively more females, and was younger than average. In terms of education level, the sample included more respondents who had reached the tertiary level. However, more degree and non-degree programs were offered in Hong Kong over the past five years, so the information contained in the 1996 census report should not be used to project the current situation (Hong Kong Government Census and Statistics Department 1996). The census was conducted every five years by the Census and Statistics Department of the Hong Kong Government. As there is no updated information about the Hong Kong Population, the 1996 census was used for reference only. There were some deviations in terms of the demographic characteristics of the respondents from the demographic characteristics of the Hong Kong population in 1996, despite efforts made to match the two. Furthermore, it should be noted that the distribution of the demographic characteristics of the Hong Kong population might have shifted since 1996.

Table 5.9 Demographic Characteristics of the Respondents

Demographics	Number	Percentages
Sex		
Male	78	37.3
Female	131	62.7
Age		
18 – 25	50	23.9
26 – 30	41	19.6
31 – 35	46	22.0
36 – 40	29	13.9
41 – 45	21	10.0
46 – 50	22	10.5
Marital Status		
Single	100	48.1
Married	106	51.1
Divorced	2	1.0
Education Attainment		
Primary or below	27	13.0
Secondary	93	44.7
Post-secondary	25	12.0
Tertiary or above	63	30.3
Occupation		
Professional / Executive	40	19.2
White Collar	76	36.5
Student	22	10.6
Entrepreneurs / Self-employed	7	3.4
Managerial	9	4.3
Blue Collar	14	6.7
Housewife	26	12.5
Unemployed	5	2.4
Others	9	4.3
Personal Monthly Income		
\$5,000 or below	51	24.5
\$5,001 - \$10,000	44	21.2
\$10,001 - \$15,000	49	23.6
\$15,001 - \$20,000	23	11.1
\$20,001 - \$25,000	14	6.7
\$25,001 - \$30,000	13	6.3
\$30,001 or above	14	6.7

5.3.7 Evaluations of the Quality of the Data

Prior to the data analysis, this section examines the quality of the data obtained from the 209 respondents. It begins with a comparison of the demographic characteristics of the respondents, and those who dropped out of the study. The respondents of the sample were then compared to the respondents of the control group to determine the effect of pre-measures and incentives on post-purchase evaluations.

Identifying Reasons for Participants Dropping out of the Study

Using cross-tabulation analysis, the demographic characteristics of the 209 respondents were compared with the 38 respondents that dropped out of the study. There was no significant difference between the two groups with respect to the proportions of males and females. (Chi-square = 0.032 and $p=0.858$). In terms of the age, it was found that there were significant differences in the proportions of respondents in the age groups of 18 – 25 and 41 – 45 between the two groups. Of the 38 drop outs, there was a relatively higher proportion of people in the 41 – 45 age group than in the 18 – 25 group. Of the 209 respondents, the situation was inverted (Chi-square = 11.977 and $p = 0.035$). It appears that the older respondents were more unwilling to reply to the second part of the questionnaire. There are two reasons for this. First, older people are generally less educated than young people in Hong Kong, according to the 1996 Census report, and their attitudes towards surveys may be neutral or somewhat negative. Second, they tend to be more conservative, and may be unwilling to disclose personal feelings or information.

The expectation responses of the 38 drop-outs were also compared with those of the other respondents. Using an independent sample t-test, “Best Brand Norm” results showed that there were four attributes whose values showed significant differences between the two groups. The first was the “food nutritional value”, and the other three were mostly associated with the environment in the dining area. They were “hygiene”, “layout” and “comfort of the environment”. For the predictive expectations, except “food variety” and

“food nutritional value”, there were no significant differences found between the two groups. A close look at the results also revealed that the values of the expectations of the above attributes of the 38 drop-outs were significantly lower than those of the other respondents. Age could have been a potential factor causing the difference between the two groups regarding the expectations of these attributes. Therefore, an independent sample t-test was conducted again on the expectations of the above attributes between the age groups of 18 – 25 and 41 - 45 for the two groups respectively. No significant difference was found. In conclusion, there is no evidence to suggest that those who had dropped out of the study were significantly different from the sample, other than for the reasons discussed above (Appendix 5.6 contains the results of the cross-tabulation analysis, and t-test statistics).

Effects of Pre-measures and Incentive on Post-Purchase Evaluations

A separate sample of fifty respondents was drawn from the same restaurants on the days when the main survey was conducted. The fifty respondents were approached by the fieldworker when they left the restaurants and they were asked to evaluate the quality of the service received and their feelings towards the overall service experience. The refusal rate was high, but this was expected because the respondents were not rewarded.

This sample included more mature respondents compared with the sample of the main study, thus the proportion of married respondents was relatively higher. As with the preceding analysis, respondent perceptions of the service received from the two groups were compared using an independent sample t-test. There was no significant difference found between the two groups on the evaluations of the service, except for “food uniqueness”. This finding was somewhat surprising, because both samples of respondents evaluated the service performance of the same restaurants, and there should not have been any significant difference in terms of “food uniqueness”. As no other rational explanation could be deduced, the difference found could only be attributed to chance. There was no significant difference between the two groups of respondents regarding their satisfaction towards the overall service, and their evaluations of the overall quality

of the service. There was also no evidence indicating that the extraneous variables interfered with the respondents post-purchase evaluations, and data analysis could proceed comfortably. (Appendix 5.7 contains the demographic characteristics of the control sample, and the results of the test-statistics)

5.4 The Theory of Structural Equation Modelling

The conceptual model presented in Chapter 4 was derived from the literature review and exploratory research. It depicted the hypothesised relationships among the theoretical constructs (also referred to as latent variables). Some of these relationships were interdependent: for example “customer satisfaction” was used to explain the variance in “global quality”, both of which in turn were used to explain the variance in “behavioural intentions”. Furthermore, the theoretical constructs were unobservable and the observed indicators approximately measured them. Considering the complexity of the model, the analytical tool which had the ability to best estimate the multiple and interrelated relationships, whilst accounting for the measurement errors in the estimation process, was structural equation modelling (Hair et al. 1998). Thus, this section introduces the theory of structural equation modelling (SEM) in a non-technical manner, including the applications of SEM, and the steps in SEM approaches.

Testing with a structural equation model is as a way of testing a specified theory about relationships between theoretical constructs (Jöreskog 1993). The theory specifies how the constructs are interrelated, and their directional relationships. Before the theory can be tested, a structural model needs to be specified and data needs to be collected. The fundamental hypothesis for structural equation modelling is that the covariance matrix of the observed variable is a function of a set of parameters. If the model is correct and if the parameters are known, then the population covariance matrix can be exactly reproduced (Bollen 1989). For simplicity, it is expressed as:

$$\Sigma = \Sigma(\theta)$$

Where

Σ (sigma) is the population covariance matrix of observed variables

θ (theta) is a vector that contains the model parameters

$\Sigma(\theta)$ is the covariance matrix expressed as a function of θ

When the equality expressed in the above equation holds, the model is said to be consistent with the data. However, in practice, neither the population covariance or variance, nor the parameters are known, thus parameter estimates are based on sample estimates of the covariance matrix. In regression analysis, estimation of the regression coefficients is derived from minimising the sum of squared differences of the predicted and observed dependent variables for each observation. In structural equation modelling, estimation involves finding the estimates of parameters, so that the covariance matrix implied by the model is as close as possible to the sample covariances (Bollen 1989). It is expressed as:

$$F [S, \Sigma(\hat{\theta})]$$

F is denoted as the fitting function, and will be discussed in detail in estimation methods in section 5.4.2

5.4.1 Applications of Structural Equation Modelling

Jöreskog (1993) discussed three applications of structural equation modelling. The first was “strictly confirmatory”. This occurs when a single model is formulated and data are collected to test whether the model should be accepted or rejected. However, this use of SEM is very rare, because even when the proposed model has a good fit, it may only be one of several which do so. The second application of SEM occurs when several alternative models are formulated, and the researcher compares these models to provide the best fit. The third application of SEM involves “model generation”. This is when a model is initially specified, and the purpose of the modelling is to improve it through re-specification of the structural or measurement models. Jöreskog (1993) emphasised that the re-specifications of the model must be based on theoretical justification, rather than be empirically driven. He argued that each parameter in the resulting model must be meaningful and substantively interpretable. The use of structural equation modelling based on theory to advance existing knowledge in marketing was deemed appropriate.

5.4.2 Steps in Structural Equation Modelling

This section presents the steps associated with structural equation modelling, which mainly follow the Hair et al. (1998) seven-stage approach. The exception is that the discussion of model identification preceded the discussion of model estimation, because it seemed more logical to ensure that the parameters were identified prior to estimation. Similar modelling procedures have been discussed in Kelloway (1998), Diamantopoulos (1994) and Bollen and Long (1993). An extensive review of the literature on structural equation modelling was also conducted, and was included in the discussion.

1. Develop a Theoretically Based Model

The relationships among a set of constructs must be developed on the basis of a theory or past research in the area (Bollen and Long 1993). Structural equation modelling is not an analytical tool for proving “causality”. It can only determine whether the model is consistent with the data, by analysis of covariance matrices. If the model fits the data, then the model may be valid. Hair et al. (1998) discussed at least four conditions must be met in order to make causal assertions. They are (1) sufficient association between the two variables, (2) temporal antecedence of the cause versus the effect, (3) lack of alternative causal variables, and (4) a theoretical basis for the relationship. Thus, it is important that theory rather than data guide the modelling approach. Chapter 3 and 4 presented the development of the theoretical model for this study.

2. Construct a Path Diagram of Causal Relationships

Path diagrams are useful for displaying the pattern of causal relationships among a set of constructs and observed indicators. They are constructed using three elements, namely constructs, arrows and observed indicators. Constructs are represented in a path diagram by ellipses, observed indicators are represented by squares and arrows are used to indicate the relationships among the constructs and among the constructs and observed indicators.

Constructs are classified as either exogenous or endogenous constructs. Exogenous constructs (also known as independent variables) are not explained by any other constructs in the model. “Expectations”, “perceived performance” and “perceived sacrifice” are classified as exogenous constructs. On the other hand, constructs whose variation is actually explained by exogenous constructs or other constructs in the model are known as endogenous. “Encounter quality”, “customer satisfaction”, “global quality”, “perceived value” and “behavioural intentions” are endogenous constructs. The observed indicators of exogenous constructs are denoted by an “x”, and those of endogenous constructs by a “y”. The path diagrams of the measurement model and structural model are shown in section 5.5.

3. Convert the Path Diagram into a Set of Structural and Measurement Models

This step involves translating the path diagram into two sets of equations, one set representing the relationships among the constructs in the structural model, and the other the relationships among the constructs and observed indicators in the measurement model.

a. The Structural Model

Endogenous constructs are denoted by η (eta), and exogenous constructs are denoted by ξ (xi) in the equations. Each endogenous construct is expressed as a function of exogenous constructs and other endogenous constructs. The error term for each structural equation is denoted by ζ (zeta). The effects of endogenous constructs on other endogenous constructs are denoted by β (beta), and the effects of exogenous constructs on endogenous constructs are denoted by γ (gamma). The correlations between the exogenous constructs are denoted by ϕ (phi) and the correlations between the endogenous constructs are denoted by ψ (psi). The structural model is expressed by a system of linear equations as:

$$\eta = B\eta + \Gamma\xi + \zeta$$

where η = a vector of endogenous constructs

B = a matrix of coefficients relating the endogenous constructs to one another

Γ = a matrix of coefficients relating the exogenous constructs to the endogenous constructs

ξ = a vector of exogenous constructs

ζ = a vector of errors in equations

For example, it was hypothesised that “perceived global quality” and “customer satisfaction” affect “behavioural intentions”. This can be expressed as:

Behavioural Intentions = f (customer satisfaction, perceived global quality)

b. The Measurement Model

Unlike in physical science, most constructs in the social and behavioural sciences are unobservable, and thus a set of observed indicators is designed to measure the dimension of each. The advantage of the SEM is that it can simultaneously assess the quality of measurement, and examine the hypothesised relationships among the constructs, while taking into account measurement errors.

In exploratory factor analysis, researchers do not have any control over factor loadings, but in the measurement model they have complete control over which variables describe each construct (Hair et al. 1998). Thus, the latter analysis is confirmatory in nature. The coefficient (also known as the factor loading) relating each observed indicator to its construct is denoted by λ (lamda). Errors in the measurement of exogenous constructs are denoted by δ (delta), and errors in the measurement of endogenous constructs are denoted by ε (epsilon). The equations for the measurement model are expressed as:

$$y = \Lambda_y \eta + \varepsilon$$

$$x = \Lambda_x \xi + \delta$$

where x = a vector of observed variables
 y = a vector of observed variables
 Λ_x = a matrix of the loadings of the x 's on the ξ 's
 Λ_y = a matrix of the loadings of the y 's on the η 's
 δ = a vector of the measurement errors for x
 ϵ = a vector of the measurement errors for y

Anderson and Gerbing (1988) advocated a two-step approach for estimating and evaluating structural equation models. This approach involves assessing the measurement model first until all constructs are measured satisfactorily, then assessing the measurement model and the structural model simultaneously. Alternatively, the one-step modelling approach is that both measurement and structural models are to be assessed simultaneously. Hair et al. (1998) support the use of the two-step approach when the measures are less reliable, or the theory is only tentative. As the measures were developed specifically for this study and the model is only tentative, a two-step modelling approach was the most appropriate.

4. Assess the Identification of the Model

Identification focuses on the question of whether unique values for the parameters of the proposed model can be obtained using the information provided by the data. A necessary condition for identification is when the number of parameters to be estimated is less than or equal to the number of non-redundant elements of S , the sample matrix of covariance among observed variables (Long 1994). If t is the number of parameters to be estimated, then the necessary condition for identification is:

$$t \leq [(p+q)(p+q+1)]/2$$

where p = number of observed y variables
 q = number of observed x variables

A model is said to be just-identified when $t = [(p+q)(p+q+1)]/2$. That is, there is one and only one estimate for each parameter. In this case, all the information available is used in the estimation of parameters, and there is no information left to test the model. Thus, a just-identified model has zero degrees of freedom. When $t < [(p+q)(p+q+1)]/2$, then the model is said to be over-identified. In this case, it is possible to obtain several estimates for the parameters and the goal of the SEM is to achieve acceptable fit with the largest number of degrees of freedom (Hair et al. 1998). When $t > [(p+q)(p+q+1)]/2$, the model is said to be under-identified. It attempts to estimate more parameters than there is information available, thus there would be infinite number of values for the parameters, and the results would not be meaningful. In the latter case, Jöreskog and Sörbom (1989) suggested to set some appropriate conditions to ensure that all the parameters are identified.

5. Identify the Input Data and Estimate the Proposed Model

a. Data Types

Either covariance or correlation matrices can be used as input for model estimation and testing. However, both matrices require that the observed variables are continuously distributed. In other words, the variables are measured on interval or ratio scales, otherwise different types of correlation matrices have to be computed prior to model estimation and testing. Jöreskog and Sörbom (1996) provide a detailed discussion on the types of data and correlation matrices.

Bentler and Chou (1987) considered that “continuous methods can be used with little worry when a variable has 4 or more categories but with 3 or fewer categories, one should consider the use of alternative methods”. Since the variables in this study were measured using a 7 point rating scale, the data were assumed to be approximately continuous, and covariance matrices were used as input to all analyses. Bagozzi and Baumgartner (1994) recommended using covariance matrices as input to model estimation and testing, as they explained that correlation matrices in some cases could produce inaccurate standard errors of estimated parameters.

b. Estimation Methods

Estimation involves finding whether the estimates of parameters such that the implied covariance matrix $\Sigma(\theta)$ are as close as possible to the sample covariance matrix S . The method to achieve this is by minimising the fitting function, $F [S, \Sigma(\theta)]$. The three commonly used fitting functions in structural equation modelling are Maximum Likelihood (ML), Unweighted Least Square (ULS) and Generalised Least Squares (GLS) (Bollen 1989). These functions can generate consistent estimates. This means that when the estimates are close to the true parameter values given, then the model is correct.

I. Maximum Likelihood Function (ML)

The Maximum Likelihood Function (ML) is the most widely used fitting function in structural equation modelling. However, in order to apply this method, the data must be normally distributed. The general form of a ML fitting function is:

$$F_{ML} = \log |\Sigma(\theta)| + \text{tr} (S \Sigma^{-1}(\theta)) - \log |S| - (p+q)$$

II. Unweighted Least Squares (ULS)

Unweighted Least Squares (ULS) is a free distribution estimation method. Jöreskog (1989) commented that free distribution estimation methods normally require relatively large sample size, and are not always feasible. The general form of the ULS fitting function is:

$$F_{ULS} = (1/2) \text{tr} [(S - \Sigma(\theta))^2]$$

III. Generalised Least Squares (GLS)

The Generalised Least Squares (GLS) weights the elements of $(S - \Sigma(\theta))$ according to their variances and covariances with other elements. The general form of the GLS fitting function is:

$$F_{GLS} = (1/2) \text{tr} \{ ([S - \Sigma(\theta)]W^{-1})^2 \}$$

where W^{-1} is a weight matrix for the residual matrix. ULS is a special case of GLS when $W^{-1} = I$.

6. Evaluate Goodness-of-Fit Criteria

Bagozzi and Yi (1988) provided an excellent review of the criteria for assessing structural equation models. Basically, they can be assessed on two levels: the overall model, and internal structure of the model. Prior to evaluating the goodness of fit for the model, it is important to ensure that the estimates do not exceed their acceptable limits. The most common problems are 1) negative or non-significant error variance for ζ , δ and ϵ , 2) correlations (ϕ) greater than one, and 3) extremely large parameter estimates. Bagozzi and Yi (1988) suggested that model mis-specification and identification problems, input errors and violations of the statistical assumptions of the method, might cause these improper solutions. These problems must be resolved first before the model can be evaluated.

a. Overall Measures of Fit

There are several measures that can be used to evaluate the overall fit of the model.

The most frequently used are:

1. χ^2 test
2. Normed fit index
3. Goodness-of-fit index (GFI)
4. Root Mean Square Residuals (RMSR)
5. Total Coefficient of Determination (R^2)

1. χ^2 test

The goodness-of-fit test is derived directly from the value of the fitting function. It is the product of the value of the fitting function and the sample size minus one (Hoyle 1995).

$$\chi^2 = F (n-1)$$

where F = value of the fitting function

n = sample size

A large χ^2 value indicates a good fit, and a small χ^2 indicates a bad fit (Jöreskog and Sörbom 1982). However, the χ^2 test is sensitive to sample size. As the sample size gets large, the chance of rejecting a model increases. On the other hand, a small sample size may lead to acceptance of an invalid model (Bagozzi and Yi 1988). Hair et al. (1998) suggested that χ^2 test can be used for sample sizes between 100 and 200. If the sample size is outside this range, this measure becomes less reliable. Alternative measures of fit have been developed which are less affected by the sample size. They are discussed below.

2. Normed Fit Index

Bentler and Bonett (1980) proposed a model testing strategy based a comparison of the fit of the hypothesised model to the “null” or “independence” model. The Normed Fit Index is defined as:

$$NFI = (\chi^2_{\text{null}} - \chi^2_{\text{hypothesized}}) / \chi^2_{\text{null}}$$

According to Bentler and Bonett (1980), $NFI \geq 0.90$ indicates an adequate fit. The index represents the percentage improvement in fit over the independence model. For example, if the $NFI = 0.95$, then the hypothesised model is 95 percent better fitting than the independence model.

3. Goodness-of-fit index

The goodness-of-fit index is a measure of the relative amount of variances and covariances jointly accounted for by the model (Jöreskog and Sörbom 1982). It is defined as:

$$\text{GFI} = 1 - \frac{\text{tr}(\hat{\Sigma}^{-1} S - I)^2}{\text{tr}(\hat{\Sigma}^{-1} S)^2} \quad \text{for Maximum Likelihood}$$

where $\hat{\Sigma}^{-1}$ = inverse of implied covariance matrix
S = observed covariance matrix
tr = trace

The adjusted goodness-of-fit index (AGFI) adjusts the GFI for degrees of freedom in the model. It is defined as:

$$\text{AGFI} = 1 - \frac{[(p+q)(p+q+1)] [(1-\text{GFI})]}{2df}$$

where p = number of y observed variables
q = number of x observed variables
df = degrees of freedom

The values of GFI and AGFI range from 0 to 1. There are no guidelines regarding how high GFI and AGFI should be good-fitting models, but researchers have typically used GFI value above 0.90 and AGFI value above 0.80 as the cut-off point (Sharma 1996). Kelloway (1998) noted that these guidelines are based on experience and are highly arbitrary, and thus should be treated with caution.

4. Root Mean Square Residuals (RMSR)

The RMSR indicates the average of the residual variance and covariances. It is defined as:

$$\text{RMSR} = [2 \sum_{i=1}^k \sum_{j=1}^i (S_{ij} - \hat{\sigma}_{ij})^2 / (p+q) (p+q+1)]^{1/2}$$

where S_{ij} = observed covariance matrix

$\hat{\sigma}_{ij}$ = estimated covariance matrix

p = number of y observed variables

q = number of x observed variables

The larger the RMSR, the less is the fit between the model and the data, and vice versa. It is normally used to compare the fit of two different models for the same set of data (Jöreskog and Sörbom 1982). Further, careful inspection of individual residuals and Q-plots of normalised residuals can also suggest possible sources of model mis-specification.

5. Total Coefficient of Determination (R^2)

The coefficient of determination (R^2) indicates the strength of the relationships for all structural equations taken jointly. It is defined as:

$$\text{TCD} = 1 - \frac{|\hat{\Psi}|}{|\text{cov}(\eta)|}$$

where $|\hat{\Psi}|$ = determinant of the covariance matrix of ζ

For the measurement model, the respective coefficients of determination are:

$$\text{TCD}_x = 1 - \frac{|\hat{\theta}_\delta|}{|S_{xx}|}$$

$$\text{TCD}_y = 1 - \frac{|\hat{\theta}_\epsilon|}{|S_{yy}|}$$

where $|\hat{\theta}_\delta|$ = determinant of the covariance matrix of the error variances for x

$|\hat{\theta}_\epsilon|$ = determinant of the covariance matrix of the error variances for y

$|S_{xx}|$ = determinant of observed covariance matrix for x

$|S_{yy}|$ = determinant of observed covariance matrix for y

Both TCD_x and TCD_y show how well \underline{x} and \underline{y} respectively serve as joint measurements of ξ and η . Kelloway (1998) explained that the total coefficients of determination (TCD) is not a measure of overall model fit in spite of many researchers having interpreted it in such a way. The coefficient of determination measures how well the structural equations account for the variance in endogenous variables. It is possible to have a well fitting model that explains only a modest amount of variance in the endogenous variables. Conversely, it is also possible to have a large TCD and an unacceptable χ^2 -test (Bagozzi and Yi 1988).

Other Fit Indices

Other measures have been suggested for evaluating the overall fit of a model, but their usefulness remains questionable. Hoetler (1983) proposed the critical N (CN) index. The value of the CN indicates the size a sample must achieve in order to accept the fit of a given model on a statistical basis. The rule of thumb for determining whether the discrepancy between an observed and implied variance-covariance matrix is trivial is $\text{CN} > 200G$, where G is the number of groups analysed simultaneously. In addition, the ratio of the χ^2 value and its degree of freedom has also been used as an alternative

measure of overall model fit (Bollen and Long 1993). However the criterion for a good fit is less clear, and ranged from the ratio value of five to as low as two.

b. Internal Structure of a Model Fit

The overall measures suggest whether the model is a good fit for the data. It is possible that the overall model fit is good, but some hypothesised relationships are insignificant, and or some measures are low in reliability. Bagozzi and Yi (1988) suggested that reliability of measures could be evaluated by three criteria: 1) individual item reliability, 2) reliability for the composite of measures of a latent variable, and 3) the average variance extracted from a set of measures of a latent variable.

1) Individual item reliability is defined as:

$$\rho_i = \frac{\lambda_i^2 \text{ var } (T)}{\lambda_i^2 \text{ var } (T) + \theta_{ii}}$$

where λ = factor loadings

$T = \eta_j$ or ξ_k

θ = measurement errors

The reliability of an item equals its true score variance divided by the total variance. In the LISREL program, it is denoted as the “squared multiple correlations for the x and y variables”.

2) The composite reliability is defined as:

$$\rho_c = \frac{(\sum \lambda_i)^2 \text{ var } (T)}{(\sum \lambda_i)^2 \text{ var } (T) + \sum \theta_{ii}}$$

where the summation is over the items comprising the composite.

It is recommended that the composite reliability should be greater than 0.60. As for the individual item reliability, the standard is less clear.

3) The average variance extracted as defined by Fornell and Larcker (1981) is:

$$\rho_v = \frac{\sum \lambda_i^2 \text{var}(T)}{\sum \lambda_i^2 \text{var}(T) + \sum \theta_{ii}}$$

This measure reflects the overall amount of variance in the indicators captured by the latent variable. Hence, ρ_v should be greater than 0.50. If ρ_v is less than 0.50, it means that the variance due to measurement error is larger than the variance captured by the construct.

Other criteria for assessing the internal structure of a model are:

1. Parameter estimates
2. Normalised residuals

Parameter estimates include path coefficients, correlations and error variance. Examining the sign and size of these parameter estimates can assess the internal quality of a structural model. Furthermore, the threshold of normalised residuals is ± 2 . A value with a magnitude greater than 2 indicates that a significant amount of variance remains unexplained, and this suggests that there may be a specification error in the model (Bagozzi and Yi 1988).

7. Modify the Model if Theoretically Justified

It has been discussed in section 5.4.1 that the “Strictly Confirmatory” use of SEM is very rare. Re-specification of a model involves adding or deleting some estimated parameters from the original model, with the aim of enhancing the model fit. The criteria discussed previously can be used to locate the source of specification errors. In addition, the LISREL program provides a modification index for each fixed and constrained parameter in the model. This index indicates how much Chi-square is expected to decrease if a fixed or constrained parameter is set free and the model is re-

estimated (Jöreskog 1993). The program also provides an expected change in parameter value, which indicates how much the parameter is expected to change if it is set free. It is important that the process of model re-specification be guided by theory rather than empirical data. Without theoretical justification, the improvement in model fit may simply be a capitalisation on chance (Aish and Jöreskog 1990).

5.5 Data Analysis

The data analysis in this section examines the reliability and validity of the measures, and evaluates the hypothesised relationships among the constructs in the model. Section 5.3.1 presented the process of the scale development. There were three scales specifically designed for this study. They were quality attributes of restaurant services, perceived value, and perceived sacrifice, whilst the other scales were mainly adapted from the literature. This section presents the use of confirmatory factor analysis to ascertain the reliability and validity of these scales, this is then followed by a discussion of the estimation and evaluation of the structural model. This section begins with a review of the LISREL program, which was designed by Jöreskog and Sörbom for analysing structural equation models.

Anderson and Gerbing (1988) suggested using a two-step approach to estimating and evaluating the measurement and structural models. They claimed that a good measurement of the latent variable is *prerequisite* to the analysis of the causal relationships among the latent variables (*italics added*). According to these researchers, the measurement and structural models can be viewed as conceptually distinct. The measurement model specifies the relations of the observed measures to their posited underlying constructs, and the structural model specifies the causal relations of the constructs to one another as posited by some theory. The two-step approach involves assessing the measurement model first until all constructs are measured satisfactorily, then simultaneously assessing the measurement and structural models. In this study, both the measures and the theoretical model were preliminary, thus application of the two-step approach was deemed appropriate.

5.5.1 Introduction to the LISREL Model

This section presents how structural equation modelling was implemented through the LISREL computer program. It includes the specifications of the LISREL model and presents the relationships among the constructs, and those between the observed indicators and theoretical constructs in a linear system of equations.

LISREL is a computer program for structural equation modelling. The acronym stands for *linear structural relationships*. Although in recent years a number of software packages have been designed to perform structural equation modelling, such as EQS (Bentler 1992) and AMOS (Arbuckle 1997), LISREL is well-known for analysing structural equations, and some researchers refer to structural equation modelling as LISREL modelling or LISREL methodology. The computer program was first developed in the 1970s by Jöreskog, and now is in its eighth version. In view of its widespread application, it was used to analyse the data in this study. LISREL 8 accepts two different command languages in the input file: they are SIMPLIS and LISREL respectively (Jöreskog and Sörbom 1993). The former allows programming through specifying equations, whereas the latter accepts input in the form of matrices. Thus LISREL 8 can produce SIMPLIS or LISREL output. As with the command language, SIMPLIS output presents the model in the form of equations, whereas the LISREL output presents the model in the form of matrices. The SIMPLIS command language is much simpler, and less likely to encourage mistakes than the LISREL command language, thus it was used to formulate the LISREL model for this study.

LISREL models generally consist of two parts: the measurement model and the structural equation model. The measurement model specifies how the latent variables are measured in terms of the observed variables, and provides information about the reliability and validity of the latter. The structural equation model specifies the relationships between the latent variables, and provides information about the causal effects and the amount of unexplained variance (Jöreskog and Sörbom 1988).

5.5.2 The Measurement Models and Results

Since a new sample was drawn for the main survey (see section 5.3.3), it is of critical importance to ascertain that the scales developed in section 5.3.1 are indeed highly reliable and valid. Gerbing and Anderson (1988) suggested that the traditional methods such as coefficient alpha, item-to-total correlation, and exploratory factor analysis were useful methods to develop preliminary scales and to reduce a large number of items to a more manageable size. However, these researchers argued that the traditional methods could not provide an assessment of the unidimensionality of the measures, which was considered a necessary requirement for valid measurement. Unidimensional measures denote those items forming a scale which measures only its underlying construct and not other constructs in the study. Confirmatory factor analysis has been suggested an analytical tool which can be used to assess the unidimensionality of the measures, and therefore it should be incorporate in the paradigm of scale development (Gerbing and Anderson 1988). Furthermore, the preliminary scales developed from the traditional methods can be further tested and refined using confirmatory factor analysis.

Sharma (1996) has distinguished the differences between exploratory factor analysis and confirmatory factor analysis. Exploratory factor analysis is useful when the structure of the factor model is not known (that is, when the relation of measures to the underlying constructs are not known). It can be used to reveal or identify the structure of the factor model using the empirical data. In contrast, when applying confirmatory factor analysis, the structure of the factor model needs to be specified based on some underlying theory or previous research, and the goal is to assess how well the empirical data conform to the hypothesised factor model. In order to apply confirmatory factor analysis, the scales developed in section 5.3.1 were used as a basis to specify the structure of the measurement models.

Prior to formulating the measurement model, the data were explored using PRELIS. The purpose was to identify any variables that might have violated the assumption of normality. This was considered important because, in order to apply Maximum Likelihood, the data are expected to be normally distributed. Further, the type of input

matrix to be used in structural equations is dependent on the nature of the data (see Data Types in section 5.4). Bagozzi and Baumgartner (1994) indicated that the normality of the data can be assessed by examining the histograms and stem-and-leaf plots and, by computing the coefficients of skewness and kurtosis. Skewness indicates how symmetric is the distribution of a variable. It is represented by $[\Sigma(x_i - \bar{x})^3 / (n-1)] / s^3$. If the variable is normally distributed, its skewness will be zero. Kurtosis is a measure of distribution tail heaviness and peakedness near the centre. It is represented by $[\Sigma(x_i - \bar{x})^4 / (n-1)] / s^4 - 3$. For a symmetric distribution, the value of kurtosis is zero (Watson et al. 1990).

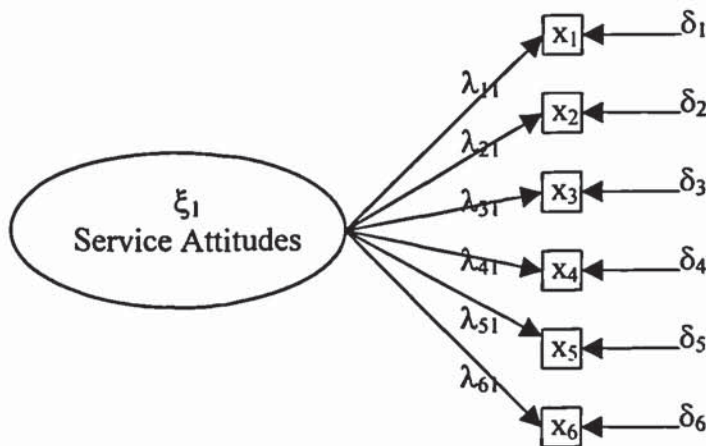
The results of this analysis showed that the variables were approximately normally distributed. Although there were several variables whose skewness and kurtosis coefficients were significantly greater than zero, examination of their histograms and stem-and-leaf plots suggested that these data were relatively normally distributed. As there are no definite cut-off points suggesting when data would not be regarded normally distributed, Byrne (1998) followed the advice of Curran et al. (1996) and considered that data are moderately non-normal if their skewness coefficients are between 2.00 and 3.00, and Kurtosis coefficients between 7.00 and 21.00. Using these as guidelines, the skewness coefficients ranged from 0.021 to -1.015, and the kurtosis coefficients ranged from -0.007 to 2.458 respectively. These values are far less than those considered by Curran et al. (1996), and thus the covariance matrix and Maximum Likelihood were used as input matrices for analysis and estimation respectively. The results of PRELIS can be found in Appendix 5.8.

A multi-item scale was developed to measure each construct in the model. Because there is no difference in the way the measurement models are specified for endogenous variables and exogenous variables, this section will make no clear distinction between exogenous and endogenous variables. It is apparent that a clear distinction between exogenous and endogenous variables is necessary when the measurement and structural models are analysed simultaneously. The procedures used to assess the measures of the constructs adhered closely to Jöreskog's (1993) suggestion, and they included:

- (1) Estimation of the measurement model for each construct separately;
- (2) Then, for each pair of constructs, combining them two by two;
- (3) Then, estimation of the measurement model for all the constructs without constraining the covariance matrix of the constructs.

The results of exploratory factor analysis as described in section 5.3.1 were used as the starting point for specifying the measurement models. The scale developed for measuring the quality attributes of restaurant services was revealed to have six components (see section 5.3.1). They were “service attitudes”, “environmental factors”, “food taste and variety”, “staff competent”, “staff appearance” and “food delivery and order”. Each of these was regarded as a sub-scale of the quality of restaurant services, and examined in turn. For the “service attitudes” sub-scale, six items were found heavily loaded in the pilot study (see Table 5.6). Therefore, the measurement model was specified as follows:

Figure 5.3 Measurement Model for “Service Attitudes”



The above measurement model can be represented mathematically as follows:

$$x_1 = \lambda_{11} (\text{Service Attitudes}) + \delta_1$$

$$x_2 = \lambda_{21} (\text{Service Attitudes}) + \delta_2$$

$$x_3 = \lambda_{31} (\text{Service Attitudes}) + \delta_3$$

$$x_4 = \lambda_{41} (\text{Service Attitudes}) + \delta_4$$

$$x_5 = \lambda_{51} (\text{Service Attitudes}) + \delta_5$$

$$x_6 = \lambda_{61} (\text{Service Attitudes}) + \delta_6$$

Since the latent variables are unobservable, they do not have natural measurement scales. The way to define the scale for the latent variables is by fixing one of the indicators to one, or by fixing the variance of the latent variable to one (Sharma 1996). The indicator chosen to define the scale for the latent variable is called the “reference indicator”. As the name implies, this indicator provides a point of reference for the latent variable. The selection of the reference indicator is rather arbitrary, because it will not affect the overall model fit (Maruyama 1998). Given that there is no rule governing its selection, the item with the largest loading value in the exploratory factor analysis was used as the reference indicator.

The measurement model in figure 5.3 contained six indicators suggesting that 21 data points are available [$6(7) / 2 = 21$], and there are in total twelve parameters to be estimated, including λ_{21} , λ_{31} , λ_{41} , λ_{51} , λ_{61} , δ_1 , δ_2 , δ_3 , δ_4 , δ_5 , δ_6 , and ϕ_{11} . Using the t-rule in section 5.4.2, the model is over-identified. Accordingly, estimation could proceed. Table 5.10 presents the results of the confirmatory factor analysis. Appendix 5.9 contains the complete LISREL output.

Table 5.10 Results of Confirmatory Factor Analysis for “Service Attitudes”

Items	Loadings	Standardised Loadings	(r ²)
(x ₁) – friendly and polite	1.00	0.91	0.83
(x ₂) - serving customers sincerely	1.06 (22.83)*	0.93	0.86
(x ₃) - willing to serve customers	1.12 (22.19)	0.92	0.85
(x ₄) - take initiative to find out what customer’s need	1.04 (17.20)	0.83	0.69
(x ₅) - inform customers of how long until the food will be ready	0.90 (12.59)	0.70	0.49
(x ₆) - offer suggestions to customers when required	0.79 (9.62)	0.58	0.34
Overall Fit Measures :			
Chi-square Statistic	183.45 with 9 degrees of freedom (p = 0.00)		
Normed Fit Index	0.85		
GFI	0.76		
AGFI	0.44		
RMSR	0.18		
(*- t-values in parentheses)			

The results suggest that the model was clearly a poor fit to the data. The Chi-square statistic was significant, and was large relative to the degrees of freedom. Further, the values of other fit measures were all outside the bounds that indicate a good fit (e.g., GFI < 0.90, AGFI < 0.80, NFI < 0.90, RMSR > 0.10) (Kelloway 1998; Sharma 1996; Bagozzi and Yi 1988). The Q-plot of standardised residuals also suggests that the model was a poor fit. (Refer to section 5.4.1 for a discussion of these overall fit Measures.) Although the factor loadings were all significant, with respective t-values greater than 1.96, the squared multiple correlations (r^2) suggested that some indicators were less reliable than others. As a rule of thumb, the squared multiple correlation should be at least 0.50 to be considered acceptable (Sharma 1996; Bagozzi and Yi 1988). While LISREL also provides modification indices suggesting how the model can be improved, the standardised residual matrix was examined first to identify any possible causes for the model mis-specification. An examination of the standardised residual matrix revealed that the covariance among the indicators x_4 , x_5 and x_6 was not adequately explained by the model. Reviewing the content of the six indicators suggested that there could be two factors rather than one accounting for the correlations among the indicators. The first factor encompassed items relating to service personnel attitudes, and the second included the items relating to communication between the service personnel and customers. The model was then re-specified and analysed with two factors, each with three indicators respectively. The results are presented in Table 5.11

Table 5.11 Results of Confirmatory Factor Analysis for “Service Attitudes” and “Communication”

Items	Loadings		Standardised Loadings		(r ²)
(x ₁) – friendly and polite	1.00	--	0.92	--	0.85
(x ₂) - serving customers sincerely	1.07 (24.10)*	--	0.94	--	0.88
(x ₃) - willing to serve customers	1.12 (22.99)	--	0.92	--	0.85
(x ₄) - take initiative to find out what customers' needs	--	1.00	--	0.88	0.78
(x ₅) - inform customers of how long until the food will be ready	--	1.02 (16.33)	--	0.87	0.76
(x ₆) - offer suggestions to customers when required	--	0.96 (13.83)	--	0.78	0.62
Overall Fit Measures :					
Chi-square statistic	68.62 with 8 degrees of freedom (p = 0.00)				
Normed Fit Index	0.94				
GFI	0.90				
AGFI	0.73				
RMSR	0.094				
(*- t-values in parentheses)					

The two-factors model provided an better overall fit than the one-factor model, but the Chi-square statistic was large relative to the degrees of freedom, and the AGFI index and standardised residual Q-plot also indicated that the model was not a good fit. The standardised residuals indicated that the covariance among x₁, x₂, x₃, and x₄ were not explained by the model, and that the modification index (6.92) was large for the path linking factor one to the indicator x₄. The results suggested that x₄ was not a unidimensional measure, thus this indicator was removed from the measurement model and the model was re-specified and analysed. The results are presented in Table 5.12.

Table 5.12 Results of Confirmatory Factor Analysis for “Service Attitudes” and “Communication”

Items	Loadings		Standardised Loadings		(r ²)
(x ₁) – friendly and polite	1.00	--	0.92	--	0.85
(x ₂) – serving customers sincerely	1.07 (24.16)*	--	0.94	--	0.89
(x ₃) – willing to serve customers	1.11 (22.79)	--	0.92	--	0.85
(x ₅) – inform customers of how long until the food will be ready	--	1.00	--	0.88	0.98
(x ₆) – offer suggestions to customers when required	--	0.85 (11.81)	--	0.87	0.63
Overall Fit Measures :					
Chi-square statistic	4.46 with 4 degrees of freedom (p=0.35)				
Normed Fit Index	1.00				
GFI	0.99				
AGFI	0.97				
RMSR	0.013				
(*- t-values in parentheses)					

Table 5.12 shows that removing indicator x₄ from the measurement model improved the overall model fit significantly. In the subsequent analysis, each sub-scale of the quality of restaurant services was assessed using confirmatory factor analysis, as described previously. The overall fit measures, the factor loadings, and the squared multiple correlations, all indicated that the measurement models provided a good fit to the data, with the exception of the measurement model for the “food taste and variety” sub-scale. The reliability of the “food portion” (p₂) was relatively low (r² = 0.33), and the results of correlation analysis revealed that this item was correlated moderately with the other items. Hence, this item was removed from the sub-scale. In sum, confirmatory factor analysis redefined the quality of restaurant services as having seven sub-scales rather than the original six. Table 5.13 summarised the overall fit of the measurement models. Appendix 5.10 contains the values of the factor loadings and the squared multiple correlations of these measurement models.

Table 5.13 Summary of the Overall Fit Measures of the Measurement Models

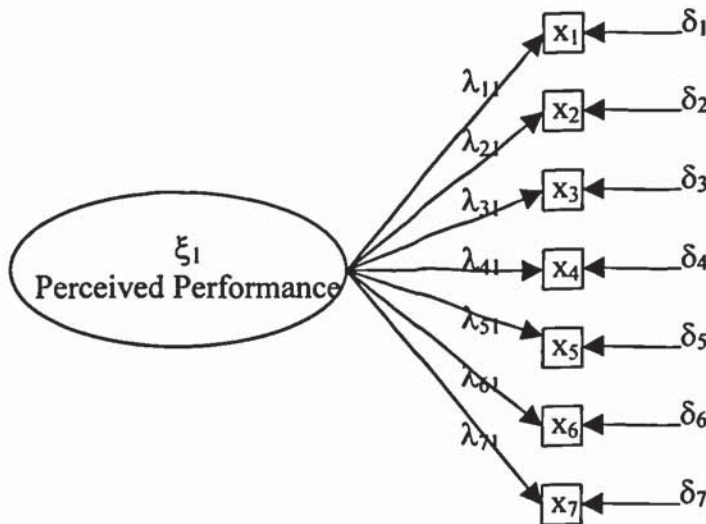
“Environmental Factors”	
Overall Fit Measures:	
Chi-square Statistic	34.76 with 5 degrees of freedom (p=0.00)
Normed Fit Index	0.95
GFI	0.93
AGFI	0.80
RMSR	0.042
“Food Taste and Variety”	
Overall Fit Measures:	
Chi-square Statistic	29.25 with 5 degrees of freedom (p=0.00)
Normed Fit Index	0.95
GFI	0.95
AGFI	0.84
RMSR	0.037
“Staff Competence”	
Overall Fit Measures:	
Chi-square Statistic	5.06 with 2 degrees of freedom (p=0.08)
Normed Fit Index	0.99
GFI	0.99
AGFI	0.94
RMSR	0.017
“Staff Appearance” & “Food Order and Delivery”	
Overall Fit Measures:	
Chi-square Statistic	4.07 with 4 degrees of freedom (p=0.35)
Normed Fit Index	0.99
GFI	0.99
AGFI	0.90
RMSR	0.014
(Note : Staff Appearance” and “Food Order and Delivery” were analysed simultaneously as each only have two indicators)	

After ensuring that the measures were unidimensional and reliable, an index was formed for each sub-scale by averaging its set of related items scores (Hair et al. 1998). Thus, seven indices were computed, each represented an indicator (or a dimension) of the quality of restaurant services. In other words, consumers evaluated the quality of restaurant services along seven dimensions, which were “service

attitudes”, “communication”, “environmental factors”, “food taste and variety”, “staff competence”, “staff appearance”, and “food delivery and order”.

The measures of each construct in the theoretical model were examined and discussed in turn. Following Jöreskog’s (1993) suggestion, each construct was examined first, then combined and evaluated two by two, and the measurement model for all the constructs was measured without constraining the covariance matrix of the constructs. This was to ensure that the measures were highly reliable and valid prior to estimation of the structural model. To begin with, “perceived performance” was evaluated, and the measurement model is replicated below:

Figure 5.4 – Measurement Model for “Perceived Performance”



The seven indices derived from the previous analysis were then used as indicators of “perceived performance”. Confirmatory factor analysis was performed, and the results suggested that the measurement model in Figure 5.4 was a very good fit to the data. The Chi-square statistic was 19.68 ($p=0.14$), with 14 degrees of freedom suggesting that there was no difference between the sample covariance matrix and the estimated covariance matrix. As for the other overall fit measures, they all fell within the bounds that indicate a good fit (for example, GFI > 0.90, AGFI > 0.80, NFI > 0.90, RMSR < 0.10) (Kelloway 1998; Sharma 1996; Bagozzi and Yi 1988). According to Anderson and Gerbing (1988), convergent validity can be assessed from the measurement model by determining whether each indicator’s estimated pattern coefficient on its posited

underlying construct is significant (that is, greater than twice its standard error). The t-statistics showed that the factor loadings of the seven indicators were highly significant (all were greater than 1.96), and in the direction expected, thus providing evidence of convergent validity. The reliability of the measures were examined using Bagozzi and Yi's (1988) recommended criteria. To assess the individual measure reliability, the squared multiple correlations were examined and they were all above 0.50, suggesting that the measures were deemed reliable (Sharma 1996; Bagozzi and Yi 1988). As for the composite reliability, it was calculated by hand using the information contained in the LISREL output. The composite reliability was defined as:

$$\rho_c = \frac{(\sum \lambda_i)^2 \text{var}(T)}{(\sum \lambda_i)^2 \text{var}(T) + \sum \theta_{ii}}$$

$$\rho_c = \frac{(5.62)^2}{(5.62)^2 + 2.5}$$

$$\rho_c \cong 0.93$$

The third criteria for evaluating the reliability of the measures was put forward by Fornell and Larcker (1981). It was defined as

$$\rho_v = \frac{\sum \lambda_i^2 \text{var}(T)}{\sum \lambda_i^2 \text{var}(T) + \sum \theta_{ii}}$$

$$\rho_v = \frac{4.5228}{4.5228 + 2.5}$$

$$\rho_v \cong 0.64$$

Since ρ_c and ρ_v were greater than 0.60 and 0.50 respectively, they indicated that the measures were highly reliable (Bagozzi and Yi 1988). (Refer to section 5.4.1 for a discussion of these criteria). Predictive validity was ascertained by regressing the seven indicators on the overall quality measure. The seven indicators explained 49.1

percent of the variation of overall quality, and thus predictive validity was supported. The results of the Chi-square difference test suggested that the sub-scales possessed high discriminant validity (refer to page 215 for a discussion of discriminant validity). Table 5.14 contains the parameter estimates and the overall fit measures for the measurement model in Figure 5.4. The table also contains the sum of the standardised measurement errors, which was used to compute the composite reliability and Fornell and Larcker's criterion.

Table 5.14 Parameter Estimates and Overall Fit Measures for the “Perceived Performance” Construct

Indicators	Loadings	Standardised Loadings	Squared Multiple Correlations (r^2)	Standardised Theta-Delta
Service attitudes	1.00	0.79	0.62	0.38
Communication	1.10 (11.82)*	0.76	0.58	0.42
Environmental Factors	0.84 (12.38)	0.79	0.62	0.38
Food taste & Variety	0.80 (13.61)	0.85	0.72	0.28
Staff Competence	0.96 (14.10)	0.87	0.76	0.24
Staff Appearance	0.93 (12.57)	0.80	0.63	0.37
Food Order and Delivery	0.92 (11.80)	0.76	0.57	0.43
		$\Sigma \lambda_i = 5.62$		$\Sigma \theta_i = 2.5$
Overall Fit Measures:				
Chi-square Statistic	19.68 with 14 degrees of freedom (p=0.14)			
Normed Fit Index	0.98			
GFI	0.97			
AGFI	0.95			
RMSR	0.024			
(*- t-values in parentheses)				

The steps involved in developing the measurement models for the “predictive expectations” and “normative expectations” constructs were same as the procedure described previously. Each of these constructs were measured by seven indicators, all of the indicators were themselves multi-item scales. The discussion which follows

focuses on the evaluations of these measurement models. Tables 5.15 and 5.16 present the results of confirmatory factor analysis for “predictive expectations” and “normative expectations”. The calculations of the composite reliability and the average variance extracted reliability are not presented, but these values are shown in the tables.

Table 5.15 Parameter Estimates and Overall Fit Measures for the “Predictive Expectations” Construct

Indicators	Loadings	Standardised Loadings	Squared multiple correlations (r^2)	Standardised Theta-Delta
Service Attitudes	1.00	0.83	0.69	0.31
Communication	1.04 (11.94)*	0.73	0.53	0.47
Environmental Factors	0.97 (14.65)	0.84	0.70	0.30
Food Taste & Variety	0.86 (12.80)	0.76	0.58	0.42
Staff Competence	1.08 (16.85)	0.91	0.76	0.17
Staff Appearance	1.06 (14.16)	0.82	0.83	0.33
Food Order and Delivery	0.84 (11.44)	0.70	0.67	0.50
		$\Sigma \lambda_i = 5.59$		$\Sigma \theta_i = 2.5$
Overall Fit Measures :				
Chi-square Statistic	40.87 with 14 degrees of freedom (p=0.00)			
Normed Fit Index	0.96			
GFI	0.94			
AGFI	0.89			
RMSR	0.032			
Composite Reliability (ρ_c)	0.93			
Average Variance Extracted	0.64			
Reliability (ρ_v)				
(*- t-values in parentheses)				

Table 5.16 Parameter Estimates and Overall Fit Measures for the “Normative Expectations” Construct

Indicators	Loadings	Standardised Loadings	Squared Multiple Correlations (r^2)	Standardised Theta-Delta
Service Attitudes	1.00	0.80	0.64	0.36
Communication	1.13 (11.64)*	0.75	0.56	0.44
Environmental Factors	0.93 (12.21)	0.77	0.60	0.40
Food Taste & Variety	0.81 (10.97)	0.71	0.51	0.49
Staff Competence	1.00 (14.27)	0.87	0.76	0.24
Staff Appearance	0.89 (11.25)	0.73	0.53	0.47
Food Order and Delivery	0.88 (11.23)	0.72	0.52	0.48
		$\Sigma \lambda_i = 5.35$		$\Sigma \theta_i = 2.88$
Overall Fit Measures :				
Chi-square Statistic	57.98 with 14 degrees of freedom ($p=0.00$)			
Normed Fit Index	0.93			
GFI	0.93			
AGFI	0.85			
RMSR	0.039			
Composite Reliability (ρ_c)	0.91			
Average Variance Extracted	0.59			
Reliability (ρ_v)				
(*- t-values in parentheses)				

The results indicated that the measurement models were supported by the data. Although the Chi-square statistic was significant, the ratio of the Chi-square statistic to the degrees of freedom was acceptable. It is documented in the literature that Chi-square is sensitive to sample size. For a large sample size, even small differences in the sample covariance matrix are statistically significant, although the differences may not be practically meaningful (Sharma 1996). The squared multiple correlations ranged from 0.51 to 0.83 (all greater than 0.5), and the factor loadings were all significantly different from zero at the 5 % level, thus the measures displayed satisfactorily levels of reliability and validity. The composite reliability and the average variance extracted reliability were above 0.50 and 0.60 respectively.

Furthermore, regression analysis showed that the “predictive expectations” measure explained about 67.2 percent of the variation of the measure of the overall predictive expectations, and the “normative expectations” measure explained about 64.5 percent of the variation of the measure of overall normative expectations. Hence predictive validity of these measures was supported.

The scales developed for measuring “perceived sacrifice” contained three sub-scales: “time costs”, “monetary costs” and “location of the restaurant”. The first two sub-scales were themselves multi-item scales, whereas the latter was a single item scale which was used as an indirect measure of the efforts consumers used in coming to the restaurant. If consumers found the restaurant easily accessible, the efforts they used in coming to the restaurant were low, and vice versa. Bollen (1989) indicated that measurement models are identified if (i) there are at least three indicators for each latent variable *or* (ii) if there are at least two indicators for each latent variable and the factors are allowed to correlate (that is, an oblique factor solution has been obtained). Given these criteria, the sub-scales of “perceived sacrifice” could not be evaluated separately, as two of the sub-scales had less than three indicators, so it was decided to evaluate them simultaneously and allow them to be correlated as described in Bollen’s second condition. The measurement model was specified as the one shown below and was analysed using LISREL. However, the program stopped after 19 iterations, indicating that θ_{71} may not be identified. Wothke (1993) has discussed several possible causes of indefinite final estimates of model parameters. In particular, negative error variances are referred as “Heywood” cases in factor analysis. These arise because one of the parameter estimates is not unique. Unlike the EQS program which incorporates inequality constraints on the error variance estimates by default, LISREL provides no such diagnostics, but it is possible to constrain the start values of the error variance to a non-negative state. Bagozzi and Baumgartner (1994) have suggested that when negative error variance occurs, the model can be re-specified with the estimate set to zero, or to a small positive value (for example, to 0.005 for completely standardised solutions). Alternatively, if the size of the measurement error is known from prior research, it can be used as independent estimate for the error variance of the single indicator (Anderson and Gerbing 1988). Because there was no such information available, it was decided to eliminate the item from the scale of

“perceived sacrifice”, and the model was re-specified and re-analysed. The results show that v4 was not a reliable measure (with $r^2 = 0.44$), so it was removed. Table 5.16 contains the final results of the confirmatory factor analysis. (For a detailed description of the items, please refer to Table 5.4)

Figure 5.5 Measurement Model for “Perceived Sacrifice”

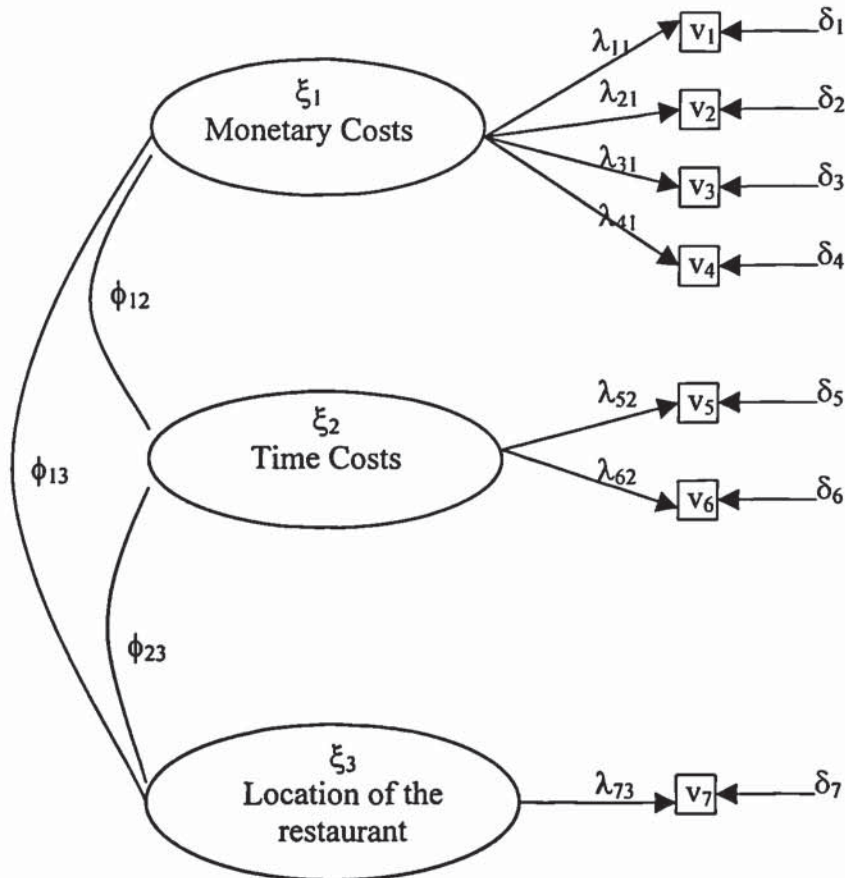


Table 5.17 Results of Confirmatory Factor Analysis for “Monetary Costs” and “Time Costs”

Indicators	Loadings		Standardised Loadings		(r^2)
- expensive (v_1)	1.00	--	0.80	--	0.63
- higher than I expected (v_2) (monetary costs)	0.94 (9.78)*	--	0.78	--	0.62
- unreasonable (v_3) (monetary costs)	0.77 (9.26)	--	0.71	--	0.50
- higher than I expected (v_5) (time costs)	--	1.00	--	0.84	0.71
- a lot of time (v_6) (time costs)	--	0.74 (5.79)	--	0.74	0.55
Overall Fit Measures :					
Chi-square Statistic	9.41 with 4 degrees of freedom (p=0.052)				
Normed Fit Index	0.97				
GFI	0.98				
AGFI	0.93				
RMSR	0.045				
(*- t-values in parentheses)					
The content of specific items can be found in Table 5.4 on page 143					

As previously noted, an index was formed for each sub-scale of “perceived sacrifice”. Then, the measures of the “perceived sacrifice” and “perceived value” constructs were evaluated simultaneously. The results indicated that “monetary costs” was a poor measure of “perceived sacrifice”, with $r^2 = 0.18$ and its standardised loading equal to 0.42. This result at first was astonishing because “monetary costs” was a multi-item scale itself, and Cronbach alpha and item-to-total correlations suggested that there were high inter-correlations among the items. However, a close examination of the covariance matrix revealed that the covariance among the items measuring monetary and time costs was relatively low, ranging from 0.249 to 0.534. Given these low values, it was not appropriate to hypothesise that these items were intended to measure the same construct. Thus, “monetary costs” and “time costs” were hypothesised to be two constructs. The former was measured by three items, and the latter by two. These measures were evaluated simultaneously with those of “perceived value”. The fit of the model was satisfactory, and the results are presented in Table 5.18.

Table 5.18 Results of Confirmatory Factor Analysis for “Monetary Costs”, “Time Costs”, and “Perceived Value”

Items	Loadings	Standardised Loadings	r ²
- expensive (v ₁)	1.00 --	0.79 --	0.63
- higher than I expected (v ₂) (monetary costs)	0.95 -- (9.78)*	0.79 --	0.62
- unreasonable (v ₃) (monetary costs)	0.77 -- (9.25)	0.71 --	0.50
- higher than I expected (v ₅) (time costs)	-- 1.00	-- 0.83	0.69
- a lot of time (v ₆) (time costs)	-- 0.77 (6.27)	-- 0.75	0.57
- time spent relative to the service received (v ₁₁)	-- -- 1.00	-- -- 0.69	0.48
- price paid relative to the service received (v ₁₂)	-- -- 1.05 (10.21)	-- -- 0.82	0.67
- efforts spent relative to the service received (v ₁₃)	-- -- 1.13 (10.21)	-- -- 0.88	0.78
Overall Fit Measures :			
Chi-square Statistic	35.88 with 17 degrees of freedom (p=0.005)		
Normed Fit Index	0.94		
GFI	0.96		
AGFI	0.91		
RMSR	0.060		
(*- t-values in parentheses)			
The content of specific items can be found in Table 5.4 on pages 143 and 144			

The “customer satisfaction” construct was measured by four items, both the “encounter quality” and “global quality” constructs were measured by three items, and “Behavioural Intentions” were measured by five items. If the measures of these constructs were evaluated separately, the measurement models for “customer satisfaction” and “behavioural intentions” would have been over-identified with two and five degrees of freedom respectively, but the measurement models for “encounter quality” and “global quality” would be just-identified with a zero degree of freedom. Therefore, it was decided that the measures of “encounter quality” and “global quality” be evaluated simultaneously, and they were allowed to be correlated. The results are shown in Tables 5.19, 5.20 and 5.21 respectively.

Table 5.19 Results of Confirmatory Factor Analysis for “Customer Satisfaction”

Items	Loadings	Standardised Loadings	r ²
- very satisfied (s ₁)	1.00	0.88	0.77
- very pleasant (s ₂)	1.05 (21.51)*	0.96	0.92
- enjoyment (s ₃)	1.03 (21.51)	0.90	0.82
- very happy (s ₄)	0.83 (2.78)	0.73	0.53
Overall Fit Measures :			
Chi-square Statistic	9.52 with 2 degrees of freedom (p=0.009)		
Normed Fit Index	0.99		
GFI	0.98		
AGFI	0.89		
RMSR	0.026		
(*- t-values in parentheses)			
The content of specific items can be found in Table 5.4 on page 145			

Table 5.20 Results of Confirmatory Factor Analysis For “Encounter Quality” and “Global Quality”

Items	Loadings	Standardised Loadings	r ²
- high quality (q ₁₆)	1.00 --	0.84 --	0.79
- higher than the industry standard (q ₁₇)	0.98 (18.07)*	0.83 --	0.78
- one of the best (q ₁₈)	0.94 (17.28)	0.79 --	0.75
- high quality (q ₁₉)	-- 1.00	-- 0.92	0.83
- higher than the industry standard (q ₂₀)	-- 0.93 (19.16)	-- 0.85	0.77
- one of the best (q ₂₁)	-- 0.96 (20.92)	-- 0.89	0.82
Overall Fit Measures:			
Chi-square Statistic	16.57 with 17 degrees of freedom (p=0.035)		
Normed Fit Index	0.99		
GFI	0.98		
AGFI	0.94		
RMSR	0.013		
(*- t-values in parentheses)			
The content of specific items can be found in Table 5.4 on page 144			

Table 5.21 Results of Confirmatory Factor Analysis for “Behavioural Intentions”

Items	Loadings	Standardised Loadings	r ²
I will consume at this restaurant more frequently (f ₁)	1.00	0.85	0.64
I will recommend this restaurant to others (f ₂)	1.01 (15.62)*	0.86	0.73
I would consider this restaurant the first choice if I had to choose again (f ₃)	0.89 (14.07)	0.80	0.73
I will say favourable things about this restaurant to others (f ₄)	1.01 (15.39)	0.85	0.72
I will be a loyal customer of this restaurant (f ₅)	0.98 (14.11)	0.80	0.65
Overall Fit Measures :			
Chi-square Statistic	65.91 with 5 degrees of freedom (p=0.00)		
Normed Fit Index	0.92		
GFI	0.90		
AGFI	0.70		
RMSR	0.078		
(*- t-values in parentheses)			
The content of specific items can be found in Table 5.4 on page 145			

The results in Tables 5.19 and 5.20 indicate that the measurement models of “customer satisfaction”, “encounter quality” and “global quality” fitted the data well. Although the Chi-square statistics were significant, the ratios of the Chi-square statistic to the degrees of freedom were acceptable. The squared multiple correlations ranged from 0.53 to 0.92, suggesting that the individual item was an adequate measure of its underlying construct. Furthermore, the measures possessed convergent validity, as the factor loadings were all significantly different from zero at the 5 % level. However, the results in Table 5.21 show that the measurement model of “behavioural intentions” did not fit the data adequately. The ratio of the Chi-square statistic to the degrees of freedom was relatively large, and the AGFI was 0.70 (< 0.80). In reviewing the standardised residual matrix, the largest residuals corresponded to the items measuring recommendation intentions, which suggested that a single-factor model did not adequately explain the variation of these items. An examination of the items suggested that the “behavioural intentions” construct was a two-dimensional construct rather than a unity dimensional construct. The model was re-specified with two factors, the first factor represented “purchase intentions” and the

second factor represented “recommendation intentions”. The results showed that the Chi-square statistic had improved significantly: the Chi-square difference between one-factor model and two-factor model was now 31.23. Apparently, the two-factor model fit the data better than the one-factor model. However, the correlation between the “purchase intentions” and “recommendation intentions” was very high ($\phi = 0.89$). This suggested that it was not meaningful to separate them as two constructs. Therefore, an index was formed for the “purchase intentions” and “recommendation intentions” respectively, and both indices were used as the measures of “behavioural intentions”.

The analyses, so far, have evaluated each of the constructs in the conceptual model except “perceived service quality” and “expectation disconfirmation”. The “perceived service quality” represented the discrepancy between perceptions of performance and normative expectations and “expectation disconfirmation” represented the discrepancy between perceptions of performance and predictive expectations. Each of these constructs was measured by seven indicators, and each of the indicators was formed by computing the average of the differences between the perception scores and expectations scores of a set of related items. Confirmatory factor analysis was performed separately for each construct, and the results are presented in Tables 5.22 and 5.23.

Table 5.22 Parameter Estimates and Overall Fit Measures for the “Perceived Service Quality” Construct

Indicators	Loadings	Standardised Loadings	Squared Multiple Correlations (r^2)	Standardised Theta-Delta
Service Attitudes	1.00	0.78	0.61	0.39
Communication	1.10 (11.07)*	0.74	0.54	0.46
Environmental Factors	0.78 (10.41)	0.70	0.49	0.51
Food Taste & Variety	0.66 (10.71)	0.72	0.52	0.48
Staff Competence	0.91 (12.94)	0.84	0.71	0.29
Staff Appearance	0.81 (9.83)	0.67	0.45	0.55
Food Order and Delivery	0.85 (10.46)	0.70	0.49	0.51
		$\Sigma \lambda_i = 5.15$		$\Sigma \theta_i = 3.19$
Overall Fit Measures :				
Chi-square Statistic	29.36 with 14 degrees of freedom (p=0.009)			
Normed Fit Index	0.96			
GFI	0.96			
AGFI	0.93			
RMSR	0.052			
Composite Reliability (ρ_c)	0.62			
Average Variance Extracted	0.54			
Reliability (ρ_v)				
(*- t-values in parentheses)				

Table 5.23 Parameter Estimates and Overall Fit Measures for the “Disconfirmation of Expectations” Construct

Indicators	Loadings	Standardised Loadings	Squared Multiple Correlations (r^2)	Standardised Theta-Delta
Service attitudes	1.00	0.79	0.62	0.38
Communication	0.81 (8.23)*	0.57	0.33	0.67
Environmental Factors	0.80 (11.25)	0.76	0.57	0.43
Food Taste & Variety	0.63 (9.23)	0.64	0.41	0.59
Staff Competence	0.95 (12.57)	0.83	0.70	0.30
Staff appearance	0.84 (8.99)	0.62	0.39	0.61
Food order and delivery	0.73 (8.52)	0.59	0.35	0.65
		$\Sigma \lambda_i = 4.80$		$\Sigma \theta_i = 3.63$
Overall Fit Measures :				
Chi-square Statistic	38.12 with 14 degrees of freedom (p=0.00)			
Normed Fit Index	0.94			
GFI	0.95			
AGFI	0.90			
RMSR	0.064			
Composite Reliability (ρ_c)	0.57			
Average Variance Extracted	0.48			
Reliability (ρ_v)				
(*- t-values in parentheses)				

Although the overall fit measures suggested that both models fitted the data reasonably well, the reliability of the individual measures were relatively low ranging, from 0.33 to 0.71. Furthermore, the composite reliability and the average variance extracted reliability of “perceived service quality” were $\rho_c = 0.62$ and $\rho_v = 0.54$ respectively, and “expectation disconfirmation” were $\rho_c = 0.57$ and $\rho_v = 0.48$ respectively. According to Fornell and Larcker (1981), the average variance extracted reliability is a more conservative measure than composite reliability. “Expectation disconfirmation” had an average extracted reliability equal to 0.48, which showed that more than 50 percent of the variance was due to measurement error, indicating that the measure of this construct was not reliable. The reliabilities of the measures of “perceived service quality” were slightly better than the measures of “expectation

disconfirmation". A review of the standardised residual matrices could not provide any reasons for poor measures. Reliability is a necessary but not sufficient condition for validity (Churchill 1995). Because the reliability of these measures was relatively low, it was not meaningful to examine the validity of these measures further. Previous research has reported the low reliability and validity of the difference scores measures (See section 2.3.5). A recent study conducted by one of the SERVQUAL authors did not use the difference scores measure, although in his study both expectations and perceptions of performance were measured (Voss, Parasuraman and Grewal 1998). In addition to the low reliability associated with using the difference scores, it is also questionable whether the consumers derive their perceptions of a service in relative to their expectations in the additive form as proposed by the SERVQUAL authors. The literature documents that normative expectations play an important role in customer evaluations of the quality of a service, but whether customer expectations will arithmetically compare the expectations with their perceptions of performance requires further study. Furthermore, the comparison process can be in the multiplicative form of ratios, as opposed to the additive form (that is, subtractive).

This study used confirmatory factor analysis, and showed that the difference score measures were low in reliability, and thus the validity of these measures was not supported. These findings were consistent with previous studies. However, there is still no evidence suggesting that "normative expectations" have no effect on "perceived encounter quality". The results only suggest that the difference score measures were low in reliability. In the conceptual model, "encounter quality" was conceptualised as a construct positing to be influenced by the "normative expectations" and "perceived performance". In addition, it was also postulated that consumers would compare the "normative expectations" with the "perceived performance" in the process, as proposed by Parasuraman et al. (1985), and the resulting differences (measured as "perceived service quality") were posited to influence "encounter quality". Because the reliabilities of the measures of "perceived service quality" were found to be relatively low, it was not meaningful to investigate its effect on "perceived encounter quality". Furthermore, the model would be over-specified if "normative expectations", "perceived performance", and "perceived service quality" were examined simultaneously, because the measures of the latter was derived from the measures of the former two. Thus, "encounter quality" in the

structural model was specified to be a function of “normative expectations” and “perceived performance”. Similarly, “customer satisfaction” was specified as a function of “normative expectations”, “predictive expectations”, “perceived value”, and “perceived performance”.

Assessments of Discriminant Validity

By definition of discriminant validity, the measures of a construct should not correlate too highly with the measures of another construct (Churchill 1995). Anderson and Gerbing (1988) have discussed two tests using confirmatory factor analysis to assess discriminant validity. The first test is a Chi-square difference test. This is performed by comparing the Chi-square values of two models, one in which the estimated correlation parameters ($\hat{\phi}_{ij}$) between the two constructs is constrained to unity (this model is denoted as M_1 in Table 5.24), and the other in which the two constructs are allowed to correlate freely (M_2). If the Chi-square value is significantly low for the model in which the trait correlation is not constrained to unity (that is, M_2), then the traits are not perfectly correlated, and thus discriminant validity is achieved. The logic of this test is based on a likelihood ratio test (Bagozzi and Baumgartner 1994). The model M_1 is said to be nested in M_2 , and is denoted as $M_1 < M_2$. The difference between Chi-square statistic values for the nested model ($\chi^2 = \chi^2_{m1} - \chi^2_{m2}$) is itself asymptotically distributed as Chi-square, with degrees of freedom equal to the difference in degrees of freedom for the two models (Steiger et al. 1985). Anderson and Gerbing (1988) indicated that the test of discriminant validity should be carried out for one pair of factors at a time, rather than as a simultaneous test of all pairs of interest. The second assessment of discriminant validity determines whether the confidence interval for the correlation estimate between the two factors includes the value of 1.0. Fornell and Larcker (1981) proposed a more rigorous test of discriminant validity. Their criterion for discriminant validity is that the squared correlation estimate between pairs of factors should be less than the variance extracted for each construct.

Discriminant validity was assessed using the three tests described above. However, considering there were altogether ten constructs in the structural model, if each was to

be examined by pairs with another construct, then there would have been a total of 45 possible two factor models ($10! / 2! 8!$). Therefore, it was reasonable to select and evaluate the pair of constructs that were hypothesised to be related, and then for the next pair of constructs, and the process continued until all pairs of closely related constructs were examined. Table 5.24 presents the results of discriminant validity assessments.

Table 5.24 Results of Discriminant Validity Assessments

Factors	Model 1 ($\hat{\phi}_{ij}=1$)	Model 2 ($\hat{\phi}_{ij}$ free)	χ^2 Difference	Confidence Interval (*)	Average Variance Extracted (ρ_v)
Normative Expectations and Predictive Expectations	$\chi^2_{(77)}$ = 375.31	$\chi^2_{(76)}$ = 324.77 $\hat{\phi} = 0.48$	$\chi^2_{(1)}$ = 50.54	$0.38 < \hat{\phi} < 0.58$	$\rho_{v(NE)} = 0.59$ $\rho_{v(PE)} = 0.64$ $(\hat{\phi})^2 = 0.23$
Perceived Performance and Perceived Value	$\chi^2_{(35)}$ = 64.55	$\chi^2_{(34)}$ = 41.23 $\hat{\phi} = 0.69$	$\chi^2_{(1)}$ = 23.32	$0.59 < \hat{\phi} < 0.82$	$\rho_{v(PP)} = 0.64$ $\rho_{v(PV)} = 0.65$ $(\hat{\phi})^2 = 0.48$
Time Costs and Monetary Costs	$\chi^2_{(5)}$ = 28.83	$\chi^2_{(4)}$ = 9.41 $\hat{\phi} = 0.49$	$\chi^2_{(1)}$ = 19.42	$0.34 < \hat{\phi} < 0.64$	$\rho_{v(TC)} = 0.62$ $\rho_{v(MC)} = 0.58$ $(\hat{\phi})^2 = 0.24$
Customer Satisfaction and Encounter Quality	$\chi^2_{(14)}$ = 33.54	$\chi^2_{(13)}$ = 23.95 $\hat{\phi} = 0.78$	$\chi^2_{(1)}$ = 9.59	$0.64 < \hat{\phi} < 0.91$	$\rho_{v(CS)} = 0.76$ $\rho_{v(EQ)} = 0.77$ $(\hat{\phi})^2 = 0.61$
Customer Satisfaction and Global Quality	$\chi^2_{(14)}$ = 42.21	$\chi^2_{(13)}$ = 35.85 $\hat{\phi} = 0.80$	$\chi^2_{(1)}$ = 6.36	$0.62 < \hat{\phi} < 0.98$	$\rho_{v(CS)} = 0.76$ $\rho_{v(PE)} = 0.81$ $(\hat{\phi})^2 = 0.64$
Encounter Quality and Global Quality	$\chi^2_{(9)}$ = 24.76	$\chi^2_{(8)}$ = 16.57 $\hat{\phi} = 0.91$	$\chi^2_{(1)}$ = 8.19	$0.76 < \hat{\phi} < 1.08^{**}$	$\rho_{v(EQ)} = 0.77$ $\rho_{v(GQ)} = 0.81$ $(\hat{\phi})^2 = 0.85^{**}$
Global Quality and Behavioural Intentions	$\chi^2_{(5)}$ = 11.67	$\chi^2_{(4)}$ = 8.87 $\hat{\phi} = 0.83$	$\chi^2_{(1)}$ = 2.8	$0.67 < \hat{\phi} < 0.99$	$\rho_{v(GQ)} = 0.81$ $\rho_{v(BI)} = 0.78$ $(\hat{\phi})^2 = 0.69$

(*) – 90 % Confidence Interval for each pairwise correlation estimate

(**) – the confidence interval includes value greater than unity, and the squared correlation estimate is greater than the variance extracted for each factors

There were seven two-factor models examined, and each of these models is discussed below.

1. Normative Expectations and Predictive Expectations

The results of the Chi-square difference test, confidence interval, and average variance extracted, indicated that the measures of these two constructs displayed a high degree of discriminant validity. However, the overall fit of the model was barely satisfactory with $\chi^2 = 324.77$ ($p = 0.00$) with 76 degrees of freedom, GFI = 0.82, AGFI = 0.75, and RMSR = 0.058. An examination of the standardised residuals revealed that there was a relatively large covariance (4.62) between the items measuring “normative and predictive expectations of communication”, which was unexplained by the model. Similarly, for “normative and predictive expectations of food”, the standardised residual was (4.50), and for “normative and predictive expectations of staff appearance”, the standardised residual was (3.33). The modification indices revealed similar information. The modification index indicates the expected change in the Chi-square value if the parameter is relaxed. The three largest modification indices were associated with the error covariance between the above pair items. Byrne (1998) indicated error covariance represents systematic rather than random errors in item responses. That systematic errors arise may be attributable to the measurement procedures or the characteristics of the respondents (Aish and Jöreskog 1990).

It is reasonable to believe that if a consumer considers that food is more important than other aspects of a restaurant’s service, then they will rate the normative and predictive expectations of food relatively higher than their normative and predictive expectations of other attributes. Thus it appears reasonable to correlate the measurement errors of these two expectation items. Long (1994a) suggested that when using the modification index, only one parameter be relaxed at a time, since freeing one parameter may reduce or eliminate the improvement in fit possible by freeing a second parameter. The parameter to be relaxed should be the one that had the largest modification index (that is, the error covariance between normative expectations of “communication” and predictive expectations of “communication”).

The results were then examined, and possible causes of model mis-specification were identified. The procedure continued until it made no further sense to relax more parameters. In total, four pairs of measurement errors were allowed to be correlated. The overall fit measures of the final model were $\chi^2 = 166.24$ ($p = 0.00$) with 72 degrees of freedom, GFI = 0.90, AGFI = 0.86 and RMSR = 0.047.

2. *Perceived Performance and Perceived Value*

The results in Table 5.23 show that the evidence of discriminant validity was provided by the three tests. The overall fit measures indicated that the model fit the data well. The Chi-square statistic was 41.23 ($p = 0.18$) with 34 degrees of freedom, GFI = 0.96, AGFI = 0.94, and RMSR = 0.031. The standardised residual largest in magnitude was 2.59.

3. *Monetary Costs and Time Costs*

From the results, the measures of these two constructs displayed a high degree of discriminant validity. The overall fit measures indicated the model fit the data satisfactorily. The Chi-square statistic was 9.41 ($p = 0.05$) with 4 degrees of freedom, GFI = 0.98 AGFI = 0.93 and RMSR = 0.045. The standardised residual largest in magnitude was 0.10.

4. *Customer Satisfaction and Encounter Quality*

Discrimination between these two constructs was upheld as reflected by the results of the three tests. The Chi-square statistic was 23.95 ($p = 0.032$), with 13 degrees of freedom, GFI = 0.97, AGFI = 0.93, and RMSR = 0.025. However, the standardised residual largest in magnitude was 4.45. This corresponded to the two items measuring “customer satisfaction”. The largest modification index (19.80) was associated with the error covariance between these two items. Since both items measured “customer satisfaction” using the semantic scale (although they were worded differently), it is not unreasonable to believe that the correlated measurement error was due to the measurement procedure. Therefore, the model was re-specified by relaxing the

constraint between the measurement errors of these two items. The overall fit of the model was improved significantly, with $\chi^2 = 6.22$ ($p = 0.90$) with 12 degrees of freedom, GFI = 0.99, AGFI = 0.98 and RMSR = 0.0098.

5. *Customer Satisfaction and Global Quality*

The results of this two-factor measurement model were similar to the previous results. The largest standardised residual was corresponded to the two items measuring “customer satisfaction”. Based on the above argument, the parameter between the measurement errors of these two items was relaxed, and the overall fit measures were $\chi^2 = 22.93$ ($p = 0.028$), with 12 degrees of freedom, GFI = 0.97, AGFI = 0.93 and RMSR = 0.0026.

6. *Encounter Quality and Global Quality*

The Chi-square difference test suggested that the model in which “encounter quality” was allowed to correlate freely with “global quality” fit the data better than the model in which the correlation between the two constructs was constrained to unity. However, the 90 % confidence interval for the correlation estimate included the value of 1.0, and the average variance extracted for each construct was less than the variance shared by these two constructs, thereby providing a mixed result of discriminant validity. Although, this result was alarming, it was not unreasonable. First, “encounter quality” and “global quality” were measured using the same semantic-differential scale, which was adapted from Teas (1993). The only difference was in the wording of the items used in the scale. The former scale contained the items relating to the quality of the restaurant’s service of a specific transaction, whereas the latter scale contained the items relating to the overall quality of the restaurant’s service. Given that the same semantic-differential scale was used, the lack of evidence of discriminant validity could have been due to carry over effects associated with the measuring instruments. Second, the latter scale was designed to obtain cumulative customer judgements of the quality of the restaurant’s service. This suggests that consumer responses also include evaluations of the quality of the restaurant’s service of the specific transaction, as well as all past transactions, thus

making it harder to demonstrate discrimination between the measures of the two constructs.

On the other hand, if these measures were indeed measuring the same construct, then they should have had the same effects on a consequent variable, namely “behavioural intentions”. Thus, regression analysis was performed with the composite measure of “behavioural intentions” as the dependent variable, and the quality items as the independent variables. It was found that the global quality items explained the variation of “behavioural intentions” better than the encounter quality items ($r^2 = 0.57$ Vs $r^2 = 0.46$). As the measures of these constructs exhibited different effects on “behavioural intentions”, the two were different. As noted in Bagozzi and Burnkrant (1985), *“it is in general a difficult task to demonstrate discriminant validity between measures of similar constructs using the same method for measurement. This is because all measures were self-report indicators, it would be expected that any shared methods variation across measures would press for an artificial convergence and thus reduce discrimination. It is a much easier task to demonstrate discriminant validity when maximally dissimilar methods are used”*. Based on the results of the Chi-square difference test as illustrated in Bagozzi and Yi’s study (1988), the two constructs would be considered as different. “Global quality” was hypothesised to be influenced by “encounter quality”. As long as the two constructs were not used simultaneously as explanatory variables of another dependent variable, then there was not a problem of multi-collinearity. It is only when two highly correlated constructs are to be used as explanatory variables that multi-collinearity can lead to inflated standard errors and unstable parameter estimates (Gujarati 1992).

7. Global Quality and Behavioural Intentions

It was noted in Table 5.24 that the upper confidence interval limit for the correlation between “global quality” and “behavioural intentions” was almost one, but the Chi-square difference test was significant at the 10 % level, and the average variance extracted was greater than the variance shared by these two constructs. Two conditions of discriminant validity were achieved satisfactorily whereas only one

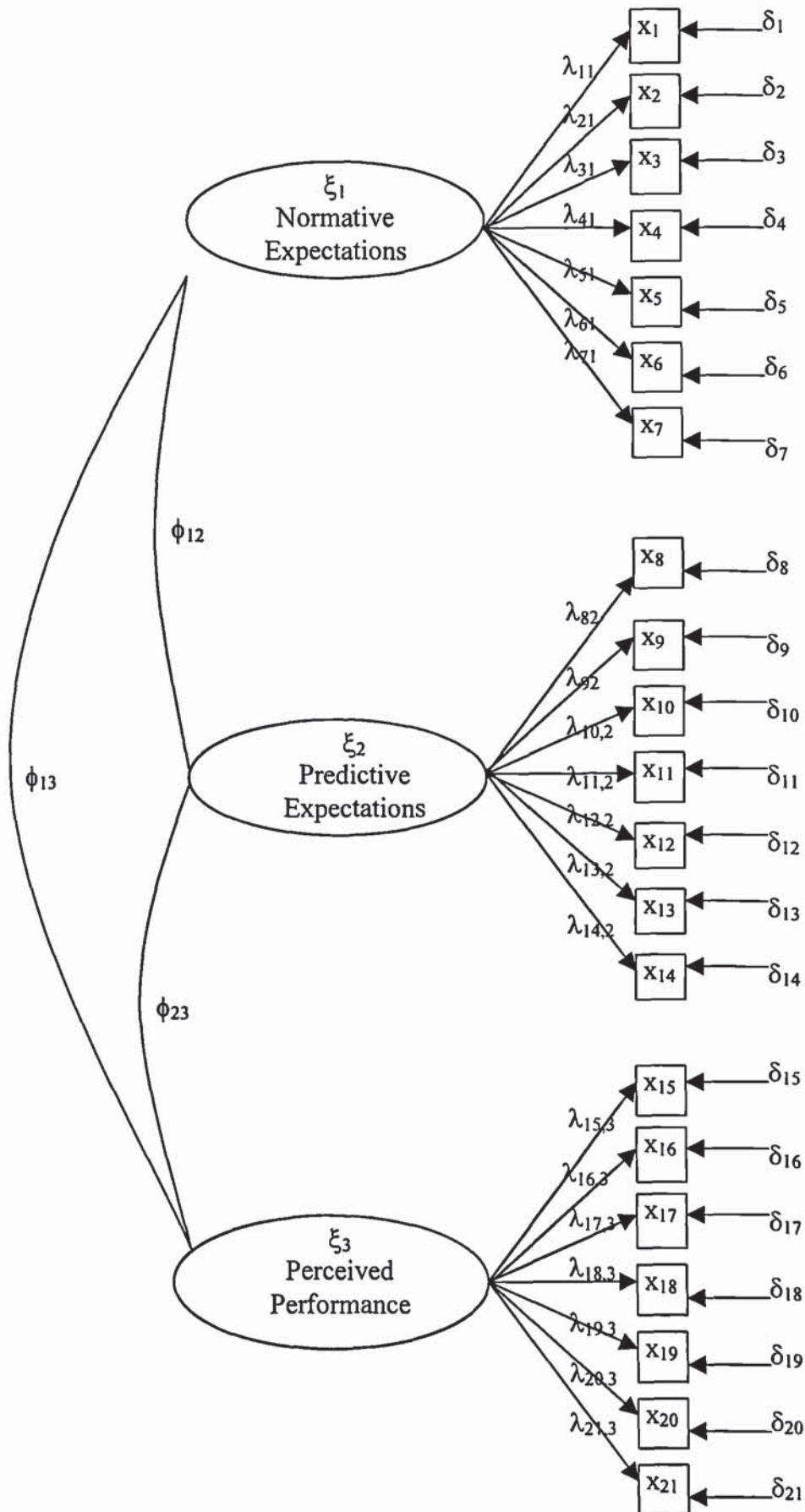
condition was just met. The overall fit of the model was adequate, $\chi^2 = 8.7$ ($p = 0.064$) with 4 degrees of freedom, GFI = 0.98, AGFI = 0.94, and RMSR = 0.022.

5.5.2.1 Summary of the Results

In summary, by use of confirmatory factor analysis, the number of the attributes that consumers used to evaluate the quality of a restaurant's service was reduced from twenty-five attributes to twenty-three, with scales comprising seven dimensions. The reliabilities of the difference score measures were found to be relatively low, and thus they were not used in the structural model. Furthermore, "monetary costs" and "time costs" were regarded as two separate constructs rather than a single construct that was originally defined as "perceived sacrifice". All the constructs demonstrated a high degree of discriminant validity with their closely related construct, except with "encounter quality" and "global quality".

After analysing each construct separately and in pairs, the last stage was to specify a measurement model for all the constructs without constraining the covariance matrix of the constructs. (that is, the constructs were allowed to correlate freely with each other). As the whole measurement model looked extremely complex, Figure 5.6 depicts only a sub-part of the measurement model.

Figure 5.6 Sub-Part of the Measurement Model



Initially, all the covariance between the measurement errors was fixed at zero by default. The results showed that the Chi-square statistic was large and significant (1439.95 with 734 degrees of freedom, $p = 0.00$). Although the ratio of Chi-square statistics to the degrees of freedom (less than two), and the RMSR was 0.060 (<0.10) were acceptable, the GFI value was 0.75 and the AGFI was 0.71, suggesting that the overall fit of the model was not satisfactory. However, it was not surprising to find that the modification indices were substantially large for the error covariance between those pairs of items identified earlier in the two-factor measurement models. It was decided to relax these parameters, and the model was re-estimated. The Chi-square statistic dropped to 1268.21 ($p=0.00$) with 729 degrees of freedom, GFI = 0.78, AGFI = 0.74, and RMSR = 0.059. The Chi-square difference test suggested that the present model fit the data better, both GFI and AGFI indices were improved by 0.03, while RMSR was reduced by 0.01.

Although both the GFI and AGFI indices suggested that the fit of the model was not highly satisfactory, an examination of the standardised residuals and modification indices, and taking into account the model's complexity, it was decided not to re-specify the model further. Bagozzi and Baumgartner (1994) pointed out that even for well-developed scales, if the number of indicators related explicitly to a factor exceeded five, then disappointing results were most certain. Considering that the ratio of the Chi-square statistic to degrees of freedom and the RMSR value were in the acceptable range, the measurement model was considered adequate. The measures of the individual items were both reliable and valid, as reflected by the squared multiple correlation (r^2) and factor loading. Table 5.25 contains the parameter estimates for the measurement model, and table 5.26 contains the correlations among the constructs.

Table 5.25 Results of the Confirmatory Factor Analysis

Parameters	Factor Loadings	Standard Factor Loadings	Squared Multiple Correlations (r^2)	Standardised Theta-Delta
Normative Expectations				
λ_{11}	1.00	0.80	0.64	0.36
λ_{21}	1.07 (11.94)*	0.73	0.53	0.47
λ_{31}	0.93 (12.43)	0.78	0.61	0.39
λ_{41}	0.78 (11.29)	0.70	0.48	0.52
λ_{51}	1.02 (14.86)	0.88	0.77	0.23
λ_{61}	0.93 (12.36)	0.74	0.55	0.45
λ_{71}	0.89 (11.35)	0.73	0.53	0.47

Table 5.25 (Continued)

Parameters	Factor Loadings	Standard Factor Loadings	Squared Multiple Correlations (r^2)	Standardised Theta-Delta
Predictive Expectations				
λ_{82}	1.00	0.83	0.69	0.31
λ_{92}	1.04 (12.66)	0.73	0.53	0.47
$\lambda_{10,2}$	0.97 (14.81)	0.84	0.70	0.30
$\lambda_{11,2}$	0.85 (13.46)	0.76	0.58	0.42
$\lambda_{12,2}$	1.07 (17.19)	0.91	0.82	0.18
$\lambda_{13,2}$	1.05 (14.94)	0.81	0.66	0.34
$\lambda_{14,2}$	0.85 (11.71)	0.71	0.51	0.49
Perceived Performance				
$\lambda_{15,3}$	1.00	0.81	0.66	0.34
$\lambda_{16,3}$	1.04 (12.01)	0.74	0.55	0.45
$\lambda_{17,3}$	0.83 (13.30)	0.80	0.64	0.36
$\lambda_{18,3}$	0.77 (14.37)	0.84	0.71	0.29
$\lambda_{19,3}$	0.93 (15.11)	0.87	0.76	0.24
$\lambda_{20,3}$	0.89 (13.06)	0.79	0.62	0.38
$\lambda_{21,3}$	0.88 (12.25)	0.75	0.56	0.44
Time Costs				
$\lambda_{22,4}$	1.00	0.82	0.68	0.32
$\lambda_{23,4}$	0.78 (6.83)	0.76	0.58	0.42
Monetary Costs				
$\lambda_{24,5}$	1.00	0.81	0.66	0.34
$\lambda_{25,5}$	0.90 (10.08)	0.77	0.59	0.41
$\lambda_{26,5}$	0.76 (9.59)	0.71	0.51	0.49
Customer Satisfaction				
$\lambda_{27,6}$	1.00	0.91	0.83	0.17
$\lambda_{28,6}$	0.95 (20.44)	0.91	0.82	0.18
$\lambda_{29,6}$	0.94 (17.96)	0.86	0.74	0.26
$\lambda_{30,6}$	0.84 (14.37)	0.76	0.58	0.42
Perceived Value				
$\lambda_{31,7}$	1.00	0.71	0.51	0.49
$\lambda_{32,7}$	1.02 (10.88)	0.82	0.67	0.33
$\lambda_{33,7}$	1.09 (11.46)	0.87	0.77	0.23
Encounter Quality				
$\lambda_{34,8}$	1.00	0.89	0.79	0.21
$\lambda_{35,8}$	0.98 (18.31)	0.88	0.78	0.22
$\lambda_{36,8}$	0.93 (17.44)	0.86	0.75	0.25
Global Quality				
$\lambda_{39,9}$	1.00	0.91	0.82	0.18
$\lambda_{40,9}$	0.94 (19.53)	0.88	0.78	0.22
$\lambda_{41,9}$	0.97 (20.79)	0.91	0.82	0.18
Behavioural Intentions				
$\lambda_{42,10}$	1.00	0.86	0.74	0.26
$\lambda_{43,10}$	1.14 (17.09)	0.91	0.84	0.16

(* - t-values in parentheses)

Table 5.26 Correlations among Constructs

Constructs	I	II	III	IV	V	VI	VII	VIII	IX	X
Predictive Expectations (I)	1.00									
Normative Expectations (II)	0.46	1.00								
Perceived Performance (III)	0.54	0.27	1.00							
Monetary Costs (IV)	0.08	0.10	0.18	1.00						
Time Costs (V)	-0.09	0.01	-0.07	0.48	1.00					
Perceived Value (VI)	0.34	0.15	0.69	-0.10	-0.24	1.00				
Customer Satisfaction (VII)	0.40	0.20	0.84	0.10	-0.13	0.64	1.00			
Encounter Quality (VIII)	0.32	0.14	0.77	0.19	-0.02	0.66	0.81	1.00		
Global Quality (IX)	0.33	0.16	0.77	0.19	-0.12	0.65	0.82	0.92	1.00	
Behavioural Intentions (X)	0.34	0.15	0.76	-0.01	-0.16	0.79	0.75	0.77	0.83	1.00

5.5.3 The Structural Models and Results

Figure 5.7 depicts the hypothesised structural paths among the constructs. For simplicity, the measurement model is not shown in the figure, but it was formulated in a way similar to the measurement models described earlier. There are some differences in the conceptual model described in section 4.4 and the structural model in Figure 5.7. First, in the structural model, “normative expectations” and “perceived performance” were hypothesised to influence “encounter quality” directly. The effect of the discrepancy between “normative expectations” and “perceived performance” on “encounter quality” was not examined due to the low reliability of the measures of the difference scores. Similarly, “customer satisfaction” was hypothesised to be influenced by “predictive expectations” and “perceived performance” directly and “normative expectations” was hypothesised to influence “customer satisfaction” through “encounter quality”. Second, “monetary costs” and “time costs” were regarded as two constructs in the structural model rather than as measures of the single construct “perceived sacrifice”.

The structural model included ten constructs, of which five were exogenous and five endogenous. “Normative expectations”, “predictive expectations”, “perceived performance”, “monetary costs” and “time costs” were exogenous constructs, whereas “encounter quality”, “customer satisfaction”, “perceived value”, “global quality”, and “behavioural intentions” were endogenous constructs. The purpose of structural equation modelling was to examine the relationships among the constructs while simultaneously accounting for random measurement error. The relationships among the constructs can be represented mathematically as follows:

Encounter Quality = f (Normative Expectations, Perceived Performance)

or using the structural equation notations, the relationship is expressed as follows:

$$\eta_1 = \gamma_{11} \xi_1 + \gamma_{12} \xi_2 + \zeta_1 \quad (\text{Eq.1})$$

Perceived Value = f (Perceived Performance, Monetary costs, Time costs)

or using the structural equation notations, the relationship is expressed as follows:

$$\eta_2 = \gamma_{22} \xi_2 + \gamma_{23} \xi_3 + \gamma_{24} \xi_4 + \zeta_2 \quad (\text{Eq.2})$$

Customer Satisfaction = f (Encounter Quality, Perceived Value, Perceived Performance, Predictive Expectations)

or using the structural equation notations, the relationship is expressed as follows:-

$$\eta_3 = \beta_{31} \eta_1 + \beta_{32} \eta_2 + \gamma_{32} \xi_2 + \gamma_{35} \xi_5 + \zeta_3 \quad (\text{Eq.3})$$

Global Quality = f (Encounter Quality, Customer Satisfaction)

or using the structural equation notations, the relationship is expressed as follows:-

$$\eta_4 = \beta_{41} \eta_1 + \beta_{43} \eta_3 + \zeta_4 \quad (\text{Eq.4})$$

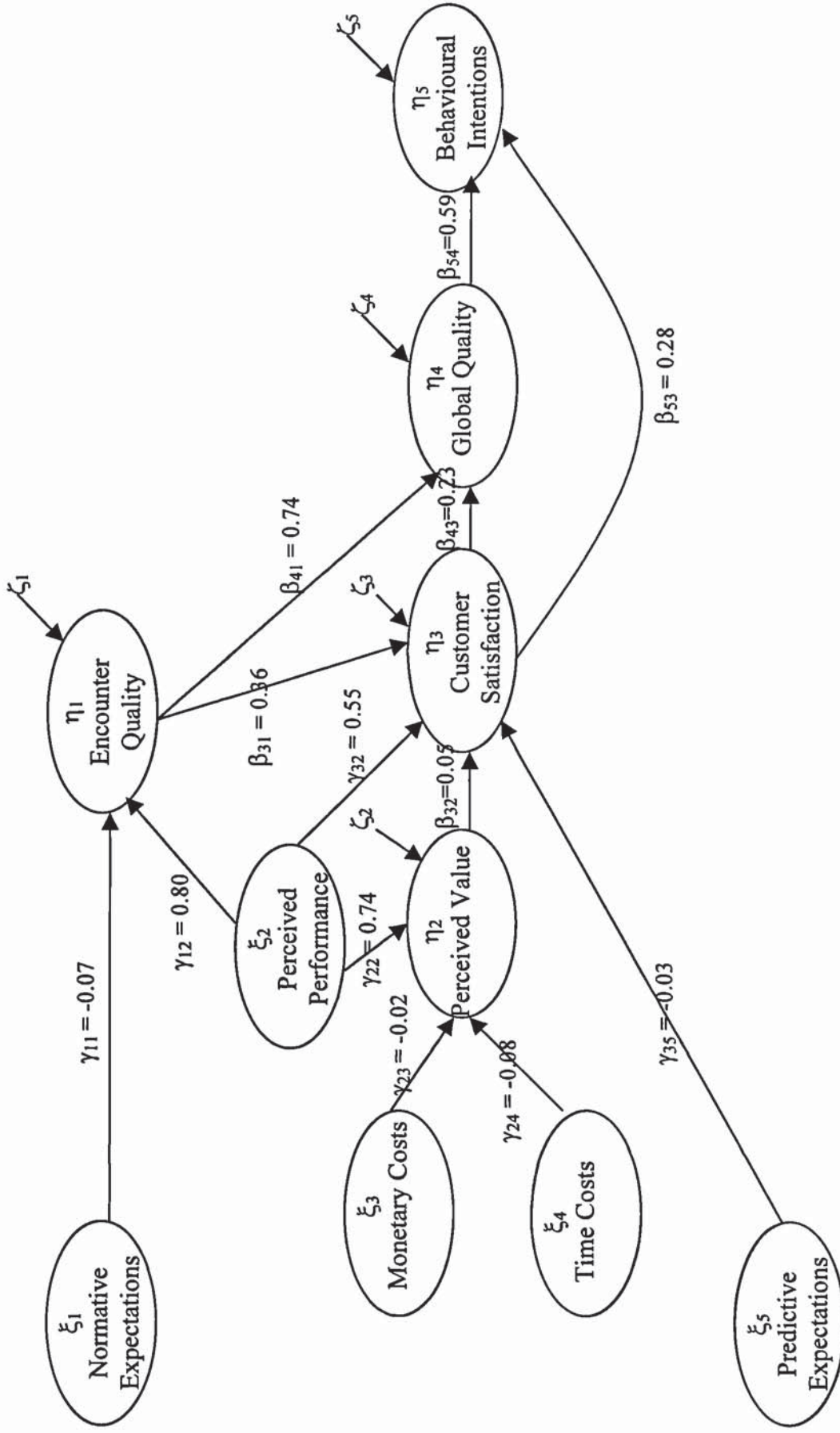
Behavioural Intentions = f (Customer Satisfaction, Global Quality)

or using the structural equation notations, the relationship is expressed as follows:-

$$\eta_5 = \beta_{53} \eta_3 + \beta_{54} \eta_4 + \zeta_5 \quad (\text{Eq.5})$$

The hypothesised relationships among the constructs are depicted in figure 5.7.

Figure 5.7 The structural model depicting the hypothesised relationships among the constructs



By default, LISREL 8 automatically standardised both the independent and dependent latent variables if no reference variable was specified for the measurement model. Table 5.26 presents the standardised parameter estimates of the structural equations. Although, the r^2 for the structural equations ranged from 0.56 to 0.87, the overall fit of the model was not satisfactory. The Chi-square statistic was 1344.74 ($p=0.00$) with 751 degrees of freedom, GFI = 0.77, AGFI = 0.73, NFI = 0.83 and RMSR = 0.067.

The signs of the path coefficients were in the hypothesised direction, but some path coefficients were very low, which indicated that the effects of some variables were very small. It appeared that “encounter quality” was solely influenced by “perceived performance”. The effect of “normative expectations” on “encounter quality” was negative, but it was found to be insignificant at the 5 % level. Both “perceived performance” and “monetary costs” were found to have significant effect on “perceived value”, and the signs of the path coefficients were in the hypothesised direction. However, “time costs” was found to have little influence on “perceived value”. This may suggest that monetary costs play a more significant role in customer assessments of perceived value than non-monetary costs. “Customer satisfaction” was found to be positively affected by “encounter quality” and “perceived performance”. In contrast, “predictive expectations” and “perceived value” did not exert significant influence on “customer satisfaction”. In particular, the effect of “perceived value” on “customer satisfaction” was very small, and this result was quite surprising. The empirical results did not support the findings suggested in the exploratory research that perceived value was a determinant of customer satisfaction. On the other hand, “global quality” was found to be significantly influenced by “encounter quality” and “customer satisfaction”. Finally, customer satisfaction and overall perceptions of service quality were shown to have positive effects on intended post-purchase behaviour.

Table 5.27 Standardised Parameter Estimates of the Structural Equations

Independent Variables	Dependent Variables				
	Encounter Quality	Perceived Value	Customer Satisfaction	Global Quality	Behavioural Intentions
	Eq. (1)	Eq. (2)	Eq. (3)	Eq. (4)	Eq. (5)
Normative Expectations	-0.07 (-1.28)				
Predictive Expectations			-0.03 (-0.50)		
Perceived Performance	0.80 (9.18)*	0.74 (8.05)*	0.55 (4.81)*		
Monetary costs		-0.20 (-2.43)*			
Time costs		-0.08 (-1.04)			
Perceived Value			0.05 (0.74)		
Encounter Quality			0.36 (4.21)*	0.74 (6.22)*	
Customer Satisfaction				0.23 (3.05)*	0.28 (2.83)*
Global Quality					0.59 (4.92)*
r^2	0.62	0.56	0.77	0.87	0.71

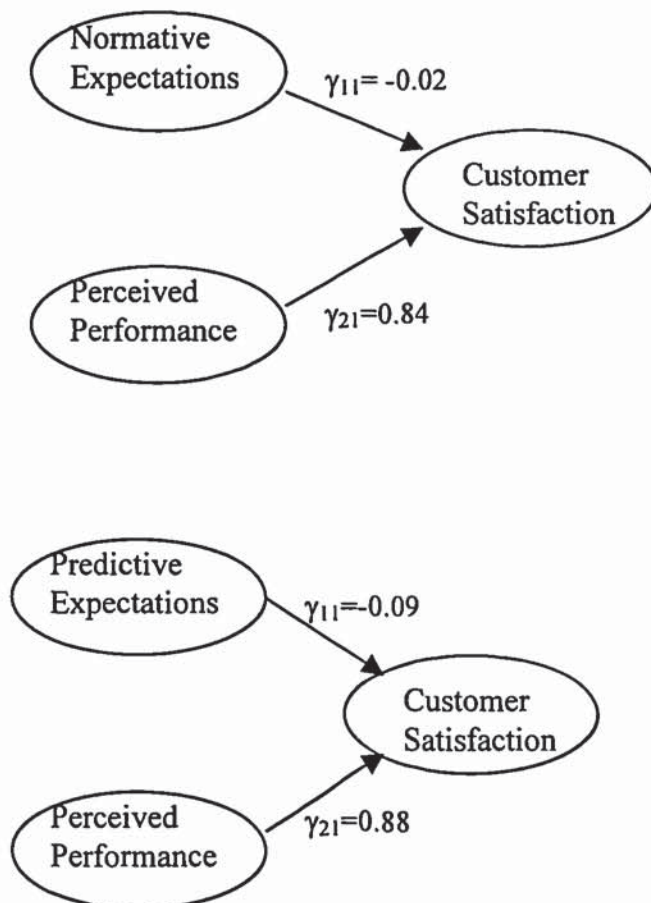
(t-values in parentheses and * significant at the 5 % level)

Considering the complexity of the model, and that it did not fit the data adequately, it was divided into two sub-models to examine closely the direct and indirect effects of some constructs on others. The first sub-model examined the effects of comparison standards on “encounter quality” and “customer satisfaction”. The second sub-model examined the relationships between “encounter quality”, “perceived value”, “customer satisfaction”, “global quality” and “behavioural intentions”.

One of the research issues of interest in this study was the need to examine the effects of comparison standards on customer satisfaction and service quality. Prior research produced mixed results. The literature documents that service quality and customer satisfaction are distinctive because they are determined by different types of

comparison standards. Therefore, it was decided to analyse and compare the effects of these standards on encounter quality and customer satisfaction respectively. For customer satisfaction, three models were specified as follows. Model 1 examined the effect of “normative expectations” and “perceived performance” on “customer satisfaction”. Model 2 examined the effect of “predictive expectations” and “perceived performance” on “customer satisfaction”. Model 3 examined simultaneous effects of the two types of comparison standards on “customer satisfaction”. Figure 5.8 depicts these models. Similarly, three models were specified for evaluating the effects of comparison standards on encounter quality. Table 5.28 summarises the results of these models.

Figure 5.8 Three Models of Customer Satisfaction



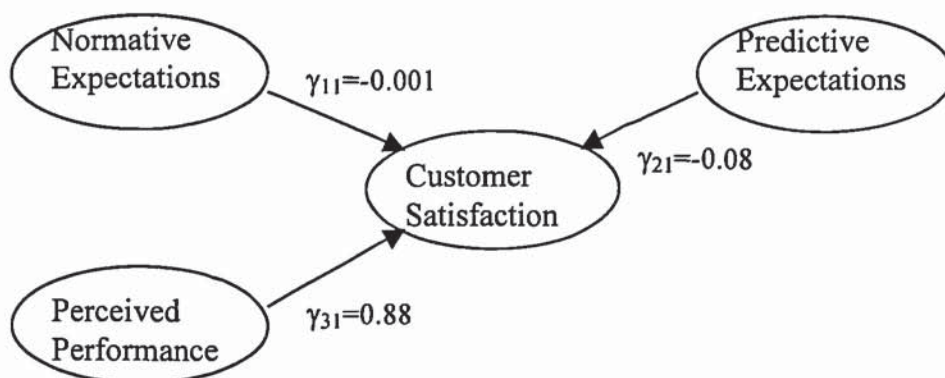


Table 5.28 Standardised Parameter Estimates of the Customer Satisfaction and Encounter Quality Models

Dependent Variables	Independent variables				Dependent Variables	Independent variables			
	N.E.	P.E.	P.P	r ²		N.E.	P.E.	P.P	r ²
Model 1 (C.S.)	-0.02 (-0.48)	N.A.	0.84 (9.19)*	0.70	Model 4 (E.Q.)	-0.08 (-1.34)	N.A.	0.79 (8.91)*	0.59
Model 2 (C.S.)	N.A.	-0.09 (-1.45)	0.88 (8.63)*	0.71	Model 5 (E.Q.)	N.A.	-0.14 (-2.04)*	0.84 (8.35)*	0.60
Model 3 (C.S.)	-0.001 (-0.02)	-0.08 (-1.26)	0.88 (8.66)*	0.70	Model 6 (E.Q.)	-0.03 (-0.52)	-0.11 (-1.56)	0.84 (8.38)*	0.60

N.E. denotes "Normative Expectations", P.E. denotes "Predictive Expectations", P.P. denotes "Perceived Performance", E.Q. denotes "Encounter Quality", C.S. denotes "Customer Satisfaction" and N.A. denotes not applicable
(t-values in parentheses and * significant at the 5 % level)

The effect of "normative expectations" on "encounter quality" was stronger than its effect on "customer satisfaction" (-0.08 compared with -0.02). Although both path coefficients were in the hypothesised directions, their values were low and their effects were small. The results in table 5.28 also indicated that the effect of "predictive expectations" on "encounter quality" was significant at the 5 % level, and was stronger than its effect on "customer satisfaction". It was also found that perceived performance exerted greater influence on customer satisfaction and encounter quality respectively than the comparison standards. This became more apparent when the two comparison standards were assessed simultaneously with perceived performance. The results suggest that perceived performance was the primary determinant of customer satisfaction, whereas encounter quality was

influenced by predictive expectations and perceived performance. Although the effect of predictive expectations on encounter quality was small, it was statistically significant at the 5 % level. These findings contradict the suggestion of Parasuraman et al. (1985) that service quality is determined by normative expectations, whereas customer satisfaction is determined by predictive expectations. The results of this research show that predictive expectations have a stronger negative effect on encounter quality than normative expectations.

A plausible explanation for this situation is that consumers may use two different comparison standards. Consumers expect the most likely level of service to be provided by the restaurant based on past experience. If they consume at the restaurant for the first time, then the brand name, exterior and interior decoration, and appearance of service personnel will exert some influence on their expectations. On the other hand, the consumer also expects a level of service that is equivalent to their ideal (expressed here as normative expectations). If the performance perceptions match or exceed normative expectations, ideal quality is achieved, and the consumer will feel extremely pleased with the service. However, if the performance perceptions are below the normative expectations but match or exceed predictive expectations, the consumer will consider the quality of service is acceptable and feel satisfied with the service. Conversely, if the performance perceptions are below the predictive expectations, the quality of the service will be considered poor and the consumer will feel dissatisfied.

In order to test hypotheses 6 and 7, the sample was divided into three groups. The first group consisted of the consumers whose summative scores of performance perceptions minus normative expectations equal or greater than zero (that is, $\sum_{i=1}^{i=23} (P_i - NE_i) \geq 0$). The second group consisted of the consumers who perceived that service performance overall was lower than the normative expectations but greater than the predictive expectations. The third group consisted of the consumers whose perceptions of the service performance was lower than predictive expectations. Analysis of variance was performed to compare the mean scores of encounter quality, customer satisfaction, global quality, and behavioural intentions, and the mean scores are presented in table 5.29. The ANOVA results can be found in Appendix 5.11.

Table 5.29 Mean Scores of Encounter Quality, Customer Satisfaction, Global Quality and Behavioural Intention

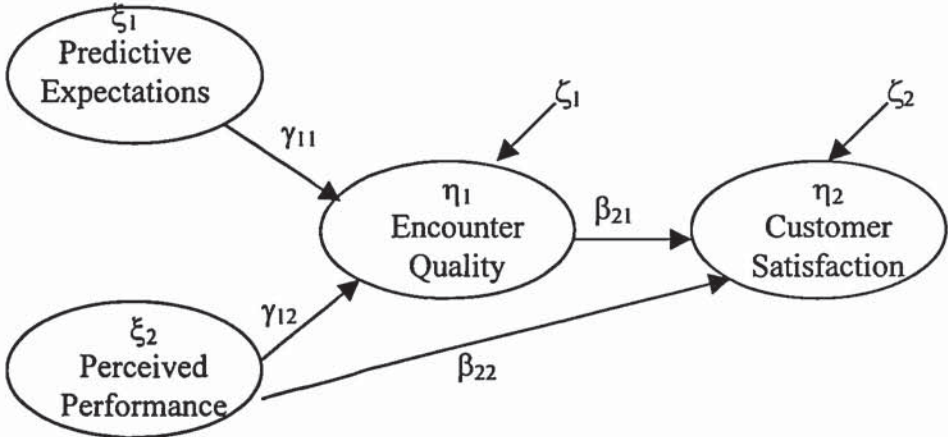
Groups	Encounter Quality	Customer Satisfaction	Global Quality	Repurchase Intention	Recommendation Intention
Group 1 (n = 35)	4.63	5.03	4.81	4.71	4.85
Group 2 (n = 71)	4.22	4.62	4.28	4.24	4.02
Group 3 (n = 103)	3.97	4.25	4.06	3.84	3.64

The results in table 5.29 show that consumers whose performance perceptions matched or exceeded normative expectations rated the encounter quality, customer satisfaction, and global quality significantly higher on the average than the consumers whose performance perceptions were below normative expectations. Furthermore, they had a stronger tendency to repurchase and recommend the service to others. For those consumers whose performance perceptions were below their normative expectations but exceeded the predictive expectations, a majority considered the quality of the service as acceptable and good. However, it was also noted that they were likely to switch to other restaurants. For about half of the sample, performance perceptions were below predictive expectations. A close examination of the summative scores revealed that some pair scores of performance perceptions and predictive expectations were very close. This may be the reason why the encounter quality on the average tended to be acceptable. However, consumer repurchase and recommendation intentions in this group were significantly low. Although, the results were preliminary, they provided some evidence to support hypotheses 6 and 7. One final remark is that each service attribute was assumed to be equally important, and an unweighted summative score was used.

A model was specified linking encounter quality with customer satisfaction. Based on the previous argument, “predictive expectations” and “perceived performance” were hypothesised to have an influence on “encounter quality”, which in turn influenced “customer satisfaction”. “Perceived performance” was posited to have direct and indirect effects on “customer satisfaction”, and “predictive expectations” was posited

to have an indirect effect on “customer satisfaction” through “encounter quality”. It was reasonable to eliminate “normative expectations” from the model, because previous results showed that it has neither significant effect on encounter quality nor on customer satisfaction. The inclusion of insignificant paths would not improve the overall fit of the model (Jöreskog and Sörbom 1993). Furthermore, insignificant paths should be excluded to help maintain the parsimony of the model (Bagozzi 1992). Figure 5.9 depicts the structural model linking encounter quality and customer satisfaction.

Figure 5.9 The Structural Model Linking Encounter Quality and Customer Satisfaction



Using LISREL, the following standardised structural equation were derived:

$$\eta_1 = -0.14 \xi_1 + 0.92 \xi_2 + 0.40 \quad r^2 = 0.60$$

(-2.05) (8.26)

$$\eta_2 = 0.41 \eta_1 + 0.57 \xi_2 + 0.23 \quad r^2 = 0.77$$

(4.74) (5.94)

The overall fit of the model was satisfactory, the Chi-square statistic was 363.35 with 183 degree of freedom, GFI = 0.85, AGFI = 0.81, NFI = 0.91 and RMSR = 0.054. As expected, “predictive expectations” was found to exert a significant negative effect on “encounter quality”, whereas the effect of “perceived performance” on “encounter quality” was found to be positive. This suggests that the higher the predictive

expectations, the more likely consumers will perceive the quality of service at a specific encounter “poor” and “unacceptable”. Conversely, the higher the perceptions of performance, the more likely the consumers will perceive the quality of service at a specific encounter “good” and “acceptable”. “Encounter quality” and “perceived performance” displayed a positive effect on “customer satisfaction”. The model was re-specified with “customer satisfaction” as the cause, and “encounter quality” as the effect. Although the results show that the model fit the data equally well, “predictive expectations” exerted no significant influence on “customer satisfaction”. If this insignificant path was removed from the model, then both “customer satisfaction” and “encounter quality” were determined primarily by “perceived performance”. The literature and the results appear to support “encounter quality” as the cause and “customer satisfaction” as the effect at the transactional level.

The results show that the effects of “normative expectations” and “predictive expectations” on “encounter quality” are different, and coupled with the discriminant validity tests described earlier, provide evidence to suggest that the two comparison standards are distinct. Thus, the hypothesis that “normative expectations” and “predictive expectations” are distinct constructs cannot be rejected. That “encounter quality” and “customer satisfaction” are distinct constructs is argued on a similar level. The results indicate that “encounter quality” was influenced by “predictive expectations”, whereas the effect of “predictive expectations” on “customer satisfaction” was mediated through “encounter quality”, and coupled with the discriminant validity tests described earlier, support the two as distinct constructs. Thus, the hypothesis that “encounter quality” and “customer satisfaction” are distinct constructs cannot be rejected.

The analysis followed an examination of the relationships among encounter quality, customer satisfaction, perceived value, global quality and behavioural intentions. A model was specified and estimated, and is illustrated in Figure 5.10.

Figure 5.10 The Structural Model Linking Encounter Quality, Customer Satisfaction, Perceived Value, Global Quality and Behavioural Intentions

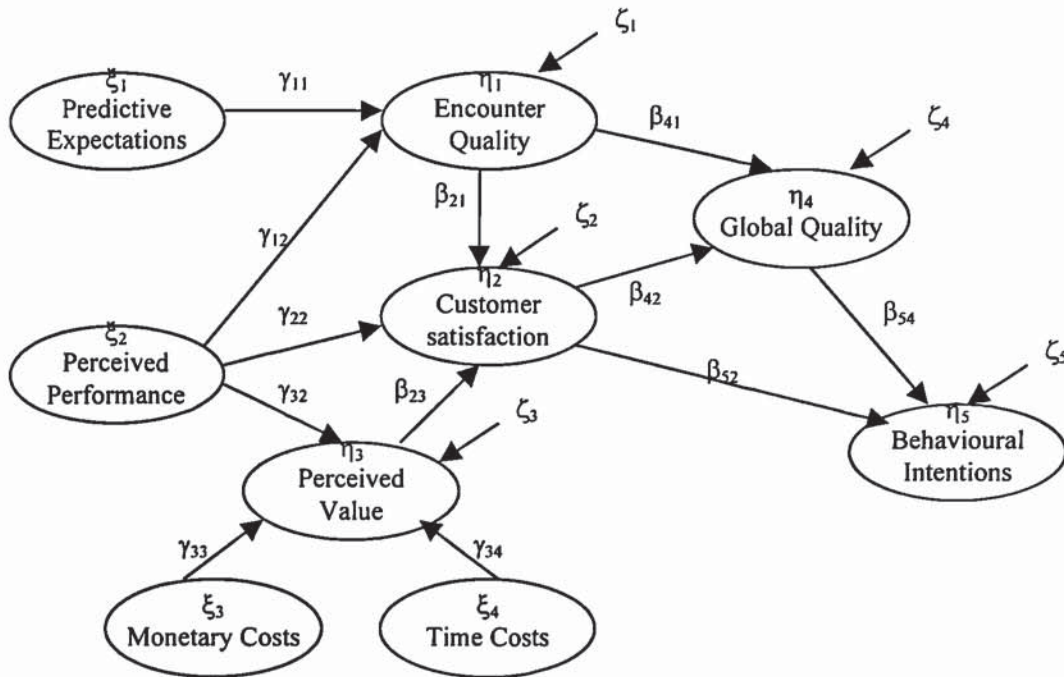


Table 5.30 Standardised Parameter Estimates of the Structural Model in Figure 5.10

Independent variables	Dependent variables				
	Encounter Quality (η_1)	Customer Satisfaction (η_2)	Perceived Value (η_3)	Global Quality (η_4)	Behavioural Intentions (η_5)
Predictive Expectations (ξ_1)	-0.15 (-2.33)*				
Perceived Performance (ξ_2)	0.87 (8.67)*	0.53 (4.94)*	0.74 (8.06)*		
Monetary costs (ξ_3)			-0.20 (-2.45)*		
Time costs (ξ_4)			-0.08 (-1.01)		
Encounter Quality (η_1)		0.36 (4.22)*		0.74 (6.17)*	
Customer Satisfaction (η_2)				0.23 (2.99)*	0.28 (2.83)*
Perceived Value (η_3)		0.05 (0.76)			
Global Quality (η_4)					0.59 (4.91)*
r^2	0.64	0.77	0.56	0.87	0.71

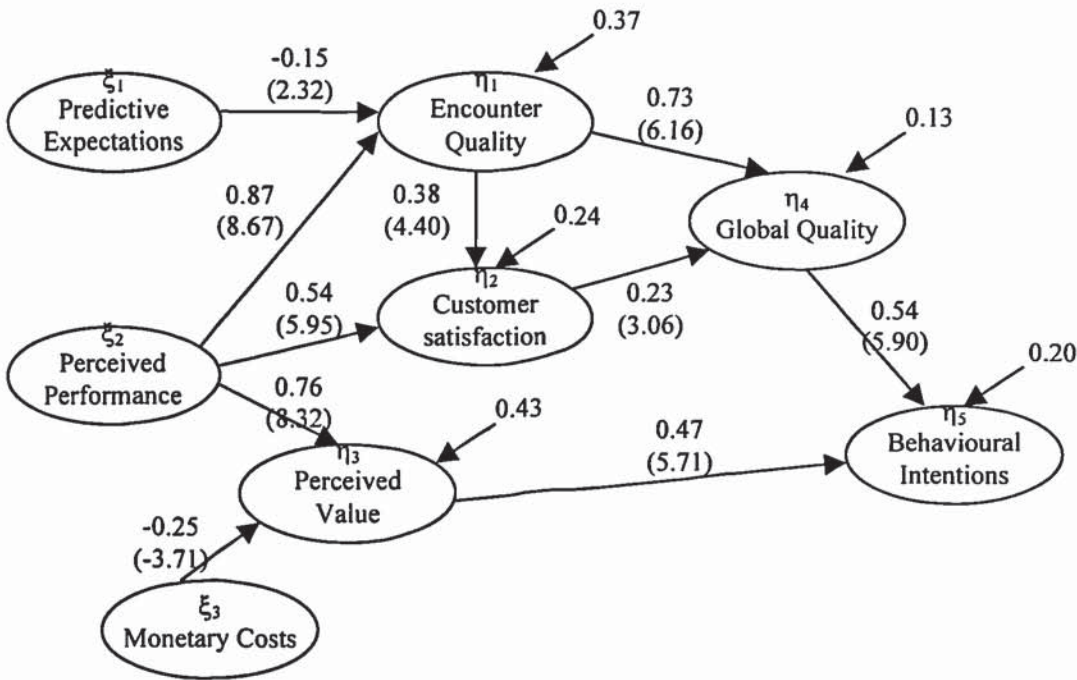
(t-values in parentheses)

The overall fit of the model was barely satisfactory: the Chi-square = 935.96 with 508 degrees of freedom, GFI = 0.79, AGFI = 0.76 and RMSR = 0.069. All the path coefficients in figure 5.10 were significant at the 5 % level except the path from “time costs” to “perceived value” and the path from “perceived value” to “customer satisfaction” ($\gamma_{34} = -0.08$ and $\beta_{23} = 0.05$ respectively). It was noted that “perceived performance” had both direct and indirect effects on “customer satisfaction” through “encounter quality” and “perceived value” respectively. It was reasonable to assume that the effect of “perceived performance” on “customer satisfaction” could have been completely mediated by “encounter quality” and “perceived value”. Therefore, the model was re-specified constraining $\gamma_{22} = 0$, and by doing so it was nested within the previous model. A Chi-square difference test was performed, but the results suggested that the effect of “perceived performance” on “customer satisfaction” was completely mediated by “perceived value” and “encounter quality” was not supported. The difference in Chi-square values was 31.68, and the difference in degrees of freedom was one, providing support for the hypothesis that “perceived performance” has a direct effect on “customer satisfaction”.

From the results of the structural model in figure 5.10, a significant large modification index was identified, suggesting that if the path coefficient between “perceived value” and “behavioural intentions” was relaxed, the Chi-square value would expectedly be reduced by 36.1. The effect of “perceived value” on “behavioural intentions” was already hypothesised to be mediated by “customer satisfaction”. This hypothesis was developed based on the findings of the earlier exploratory research, although prior research had found a relationship between “perceived value” and “behavioural intentions” (Chang and Wildt 1994). It was also surprising to find that customer satisfaction had often been omitted in the studies that examined perceived value and behavioural intentions. It was decided to examine the direct effect of “perceived value” on “behavioural intentions”. Thus, a model was re-estimated with the path coefficient between “perceived value” and “behavioural intentions” specified as a free parameter. The overall fit of the model had improved with a Chi-square value of 892.17 (with 507 degrees of freedom), GFI = 0.80, AGFI = 0.76 and RMSR 0.061. The results suggest that consumer value perceptions exerted significant influence on their intended behaviour. The path coefficient was found to be 0.45. It was interesting

to note that after adding the direct path from “perceived value” to “behavioural intentions”, the effect of “customer satisfaction” on “behavioural intentions” appeared to be mediated entirely by “global quality”. The direct effect of “customer satisfaction” on “behavioural intentions” was 0.08. In the interest of parsimony, a final model was estimated with the insignificant paths eliminated from the model. The resultant model was as follows:

Figure 5.11 The Resultant Model Linking Encounter Quality, Customer Satisfaction, Perceived Value, Global Quality and Behavioural Intentions



(t-values in parentheses)

The resultant model had a Chi-square value of 785.04 with 450 degrees of freedom, GFI = 0.81, AGFI = 0.78, RMSR = 0.058 and NFI = 0.87. Although both the GFI and AGFI indices suggested that the fit of the model was not highly satisfactory, the RMSR value and the ratio of Chi-square statistic to degree of freedom were acceptable. The r^2 ranged from 0.57 to 0.87, and all the path coefficients were in their hypothesised directions, and were significant at the 5 % level. Table 5.31 summarises the indirect effects of exogenous and endogenous constructs on endogenous

constructs. Table 5.32 summarises the total effects (indirect and direct) of exogenous and endogenous constructs on endogenous constructs.

Table 5.31 Indirect Effects of Exogenous and Endogenous Constructs on Endogenous Constructs

Independent variables	Dependent variables		
	Customer Satisfaction (η_2)	Global Quality (η_4)	Behavioural Intentions (η_5)
Predictive Expectations (ξ_1)	-0.06 (-2.15)*	-0.12 (-2.29)*	-0.07 (-2.25)*
Perceived Performance (ξ_2)	0.33 (4.32)*	0.84 (7.58)*	0.82 (7.52)*
Monetary costs (ξ_3)			-0.12 (-3.35)*
Encounter Quality (η_1)		0.09 (2.77)*	0.45 (6.07)*
Customer Satisfaction (η_2)			0.13 (2.79)*

(t-values in parentheses)

Table 5.32 Total Effects of Exogenous and Endogenous Constructs on Endogenous Constructs

Independent variables	Dependent variables				
	Encounter Quality (η_1)	Customer Satisfaction (η_2)	Perceived Value (η_3)	Global Quality (η_4)	Behavioural Intentions (η_5)
Predictive Expectations (ξ_1)	-0.15 (-2.32)*	-0.06 (-2.15)*		-0.12 (-2.29)*	-0.07 (-2.25)*
Perceived Performance (ξ_2)	0.87 (8.67)*	0.87 (9.34)*	0.76 (8.32)*	0.84 (7.48)*	0.82 (7.52)*
Monetary costs (ξ_3)			-0.25 (-3.71)*		-0.12 (-3.35)*
Encounter Quality (η_1)		0.38 (4.40)*		0.82 (7.02)*	0.45 (6.07)*
Customer Satisfaction (η_2)				0.23 (3.06)*	0.13 (2.79)*
Perceived Value (η_3)					0.47 (5.71)*
Global Quality (η_4)					0.54 (5.90)*

(t-values in parentheses)

5.5.4 Discussion of the Results

Determinants of Encounter Quality

The findings show that predictive expectations exert a negative effect on encounter quality. Although the effect of normative expectations on encounter quality is negative, it is insignificantly different from zero at the 5 % level. Perceived performance has a positive effect on encounter quality. The findings suggest that the higher the predictive expectations, the lower the encounter quality perceptions, whereas the higher the performance perceptions, the higher the encounter quality perceptions.

Determinants of Customer Satisfaction

The effect of predictive expectations on customer satisfaction is mediated through encounter quality (-0.06). Normative expectations do not exert significant influence on customer satisfaction, thereby the hypothesis that customer satisfaction is influenced by multiple comparison standards is not supported. Both encounter quality and perceived performance exert positive influence on customer satisfaction. Perceived performance exerts a stronger influence on customer satisfaction, and the total effect of perceived performance is 0.87 ($0.54 + 0.87 \times 0.38$). However, contrary to expectation, perceived value does not exert significant influence on customer satisfaction. This result is inconsistent with the findings of the earlier exploratory research, and the research of others. It appears that customer's degree of satisfaction is not determined by their value perceptions of the service. One of the possible explanations is that customer satisfaction as defined and operationalised in this study is an emotional response towards the service, whereas perceived value is defined and operationalised as a rational judgement resulting from a comparison of costs and gains. The hypothesis suggests that customers who have low value perceptions are more likely to feel dissatisfied with the service, and vice versa. However, it is possible that customers are satisfied with the service but they do not consider the costs associated with it justified.

There are some charges that may appear unreasonable to customers who dine at Chinese restaurants in Hong Kong, such as those for Chinese tea per person and the

snack served prior to the meal. It has also been observed that some restaurants attempt to attract more customers by lowering the price of dishes to make them appealing, but raise the prices of beverages and snacks.

In an attempt to obtain a better understanding of the relationship between perceived value and customer satisfaction, the sample was divided into two groups, one consisting of those customers who felt very satisfied with the service performance, and the other consisting of those who felt dissatisfied with the service performance. It was found that the relationship between customer satisfaction and perceived value was very strong for those customers who felt dissatisfied with the service ($r=0.574$, $p=0.000$). However, for those who felt very satisfied, the relationship between perceived value and customer satisfaction was very weak ($r = 0.104$, $p = 0.350$). The results suggest that if customers perceive the service as not worthy of its cost, they will more likely feel dissatisfied with it. On the other hand, if customers feel extremely satisfied with the service performance, they will not necessarily consider the service highly worthwhile. A plausible explanation for this is that the relationship between customer satisfaction and perceived value may be intervened by other factors that have not been examined in the model, such as mood and occasion of the service. A customer's mood or occasions of the service, like birthday celebrations, may inflate customer satisfaction responses. Another possible explanation is that customers always want more for less.

Determinants of Perceived Value

The results support the hypothesis that customers who have high performance perceptions will consider the service worthwhile. On the other hand, customers who have high monetary cost perceptions will consider the service not worthwhile. Time spent in waiting and receiving the service does not exert impact on value perceptions of that service. It appears that monetary costs play a more significant role in determining customer perceptions of the service value.

Determinants of Global Quality

Cumulative customer judgement of the overall quality of the service is strongly influenced by the quality of the service at the most recent encounter. In other words, overall customer perception of the quality of the service is *adjusted* according to the

quality of the service received at the recent encounter. Customer satisfaction is also shown to have a positive influence on overall quality perceptions.

Determinants of Behavioural Intentions

Global quality and perceived value exert significant positive effects on behavioural intentions. The former effect is stronger, with the standardised path coefficient 0.54 compared to 0.47. Although customer satisfaction is regarded as a highly important variable in marketing literature, its effect on behavioural intentions is mediated through global quality. Monetary costs exert a significant negative indirect effect on intended customer behaviour through perceived value. Predictive expectations also exert indirect influence on behavioural intentions through encounter quality and global quality. There is also a positive indirect effect of perceived performance on behavioural intentions through perceived value, customer satisfaction, encounter quality and global quality.

The results of this study highlight the importance of perceived value on intended customer behaviour. It has been reported in the literature that satisfied customers are no longer necessarily loyal customers. The relationship between perceived value and behavioural intentions that was found in this study explains why even satisfied customers have a low tendency to repurchase. The results reveal that the effect of perceived value on behavioural intentions is stronger than the effect of customer satisfaction. This suggests that customer repurchase and recommendation intentions are influenced more by value perceptions than by the degree of satisfaction.

Table 5.32 Summary of Hypothesis Test Results

Hypothesis Statements	Result
H ₁ : Perceived encounter quality and customer satisfaction are two distinct constructs	Supported
H ₂ : Normative expectations and predictive expectations are two distinct constructs	Supported
H ₄ : Normative expectations will have a negative effect on perceived encounter quality	Rejected
H ₅ : Predictive expectations will have a negative effect on customer satisfaction	Supported
H ₆ : Customers whose perceptions of performance match or exceed predictive expectations are more satisfied with service performance than customers whose perceptions of performance fall short of predictive expectations	Supported
H ₇ : Customers whose perceptions of performance match or exceed normative expectations perceive that the service is of higher quality than customers whose perceptions of performance fall short of normative expectations	Supported
H ₈ : Perceived performance will have a positive effect on perceived encounter quality	Supported
H ₉ : Perceived performance will have a positive effect on customer satisfaction	Supported
H ₁₀ : Perceived encounter quality will have a positive effect on customer satisfaction	Supported
H ₁₁ : Perceived encounter quality will have a positive effect on perceived global quality	Supported
H ₁₂ : Customer satisfaction will have a positive effect on perceived global quality	Supported
H ₁₃ : Customer satisfaction will have a positive effect on behavioural intentions	Supported
H ₁₄ : Perceived global quality will have a positive effect on behavioural intentions	Supported

Table 5.32 (Continued)

Hypothesis Statements	Result
H ₁₉ : Perceived performance will have a positive effect on perceived value	Supported
H ₂₀ : Perceived sacrifice will have a negative effect on perceived value	Supported
H ₂₁ :Perceived value will have a positive effect on customer satisfaction	Rejected

Chapter 6

Investigation of the Influence of Experience on Consumer Expectations

6.1 Introduction

The purpose of this chapter is to investigate the influence of consumer experience on expectations of future service. The chapter begins with a description of the data collection, which is followed by a discussion of the analysis and results. The findings are presented and discussed subsequently.

6.2 Data Collection

In order to examine the influence of consumer experience on expectations of future service, a longitudinal study was conducted. Of the 209 respondents in the main field survey, 115 respondents agreed to take part in the second phase of the study. The advantage of a longitudinal study is that small changes in criterion variables are more easily identified than if separate studies are made using 2 or more independent samples. The variation of the criterion variable in the latter case may be due to changes in the composite sample (Churchill 1995). A questionnaire was mailed to the respondents approximately one month after the first interview. The questionnaire asked respondents whether they had consumed at the restaurant under investigation since the first interview, and other questions relating to customer satisfaction, global quality, normative and predictive expectations. A copy of the questionnaire can be found in Appendix 6.1. After two follow-up letters, 75 questionnaires were returned. However, two of them were discarded because of missing information, leaving 73 valid responses for analysis. There were 33 original respondents who did not return the questionnaire, while 7 respondents gave incomplete addresses. The response rate was 63.5 percent and it was considered satisfactory given the length of the questionnaire, and the fact that Hong Kong consumers in general are reluctant to participate in surveys. The use of incentives to enhance the response rate, as in this case, appears to be effective. While the sample size confines the types of analytical

methods to be used in analysing the data to such as the structural equation modelling used in the preceding chapter, the data analysis that follows generates some preliminary results indicating the relationship of experience and expectations of future service.

6.3 Analysis and Results

The demographic characteristics of the 73 respondents were compared with the demographic characteristics of the 33 who did not return the questionnaire, to examine if there was any significant difference between them. Cross-tabulation and Chi-square analysis were performed, and there was no significant difference between the two groups in terms of demographic characteristics at the 5 % level. Furthermore, the mean scores of customer satisfaction, perceived value, and global quality were compared between the two groups, and the results indicate that there was no significant difference between the two groups at the 5 % level. Thus, it appears that the reasons for respondents dropping out of the study were not related to demographic characteristics or previous experience of service. Whitley (1996) indicated that random attrition poses fewer problems than if attrition is non-random. Table 6.1 presents the demographic characteristics of the respondents and non-respondents.

Table 6.1 Demographic Characteristics of Respondents and Non-Respondents

Demographic Characteristics	Response Group	Non-response Group
Sex		
Male	29 (39.7)	10 (30.3)
Female	44 (60.3)	23 (69.7)
Age		
18 – 25	24 (32.9)	11 (33.3)
26 – 30	10 (13.7)	5 (15.2)
31 – 35	12 (16.4)	5 (15.2)
36 – 40	9 (12.3)	6 (18.2)
41 or above (*)	18 (24.7)	6 (18.2)
Marital Status		
Single	37 (50.7)	16 (48.5)
Married	35 (47.9)	17 (51.5)
Divorced	1 (0.9)	

Educational Attainment		
Primary or Below	11 (15.1)	8 (24.2)
Secondary or Post-Secondary (*)	37 (50.7)	15 (45.5)
Tertiary or Above	25 (34.2)	10 (30.3)
Personal Monthly Income		
\$ 5,000 or below	16 (21.9)	12 (36.4)
\$ 5,001 - \$10,000	17 (23.3)	9 (27.3)
\$10,001 - \$ 15,000	19 (26.0)	7 (21.2)
\$15,001 - \$ 20,000	8 (11.0)	2 (6.1)
\$ 20,001 or above (*)	13 (17.8)	3 (9.1)

(Percentages in parentheses)

(*) – classes have been combined so as to meet the expected frequency > 5 criterion in Chi-square test

Of the 73 respondents, 35 had consumed at the restaurants under investigation since the first interview, while 38 had not. Those respondents who had consumed at the same restaurant were requested to answer the questions relating to satisfaction, perceptions of value and overall quality of service in relation to their most recent experience, and the two sets of expectation statements. For those respondents who had not returned to the same restaurant, they were only requested to complete the two sets of expectation statements.

As was expected, those respondents who had consumed at the same restaurant had scores of satisfaction, perceptions of value, and overall quality that were on average higher than the scores of those respondents who had not returned. A composite measure of customer satisfaction was formed by averaging the four items relating to it. Similarly, a composite measure of perceived value and global quality was formed by averaging the relevant items respectively. Independent sample t-tests were performed on the mean scores of the composite measures for the two respondent groups. The results show that there was significant difference between the mean scores of customer satisfaction and perceived value for the two groups of respondents at the 5 % level. The mean scores of global quality for the two groups of respondents was found to be significantly different at the 10 % level. Table 6.2 presents the mean scores of customer satisfaction, perceived value and global quality of the two respondent groups, and the results of the independent sample t-tests.

Table 6.2 Results of Independent Samples T-tests

Variables	Revisit Customers (n=35)	Non-return Customers (n=38)	t-statistics
Customer Satisfaction	4.81	4.35	2.13*
Perceived Value	4.45	3.99	2.26*
Global Quality	4.45	4.06	1.70**

(*) significant at 5 % level

(**) significant at 10 % level

Dynamics of Consumer Expectations

In order to examine the dynamics of consumer expectations, scores of expectations taken at the first phase of study were compared with the scores of expectations taken at the second phase of the study. Since it was the same respondents who rated both sets of expectation statements, paired sample t-tests were used to test for the difference in the mean scores of each dimension of the expectations of restaurant service at time 1 and time 2. The paired sample t-tests revealed that there were no significant differences between the expectations at time 1 and the expectations at time 2, except on the food dimension. Table 6.3 and table 6.4 present the mean scores of the normative expectations and predictive expectations at time 1 and time 2 respectively.

Table 6.3 Results of Paired t-tests of Mean Scores of Normative Expectations at time 1 and time 2

Dimensions of Restaurant service	Normative Expectations at t ₁	Normative Expectations at t ₂	t-statistics (n=73)
Service Attitudes	5.31	5.37	-0.441
Communication	4.60	4.55	0.342
Food Taste and Variety	5.00	5.03	-0.342
Food Order and Delivery	5.17	5.03	0.997
Staff Appearance	5.15	5.27	-0.763
Staff Competence	4.81	4.87	-0.493
Environmental Factors	5.22	5.23	-0.135

Table 6.4 Results of Paired t-tests of Mean Scores of Predictive Expectations at time 1 and time 2

Dimensions of Restaurant service	Predictive Expectations at t ₁	Predictive Expectations at t ₂	t-statistics (n=73)
Service Attitudes	4.27	4.50	-1.317
Communication	3.76	3.94	-1.090
Food Taste and Variety	4.09	4.46	-2.534*
Food Order and Delivery	4.26	4.44	-1.166
Staff Appearance	4.12	4.44	-1.743
Staff Competence	3.97	4.19	-1.464
Environmental Factors	4.21	4.43	-1.258

(*) – significant different from zero at 5 % level

Based on the results of the paired t-tests, there appears to be lack of evidence to support the H₃ assertion that normative expectations are relatively more stable than predictive expectations. The results indicate that both normative expectations and predictive expectations appear to be relatively stable over time. However, the literature suggests that expectations may change following a service experience. Research by Clow et al. (1998) showed that consumers who have a negative experience will shift their prior expectations upwards, and consumers who have a positive experience will shift their prior expectations downwards. They also argued that if the change in expectations is in the opposite direction for a positive experience from a negative experience, then aggregate analysis of positive and negative experiences might average out the changes in expectation. Therefore, it was decided to separate the respondents into two groups: those respondents whose perceptions of performance were below predictive expectations formed one group, and those respondents whose perceptions of performance matched or exceeded predictive expectations formed the other. Of the 73, 40 respondent perceptions of performance matched or exceeded predictive expectations, while 33 fell short of predictive expectations. Paired t-tests were performed, and the results show that for those respondents whose perceptions of performance were below predictive expectations, both their predictive expectations and normative expectations were relatively stable.

There was no significant difference in both sets of expectations at time 1 and time 2. Tables 6.5 and 6.6 present the results of the t-tests of the consumers whose expectations had not been met.

Table 6.5 Results of Paired Sample t-tests of Mean Scores of Normative Expectations at time 1 and time 2.

Dimensions of Restaurant service	Normative Expectations at t ₁	Normative Expectations at t ₂	t-statistics (n=33)
Service Attitudes	5.67	5.47	0.978
Communication	4.77	4.64	0.576
Food Taste and Variety	5.14	5.05	0.539
Food Order and Delivery	5.41	5.18	1.094
Staff Appearance	5.27	5.17	0.488
Staff Competence	4.95	4.98	-0.115
Environmental Factors	5.50	5.31	1.113

Table 6.6 Results of Paired Sample t-tests of Mean Scores of Predictive Expectations at time 1 and time 2.

Dimensions of Restaurant service	Predictive Expectations at t ₁	Predictive Expectations at t ₂	t-statistics (n=33)
Service Attitudes	4.47	4.31	0.588
Communication	3.97	3.80	0.670
Food Taste and Variety	4.30	4.35	-0.225
Food Order and Delivery	4.48	4.36	0.581
Staff Appearance	4.27	4.20	0.285
Staff Competence	4.25	4.14	0.462
Environmental Factors	4.45	4.23	0.778

For those respondents whose perceptions of performance matched or exceeded predictive expectations, the paired t-tests showed that normative expectations were relatively stable. There was no significant difference between normative expectations at time 1 and time 2 at the 5 % level. However, there appears to have been a change in predictive expectations: the t-test results show that there was a significant difference between the predictive expectations at time 1 and time 2 at the 5 % level. The results suggest that consumer predictive expectations will shift upwards following a positive experience. In other words, when consumer perceptions of performance match or exceed predictive expectations, then expectations of future service to be provided by a specific restaurant will likely increase, while normative expectations remain relatively stable. On the other hand, when consumer perceptions of performance are below predictive expectations, then expectations of future service remain stable instead shifting downward. Although the latter finding is not consistent with the expected result, it may suggest that an alternative comparison standard exists. As long as the perceptions of performance do not fall short of this alternative comparison standard, consumer expectations of future service are assimilated to prior expectations. While the present study does not reveal what this comparison standard may be, the literature suggests that alternative comparison standards may exist such, as “minimum acceptable” proposed by Miller (1977), or “adequate level” proposed by Zeithaml et al. (1993).

Further, the findings in this study appear to be inconsistent with the findings of Clow et al. (1998). These authors found that consumers who had a negative experience will shift their reporting of prior expectations higher, and consumers who had a positive experience will shift their reporting of prior expectations downwards. However, their study investigated the effects of experience on *prior* expectations, whereas the present study is the first attempt to investigate the effect of consumer experience on expectations of future service with a longitudinal study. Clow et al (1998) stated that “it is highly likely that for a future service experience, expectations will be reduced for a negative experience and will remain stable or increase for a positive experience”. The present study provides some empirical evidence supporting this statement. Furthermore, the present study and the Clow et al. (1998) study illustrated that the shift in predictive expectations are different for consumers whose predictive expectations have been met and consumers whose predictive expectations have not

been met. Therefore, it is recommended that in future research that involves expectations and perceptions of performance, separate analysis of consumers with positive and negative experience will achieve more clear and accurate results than those of an aggregate analysis of all consumers. Based on these findings, H₃, which suggests that normative expectations are relatively more stables than predictive expectations over time, is supported. Table 6.7 and 6.8 present the results of t-tests of the consumers whose perceptions of performance exceeded or matched predictive expectations.

Table 6.7 Results of Paired Sample t-tests of Mean Scores of Normative Expectations at point t-1 and t.

Dimensions of Restaurant service	Normative Expectations at t-1	Normative Expectations at t	t-statistics (n=40)
Service Attitudes	5.01	5.29	-1.237
Communication	4.46	4.48	-0.057
Food Taste and Variety	4.89	5.03	-1.084
Food Order and Delivery	4.98	4.91	0.339
Staff Appearance	5.05	5.35	-1.422
Staff competence	4.70	4.79	-0.610
Environmental Factors	4.98	5.17	-1.137

Table 6.8 – Results of Paired Sample t-tests of Mean Scores of Predictive Expectations at point t-1 and t.

Dimensions of Restaurant service	Predictive Expectations at t-1	Predictive Expectations at t	t-statistics (n=40)
Service Attitudes	4.11	4.65	-2.695*
Communication	3.59	4.05	-2.220*
Food Taste and Variety	3.93	4.56	-3.355*
Food Order and Delivery	4.08	4.50	-1.988**
Staff Appearance	4.00	4.64	-2.684*
Staff Competence	3.74	4.24	-2.772*
Environmental Factors	4.01	4.60	-2.859*

(*) significantly different from zero at the 5 % level

(**) significantly different from zero at the 10 % level

The Relationship of Customer Satisfaction and Expectation

Due to the small sample size (n=73), it was not appropriate to use structural equation modelling to investigate the relationship of customer satisfaction with expectations of future service. The discussion that follows is based on the correlation analysis of customer satisfaction with the two sets of expectations for the seven service dimensions. One of the conditions for asserting the cause and effect relationship between two variables is that there must be sufficient association between them (see page 177). If this condition is not met, then the causal effect of one variable on another cannot be supported. The correlation analysis was performed, and the results are shown in table 6.9.

Table 6.9 Correlations between Customer Satisfaction with Normative Expectations and Customer Satisfaction with Predictive Expectations

Dimensions of Restaurant Service	Customer Satisfaction with Normative Expectations	Customer Satisfaction with Predictive Expectations
Service Attitudes	0.079	0.387*
Communication	-0.022	0.280*
Food Taste and Variety	0.003	0.424*
Food Order and Delivery	0.029	0.334*
Staff Appearance	0.029	0.283*
Staff Competence	-0.087	0.346*
Environmental Factors	0.073	0.379*

(*) – significant at the 5 % level

Examining the correlation coefficients between normative expectations and customer satisfaction, there was no evidence to suggest that they were related at the 5 % level, thereby the hypothesis that customer satisfaction is related to normative expectations cannot be supported. On the other hand, it appears that the more satisfied respondents felt about the service, the higher their expectations of future service. The results provide evidence to suggest that customer satisfaction is related to expectations of future service to be provided by a specific restaurant.

The Relationship of Global Quality and Expectations

The relationship of global quality with expectations was evaluated in a similar manner. Global quality was not found to be correlated with normative expectations, whereas its correlation with predictive expectations was significant at the 5 % level. The higher that respondents perceived the overall quality of the restaurant’s service, the higher their expectations of future service to be provided by that specific restaurant. Table 6.10 presents the results of correlation analysis of global quality with normative and predictive expectations.

Table 6.10 Correlations between Global Quality with Normative Expectations and Global Quality with Predictive Expectations

Dimensions of Restaurant Service	Global Quality with Normative Expectations	Global Quality with Predictive Expectations
Service Attitudes	-0.027	0.262*
Communication	-0.008	0.256*
Food Taste and Variety	0.036	0.384*
Food Order and Delivery	0.009	0.286*
Staff Appearance	0.055	0.234*
Staff Competence	-0.104	0.278*
Environmental factors	0.031	0.334*

(*) – significant at the 5 % level

6.4 Conclusions and Discussion

Expectations are a fascinating topic for researchers, particularly in the field of marketing, because they play a significant role in the consumer purchase decision process (Kurtz and Clow 1998). Despite the fact that research on expectations began more than two decades ago, earlier research focused on examining the effects of expectations on customer satisfaction, and the relationships of expectations and perceptions of performance. The formation and revision of expectations remain relatively unexplored. The present study adopted a more rigorous methodology, by use of a longitudinal survey, to understand how expectations are revised based on previous experience. The results show that normative expectations are relatively stable, whereas predictive expectations will be adjusted upwards following a positive experience and remain stable following a negative experience. The findings are consistent with the suggestion in the literature that normative expectations represent consumer ideals of service, and that they tend to be stable over time, whereas predictive expectations are temporal and may be adjusted following a consumption experience.

In a normal purchase situation, consumer anticipation of the service performance to be provided by a specific firm strongly influences choice decision and subsequently

behaviour. If consumers anticipate that firm A's service is better than firm B's service then they will choose and consume at firm A, on the assumption that all other factors are equal. After the service, if there is a discrepancy between perceptions of performance and prior expectations, then the consumer will update their prior expectations based on the consumption experience, and use them for the next choice decision. The present study highlights the fact that experience plays an important role in the formation of predictive expectations. There is evidence to support the notion that predictive expectations are revised following a positive experience. However, the evidence for a downward shift in predictive expectations following a negative experience is lacking. There are several explanations for this. First, an alternative comparison standard may exist, and as long as consumers' perceptions of performance do not fall short of this alternative comparison standard their predictive expectations may remain relatively stable. Second, if consumer can attribute the causes of negative experience to factors beyond the control of the service firm, then it is expected that predictive expectations will remain stable. Therefore, the suggestion of H₃, that normative expectations are relatively more stable than predictive expectations over time, is supported.

Correlation analysis was used to assess the relationships between customer satisfaction with expectations, and between global quality with expectations. It was not intended as a test for assessing the causal relationships among these variables. The results show that the correlations between normative expectations with customer satisfaction and normative expectations with global quality are very low, and insignificant at the 5 % level. On the other hand, the correlations between predictive expectations with customer satisfaction and predictive expectations with global quality are moderate, and significant at the 5 % level. The findings are consistent with those previous that normative expectations represent the consumer's feasible ideals of service, and are less likely to be influenced by recent experience. Thus, the hypotheses suggesting that customer satisfaction and normative expectations are not related, and that global quality and normative expectations are not related, are supported. Conversely, predictive expectations are temporal and subject to change according to experience. Thus, the hypotheses suggesting that customer satisfaction and predictive expectations are related, and that global quality and predictive

expectations are related, are supported. Table 6.11 summarises the findings. The managerial implications of these findings will be discussed in the next chapter.

Table 6.11 – Summary of Hypotheses Tests Results

Hypotheses Statements	Results
H ₃ : Normative expectations are relatively more stable than predictive expectations over prior experience	Supported
H ₁₅ : Customer satisfaction at time t will relate with predictive expectations at time $t+1$	Supported
H ₁₆ : Customer satisfaction at time t will not relate with normative expectations at time $t+1$	Supported
H ₁₇ : Perceived global quality at time t will relate with predictive expectations at time $t+1$	Supported
H ₁₈ : Perceived global quality at time t will not relate with normative expectations at time $t+1$	Supported

Chapter 7 Research Implications and Conclusions

7.1 Introduction

This chapter begins with a review of the objectives of the research, the methods utilised to achieve them, and the major findings. This is followed by a discussion of the contributions of this research to the marketing literature, and its managerial implications. Then, the limitations of this research are noted and the chapter is concluded with some thoughts on future research.

7.2 Summary of the Research

Customer satisfaction and service quality are two important concepts in the marketing literature. The former is a cornerstone of the marketing concept, whereas the latter has been used as a strategic tool to create a competitive advantage. At the outset of this research, there was some confusion about how these two concepts should be conceptualised and measured, and the nature of the relationship between them. Furthermore, there are only a handful of studies that have examined the concepts simultaneously. Besides, some researchers view customer satisfaction and service quality as equivalent concepts, and practitioners often use the terms interchangeably. Considering the importance of these two concepts, this research sought to develop a more thorough understanding of them, and a model that can help to explain the relationship between them and their relationships with post-purchase behaviour. The objective of this research was to bridge the gap between service quality and customer satisfaction by drawing together these two separate streams of research in an effort to develop a coherent model that can help enhance our understanding of customer purchase and post-purchase behaviour. The research was designed specifically:

1. To examine the similarities and differences between service quality and customer satisfaction, and the nature of the relationship between them;
2. To develop a model that can help explain customer post-purchase behaviour;

3. To investigate the effects of different comparison standards on service quality and customer satisfaction, and the dynamics of these standards

There appears to be some consensus among researchers that customer satisfaction is an emotional response, whereas service quality is a cognitive evaluation, and that service quality can be evaluated from both a transactional and global perspective (Rust and Oliver 1994; Parasuraman et al. 1994; Teas 1993). A preliminary model was developed based on an exhaustive review of the literature. Following the depth interviews with consumers, the model was revised with the qualitative data generated from these interviews. “Perceived value” and “perceived sacrifice” were incorporated into the model to help explain customer post-purchase behaviour. The measures of the constructs were developed following the procedures suggested by Churchill (1979). The initial research questionnaire was pilot tested with a sample of 200 respondents.

The field research involved two phases, the first phase aimed to collect the data to examine the hypothesised relationships among the constructs as depicted in the model of figure 5.7, and the second phase focused on investigating the dynamics of comparison standards. A longitudinal survey was implemented, comparison standards were measured prior to consumption of the service, and post-purchase constructs such as “perceived performance”, “customer satisfaction”, “encounter quality”, “perceived value”, “global quality” and “behavioural intentions” were measured after the service encounter. The inclusion of “encounter quality” and “global quality” in the model was consistent with the global and transactional view of quality. A total of 209 valid responses were used for analysis, and of these 209 consumers, 115 agreed to take part in the second phase of the study.

As recommended by Gerbing and Anderson (1988), confirmatory factor analysis was performed to assess and refine the measures. All the measures of the constructs satisfied the rigorous reliability and validity criteria except the difference scores, which measured the discrepancy between “normative expectations” and “perceived performance”, and the discrepancy between “predictive expectations” and “perceived performance”. These measures were found to be low in reliability, thereby their validities were not supported. Therefore, these difference scores were not used as variables in analysing the relationships among the constructs, and instead the

summative of these scores were used to separate the sample into three sub-groups. The first group consisted of consumers whose perceptions of performance matched or exceeded their normative expectations. The second group consisted of consumers whose perceptions of performance were lower than their normative expectations but matched or exceeded their predictive expectations. The third group consisted of consumers whose perceptions of performance were lower than their predictive expectations. The purpose was to examine whether the mean scores of the post-purchase evaluations were significantly different among the three groups. The results of analysis of variance provided some evidence to support the hypothesis that consumers whose perceptions of performance matched or exceeded normative expectations responded more favourably to the measures of encounter quality, customer satisfaction, and behavioural intentions than those consumers whose perceptions of performance fell short of normative expectations.

The hypothesised relationships among the constructs as depicted in the model in figure 5.7 were evaluated using LISREL8. While all the path coefficients were in their hypothesised directions, the overall fit of the model was not satisfactory. Therefore, the model was re-specified according to suggestions in the literature. The path coefficients that were found to be insignificantly different from zero were removed to help maintain the parsimony of the model (Bagozzi 1992). As the effect of “normative expectations” on “encounter quality” was insignificant, and the effect of “time costs” on “perceived value” was insignificant, they both did not contribute to explaining the variance in the consequent variables, thus they were removed from the model for parsimony. The results of the final model show that “encounter quality” was a function of “predictive expectations” and “perceived performance”. The effect of “predictive expectations” on “customer satisfaction” was mediated through “encounter quality”. “Perceived performance” exhibited a positive effect on “customer satisfaction”. As expected, the effect of “encounter quality” on “global quality” was stronger than the effect of “customer satisfaction” on “global quality”. Both “perceived value” and “global quality” strongly influenced “behavioural intentions”. Contrary to expectation, “customer satisfaction” was not affected by “perceived value”, and its influence on “behavioural intentions” was mediated through “global quality”.

In the second phase of the research, 73 valid responses were obtained for analysis. The results revealed that “normative expectations” remained relatively stable over consumers’ prior experience, but “predictive expectations” was found to shift upwards following a positive experience and remained relatively stable following a negative experience. The results also indicate that the correlations between “predictive expectations” and “customer satisfaction”, and between “predictive expectations” and “global quality” were moderate, whereas the correlations between “normative expectations” and “customer satisfaction”, and between “normative expectations” and “global quality” were relatively low.

7.3 Contributions of the Research

This thesis has clarified some confusion regarding the nature of the relationship between service quality and customer satisfaction, and provided some possible explanations as to why customer satisfaction may no longer be sufficient to secure customer loyalty. However, like much similar research, this research has also posed more questions that need to be addressed. This section begins by summarising the present state of knowledge on the research topic. This is then followed by a discussion of the contributions of this research to the marketing literature. Managerial implications are also discussed.

7.3.1 Theoretical Contributions

Customer satisfaction and service quality each have been investigated extensively by researchers, but, surprisingly, studies examining the two concepts simultaneously have only been found in the recent literature (Ruyter et al. 1997; Spreng and Mackoy 1996; Gotlieb et al. 1994; Taylor and Cronin 1994). Both concepts are highly important in marketing because of their abilities in influencing customers’ post-purchase behaviour. However, previous research shows that high levels of customer satisfaction do not necessarily lead to repeat purchases (Jones and Sasser 1995; Reichheld 1995; Mittal and Lassar 1998). Concurrently, efforts have been devoted to examine other factors, such as perceived service quality or perceived value, to help explain customer post-purchase behaviour (Zeithaml et al. 1996; Brady and Robertson

1999). Furthermore, the literature suggests that both satisfaction and service quality judgements are results of a comparison process. The difference between them is that the former is determined by predictive expectations, whereas the latter is determined by normative expectations. It has also been suggested that the quality of a service can be evaluated at an encounter level as well as at a global level (Parasuraman et al. 1994; Teas 1993). The present study was the first to integrate two perspectives of quality, customer satisfaction, and perceived value into a coherent model, and to empirically verify their relationships with behavioural intentions. The study has not only resolved some important issues in marketing, but the methodology and analytical approach it had adopted will also provide valuable reference for future research.

This thesis makes several contributions to marketing. The major contribution is to empirically test a model which was developed based on theory, findings of previous research, and exploratory research. The model provides us a better understanding of the relationships among expectations, encounter quality, customer satisfaction, perceived value, global quality, and behavioural intentions. There is a consensus among researchers that customer satisfaction and service quality are conceptually distinct constructs, but one of the intriguing issues is whether the two constructs are distinguishable from a practical perspective. The results of confirmatory factor analysis shows that the two constructs are highly correlated, but there is evidence supporting the convergent and discriminant validity of the two constructs. It is important to make the distinction between the two constructs, as the results of structural equation modelling show that they exhibit different effects on behavioural intentions. Customer satisfaction alone is not sufficient to capture repeat purchase. Furthermore, the notion that encounter quality has both a direct effect and an indirect effect through customer satisfaction on the accumulative judgement of the quality of a firm's service is supported with the data. It is expected that following each service encounter, customer perceptions of the overall quality of a firm's service is revised based on their perceptions of encounter quality and satisfaction which then affects their expectations of future service to be provided by the firm. These expectations in turn affect their next purchase decision. This process of updating customer expectations is consistent with the dynamic view of quality.

Customer satisfaction has drawn the interest of academics for more than two decades, and it has been used as a means to achieve the business goals of most firms. However, the assumption that satisfied customers will make repeat purchases and tell others about their satisfying experiences is no longer appropriate for highly competitive markets. Researchers have suggested that the relationship between customer satisfaction and repeat purchase varies according to the degree of competition in the industry (Jones and Sasser 1995). Others have proposed several factors that may inflate self-reported satisfaction ratings: these factors included question format, timing of measurement, and mood of the respondent (Peterson and Wilson 1992). The present study shows that customer satisfaction alone does not guarantee repeat purchases. The results indicate that perceived global quality and perceived value accounted for the variations in repurchase and recommendation intentions better than customer satisfaction. This finding is apparently new as most studies examining the relationship between customer satisfaction and behavioural intentions have shown that a relationship does exist. Oliver and Bearden's (1985) study was among the few to show that satisfaction was not a significant predictor of intentions. These researchers suggested that other affect-based variables might be more influential in repeat usage intentions. However, the present study shows that cognitive variables have greater ability to influence repurchase and recommendation intentions. There is some ground for the belief that perceived quality and value are significant predictors of behavioural intentions as they are the major factors that most consumers consider when they make a purchase decision. Furthermore, Iacobucci et al. (1994) suggested that inserting other factors such as cost or value into the service quality model would provide greater utility to understanding and predicting consumer behaviour.

Another significant contribution of this thesis is to examine simultaneously the effects of two types of expectations on customer evaluations of service. The importance that expectations play in the customer purchase decision process has been acknowledged in the literature. Both customer satisfaction and service quality are posited to be influenced by expectations. Studies have been conducted examining either the effects of expectations on customer satisfaction, or the effects of expectations on service quality. However, the findings were mixed regarding the role that expectations play in determining customer satisfaction and service quality evaluations. The relationship of expectations and customer satisfaction has been suggested to vary depending on the

type of product or service, usage occasion, as well as customer involvement. But the disparity in results may be attributed to the type of methods used (experiments versus cross-sectional surveys) and the timing of measurement (before versus after). For example, in studies where respondents formed their expectations based on a description of the product or service, these expectations may have been vague, and thus customer satisfaction evaluations were driven solely by their perceptions of performance (Spreng and Olshavsky 1993). On the other hand, when the product or service manipulation is too strong, expectations may play a secondary or insignificant role in predicting customer satisfaction (Churchill and Surprenant 1982). Furthermore, in some studies, respondents were asked to recall their prior expectations after the consumption experience. This may incur larger measurement errors than when their expectations were obtained prior to the consumption experience, possibly due to memory loss or perceptual distortion (Oliver 1987).

In view of the limitations of previous research, the present study was conducted in a natural service environment with the aim to achieve a thorough understanding of the role that expectations play in customer satisfaction and service quality evaluations. The findings were contrary to the suggestion of Parasuraman et al. (1985) that customer satisfaction is influenced by predictive expectations, whereas service quality is influenced by normative expectations. The present study empirically shows that normative expectations exhibited no significant effect on encounter quality and customer satisfaction, and that these expectations were found to be relatively stable over time. On the other hand, predictive expectations displayed a significant effect on encounter quality, and an indirect effect on customer satisfaction through encounter quality. These expectations tended to change following a consumption experience. Boulding et al. (1993) have suggested that in order to increase customer perceptions of overall service quality, firms should manage customer predictive expectations upwards and normative expectations downwards. However, there appears to be some inconsistency in their suggestions, as they also stated that “service quality is directly influenced only by perceptions”. Furthermore, these researchers did not compare the effects of normative expectations and predictive expectations simultaneously on the same respondent, as has this study. The present study demonstrates that the significant determinant on encounter quality was predictive expectations. As it displayed a negative effect, thereby it appears not to be a wise strategy to rise customer

expectations of what a firm will provide in the forthcoming service encounter, as this will lower perceptions of overall quality. On the other hand, it does not seem to be effective to delight customers by managing predictive expectations downwards such that the service delivered exceeds the expectations. In a normal buying situation, that is one in which customers have free choice, their purchase decision is likely to be governed by their expectations. If a firm attempts to manage expectations downwards, it may not be able to attract its target customers to purchase and consume its service.

The present study has also illustrated how predictive expectations are updated following a consumption experience. This supports the view that predictive expectations are dynamic and influenced by experience, although other potential causal factors include marketing efforts, service categories, word-of-mouth communication, customer characteristics and situational factors.

This thesis has also provided several methodological contributions. First, the review of the literature identified that the existing scales used to measure customer perceptions of restaurant service quality are inadequate. It is argued that the scale developed in this thesis, based on the steps recommended by Churchill (1979) and incorporated with Anderson and Gerbing's (1988) suggestions, should make a direct contribution to the hospitality and catering literature, and more generally the service marketing literature. Second, in acknowledging that predictive expectations are dynamic, it has been established that they should be measured prior to and not after the consumption of a service. In future research which focuses on examining the relationships between pre-purchase variables and post-purchase variables, longitudinal data will be more desirable than cross-sectional data.

Finally, the difference score approach to measure customer perceptions of service quality, and to use the difference score as predictor of consequent variables, is faulted on a number of grounds. Researchers have discussed the weaknesses of this approach, and yet there was not strong empirical evidence to suggest that the difference score measure lacked reliability and validity (refer to the discussion in section 2.3.5). For the first time, this thesis illustrates, by use of confirmatory factor analysis, that difference score measures are not reliable indicators of customer service quality perceptions. The low reliability of the difference scores is attributable to the moderate

covariances among the indices of difference scores. In other words, difference scores do not vary consistently in the same direction across all the service dimensions. Some perceptions of performance may match or exceed expectations while other perceptions of performance may fall short of expectations. Further, it was observed that the variation of the difference scores was significantly higher than the variation of each variable which constituted the difference score. Therefore, it is strongly recommended that difference scores should not be used as a measure of a latent construct. But this is not tantamount to the suggestion that expectations are of no significant value. By obtaining customer predictive expectations and perceptions of performance, managers are able to identify which aspects of the service do not match with customer predictive expectations, and thus corrective actions can be taken. Similar arguments for the use of difference scores are advocated by Parasuraman et al. (1994).

7.3.2 Managerial Contributions

The contributions of this study to management are discussed in relation to three issues: the role of expectations in customer evaluations of service, service encounters, the relationships between perceived value, quality, customer satisfaction, and behavioural intentions. Each of these is detailed below.

This study highlights the important role that predictive expectations play in customer evaluations of service. On the other hand, normative expectations do not exhibit a significant effect on customer perceptions of encounter quality and customer satisfaction, and they are relatively stable, therefore it would be more fruitful for management to devote their efforts to manage customer predictive expectations than to alter normative expectations. Furthermore, predictive expectations play a crucial role in customer purchase decisions, and it is important for management to ensure that consumers form an accurate picture of their service offerings. Considering that predictive expectations are dynamic and may change following a service experience, firms need to conduct research regularly to monitor changes in customer expectations, and adapt their strategies to suit. Although the value of normative expectations in explaining customer purchase process in services is limited, they can be used for

benchmarking, and thus enable a firm to identify its position relative to the top performers in the industry. Furthermore, normative expectations can be a useful source for identifying areas for improvement.

Moreover, it has been observed that in past years many firms tended to exaggerate their service offerings in order to make them more appealing to customers. This was particularly common in highly competitive markets. However, such marketing practice should be treated with caution, as it will lead to high customer expectations, which can then result in negative evaluations of the service. The consequence of this is that it would be harder for firms to regain customer confidence, and to minimise the impact of negative word of mouth communication.

The argument presented here emphasises that effective management of service encounters is essential. Notwithstanding there is considerable research on service quality, it is only recently that service encounters have received academic interest and attention. Service encounters are referred to as the moment of truth, as they provide an opportunity for the firm to reinforce its commitment to quality (Bitner and Hubbert 1994; Grönroos 1990). Since most services possess experiential attributes, it is during the consumption of the service that customers can experience its quality and judge whether they want to come back and consume the service again. Thus, the service encounter is the point on which future business hinges (Czepiel 1990). Therefore, every interaction point between the customer and the service firm has to be carefully designed and pre-tested thoroughly. It is also vital for firms to make use of each service encounter to develop relationships with customers, and to capture their loyalty. The foremost step for firms to establish a relationship is by developing customer trust, that is to make certain that the service delivered to customers is consistent with their expectations.

The key determinants of customer repurchase intentions are their perceptions of the value and quality of the service. In order to develop customer loyalty, firms should design their strategies by aiming to enhance customer perceptions of the value and quality of the service. When customers are confronted with more than one seller, it is likely that they will compare among the alternatives. To use perceived value as a means to gain a competitive advantage, firms need to enhance customer perceptions

that the service offering is better than competitors, or provide supplementary services at no extra cost to customers. It is important for management to identify the aspects of service which customers value most, and efforts need in these areas to influence perceptions of value. Alternatively, firms can reduce customer perceptions of the costs associated with using the service relative to those of competitors. It is acknowledged that customer perceptions of costs include monetary as well as non-monetary considerations. Whilst this study revealed that monetary cost is the significant determinant of perceived value, the significance of such perceived sacrifice may vary among customers as well as types of services. In sum, to succeed in the competitive marketplace, a firm does not require to be the highest service quality provider or to be the lowest cost leader. Finding the right customers, and offering the services that they perceive valuable is a potent strategy for winning their loyalty. Re-emphasising the importance of perceived value, Berry and Yadav (1996) suggested that service pricing should capture and communicate value to customers. Furthermore, as the relationship between customer satisfaction and loyalty is relatively weak, it is advised that management should interpret customer satisfaction ratings cautiously to avoid drawing incorrect conclusions about their business performance.

Finally, in view of the fact that services are heterogeneous, one of the challenges for marketers is to ensure that services delivered to customers match their expectations every time, at each encounter. Expectations are dynamic: management has to regularly monitor customer expectations, and educate to help form realistic expectations of the forthcoming service encounter. In addition, efforts should be devoted to ensure that the service delivered to customers is consistent across encounters. The underlying factor that most causes variation in service performance across encounters is not equipment or facilities, but people. People include a firm's personnel, customers, and other customers at the service setting (Zeithaml and Bitner 2000). Effective people management is the key to ensuring service consistency across multiple encounters. While most firms recognise the importance of customers and customer satisfaction, the performance of frontline employees also deserves greater attention from management.

7.4 Limitations of the Research

Although, the present study was carefully planned and executed, several limitations should be noted. First, the sample was slightly over-represented by female respondents. Second, the study was conducted in the context of restaurant industry and among Chinese consumers. Previous studies have suggested that the relationship between expectations and customer satisfaction may depend on the type of product and service. Furthermore, culture may affect consumer attitudes and behaviour (Engel et al. 1993). Hence, generalisations of the findings beyond the restaurant industry and the study population should be made with caution.

The measures of the constructs were used as reflective indicators in the structural model. It is noted that there are two types of indicators: reflective indicators and formative indicators. When the observed variables are expressed as a function of a construct, they are regarded as reflective indicators. For example, if consumers perceive the quality of service provided by a firm is good, it will be reflected in their answers to the items that measure perceived service quality. On the other hand, when the latent variable is defined as a linear sum of a set of measurements, these measures are known as formative indicators. This implies that the measures are the causes of the construct. Reflective indicators are the most frequently used measures in Marketing and these indicators should covary highly if they are intended to measure the same underlying construct (Bagozzi 1994). This is the approach adopted in this study.

From the measurement model, it was found that the covariances among the differences scores measures were only moderate and the reliabilities of these measures were relatively low. Based on these results, the differences scores measures were not used and their respective constructs were not examined in the structural model. However, if these measures had been treated as formative indicators, then they do not require to be covaried highly with the other measures because the formative indicators of the same construct can have positive, negative or no correlation (Bollen and Lennox 1991). Treating the difference scores measures as reflective indicators and rejecting them based on the low reliabilities of these measures, while in line with

current practice in marketing research, may have resulted in an over-critical test of these constructs resulting in their exclusion from the structural model.

Due to time and labour constraints, the sample size was relatively small despite the considerable efforts devoted to data collection. It would be ideal to have a larger sample size, so that the sample could be split into two. The first half would be used for model testing, and the second half for validation purposes. Therefore, it would be desirable to verify the results of the present study with a new sample in a different service setting. While the data were collected at different points in time in order to reveal the dynamic process of customer purchase and post-purchase behaviour, examining multiple encounters across a longer span of time could provide a richer understanding of the changes in customer behaviour.

Despite every effort being made to ensure that the scales developed for this study were reliable and valid, it was revealed from the confirmatory factor analysis that the items encompassing monetary, time, and effort cost were not measuring the construct “perceived sacrifice” as intended. Further, perceived efforts cost was measured by a single item, so it was not included in the analysis of the main model. It appears that the items used to measure perceived sacrifice are somewhat limited, thus future research on the development of a perceived sacrifice scale, and examination of its influence on perceived value, is warranted.

One of the limitations of the present study is the high correlations amongst the constructs. On the other hand, this is not surprising as the constructs are closely related. The effects of multicollinearity can lead to several problems, such as larger sampling variances, greater sensitivity of estimated coefficients to small changes in the data, and wrong signs for the coefficients (refer to Gujarati (1992) for a more thorough discussion). However, the results did not indicate that multicollinearity effects were very serious. Nevertheless, care should be taken when drawing conclusions from the results of this study.

Finally, like other statistical tools, structural equation modelling can not prove the cause and effect relations among the variables. Efforts have been made to ensure that the conditions for causal assertions were met. Alternative model structures may give

acceptable fits from the same set of data, but the model presented was guided by theory.

7.5 Suggestions for Future Research

This thesis concludes here with some suggestions for future research. The present study shows that experience had a significant influence on predictive expectations. However, other factors such as customer characteristics, familiarity of the service, situational factors, as well as marketing efforts, service categories, and word of mouth communication might influence predictive expectations. Thus, in order to manage expectations effectively, additional research is needed to examine the extent of the influence of these variables. In particular, the role of price in customer expectations and evaluations of service deserves more research efforts. In the present study, perceived price is assumed to have no effect on customer expectations of the service, on the basis that the price of the service is made known to customers after the consumption. However, with many services like air travel, education, and package holidays, customers are required to pay prior to consumption of the service, and customer perceptions of risks in purchasing these services are likely to be higher. How price influences customer expectations, and subsequently their purchase decision and evaluations of chosen service, are issues worthy of future research efforts.

Closely related to price is customer perceived value of a service. The research in this area is limited. Notwithstanding that the present study provides evidence to support the notion that there is a strong relationship between perceived value and behavioural intentions, more work is needed to understand the significance of monetary and non-monetary costs, and how customers integrate these costs together with perceptions of service to arrive at an overall value perception. Additional effort is needed to improve the measurement of perceived sacrifice and perceived value.

Consistent with the findings of previous studies, the present study shows that the difference score approach to measuring perceived service quality lacks reliability. A plausible explanation is that customer perceptions of the quality of a service do not derive from the calculation of the difference between expectations and perceived

performance. Although perceived service quality is a relative concept, the psychological process that customers take to arrive at the judgement of quality requires more future research.

Further work is needed to examine the relationship between perceived value and customer satisfaction. An unexpected finding from the present study is that perceived value does not explain variations in customer satisfaction. The results show that the relationship between perceived value and customer satisfaction is stronger among dissatisfied customers than among satisfied customers. A possible explanation is that other variables such as mood or occasion of the service, which have not been examined in the present study may intervene in the relationship between perceived value and customer satisfaction. Furthermore, some researchers suggest that customers are prepared to tolerate some unfavourable service outcomes before expressing dissatisfaction (Kenny and Thirkell 1988). Clearly, research is needed to further explore the process of customer satisfaction formation.

Another fruitful and interesting area for future research is service relationships. Confronted with strong competition, it has been suggested that the key to winning customers' loyalty is through developing and maintaining a successful relationship. According to Berry (1995), relationship marketing is not a totally new concept, its appearance in the services marketing literature dates back to 1983. Until recently, it was a popular topic, and yet little work has been conducted on the link between the performance of service encounters and development of a relationship. Czepiel (1990) suggested that the concept of the relationship is especially relevant and important in the marketing of services. Most services are intangible, customers perceived greater risks in purchasing them, and they participate actively during consumption. The present study highlighted the importance of the service encounter and demonstrated that perceived value and perceived overall quality are significant variables in influencing customer behavioural intentions. Understanding how the elements encompassing service encounters contribute to the development of a successful relationship, and the impact of the service relationship on profitability, are issues which deserve greater research efforts.

References

Adams, J. S. (1963), "Toward An Understanding of Inequity", *Journal of Abnormal and Social Psychology*, volume 67, no.5, pp. 422-436.

Aish, Anne-Marie and Jöreskog, K. (1990), "A Panel Model for Political Efficacy and Responsiveness: An Application of LISREL 7 with Weighted Least Squares", *Quality & Quantity*, volume 24, pp. 405-426.

Ajzen, I. and Fishbein, M. (1975), *Belief, Attitude, Intention and Behavior : An Introduction to Theory and Research*, Addison-Wesley Publish Co.

-----, (1980), *Understanding Attitudes and Predicting Social Behavior*, Englewood Cliffs, N.J.: Prentice Hall.

Anderson, D. (1982), "The Satisfied Consumer: Service Return Behavior in the Hospital Obstetrics Market", *Journal of Health Care Marketing*, volume 2, no. 4, Fall, p. 25-33.

Anderson, E. (1973), "Consumer Dissatisfaction: The Effects of Disconfirmed Expectancy on Perceived Product Performance", *Journal of Marketing Research*, 10 (February), pp. 38-44.

Anderson, E. and Sullivan M. (1993), "The Antecedents and Consequences of Customer Satisfaction For Firms", *Marketing Science*, 12 (2), pp. 125-143.

----- and Fornell, C. (1994), "A Customer Satisfaction Research Prospectus" in *Service Quality - New Directions in Theory and Practice*, Rust, R. and Oliver, R. eds, Sage Publications, pp. 241-268.

-----, Fornell, C., and Lehmann, D. (1994), "Customer Satisfaction, Market Share, and Profitability: Findings From Sweden", *Journal of Marketing*, 58 (July), pp. 53-66.

Anderson, J. C. and Gerbing, D.W. (1984), "The Effect of Sampling Error on Convergence, Improper Solutions, and Goodness-of-fit indices for Maximum Likelihood Confirmatory Factor Analysis", *Psychometrika*, volume 49, pp. 153-173.

----- (1988), "Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach", *Psychological Bulletin*, volume 103, no. 3, pp. 411-423.

Angur, M., Natarajan, R. and Jahera, J. (1999), "Service Quality in the Banking Industry: An Assessment in a Developing Economy", *International Journal of Bank Marketing*, volume 17, no. 3, pp. 116-123.

Anthiyaman, A. (1997), "Linking Student Satisfaction and Service Quality Perceptions : The Case of University Education", *European Journal of Marketing*, volume 31, no.7, pp. 528-540.

Arbuckle, J. L. (1997), *AMOS Users' Guide Version 3.6*, SPSS Inc.

Asubongteng, P., McCleary, K. and Swan, J. (1996), "SERVQUAL Revisited : A Critical review of Service Quality", *The Journal of Services Marketing*, volume 10, no.6 pp. 62-81.

Auty, S., (1992), "Consumer Choice and Segmentation in the Restaurant Industry", *The Services Industries Journal*, volume 12, no.3, pp. 324-339.

Babakus, E. and Boller, G. (1992), "An Empirical Assessment of the SERVQUAL scale", *Journal of Business Research*, volume 24, pp. 253-268.

Babin, B. and Griffin, M. (1998), "The Nature of Satisfaction : An Updated Examination and Analysis", *Journal of Business Research*, volume 41, pp. 127-136.

Bagozzi, R. and Yi, Y. (1988), "On the Evaluation of Structural Equation Models", in *Journal of Academy of Marketing Science*, volume 16, no.1, pp. 74-94.

----- (1994), *Principles of Marketing Research*, Cambridge Mass : Blackwell Business.

----- (1994), "Structural Equation Models in Marketing Research: Basic Principles", in *Principles of Marketing Research*, Richard Bagozzi (ed.), 1st edition, Cambridge Mass : Blackwell Business, pp. 317-385.

----- (1992), "The Self-regulation of Attitudes, Intentions and Behavior", *Social Psychology Quarterly*, 55, pp. 178-204.

----- and Burnkrant, R. E. (1985), "Attitude Organization and the Attitude-Behavior Relation: A Reply to Dillon and Kumar", *Journal of Personality and Social Psychology*, volume 49, pp 47-57.

----- and Baumgartner, (1994) "The Evaluation of Structural Equation Models and Hypothesis Testing", in *Principles of Marketing Research*, Richard Bagozzi (ed.), 1st edition, Cambridge Mass : Blackwell Business, pp. 386-422.

Bateson, J. (1995), *Managing Services Marketing*, London : Dryden Press.

Bearden, W. and Teel J. (1983), "Selected Determinants of Consumer Satisfaction and Complaint Reports", *Journal of Marketing Research*, XX (February), pp. 21-28.

Bentler, P. M. and Chou, C. P. (1987), "Practical Issues in Structural Equation Modeling", *Sociological Methods and Research*, volume 16, pp. 78-117.

----- and Bonett, D. G. (1980), "Significance Tests and Goodness of Fit in the Analysis of Covariance Structures", *Psychological Bulletin*, volume 88, pp. 588-606.

----- (1995), *EQS: Structural Equations Program Manual*, Encino, CA: Multivariate Software Inc.

- Bernhardt, K.L., Donthu, N. and Kenneth, P. (2000), "A Longitudinal Analysis of Satisfaction and Profitability", *Journal of Business Research*, volume 47, pp. 161-171.
- Berry, L. and Parasuraman, A. (1991), *Marketing Services - Competing Through Quality*, Free Press.
- , Parasuraman, A. and Zeithaml, V. (1988), "The Service-Quality Puzzle", *Business Horizons*, 31 (September-October), pp. 35-43.
- , Parasuraman, A. and Zeithaml, V. (1985), "Quality Counts in Services, Too", *Business Horizons*, 28 (May-June), pp. 44-52.
- (1995). "Relationship Marketing of Services – Growing Interest, Emerging Perspective", *Journal of the Academy of Marketing Science*, volume 23, no. 4, pp. 236-245.
- , and Yadav, M. (1996). "Capture and Communicate Value in the Pricing of Services", *Sloan Management Review*, Summer, pp. 41-51.
- Bitner, M. (1990), "Evaluating Service Encounters : The effects of Physical Surroundings and Employee Responses", *Journal of Marketing*, 54 (April), pp.69-82.
- , Booms, B. and Tetreault, M. (1990), "The Service Encounter : Diagnosing Favorable and Unfavorable Incidents", *Journal of Marketing*, volume 54, pp. 71-84.
- and Hubbert, A. (1994), "Encounter satisfaction Versus Overall Satisfaction Versus Quality : The Customer's Voice", in *Service Quality - New Directions in Theory and Practice*", R. Rust and R. Oliver, eds, Sage Publications, pp. 72-94.
- Bojanic, D. and Rosen, L. (1994), "Measuring Service Quality in Restaurants : An Application of the SERVQUAL Instrument" *Hospitality Research Journal*, volume 18, no.1, pp. 3-14.
- (1996), "Consumer Perceptions of Price, Value and Satisfaction in the Hotel Industry: An Exploratory Study", *Journal of Hospitality & Leisure Marketing*, 4 (1), pp. 5-22.
- Bolting, C. P. and Woodruff, R. B. (1988), "Effects of Situational Involvement on Consumers' Use of Standards in Satisfaction/Dissatisfaction Processes", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 1, pp. 16-24.
- Bollen, K. A. (1989), *Structural Equations with Latent Variables*, John Wiley & Sons Publications.
- and Lennox, R. (1991), "Conventional Wisdom on Measurement: A Structural Equation Perspective", *Psychological Bulletin*, volume 110, no.2, pp. 305-314.
- and Long, J. S. (1993), *Testing Structural Equation Models*, Sage Publications.

Bolton, R. and Drew, J. (1991a), "A Multistage Model of Customers' Assessments of Service Quality and Value" *Journal of Consumer Research*, 17 (March), pp. 375-384.

----- and Drew, J., (1991b), "A Longitudinal Analysis of the Impact of Service Changes on Customer Attitude", *Journal of Marketing*, volume 55, January, pp. 1-9.

----- and Drew, J. (1994), "Linking Customer Satisfaction to Service Operations and Outcomes", in *Service Quality - New Directions in Theory and Practice*, R. Rust and R. Oliver, eds., Sage Publications, pp. 173 - 200.

Bonner, G. and Nelson, R. (1985). "Product Attributes and Perceived Quality : Foods" in *Perceived Quality*, Jacob Jacoby and Jerry C. Olson eds., Lexington Books.

Booms, B. and Bitner, M. (1981), "Marketing Strategies and Organization Structures for Service Firms", in *Marketing of Services*, J. Donnelly and W. George, eds., Chicago : American Marketing Association, pp. 47-52.

Boulding, W., Kalra, A., Staelin, R., and Zeithmal, V. (1993), "A Dynamic Process Model of Service Quality: From Expectations to Behavioral Intentions", *Journal of Marketing Research*, XXX (February), pp. 7-27.

Brady, M. K. and Robertson, C. J., (1999), "An Exploratory Study of Service Value in the USA and Ecuador", *International Journal of Service Industry Management*, volume 10, no. 5, pp. 469-486.

Brogowicz, A. Delene, L. M. and Lyth, D. M. (1990), "A Synthesised Service Quality Model with Managerial Implications", *International Journal of Service Industry Management*, 1 (1), pp. 27-45.

Brown, S. and Swartz, T. (1989), "A Gap Analysis of Professional Service Quality", *Journal of Marketing*, 53 (April), pp. 92-98.

----- Gummesson, E., Edvardsson, B. and Gustausson, B. (1991), *Service Quality : Multidisciplinary and Multinational Perspectives*, Lexington Books.

Brown, T. (1997). "Using Norms to Improve the Interpretation of Service Quality Measures", *The Journal of Services Marketing*, volume 11, no.1, pp. 66-80.

Brown, T., Churchill, G. Jr. and Peter, P. (1993). "Research Note : Improving the Measurement of Service Quality", *Journal of Retailing*, volume 69, no.1, pp. 127-140.

Bush, R. P., Bush, A. J., Ortinau, D. J. and Hair, J. F. (1997), "Developing a Behavior-Based Scale to Assess Retail Salesperson Performance", *Journal of Retailing*, pp. 119-136.

Buttle, F. (1996). "SERVQUAL : Review, Critique, Research Agenda", *European Journal of Marketing* 30 (1), pp. 8-32.

- Buzzell, R. and Gale, B. (1987), *The PIMS Principles : Linking Strategy to Performance*, Free Press.
- Byrne, B.M. (1998), *Structural Equation Modeling with LISREL, PRELIS, and SIMPLIS*, Lawrence Erlbaum Associates, Publishers.
- Cadotte, E., Woodruff, R. and Jenkins R. (1987), "Expectations and Norms in Models of Consumer Satisfaction", *Journal of Marketing Research*, XXIV (August), pp. 305-314.
- Calder, B. (1994), "Qualitative Marketing Research", in *Principles of Marketing Research*, Richard P. Bagozzi (ed), 1st edition, Blackwell Publishers, pp. 50-72.
- Cardozo, R., (1965), "An Experimental Study of Customer Effort, Expectation and Satisfaction", *Journal of Marketing Research*, volume II, (August), pp. 244-249.
- Carman, J. (1990), "Consumer Perceptions of Service Quality : An Assessment of the SERVQUAL Dimensions", *Journal of Retailing*, 66 (1), pp. 33-55.
- Chang, T.Z. and Wildt, A., (1994), "Price, Product Information, and Purchase Intention : An Empirical Study", *Journal of the Academy of Marketing Science*, volume 22, no.1, pp. 16-27.
- Churchill, G. (1979), "A Paradigm for Developing Better Measures of Marketing Constructs", *Journal of Marketing Research*, XVI (February), pp. 64-73.
- Churchill, G. and Surprenant, C. (1982), "An Investigation Into the Determinants of Customer Satisfaction", *Journal of Marketing Research*, XIX (November), pp. 491-504.
- Churchill, G. (1995), *Marketing Research - Methodological Foundations*, Sixth edition, The Dryden Press.
- Clow, K. and Vorhies, D. (1993), "Building a Competitive Advantage for Service Firms", *Journal of Services Marketing* 7 (1), pp. 22-32.
- , Kurtz, D. and Ozment, J. (1996), "Managing Customer Expectations of Restaurants : An Empirical Study", *Journal of Restaurant and Foodservice Marketing*, volume 1, (3/4), pp. 135-159.
- , Kurtz, D. and Ozment, J. (1998), "A Longitudinal Study of the Stability of Consumer Expectations of Services", *Journal of Business Research*, volume 42, pp.63-73.
- Cooper, A., Cooper, M. and Duhan, D. (1989), "Measurement Instrument of Development Using Two Competing Concepts of Customer Satisfaction", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, volume 28-35.
- Cronin, J. and Taylor, S. (1992), "Measuring Service Quality : A Re-examination and Extension", *Journal of Marketing*, 56 (July), pp. 55-68.

Cronin, J. and Taylor, S. (1994), "SERVPERF Versus SERVQUAL : Reconciling Performance-Based and Perceptions-Minus-Expectations Measurement of Service Quality", *Journal of Marketing*, 58 (Jan), pp. 125-131.

Cronin, J., Brady, M., Brand. R., Hightower, R. and Shemwell, D., (1997), "A Cross-sectional Test of the Effect and Conceptualization of Service Value", *The Journal of Services Marketing*, volume 11, no.6, pp. 375-391.

Crosby, P. B. (1984). *Quality Without Tears : The Art of Hassle-Free Management*, McGraw-Hill Book Company.

Crosby, L. and Stephens N. (1987), "Effects of Relationship Marketing on Satisfaction, Retention and Prices in the Life Insurance Industry", *Journal of Marketing Research*, volume XXIV, November, pp. 404-411.

Curran, P.J., West, S.G. and Finch, J.F. (1996), "The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis", *Psychological Methods*, volume 1, pp. 16-29.

Czepiel, J. and Rosenberg, L. (1977), "Consumer Satisfaction : Concept and Measurement", *Journal of the Academy of Marketing Science*, 5, (Fall), pp. 403-411.

----- (1980), "Measuring Customer Satisfaction in Consumer Service Businesses", Cambridge, MA : Marketing Science Institute, working paper.

-----, Solomon, J., Surprenant, C. and Gutman, E., (1985), "Service Encounters : An Overview", in *The Service Encounter – Managing Employee / Customer Interaction in Service Businesses*, John Czepiel, Michael Solomon and Carol Surprenant, eds., Lexington, MA : Lexington Books, pp. 3-16.

-----, (1990), "Service Encounters and Service Relationships : Implications for Research", *Journal of Business Research*, volume 20, pp. 13-21.

Dabholkar, P. (1993), "Customer Satisfaction and Service Quality : Two Construct or One ?", *AMA Educators' Proceeding, Enhancing Knowledge Development in Marketing*, volume 4, American Marketing Association, pp. 10-18.

-----, P. (1995), "The Convergence of Customer Satisfaction and Service Quality Evaluations With Increasing Customer Patronage", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, volume 8, pp. 32-43.

----- (1995). "A Contingency Framework For Predicting Causality Between Customer Satisfaction and Service Quality", *Advances in Consumer Research*, volume 22, pp ??

Day, R. (1984), "Modeling Choices Among Alternative Response to Dissatisfaction", in *Advances in Consumer Research*, volume 11, pp 496-499.

- Deming, W., E. (1986). *Out of the Crisis*, Cambridge : Cambridge University Press.
- Deshpande, R., (1983), "Paradigms Lost: On Theory and Method in Research in Marketing", *Journal of Marketing*, volume 47, Fall, pp. 101-110.
- Diamantopoulos, A. (1994), "Modelling with LISREL: A Guide for the Uninitiated", *Journal of Marketing Management*, volume 10, pp. 105-136.
- Douglas, S. P. and Craig, C. M. (1983), *International Marketing Research*, Prentice-Hall, Inc.
- Drew, J. and Bolton, R. (1990), "The Customer Satisfaction Feedback Loop For Local Telephone Service", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, volume 3, pp. 29-35.
- and Bolton, R., (1991). "The Structure of Customer Satisfaction : Effects of Survey Measurement", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, volume 4, pp. 21-31.
- Dunteman, G.H. (1994), "Principal Components Analysis", in *Factor Analysis & Related Techniques*, Michael S. Lewis-Beck ed., Sage Publications.
- Engel, J. , Blackwell, R. and Miniard, P. (1993), *Consumer Behavior*, Harcourt Brace College Publishers, The Dryden Press.
- Ennew, C., Reed, G. and Binks, M. (1993), "Importance-Performance Analysis and the Measurement of Service Quality", *European Journal of Marketing*, volume 27, no.2, pp. 59-70.
- Feigenbaum, A. V. (1983). *Total Quality Management*, Third edition. Maidenhead :McGraw-Hill.
- Flanagan, J. (1954), "The Critical Incident Technique", *Psychological Bulletin*, 51 (July), pp.327-357.
- Folkes, V. (1984), "Consumer Reactions to Product Failure : An Attributional Approach", *Journal of Consumer Research*, volume 10, (March). pp. 398-409.
- Fornell, C. (1992), "A National Customer Satisfaction Barometer: The Swedish Experience", *Journal of Marketing*, 56 (January), pp. 6-21.
- , and Larcker, D., "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error", *Journal of Marketing Research*, volume XVIII, February, pp. 39-50.
- and Wernerfelt, B. (1987), "Defensive Marketing Strategy by Customer Complaint Management : Am Theoretical Analysis", *Journal of Marketing Research*, volume 24, pp. 337-346.

----- and Wernerfelt, B. (1988), "A Model for Customer Complaint Management", *Marketing Science*, 7, pp. 287-298.

Garvin, D. (1983), "Quality on the Line", *Harvard Business Review*, volume 61, September-October, pp. 65-75.

----- (1988). *Managing Quality : the Strategic and Competitive Edge*, London :Collier MacMillian.

Gerbing, D.W. and Anderson, J.C. (1988), "An Updated Paradigm for Scale Development Incorporating Unidimensionality and Its Assessment", *Journal of Marketing Research*, volume XXV, May, pp. 186-192.

Getty, J. and Thompson, K. (1994), "The Relationship Between Quality, Satisfaction, and Recommending Behavior in Lodging Decisions", *Journal of Hospitality & Leisure Marketing*, 2 (3), pp. 3-22.

Ghobadian, A., Speller, S. and Jones, M. (1994), "Service Quality -Concepts and Models", *International Journal of Quality and Reliability*, 11 (9), pp. 43-66.

Gotlieb, J, Dhruv, G. and Brown, S. (1994). "Consumer Satisfaction and Perceived Quality : Complementary / Divergent Constructs ?", *Journal of Applied Psychology*, volume 79, no. 6 pp. 875-885.

Green, P., Tull, D. and Albaum, G. (1988), *Research for Marketing Decisions*, Prentice-Hall, Inc.

Gronlund, N.E. (1988), *How to Construct Achievement Tests*. Englewood Cliffs, NJ: Prentice Hall

Grönroos, C. (1978), "A Service-Oriented Approach to Marketing of Services", *European Journal of marketing*, 12 (8), pp. 588-600.

----- (1984), "A Service Quality Model and its Marketing Implications", *European Journal of Marketing*, 18 (4), pp. 36-44.

----- (1990), *Service Management and Marketing- Managing The Moments of Truth in Service Competition*, 1st edition, Lexington Books.

----- (1993), "Toward a Third Phase in Service Quality Research : Challenges and Future Directions", in *Advances in Services Marketing and Management*, volume 2, T. Swartz, D. Bowen and S. Brown, eds, Greenwich :JAI PRESS INC., pp. 49-64.

Gujarati, D. (1992), *Essentials of Econometrics*, McGraw-Hill.

Gummesson, E. (1991), "Service Quality : A Holistic View" in Service Quality : Multidisciplinary and Multinational Perspectives, S. Brown, E. Gummesson, B. Edvardsson and B. Gustausson, eds. Lexington Books.

Gupta, K. and Stewart, D. (1996), "Customer Satisfaction and Customer Behavior : The Differential Role of Brand and Category Expectations", Marketing Letters, volume 7, no.3, pp. 249-263.

Hair, J., Anderson, R., Tatham, R. and Black, W. (1998), Multivariate Data Analysis With Readings, fifth edition, Prentice Hall.

Halstead, D. (1989), "Expectations and Disconfirmation Beliefs as Predictors of Consumer Satisfaction, Repurchase Intention, and Complaining Behavior: An Empirical Study", Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior, 2, pp. 17-21.

Hausknecht, D. (1990), "Measurement Scales in Consumer Satisfaction / Dissatisfaction", Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior, volume 3, pp. 1-11.

Haywood-Farmer, J. (1990). "A Conceptual Model of Service Quality", in Managing Service Quality, An IFS Executive Briefing, Graham Clark (ed.), IFS Ltd., pp. 19-25.

Headley, D. and Miller, S. (1993). "Measuring Service Quality and Its Relationship on Future Consumer Behavior", Journal of Health Care Marketing, volume 13, no.4, pp. 32-41.

Helsen, H. (1964). Adaptation-Level Theory : An Experimental and Systematic Approach to behavior, New York : Harper & Row.

Hoelter, J. W. (1983), "The Analysis of Covariances Structures", Sociological Methods and Research, volume 11, February, pp. 325-344.

Homans, G. (1961), Social Behavior : Its Elementary Forms, Harcourt, Brace & World, New York.

Holbrook, M. and Corfman, K. (1985), "Quality and Value in the Consumption Experience : Phaedrus Rides Again", in Perceived Quality - How Consumers View Stores and Merchandise, Jacob, Jacoby and Jerry C. Olson (eds.), Lexington Books.

Holbrook, M. (1994), "The Nature of Customer Value : An Axiology of Services in the Consumption Experience", in Service Quality - New Directions in Theory and Practice, R. Rust and R. Oliver R. (eds), Sage Publications pp.

Hooley, G. (1993), "Market-Led Quality Management", Journal of Marketing Management, volume 9, pp. 315-335.

Howard, J. and Sheth, J. (1969). The Theory of Buyer Behavior, New York : John Wiley & Sons.

Hoyle, R. H. (1995), *Structural Equation Modeling: Concepts, Issues and Application*. Thousand Oaks, Sage Publications.

Iacobucci, D., Grayson, K. and Ostrom, A. (1994), "The Calculus of Service Quality and Customer Satisfaction : Theoretical and Empirical Differentiation and Integration", in *Advances in Services Marketing and Management*, Vol 3, T. Swartz, D. Bowen and S. Brown, eds. Greenwich, JAI Press Inc. pp. 1-67.

Jayanti, R. and Jackson, A. (1991). "Service Satisfaction : An Exploratory Investigation of Three Models", *Advances in Consumer Research*, volume 18.

Johns, N. and Tyas, P. (1996), "Use of Service Quality Gap Theory to Differentiate Between Foodservice Outlets", *The Service Industries*, volume 16, no.3, pp. 321-346.

Johnson, M. D. and Fornell, C. (1991). "A Framework for Comparing Customer Satisfaction Across Individuals and Product Categories", *Journal of Economic Psychology*, volume 12, pp. 267-286.

----- (1998), *Customer Orientation and Market Action*, Prentice-Hall, Inc.

Johnson, C. and Mathews, B. (1997), "The Influence of Experience on Service Expectations", *International Journal of Service Industry Management*, volume 8, no.4, pp. 290-305.

Jones, T. and Sasser, W. Jr. (1995). "Why Satisfied Customers Defect", *Havard Business Review*, November-December, pp. 88-99.

Jöreskog, K. (1993), "Testing Structural Equation Models", in *Testing Structural Equation Models*, Kenneth A. Bollen and J.Scott Long, eds., Sage Publications.

----- and Sörbom, D. (1982), "Recent Developments in Structural Equation Modeling", *Journal of Marketing Research*, volume XIX, November, pp. 404-416.

----- (1989), *LISREL 7 A Guide to the Program and Applications*, 2nd edition, SPSS Inc.

----- (1993), *LISREL 8: Structural Equation Modeling with the SIMPLIS Command Language*, Scientific Software International, Inc.

----- (1996), *PRELIS 2: User's Reference Guide*, Scientific Software International, Inc.

----- (1996), *LISREL 8: User's Reference Guide*, Scientific Software International, Inc.

Juran, J. M. (1989), *Juran on Leadership For Quality*, London : Collier MacMillan.

Kelly, S. and Davis, M. (1994), "Antecedents to Customer Expectations For Service Recovery", *Journal of the Academy of Marketing Science*, volume 22, no.1, pp. 52-61.

Kelloway, K.E. (1998), *Using LISREL for Structural Equation Modeling*, Sage Publications.

Kennedy, J. R. and Thirkell, P. C. (1988), "An Extended Perspective on the Antecedents of satisfaction", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, volume 1, pp. 2-9.

Kivela, J. (1997), "Restaurant Marketing : Selection and Segmentation in Hong Kong", *International Journal of Contemporary Hospitality Management*, volume 9, no.3, pp. 116-123.

Kotler, P. and Armstrong, G. (1996), *Principles of Marketing*, Seventh edition, Prentice Hall.

----- (1991), *Marketing Management: Analysis, Planning, Implementation and Control*, seventh edition, Prentice-Hall.

Knutson, B., Stevens, P. and Patton, M. (1995). "DINSERV : Measuring Service Quality in Quick Service, Casual / Theme, and Fine Dining Restaurants", *Journal of Hospitality and Leisure Marketing*, volume 3, no.2, pp. 35-44.

Kurtz, D. and Clow, K. (1998). *Services Marketing*. First edition. John Wiley & Sons.

LaBarbera, P. and Mazursky, D. (1983), "A Longitudinal Assessment of Consumer Satisfaction / Dissatisfaction : The Dynamic Aspect of the Cognitive Process", *Journal of Marketing Research*, XX (November), pp. 393-404.

LaTour, Stephen A. and Nancy C. Peat (1979), "Conceptual and Methodological Issues in Consumer Satisfaction Research", in *Advances in Consumer Research*, William L. Wilkie, ed. Ann Arbor, MI: Association for Consumer Research, VI, pp. 431-437.

----- (1980), "The Role of Situationally-Produced Expectations, Other's Experiences, and Prior Experience in Determining Consumer Satisfaction", in *Advances in Consumer Research*, MI: Association for Consumer Research, pp. 588-592.

Lam, S. (1995). "Assessing the Validity of SERVQUAL : An Empirical Analysis in Hong Kong", *Asia Pacific Journal of Quality Management*, volume 4, no.4, pp. 33-40.

----- and Woo, K., S. (1997), "Measuring Service Quality : A Test-Retest Reliability Investigation of SERVQUAL", *Journal of the Market Research Society*, volume 39, no.2, pp. 381-396.

Lan, L. and Khan, M. (1995). "Hong Kong' Fast-food Industry : An Overview", *Cornell Hotel and Restaurant and Administration Quarterly*, June.

- Lee, M. and Ulgado, F. (1997), "Consumer Evaluations of Fast-food Services : a Cross-national Comparison", *The Journal of Services Marketing*, volume 11, no.1, pp. 39-52.
- Legg, D. and Baker, J. (1987), "Advertising Strategies For Service Firms" in *Add Value to Your Service*, C. Surprenant, ed., Chicago : American Marketing Association, pp. 163-167.
- Lehtinen, U. and Lehtinen, J. (1991), "Two Approaches to Service Quality Dimensions", *The Service Industries Journal*, volume 11, no.3, pp. 287-303.
- Lewis, R. and Booms, B. (1983), "The Marketing Aspects of Service Quality", in *Emerging Perspectives on Services Marketing, Proceeding Series*, Berry, L., Shostack, L. and Upah, G., eds, American Marketing Association, pp. 99-104.
- Lewis, B. and Mitchell, V. (1990), "Defining and Measuring the Quality of Customer Service", *Marketing Intelligence & Planning*, 8(6), pp. 11-16.
- Lewis, B. (1991), "Service Quality : An International Comparison of Bank Customers' Expectations and Perceptions", *Journal of Marketing Management*, volume 7, pp. 47-62.
- Li, L. and Mahmood, K. (1995), "Hong Kong's Fast Food Industry – An Overview", *Cornell Hotel and Restaurant Administration Quarterly*, (June), pp. 34-41.
- Liechty, M. and Churchill, G. (1979), "Conceptual Insights into Consumer Satisfaction with Services", in *Educators' Conference Proceedings, Series 94*, Neil Beckwith et al. eds., Chicago: American Marketing Association, pp. 509-515.
- Liljander, V. and Strandvik, T. (1995), "The Relation Between Service Quality, Satisfaction and Intentions", in *Managing Service Quality*, P. Kunst and J. Lemmink, eds. Vught, Innovation Trading B.V. pp. 45-61.
- (1993), "Different Comparison Standards as Determinants of Service Quality", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, pp. 118-132.
- Long, S. (1994a), "Confirmatory Factor Analysis", in *Factor Analysis & Related Techniques*, Michael S. Lewis-Beck ed., Sage Publications.
- (1994b), "Covariance Structure Models: An Introduction to LISREL", in *Factor Analysis & Related Techniques*, Michael S. Lewis-Beck ed., Sage Publications.
- Lovelock, C. H. (1996), *Services Marketing*, third edition, Englewood Cliffs, NJ : Prentice-Hall, Inc.
- Maruyama, G.M. (1998), *Basics of Structural Equation Modeling*, Sage publications.
- McCathy, E. and Perreault, W. Jr. (1998). *Basic Marketing*. Tenth edition. Irwin.

Miller, J. (1977). "Studying Satisfaction Modifying Models, Eliciting Expectations, Posing Problems, and Making Meaningful Measurement", in *Conceptualization and Measurement of Consumer and Dissatisfaction*, K. Hunt, ed., Mass : Marketing Science Institute (May), pp. 72-91.

Mittal, B. and Lasser, W. (1998), "Why Do Customers Switch ? The Dynamics of Satisfaction Versus Loyalty", *The Journal of Services Marketing*, volume 12, no.3.

Monroe, K. and Krishnan, R. (1985). "The Effect of Price on Subjective Product Evaluations", in *Perceived Quality*, Jacob Jacoby and Jerry C. Olson eds., Lexington Books.

Monroe, K. and Chapman, J. (1987), "Framing Effects on Buyers' Subjective Product Evaluations", *Advances in Consumer Research*, pp. 193-197.

----- (1991). *Pricing - Making Profitable Decisions*, McGraw-Hill.

Morgan, D., (1997). *Focus Groups As Qualitative Research*, 2nd edition, Sage Publications.

Myers, J. (1991), "Measuring Customer Satisfaction : Is Meeting Expectations Enough?", *Marketing Research*, December, pp. 35- 43.

Norusis, M. J. (1993), *SPSS for Windows. Base System User's Guide Release 6.0*. SPSS Inc.-

Nunnally, J. (1978), *Psychometric Theory*, McGraw-Hill.

----- and Bernstein, I. (1994), *Psychometric Theory, Third Edition*, McGraw-Hill Inc.

Nyquist, J., Bitner, M. and Booms, B. (1985). "Identifying Communications Difficulties in the Service Encounter : A Critical Incidents Approach", in *The Service Encounter*, John Czepiel, Michael Solomon and Carol Surprenant, eds., Lexington, MA : Lexington Books, pp. 195-212.

Oliver, R. (1980), "A Cognitive Model of the Antecedents and Consequences of satisfaction Decisions", *Journal of Marketing Research*, XVII (November), pp. 460-469.

----- (1981), "Measurement and Evaluation of Satisfaction Processes in Retail Settings", *Journal of Retailing*, 57 (3), pp. 25-48.

----- and Bearden, W. (1985), "Disconfirmation Processes and Consumer Evaluations in Product Usage", *Journal of Business Research*, volume 13, pp. 235-256.

----- and Winer, R. (1987), "A Framework for the Formation and Structure of Consumer Expectations: Review and Propositions", *Journal of Economic Psychology*, 8, pp. 469-499.

----- and DeSarbo, W., (1988), "Response Determinants in satisfaction Judgements", *Journal of Consumer Research*, volume 14, (March), pp. 495-507.

----- and Swan, J., (1989), "Consumer Perceptions of Interpersonal Equity and Satisfaction in Transactions : A Field Survey Approach", *Journal of Marketing*, volume 53, (April), pp. 21-35.

----- (1989), "Processing of the Satisfaction Response in Consumption : An Suggested Framework and Research Propositions", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, volume 2, pp. 1-16.

----- (1987), "An Investigation of the Interrelationship Between Consumer (Dis)satisfaction and Complaint Reports", in *Advances Consumer Research*, pp. 218-222.

----- (1993), "A Conceptual Model of Service Quality and Service Satisfaction: Compatible Goals, Different Concepts", in *Advances in Services Marketing and Management*, volume 2, T. Swartz, D. Bowen and S. Brown, eds, Greenwich, JAI PRESS LTD., pp. 65-86.

----- (1994), "Conceptual Issues in the Structural Analysis of Consumption Emotion, Satisfaction, and Quality: Evidence in a Service Setting", *Advances in Consumer Research*, volume 21, pp. 16-22.

----- (1997). *Consumer Satisfaction*. First edition. McGraw Hill.

Olshavsky, R. and Miller, J. (1972), "Consumer Expectations, Product Performance and Perceived Product Quality", *Journal of Marketing Research*, volume IX, (February), pp. 19-21.

----- (1985). "Perceived Quality in Consumer Decision Making : An Integrated Theoretical Perspective", in *Perceived Quality*, Jacob Jacoby and Jerry C. Olson eds., Lexington Books.

Parasuraman, A., Zeithaml, V. and Berry, L. (1985), "A Conceptual Model of Service Quality and Its Implications for Future Research", *Journal of Marketing*, 49 (Fall), pp. 41-50.

-----, Zeithaml, V. and Berry, L. (1988), "SERVQUAL : A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality", *Journal of Retailing*, 64 (1), pp. 12-40.

-----, Zeithaml, V. and Berry, L. (1991), "Refinement and Reassessment of the SERVQUAL Scale", *Journal of retailing*, 67 (4), pp. 420-450.

-----, Berry, L. and Zeithaml, V. (1991), "Understanding Customer Expectations of Service", *Sloan Management Review*, 39 (Spring), pp. 39-48

-----, Berry, L. and Zeithaml, A. (1993), "Research Note : More on Improving Service Quality Measurement", *Journal of Retailing*, 69 (3), pp. 140-147.

-----, Zeithaml, V. and Berry, L. (1994a), "Reassessment of Expectations as a Comparison Standard in Measuring Service Quality : Implications For Future Research", *Journal of Marketing*, 58 (April), pp. 111-124.

-----, Zeithaml, V. and Berry, L. (1994b), "Moving Forward in Service Quality Research : Measuring Different Customer Expectation Levels, Comparing Alternatives Scales, and Examining the Performance-Behavioral Intentions Link", Working Paper, September, Marketing Science Institute.

Patterson, P. (1993), "Expectations and Product Performance as Determinants of Satisfaction for a High-Involvement Purchase", *Psychology & Marketing*, 10 (5), pp. 449-465.

Patterson, P. and Johnson, L. (1993). "Disconfirmation of Expectations and The Gap Model of Service Quality : An Integrated Paradigm", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, volume 6, pp. 90-99.

----- and Spreng, R. (1997), "Modelling the Relationship Between Perceived Value, Satisfaction and Repurchase Intention in a Business-to-Business, Service Context : An Empirical Examination", *International Journal of Service Industry Management*, volume 8, no.5 pp. 414-434.

Peter, J., Churchill, G. Jr. and Brown, T. (1993). "Caution in the Use of Difference Scores in Consumer Research", *Journal of Consumer Research*, volume 19, March, pp. 655-662.

Peterson, R. and Wilson, W. (1992), "Measuring Customer Satisfaction: Fact and Artifact", *Journal of the Academy of Marketing Science*, volume 20, no.1, pp. 61-71.

Pettijohn, L., Pettijohn, C. and Luke, R. (1997), "An Evaluation of Fast Food Restaurant Satisfaction : Determinants, Competitive Comparisons and Impact of Future Patronage", *Journal of Restaurant and Foodservice Marketing*, volume 2(3), pp. 3-20.

Prakash, V. (1984), "Validity and Reliability of the Confirmation of Expectations Paradigm As a Determinant of Consumer Satisfaction", *Journal of the Academy of Marketing Science*, 12 (4), pp. 63-76.

Prakash, V. and Lounsbury, J. (1984), "The Role of Expectations in the Determination of Consumer Satisfaction", *Journal of the Academy of Marketing Science*, 12 (3), pp. 1-17.

Price, F. (1994)., "The Quality Concept and Objectives", in *Handbook of Quality Management*, Dennis Lock (ed.), 2nd edition,, Gower Publishing Ltd.

Prokesch, S. (1995), "Competing on Customer Service : An Interview with British Airways' Sir Colin Marshall", *Harvard Business Review*, November-December, pp. 101-116.

Quester, P. and Romaniuk, S. (1997). "Service Quality in the Australian Advertising : A Methodological Study", *The Journal of Services Marketing*, volume 11, no.3, pp. 180-192.

Raaij, W. (1991) "The Formation and Use of Expectations in Consumer Decision Making", in *Handbook of Consumer Behavior*, Thomas S. Robertson and Harold H. Kassirjian (eds), Prentice-Hall, U.S.A.

Ravald, A. and Grönroos, C. (1996), "The Value Concept and Relationship Marketing", *European Journal of Marketing*, 30 (2), pp. 19-30.

Reichheld, F. and Sasser, W. (1990), "Zero Defections : Quality Comes into Services", *Harvard Business Review*, Sept-Oct, pp. 105-111.

----- (1993), "Loyalty-based Management", *Harvard Business Review*, March-April, pp. 64-73.

Richard, M., Sundaram, D. and Allaway, A. (1994), "Service Quality and Choice Behavior : An Empirical Investigation", *Journal of Restaurant and Foodservice Marketing*, volume 1(2), pp. 93-109.

Robinson, J. P., Shaver, P. R. and Wrightsman, L.S. (1991), *Measures of Personality and Social Psychological Attitudes*, San Diego, CA: Academic Press.

Rust, R. and Oliver, R. (1994), *Service Quality - New Directions in Theory and Practice*, Sage Publications.

----- and Zahorik, A. (1993). "Customer Satisfaction, Customer Retention, and Market Share", *Journal of Retailing*, 69 (2), pp/ 193-215.

----- Zahorik, A. and Keiningham, T. (1996), *Service marketing*, Harper Collins College Publishers.

Ruyter, Ko de and Bloemer, J. and Peters, P. (1997). "Merging Service Quality and Service Satisfaction - An Empirical Test of an Integrative Model", *Journal of Economic Psychology*, volume 18, pp. 387-406.

Saleh, F. and Ryan, C. (1991). "Analysing Service Quality in the Hospitality Industry Using the SERVQUAL Model", *The Service Industrial Journal*, volume 11, no.3, pp. 324-345.

Sharma, S. (1996). *Applied Multivariate Techniques*, Johnson Wiley & Sons, Inc.

Shostack, L. (1977), "Breaking Free from Product Marketing", *Journal of Marketing*, 41 (April), pp. 37-48.

----- (1984), "Designing Services that Deliver", *Harvard Business Review*, January-February, pp. 133-139.

----- (1985), "Planning the Service Encounter" in *The Service Encounter – Managing Employee / Customer Interaction in Service Businesses*, John Czepiel, Michael Solomon and Carol Surprenant, eds., Lexington, MA : Lexington Books, pp. 243-254.

Sekaran, U. (1992), *Research Methods For Business – A Skill Building Approach*, second edition, John Wiley & Sons, Inc.

Singh, J. (1991), "Understanding the Structure of Consumers' Satisfaction Evaluations of Service Delivery", *Journal of the Academy of Marketing Science*, volume 19, no.3, pp. 223-244.

Smith, A. (1995). "Measuring Service Quality : Is SERVQUAL now Redundant ?", *Journal of Marketing Management*, volume 11, pp. 257-276.

Smith, R. and Houston, M. (1983), "Script-Based Evaluations of Satisfaction with Services", in *Emerging Perspectives on Services Marketing, Proceeding Series*, Berry, L., Shostack, L. and Upah, G., eds, American Marketing Association, pp. 59-62.

Spector, P.E. (1994). "Summated Rating Scale Construction: An Introduction", in *Basic Measurement*, Michael S. Lewis-Beck ed., Sage Publications

Spreng, R. and Singh, A. (1993), "An Empirical Assessment of the SERVQUAL Scale and the Relationship Between Service Quality and Satisfaction", *AMA Educators' Proceedings, Enhancing Knowledge Development in Marketing*, volume 4, American Marketing Association.

-----, and Olshavsky, R. (1993), "A Desires Congruency Model of Consumer Satisfaction", *Journal of the Academy of Marketing Science*, volume 21, no.3, pp. 169-177.

-----, Dixon, A. and Olshavsky R. (1993), "The Impact of Perceived Value on Consumer Satisfaction", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, volume 6, pp. 50-55.

-----, MacKenzie, S. and Olshavsky, R. (1996), "A Re-examination of the Determinants of Consumer Satisfaction", *Journal of Marketing*, volume 60, July, pp. 15-32.

----- and Mackoy, R. (1996), "An Empirical Examinations of a Model of Perceived Service Quality and Satisfaction", *Journal of Retailing*, volume 72, no.2, pp. 201-214.

Steiger, J.H., Shapiro, A. and Browne, M.W. (1985), "On the Multivariate Asymptotic Distribution of Sequential Chi-square Statistics", *Psychometrika* volume 50, pp. 253-264.

Stevens, P., Knutson, B. and Patton, M. (1995), "DINESERV: a Tool for Measuring Service Quality in Restaurants", *Cornell Hotel & Restaurant Administration Quarterly*, volume 36, no.2 pp. 56-60.

Stewart, D.W. (1981), "The Application and Misapplication of Factor Analysis in Marketing Research", in *Journal of Marketing Research*, volume XVIII, February, pp. 51-62.

Storbacka, K., Strandvik, T. and Grönroos, C. (1994), "Managing Customer Relationships for Profit: The Dynamics of Relationship Quality", *International Journal of Services Industry Management*, volume 5, no. 5, pp. 21-38.

Sudman, S. (1976), *Applied Sampling*, Orlando, Fla: Academic Press.

----- and Blair, E. (1998), *Marketing Research : A Problem-solving Approach*, McGraw-Hill.

Swan, J. and Combs, Linda Jones (1976), "Product Performance and Consumer Satisfaction: A New Concept", *Journal of Marketing*, 40 (April), pp. 25-33.

----- and Trawick, F. (1981), "Disconfirmation of Expectations and Satisfaction with Retail Service", *Journal of Retailing*, 57 (3), pp. 49-67.

----- and Carroll, M. G. (1981), "Effect of Participation in Marketing Research on Consumer Attitudes Toward Research and Satisfaction with a Service" *Journal of Marketing Research*, volume XVIII, August, pp. 356-363.

----- (1988), "Consumer Satisfaction Related to Disconfirmation of Expectations and Product Performance", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, volume 1, pp. 40-47.

Swartz, T. and Brown, S. (1989), "Consumer and Provider Expectations and Experiences in Evaluating Professional service Quality", *Journal of the Academy of Marketing Science*, 17 (2), pp. 189-195.

Sweeney, J., Johnson, L. and Armstrong, R. (1992), "The Effect of Cues on Quality Expectations and Service Selection in a Restaurant Setting", *The Journal of Services Marketing*, vol 6, no. 4, Fall, pp. 15-22.

Tam, J.L.M. (2000), "The Effects of Service Quality, Perceived Value and Customer Satisfaction on Behavioural Intentions", *Journal of Hospitality and Leisure Marketing*, volume 6, pp.31-43.

Taylor, S. and Baker, T. (1994), "An Assessment of the Relationship Between Service Quality and Customer Satisfaction in the Formation of Consumers' Purchase Intentions", *Journal of Retailing*, 70 (2), pp. 163-178.

----- and Cronin, J. Jr. (1994), "Modeling Patient Satisfaction and Service Quality", *Journal of Health Care Marketing*, volume 14, no.1, pp. 34-44.

----- (1995), "Service Quality and Consumer Attitudes: Reconciling Theory and Measurement" in *Advances in Services Marketing and Management*, volume 4, pp. 1-36.

Teas, K. (1993), "Expectations, Performance Evaluation, and Consumers' Perceptions of Quality", in *Journal of Marketing*, 57 (October), pp. 18-34.

Teas, K. (1994), "Expectations as a Comparison Standard in Measuring Service Quality : An Assessment of a Reassessment", *Journal of Marketing*, volume 58, January, pp. 132-139.

Thibaut, J. and Kelly, H. (1959). *The Social Psychology of Groups*, New York : Wiley.

Triplett, J., Yau, O. and Neal, C. (1995), "Assessing the Reliability and Validity of SERVQUAL in a Longitudinal Study : The Experience of an Australian Organisation", *Asia Pacific Journal of Marketing and Logistics*, pp. 41-82.

Tse, D. and Wilton, P. (1988), "Models of Consumer Satisfaction Formation : An Extension", *Journal of Marketing Research*, XXV (May), pp. 204-212.

Tse, D., Nicosia, F. and Wilton P. (1990), "Consumer Satisfaction as a Process", *Psychology and Marketing*, volume 7, no.(3), pp. 177-193.

Tull, D. and Hawkins, D. (1993), *Marketing Research - Measurement and Method*, sixth edition, MacMillian Publishing Company.

Voss, G. B., Parasuraman, A. and Grewal, D. (1998), "The Roles of Price, Performance, and Expectations in Determining Satisfaction in Service Exchange", *Journal of Marketing*, volume 62, October, pp. 46-61.

Walker, J. (1995), "Service Encounter Satisfaction : Conceptualized", *Journal of Service Marketing*, volume 9, no.1, pp. 5-14.

Watson, C., Billingsley, P., Croft, D. and Huntsberger, D. (1990), *Statistics For Management and Economics*, Fourth edition, Allyn and Bacon.

Webb, D. (1998), "Segmenting Police 'Customers' on the Basis of their Service Quality Expectations", *The Service Industrial Journal*, volume 18, no. 1, pp.72-100.

Webster, C. (1991), "Influences Upon Consumer Expectations of Services", *The Journal of Services Marketing*, volume 5, no.1, pp. 5-16.

----- (1993), "Refinement of the Marketing Culture Scale and the Relationship Between Marketing Culture and Profitability of a Service Firm", *Journal of Business Research*, volume 26, pp. 111-131.

Weiner, B. (1985), "An Attribution Theory of Achievement Motivation and Emotion", *Psychological Review*, volume 92, pp. 548-573.

Westbrook, R. (1987), "Product/Consumption-Based Affective Responses and Postpurchase Processes", *Journal of Marketing Research*, XXIV (August), PP. 258-270.

----- (1981), "Sources of Consumer Satisfaction with Retail Outlets", *Journal of Retailing*, 57 (Fall), pp. 8-85.

----- (1980), "A Rating Scale for Measuring Product/Service Satisfaction", *Journal of Marketing*, 44 (Fall), pp.68-72.

----- and Oliver, R. (1981), "Developing Better Measures of Consumer Satisfaction: Some Preliminary Results", in *Advances in Consumer Research*, Kent B. Monroe, ed. Ann Arbor, MI: Association for Consumer Research, pp. 94-99.

Whitley, B.E. (1996), *Principles of Research in Behavioural Science*, Mayfield Publishing Company.

Wille, E. (1992). *Quality : Achieving Excellence*. First Edition. Century Business.

Wilton, Peter C. and M. Nicosia (1986), "Emerging Paradigms for the Study of Consumer Satisfaction", *European Research*, 14 (January), pp. 4-11.

Woodruff, R., Cadotte, E. and Jenkins, R. (1983), "Modeling Consumer Satisfaction Processes Using Experience-Based Norms", *Journal of Marketing Research*, XX (August), pp. 296-304.

Woodruff, R., Scott, C., Schumann D., Gardinal S. and Burns, M. (1991), "The Standards Issues in CS/D Research : A Historical Perspective", *Journal of Consumer Satisfaction and Dissatisfaction and Complaining Behavior*, Volume 4, pp. 103- 109.

-----, Clemons, D., Schumann, D., Gardial, S. and Burns, M. (1991), "The Standards Issue in CS/D Research : A Historical Perspective", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, volume 4, pp. 103- 109.

Woodside, A., frey, L. and Daly, R. (1989), "Linking Service Quality, Customer Satisfaction, and Behavioral Intention", *Journal of Health Care Marketing*, 9 (4), pp. 5-17.

Wothke, W. (1993), "Nonpositive Definite Matrices in Structural Modeling", in *Testing Structural Equation Models*, Kenneth A. Bollen and J. Scott Long, eds., Sage Publications.

Wragg, T. (1994). *An Investigation into the Nature, Determinants and Dynamics of Service Quality Expectations*, PhD Thesis, Aston University.

Yau, O. (1994). *Consumer Behaviour in China - Customer Satisfaction and Cultural Values*, Routledge.

----- and Lee, E. (1996). "Restaurant Industry in Hong Kong : A Conceptual Model", *Journal of Restaurant & Foodservice Marketing*, volume 1, (3/4), pp. 85-106.

Yi, Y. (1990), "A Critical Review of Consumer Satisfaction", in *Review of Marketing*, Vol 4, V. Zeithaml, ed., American Marketing Association. pp. 68-123.

----- (1989), "An Investigation of the Structure of Expectancy - Value Attitude and Its Implications", *International Journal of Research in Marketing*, 6 (December), pp. 71-83.

Zahorik, A. and Rust, R. (1992). "Modelling the Impact of Service Quality on Profitability", in *Advances in Services Marketing and Management*, volume 1, T. Swartz, D. Bowen and S. Brown, eds., Greenwich, JAI Press Inc. pp. 247-276.

Zeithaml, V. (1981). "How Consumer Evaluation Processes Differ Between Goods and Services" in Marketing of Services, James H. Donnelly and William R. George, eds., American Marketing Association, Chicago.

-----, (1988), "Consumer Perceptions of Price, Quality and Value : A Means-End Model and Synthesis of Evidence", Journal of Marketing, (July), pp. 2-22.

-----, Parasuraman, A. and Berry, L. (1985), "Problems and Strategies in Services Marketing, Journal of Marketing, volume 49, Spring, pp. 33-46.

-----, Parasuraman, A. and Berry, L. (1990). Delivering Quality Service. First edition. Free Press.

-----, Berry, L. and Parasuraman, A. (1993), "The Nature and Determinants of Customer Expectations of Service", Journal of the Academy of Marketing Science, 21 (1), pp. 1-12.

-----, Berry, L. and Parasuraman, A. (1996), "The Behavioral Consequences of Service Quality", Journal of Marketing, 60 (April) pp. 31-46

----- and Bitner, M. (2000). Services Marketing, second edition, McGraw Hill.

Other References :

"The Restaurant Industry", Economic Analysis, The Bank of East Asia, Ltd. (April) 1997.

"Hong Kong 1997" Bob Howlett ed., Information Services Department, Government Printer 1997.

Hong Kong Census 1996. Hong Kong Government Census and Statistics Department 1996.

Appendix 4.1

Depth-Interview Questions

Questions asked in the depth interview:

- Q1. What does “service quality” mean to you?
- Q2. How do you judge whether a service is of high quality? And low quality?
- Q3. How would you describe that you are satisfied with a service performance?
- Q4. What factors determine your satisfaction with a service performance?
- Q5. When you evaluate the quality of a service, do you compare the service you received against a point of reference?
If, yes, what is this reference point?
- Q6. Do “consumer satisfaction” and “service quality” mean the same thing to you?
- Q7. *Can you recall an instance in which you felt that you were receiving a low quality service but were satisfied?*
- Q8. *Can you recall an instance in which you felt that you were receiving a high quality service but were not satisfied?*

Appendix 5.1

Critical Incident Technique Questions

- Q1. Think of a time when you had a particularly satisfying (dissatisfying) dining experience at a restaurant.
- Q2. When was that?
- Q3. Can you describe in detail what factors made you feel that the dining experience was extremely satisfying (dissatisfying)?
- Q4. Can you recall the restaurant environment?
Restaurant atmosphere?
Employee performance?
Quality of food?
Interior decoration?
- Q5. How likely is it that you will consume at that restaurant again?
Respondents were asked to rate on a five-point scale ranging from Not likely at all to Very likely
- Q6. How willingly will you recommend others (e.g., friends) to consume at that restaurant?
Respondents were asked to rate on a five-point scale ranging from Definitely not willing to Very willing
- Q7. Demographic questions including sex, age, and education level.

(Note : Q5 and Q6 are used to validate respondent answers to the above questions)

Appendix 5.2

Initial Questionnaire

There are four parts to this questionnaire. Please follow the directions in each part. The questions are purely for research purposes and all the information you provide will be kept strictly confidential.

Part I

Q1. Have you consumed at a Chinese Restaurant in the last month?

Yes No (Thank-you for your co-operation)

Q2. Please tell us the name and the location of the restaurant in which you had your most recent dining experience.

Part II

Directions: In this part, I would like to know your perceptions of the service that you received recently at the above restaurant. For each of the following service attributes, if you perceive the restaurant has performed excellently on an attribute, then circle 7. If you perceive the restaurant has not performed excellently on an attribute, then circle a number from 1 to 6. There are no right or wrong answers, all I am interested in are the ratings on each attribute that best represent your perceptions of the restaurant's service.

Q3a. <u>Food attributes</u>	Poor.....	Excellent
Taste of food	1 2 3 4 5 6 7	
Portion of food	1 2 3 4 5 6 7	
Presentation of food	1 2 3 4 5 6 7	
Smell of food	1 2 3 4 5 6 7	
Temperature of food	1 2 3 4 5 6 7	
Freshness of food	1 2 3 4 5 6 7	
Nutritional value of food	1 2 3 4 5 6 7	
Hygiene of food	1 2 3 4 5 6 7	

	Poor.....	1	2	3	4	5	6	7	Excellent
Variety of dishes		1	2	3	4	5	6	7	
Uniqueness of dishes		1	2	3	4	5	6	7	
Q3b. <u>Menu</u>									
Readability of menu		1	2	3	4	5	6	7	
Design of menu		1	2	3	4	5	6	7	
Q3c. <u>Food Delivery</u>									
Speed of food delivery		1	2	3	4	5	6	7	
Order of food delivery		1	2	3	4	5	6	7	
Q3d. <u>Serving Staff</u>									
Employees welcome customers on their arrival		1	2	3	4	5	6	7	
Employees are willing to serve customers		1	2	3	4	5	6	7	
Employees are willing to handle customer special requests		1	2	3	4	5	6	7	
Employees serve customers sincerely		1	2	3	4	5	6	7	
Employees are experienced and competent at doing their job		1	2	3	4	5	6	7	
Employees know about the menu items and methods of cooking		1	2	3	4	5	6	7	
Employees have the ability to provide efficient service		1	2	3	4	5	6	7	
Employees possess the ability to answer customer questions clearly and completely		1	2	3	4	5	6	7	
Employees inform customers about how long until the food will be ready		1	2	3	4	5	6	7	
Employees offer suggestions to customers when required		1	2	3	4	5	6	7	
Employees takes the initiative to find out what customers need		1	2	3	4	5	6	7	

	Poor.....	1	2	3	4	5	6	7	Excellent
Employees are courtesy and friendly	1	2	3	4	5	6	7		
Employees are approachable and easy to contact	1	2	3	4	5	6	7		
Employees wear neat and tidy uniforms	1	2	3	4	5	6	7		
Employees wear attractive uniforms	1	2	3	4	5	6	7		
Employees inform customers promptly when the food is not available	1	2	3	4	5	6	7		
Employees provide an explanation when there is a delay in preparation of the food	1	2	3	4	5	6	7		
Employees spend effort to solve problems when they arise	1	2	3	4	5	6	7		
Q3e. <u>Dining Environment</u>									
Atmosphere of the restaurant	1	2	3	4	5	6	7		
Temperature of the dining area	1	2	3	4	5	6	7		
Hygiene of the dining area	1	2	3	4	5	6	7		
Interior decoration	1	2	3	4	5	6	7		
Layout of the seats and tables	1	2	3	4	5	6	7		
Comfort	1	2	3	4	5	6	7		
Q3f. <u>Utensils, Table cloth and Napkins</u>									
Attractive appearance	1	2	3	4	5	6	7		
Hygiene	1	2	3	4	5	6	7		
Clean	1	2	3	4	5	6	7		
Presentation	1	2	3	4	5	6	7		
Q3g. <u>Seats and Tables</u>									
Attractive appearance	1	2	3	4	5	6	7		
Comfortable	1	2	3	4	5	6	7		

Part III

Directions: In this part, I would like to know your overall evaluations of the quality of the restaurant's service, the costs and value of the service, and your overall satisfaction towards the service. Please respond by circling the number which best reflects your evaluations.

Q4a. Based on the recent encounter, please rate on the following scales, the time you perceived to have spent in waiting to be served.

Little time	1	2	3	4	5	6	7	A long time
Lower than I expected	1	2	3	4	5	6	7	Higher than I expected

Q4b. Please rate on the following scales, the price you perceived to have paid for the service received at the recent encounter (including food, service, environment).

Cheap	1	2	3	4	5	6	7	Expensive
Reasonable	1	2	3	4	5	6	7	Unreasonable
Lower than I expected	1	2	3	4	5	6	7	Higher than I expected

Q4c. In comparison with other similar restaurants, how did you perceive the price of the service at the recent encounter (including food, service, environment).

Cheaper than other restaurants	1	2	3	4	5	6	7	Expensive than other restaurants
--------------------------------	---	---	---	---	---	---	---	----------------------------------

Q4d. Did you find the location of the restaurant easily accessible?

Easily accessible	1	2	3	4	5	6	7	Not easily accessible
-------------------	---	---	---	---	---	---	---	-----------------------

Q5a. Based on the service you have received (including food, service, environment), how did you perceive the price you paid ?

Not worthwhile at all	1	2	3	4	5	6	7	Very worthwhile
-----------------------	---	---	---	---	---	---	---	-----------------

Q5b. Based on the service you have received (including food, service, environment), how did you perceive the time you spent in waiting to be served ?

Not worthwhile at all	1	2	3	4	5	6	7	Very worthwhile
-----------------------	---	---	---	---	---	---	---	-----------------

Q5c. Based on the service you have received (including food, service, environment), how did you perceive the efforts you made in coming to the restaurant ?

Not worthwhile at all 1 2 3 4 5 6 7 Very worthwhile

Q6. Please rate on the following scales, the overall quality of the service you received at the recent encounter (including food, service, and environment).

One of the worst 1 2 3 4 5 6 7 One of the best

Low quality 1 2 3 4 5 6 7 High quality

Lower than the standard of this industry 1 2 3 4 5 6 7 Higher than the standard of this industry

Q7. How did you feel about the overall service experience (including food, service, environment) at the recent encounter ?

Very unpleasant 1 2 3 4 5 6 7 Very pleasant

Very dissatisfied 1 2 3 4 5 6 7 Very satisfied

Very unhappy 1 2 3 4 5 6 7 Very happy

I did not enjoy it at all 1 2 3 4 5 6 7 I enjoyed it very much

Q8. Please indicate how likely will you engage in the following activities. (1 anchored “definitely will not” and 7 anchored “definitely will)

Definitely will not.....will

Q8a. I will consume at this restaurant more frequently 1 2 3 4 5 6 7

Q8b. I will recommend the restaurant to others 1 2 3 4 5 6 7

Q8c. I would consider this restaurant the first choice if I had to choose again 1 2 3 4 5 6 7

Q8d. I will say favourable things about the restaurant to others 1 2 3 4 5 6 7

Q8e. I will be a loyal customer of this restaurant 1 2 3 4 5 6 7

Part IV

The questions in this part are for classification purposes. All the information you provide will be kept strictly confidential. Please tick the box that best matches your status.

Q9. Sex:

- Male Female

Q10. Age:

- 18 - 25 26 - 30
 31 - 35 36 - 40
 41 - 45 46 - 50

Q11. Marital Status:

- Single Married Divorced

Q12. Education attainment:

- Primary or below
 Secondary level
 Post-secondary level
 Polytechnic/University level
 Others, please specify _____

Q13. Occupation:

- | | |
|---|--|
| <input type="checkbox"/> Professional/Executive | <input type="checkbox"/> Managerial/Administrative |
| <input type="checkbox"/> White collars | <input type="checkbox"/> Blue collar |
| <input type="checkbox"/> Students | <input type="checkbox"/> Housewife |
| <input type="checkbox"/> Retired | <input type="checkbox"/> Unemployed |
| <input type="checkbox"/> Entrepreneur/Self-employed | <input type="checkbox"/> Other, please specify _____ |

Q14. Average monthly income:

- | | |
|--|--|
| <input type="checkbox"/> \$ 5,000 or below | <input type="checkbox"/> \$ 5,001 - \$10,000 |
| <input type="checkbox"/> \$10,001 - \$15,000 | <input type="checkbox"/> \$15,001 - \$ 20,000 |
| <input type="checkbox"/> \$ 20,001 - \$ 25,000 | <input type="checkbox"/> \$ 25,001 - \$ 30,000 |
| <input type="checkbox"/> \$ 30,001 - \$ 35,000 | <input type="checkbox"/> \$ 35,001 - \$ 40,000 |
| <input type="checkbox"/> \$ 40,001 - \$ 45,000 | <input type="checkbox"/> \$ 45,001 - \$ 50,000 |
| <input type="checkbox"/> above \$ 50,000 | |

- End of Questionnaire -
- Thank-you for your co-operation -

Appendix 5.3

Initial Questionnaire (Chinese version)

這問卷分四部份，請依照指示回應每部份的問題。你所提供的資料只會用作研究用途，並將絕對保密。

甲部：

Q1. 請問你過去一個月內有否光顧中式酒樓？

有 否(多謝合作)

Q2. 請問你最近一次光顧的中式酒樓叫什麼名字及在什麼區域？

乙部：

Q3. 指示: 請你就那次用膳，表達你對該酒樓在以下各項服務表現的意見。假如你認為該酒樓的服務表現優越，請圈上數目字“7”。假如你認為該酒樓的服務表現並不優越，請在“1”至“6”的數目字，圈上其中一個。（“1”代表差劣，“7”代表優越）

Q3a 食物方面	差劣。 優越						
食物味道	1	2	3	4	5	6	7
食物份量	1	2	3	4	5	6	7
食物賣相	1	2	3	4	5	6	7
食物氣味	1	2	3	4	5	6	7
食物配料	1	2	3	4	5	6	7
食物調味	1	2	3	4	5	6	7
食物溫度	1	2	3	4	5	6	7
食物新鮮程度	1	2	3	4	5	6	7
食物營養價值	1	2	3	4	5	6	7
食物衛生程度	1	2	3	4	5	6	7
菜式(獨特)	1	2	3	4	5	6	7
菜式(種類)	1	2	3	4	5	6	7

	差劣	1	2	3	4	5	6	7	優越
Q3b 餐牌方面									
餐牌字體清晰		1	2	3	4	5	6	7	
餐牌設計		1	2	3	4	5	6	7	
Q3c 遞送食物方面									
等候遞送食物的時間		1	2	3	4	5	6	7	
遞送食物的次序		1	2	3	4	5	6	7	
Q3d 員工表現									
態度友善		1	2	3	4	5	6	7	
服務慇懃		1	2	3	4	5	6	7	
樂意侍奉顧客		1	2	3	4	5	6	7	
樂意去解答顧客的問題		1	2	3	4	5	6	7	
樂意去處理顧客的特別要求		1	2	3	4	5	6	7	
會以歡迎的態度接待光臨的顧客		1	2	3	4	5	6	7	
會主動去了解顧客需求		1	2	3	4	5	6	7	
會主動提供意見給顧客選擇菜式		1	2	3	4	5	6	7	
穿著整齊的制服		1	2	3	4	5	6	7	
穿著的制服美觀吸引		1	2	3	4	5	6	7	
俱備熟練的工作技巧		1	2	3	4	5	6	7	
熟識餐牌上的菜式，配料及煮食方法		1	2	3	4	5	6	7	
有能力去提供快捷的服務		1	2	3	4	5	6	7	
有能力去全面解答顧客的問題		1	2	3	4	5	6	7	
會向顧客匯報起菜時間		1	2	3	4	5	6	7	
會為延誤的菜式作出道歉及解釋		1	2	3	4	5	6	7	
會為未能提供的菜式作出道歉及解釋		1	2	3	4	5	6	7	
當有問題發生時，會努力去解決		1	2	3	4	5	6	7	
Q3e 酒樓樓面的環境									
氣氛		1	2	3	4	5	6	7	
溫度		1	2	3	4	5	6	7	
衛生		1	2	3	4	5	6	7	
佈置		1	2	3	4	5	6	7	
空氣質素		1	2	3	4	5	6	7	
噪音量		1	2	3	4	5	6	7	

Q5a. 就那次整體的服務表現，你覺得所出的金錢是否值得？

非常不值得 1 2 3 4 5 6 7 非常值得

Q5b. 就那次整體的服務表現，你覺得所出的時間是否值得？

非常不值得 1 2 3 4 5 6 7 非常值得

Q5c. 就那次整體的服務表現，你覺得所消耗體力前來該酒樓是否值得？

非常不值得 1 2 3 4 5 6 7 非常值得

Q6. 就那次用膳，你覺得該酒樓提供的服務怎樣？(包括食物，員工表現，環境)

低於預期 1 2 3 4 5 6 7 高於預期

最差的其中一間 1 2 3 4 5 6 7 最好的其中一間

低於這個行業標準 1 2 3 4 5 6 7 高於這個行業標準

質素很低 1 2 3 4 5 6 7 質素很高

Q7a. 請你就那次用膳，表示你對該酒樓服務質素的滿意程度

非常不滿意 1 2 3 4 5 6 7 非常滿意

Q7b. 在整個服務過程，你的感覺是怎樣？

非常不愉快 1 2 3 4 5 6 7 非常愉快

非常不開心 1 2 3 4 5 6 7 非常開心

非常不享受 1 2 3 4 5 6 7 非常享受

指示：請在下列問題，表達你會實行以下問題的內容的可能性？

	絕對不會							絕對會						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Q8a. 你會否再次光顧這間酒樓？	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Q8b. 你會否推薦這間酒樓給你的親友？	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Q8c. 如再要選擇，你會否首選這間酒樓？	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Q8d. 你會否在親友面前稱贊這間酒樓？	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Q8e. 你會否成為這間酒樓的忠實顧客？	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	很少							經常						
Q9. 你以往是否經常光顧這間酒樓？	1	2	3	4	5	6	7	1	2	3	4	5	6	7

工部：(在這部份收集的個人資料，目的是可以將資料分類)

Q10. 性別：

- 男 女

Q11. 年齡組別：

- 18 - 25 26 - 30
 31 - 35 36 - 40
 41 - 45 46 - 50

Q12. 婚姻狀況：

- 未婚 已婚 其它

Q13. 教育程度：

- 小學或以下程度
 中學程度
 預科程度
 大專或以上程度
 其它

Q14. 職業組別：

- | | |
|--------------------------------------|-------------------------------|
| <input type="checkbox"/> 專業人仕 / 行政人員 | <input type="checkbox"/> 管理人員 |
| <input type="checkbox"/> 白領 | <input type="checkbox"/> 藍領 |
| <input type="checkbox"/> 學生 | <input type="checkbox"/> 家庭主婦 |
| <input type="checkbox"/> 退休 | <input type="checkbox"/> 沒有工作 |
| <input type="checkbox"/> 企業家/自僱 | <input type="checkbox"/> 其它 |

Q15. 每月平均收入：

HK\$5000 或 以下

HK\$10001 - 15000

HK\$20001 - 25000

HK\$30001 - 35000

HK\$40001 - 45000

Above\$50001

\$50001 - 10000

\$15001 - 20000

\$25001 - 30000

\$35001 - 40000

\$45001 - 50000

-多謝合作-

Appendix 5.4

Main Questionnaire

The respondents were informed that the survey was conducted in two-stages. The first stage was taken prior to respondents entering the restaurant and the second stage was taken after their consumption of the restaurant's service. Respondents were instructed to follow the directions in the questionnaire.

First Stage

Questionnaire no: _____

Date: _____

Part I

Q1. Please fill in the name and the location of the restaurant, and the time of the interview.

Q2. Have you frequently consumed at this restaurant ?

Rarely.....Very often
1 2 3 4 5 6 7

Directions: In this part, please think about a restaurant that you consider its service performance is the best in the industry. I would like to know your expectations of the service to be provided by this restaurant. For each of the following service attributes, please rate the level of service performance you expect the best restaurant will deliver. If you expect it will perform excellently on an attribute, then circle 7. If you expect it will not perform excellently on an attribute, then circle a number from 1 to 6.

My expectations of the "Best" restaurant

Q3a. <u>Food attributes</u>	Poor.....Excellent
Taste of food	1 2 3 4 5 6 7
Portion of food	1 2 3 4 5 6 7
Presentation of food	1 2 3 4 5 6 7
Nutritional value of food	1 2 3 4 5 6 7
Variety of dishes	1 2 3 4 5 6 7
Uniqueness of dishes	1 2 3 4 5 6 7

		Poor.....Excellent						
Q3b.	<u>Food Delivery</u>							
	Speed of food delivery	1	2	3	4	5	6	7
	Order of food delivery	1	2	3	4	5	6	7
Q3c.	<u>Serving Staff</u>							
	Employees are willing to serve customers	1	2	3	4	5	6	7
	Employees are serving customers sincerely	1	2	3	4	5	6	7
	Employees are experienced and competent at doing their job	1	2	3	4	5	6	7
	Employees know about the menu items and methods of cooking	1	2	3	4	5	6	7
	Employees have the ability to provide efficient service	1	2	3	4	5	6	7
	Employees possess the ability to answer customer questions clearly and completely	1	2	3	4	5	6	7
	Employees inform customers about how long until the food will be ready	1	2	3	4	5	6	7
	Employees offer suggestions to customers when required	1	2	3	4	5	6	7
	Employees takes the initiative to find out what customers need	1	2	3	4	5	6	7
	Employees are courtesy and friendly	1	2	3	4	5	6	7
	Employees wear neat and tidy uniform	1	2	3	4	5	6	7
	Employees wear attractive uniform	1	2	3	4	5	6	7
Q3d	<u>Dining Environment</u>							
	Temperature of the dining area	1	2	3	4	5	6	7
	Hygiene of the dining area	1	2	3	4	5	6	7
	Interior decoration	1	2	3	4	5	6	7
	Layout of the seats and tables	1	2	3	4	5	6	7
	Comfortable	1	2	3	4	5	6	7

	Poor.....	Excellent
Q3e. Your expectations of the overall service (include food, service personnel and environment)	1	2 3 4 5 6 7

Part II

Directions: In this part, I would like to know your expectations of the service to be provided by the restaurant under investigation. (In the actual interview, the name of the restaurant was mentioned). For each of the following service attributes, please rate the level of service performance you expect this restaurant will deliver. If you expect it will perform excellently on an attribute, then circle 7. If you expect it will not perform excellently on an attribute, then circle a number from 1 to 6.

My expectations of this restaurant

	Poor.....	Excellent
Q4a. <u>Food attributes</u>		
Taste of food	1	2 3 4 5 6 7
Portion of food	1	2 3 4 5 6 7
Presentation of food	1	2 3 4 5 6 7
Nutritional value of food	1	2 3 4 5 6 7
Variety of dishes	1	2 3 4 5 6 7
Uniqueness of dishes	1	2 3 4 5 6 7
Q4b. <u>Food Delivery</u>		
Speed of food delivery	1	2 3 4 5 6 7
Order of food delivery	1	2 3 4 5 6 7
Q4c. <u>Serving Staff</u>		
Employees are willing to serve customers	1	2 3 4 5 6 7
Employees are serving customers sincerely	1	2 3 4 5 6 7
Employees are experienced and competent at doing their job	1	2 3 4 5 6 7
Employees know about the menu items and methods of cooking	1	2 3 4 5 6 7

	Poor.....	1	2	3	4	5	6	7	Excellent
Employees have the ability to provide efficient service		1	2	3	4	5	6	7	
Employees possess the ability to answer customer questions clearly and completely		1	2	3	4	5	6	7	
Employees inform customers about how long until the food will be ready		1	2	3	4	5	6	7	
Employees offer suggestions to customers when required		1	2	3	4	5	6	7	
Employees takes the initiative to find out what customers need		1	2	3	4	5	6	7	
Employees are courtesy and friendly		1	2	3	4	5	6	7	
Employees wear neat and tidy uniform		1	2	3	4	5	6	7	
Employees wear attractive uniform		1	2	3	4	5	6	7	

Q4d. Dining Environment

Temperature of the dining area	1	2	3	4	5	6	7
Hygiene of the dining area	1	2	3	4	5	6	7
Interior decoration	1	2	3	4	5	6	7
Layout of the seats and tables	1	2	3	4	5	6	7
Comfortable	1	2	3	4	5	6	7

Q4e. Your expectations of the overall service (include food, service personnel and environment)	1	2	3	4	5	6	7
--	---	---	---	---	---	---	---

Q5a. Sex:

Male Female

Q5b. Age:

18 - 25 26 - 30
 31 - 35 36 - 40
 41 - 45 46 - 50

- End of Questionnaire in the First Stage-

Second Stage

A cover letter was attached to this questionnaire, and the respondents were instructed to complete the questionnaire and return it within two weeks.

Part III

Questionnaire no. _____

Directions: In this part, I would like to know your perceptions of the service that you have received at the restaurant. For each of the following service attributes, if you perceive the restaurant has performed excellently on an attribute, then circle 7. If you perceive it has not performed excellently on an attribute, then circle a number from 1 to 6.

My perceptions of the restaurant's performance

Q6a. <u>Food attributes</u>	Poor.....Excellent
Taste of food	1 2 3 4 5 6 7
Portion of food	1 2 3 4 5 6 7
Presentation of food	1 2 3 4 5 6 7
Nutritional value of food	1 2 3 4 5 6 7
Variety of dishes	1 2 3 4 5 6 7
Uniqueness of dishes	1 2 3 4 5 6 7
Q6b. <u>Food Delivery</u>	
Speed of food delivery	1 2 3 4 5 6 7
Order of food delivery	1 2 3 4 5 6 7
Q6c. <u>Serving Staff</u>	
Employees are willing to serve customers	1 2 3 4 5 6 7
Employees are serving customers sincerely	1 2 3 4 5 6 7
Employees are experienced and competent at doing their job	1 2 3 4 5 6 7
Employees know about the menu items and methods of cooking	1 2 3 4 5 6 7
Employees have the ability the to provide efficient service	1 2 3 4 5 6 7

	Poor.....Excellent						
Employees possess the ability to answer customer questions clearly and completely	1	2	3	4	5	6	7
Employees inform customers about how long until the food will be ready	1	2	3	4	5	6	7
Employees offer suggestions to customers when required	1	2	3	4	5	6	7
Employees takes the initiative to find out what customers need	1	2	3	4	5	6	7
Employees are courteous and friendly	1	2	3	4	5	6	7
Employees wear neat and tidy uniforms	1	2	3	4	5	6	7
Employees wear attractive uniforms	1	2	3	4	5	6	7

Q6d. Dining Environment

Temperature of the dining area	1	2	3	4	5	6	7
Hygiene of the dining area	1	2	3	4	5	6	7
Interior decoration	1	2	3	4	5	6	7
Layout of the seats and tables	1	2	3	4	5	6	7
Comfortable	1	2	3	4	5	6	7

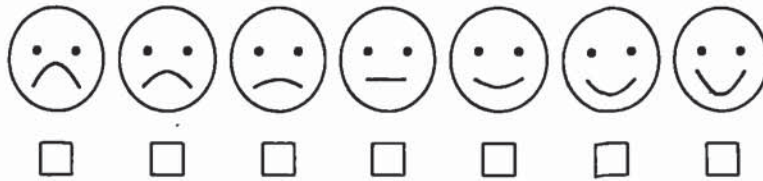
Part IV

Directions: In this part, I would like to know your overall evaluations of the quality of the restaurant's service, the costs and value of the service, and your overall satisfaction towards the service. Please respond by circling the number which best reflects your evaluations.

Q7a. How did you feel about the overall service experience (including food, service, environment) at the recent encounter?

Very unpleasant	1	2	3	4	5	6	7	Very pleasant
Very dissatisfied	1	2	3	4	5	6	7	Very satisfied
I did not enjoy it at all	1	2	3	4	5	6	7	I enjoyed it very much

Q7b. Please mark on one of the seven faces below the position which most reflects your feelings towards this overall service experience.



Q8a. Based on this service encounter, please rate on the following scales, the time you perceived to have spent in waiting to be served.

Little time	1	2	3	4	5	6	7	A long time
Lower than I expected	1	2	3	4	5	6	7	Higher than I expected

Q8b. Please rate on the following scales, the price you perceived to have paid for the service received at this encounter (including food, service, and environment)?

Cheap	1	2	3	4	5	6	7	Expensive
Reasonable	1	2	3	4	5	6	7	Unreasonable
Lower than I expected	1	2	3	4	5	6	7	Higher than I expected

Q8c. In comparison with other similar restaurants, how did you perceive the price of the service at this encounter (including food, service, environment)?.

Cheaper than other restaurants	1	2	3	4	5	6	7	Expensive than other restaurants
--------------------------------	---	---	---	---	---	---	---	----------------------------------

Q8d. Did you find the location of the restaurant easily accessible?

Easily accessible	1	2	3	4	5	6	7	Not easily accessible
-------------------	---	---	---	---	---	---	---	-----------------------

Q9a. Based on the service you have received (including food, service, environment), how did you perceive the price you have paid?

Not worthwhile at all	1	2	3	4	5	6	7	Very worthwhile
-----------------------	---	---	---	---	---	---	---	-----------------

Q12. Based on the past experience that you have encountered with this restaurant, what do you think of the overall quality of the service provided by this restaurant (including food, service, environment)?

One of the worst	1	2	3	4	5	6	7	One of the best
Low quality	1	2	3	4	5	6	7	High quality
Lower than the standard of this industry	1	2	3	4	5	6	7	Higher than the standard of this industry

PartV

The questions in this part are for classification purposes. All the information you provide will be kept strictly confidential. Please tick the box that best matches your status.

Q13. Sex:

- Male Female

Q14. Age:

- 18 - 25 26 - 30
 31 - 35 36 - 40
 41 - 45 46 - 50

Q15. Marital Status:

- Single Married Divorced

Q16. Education attainment:

- Primary or below
 Secondary level
 Post-secondary level
 Polytechnic / University level
 Others, please specify _____

Q17. Occupation:

- | | |
|---|--|
| <input type="checkbox"/> Professional/Executive | <input type="checkbox"/> Managerial/Administrative |
| <input type="checkbox"/> White collar | <input type="checkbox"/> Blue collar |
| <input type="checkbox"/> Student | <input type="checkbox"/> Housewife |
| <input type="checkbox"/> Retired | <input type="checkbox"/> Unemployed |
| <input type="checkbox"/> Entrepreneur/Self-employed | <input type="checkbox"/> Other, please specify _____ |

Q18. Average monthly income:

- | | |
|--|--|
| <input type="checkbox"/> \$ 5,000 or below | <input type="checkbox"/> \$ 5,001 - \$10,000 |
| <input type="checkbox"/> \$10,001 - \$15,000 | <input type="checkbox"/> \$15,001 - \$ 20,000 |
| <input type="checkbox"/> \$ 20,001 - \$ 25,000 | <input type="checkbox"/> \$ 25,001 - \$ 30,000 |
| <input type="checkbox"/> \$ 30,001 - \$ 35,000 | <input type="checkbox"/> \$ 35,001 - \$ 40,000 |
| <input type="checkbox"/> \$ 40,001 - \$ 45,000 | <input type="checkbox"/> \$ 45,001 - \$ 50,000 |
| <input type="checkbox"/> above \$ 50,000 | |

Please write down below your name and correspondence address:

- End of Questionnaire -

Thank-you for your participation in this important study. Your co-operation is highly appreciated.

Appendix 5.5

Main Questionnaire (Chinese Version)

多謝閣下參與這項有關服務質素和顧客滿意程度的學術研究。這項研究用問卷方式進行，問卷分兩部份，第一部份是收集閣下進入酒樓前對酒樓的期望及意見。第二部份是收集閣下光顧酒樓後的滿意程度及意見。為酬謝閣下，我們預備了一份禮物送給閣下。若對這項研究有任何查詢，請致電 2766-7951 與商業學系譚麗明小姐聯絡。

問卷編號： _____

日期： _____

第一部份

請依照指示回應每部分的問題。

Q1. 請填寫訪問區域，時間及酒樓名稱

Q2. 你是否經常光顧這間酒樓？

很少
1 2 3 4 5 6 經常
7

Q3. 指示：請你表達你預期“最好”的一間酒樓在以下各項服務的表現。假如你預期該酒樓將會提供優越的服務，請圈上數目字“7”。假如你預期該酒樓將不會提供優越的服務，請在“1”至“6”的數目字，圈上其中的一個。（“1”代表差劣，“7”代表優越）

Q3a. 食物方面	預期“最好”的一間表現						
	差劣	優越
食物味道	1	2	3	4	5	6	7
食物份量	1	2	3	4	5	6	7
食物賣相	1	2	3	4	5	6	7
食物營養價值	1	2	3	4	5	6	7
菜式(獨特)	1	2	3	4	5	6	7
菜式(種類)	1	2	3	4	5	6	7

		預期“最好”的一間表現						
		差劣。 優越						
		1	2	3	4	5	6	7
Q3b.	遞送食物方面							
	等候遞送食物的時間	1	2	3	4	5	6	7
	遞送食物的次序	1	2	3	4	5	6	7
Q3c.	員工表現							
	態度友善	1	2	3	4	5	6	7
	服務慇勤	1	2	3	4	5	6	7
	樂意侍奉顧客	1	2	3	4	5	6	7
	會主動去了解顧客需求	1	2	3	4	5	6	7
	會主動提供意見給顧客選擇菜式	1	2	3	4	5	6	7
	會向顧客匯報起菜時間	1	2	3	4	5	6	7
	俱備熟練的工作技巧	1	2	3	4	5	6	7
	熟識餐牌上的菜式，配料及煮食方法	1	2	3	4	5	6	7
	有能力去提供快捷的服務	1	2	3	4	5	6	7
	有能力去全面解答顧客的問題	1	2	3	4	5	6	7
	穿著整齊的制服	1	2	3	4	5	6	7
	穿著的制服美觀吸引	1	2	3	4	5	6	7
Q3d.	酒樓樓面的環境							
	佈置	1	2	3	4	5	6	7
	空調溫度	1	2	3	4	5	6	7
	舒適程度	1	2	3	4	5	6	7
	衛生程度	1	2	3	4	5	6	7
	座位分佈及間格	1	2	3	4	5	6	7
		預期“最好”的一間表現						
		差劣。 優越						
		1	2	3	4	5	6	7
Q3e.	你預期整體服務表現							
	(包括、食物、員工表現及環境)	1	2	3	4	5	6	7

Q4. 指示：請你表達你預期“這間酒樓”在以下各項服務的表現。假如你預期這間酒樓將會提供優越的服務，請圈上數目字“7”。假如你預期這間酒樓將不會提供優越的服務，請在“1”至“6”的數目字，圈上其中的一個。
 (“1”代表差劣，“7”代表優越)

		預期“這間酒樓”的表現							
		差劣	。	。	。	。	。	。	優越
Q4a.	食物方面								
	食物味道	1	2	3	4	5	6	7	
	食物份量	1	2	3	4	5	6	7	
	食物賣相	1	2	3	4	5	6	7	
	食物營養價值	1	2	3	4	5	6	7	
	菜式(獨特)	1	2	3	4	5	6	7	
	菜式(種類)	1	2	3	4	5	6	7	
Q4b.	遞送食物方面								
	等候遞送食物的時間	1	2	3	4	5	6	7	
	遞送食物的次序	1	2	3	4	5	6	7	
Q4c.	員工表現								
	態度友善	1	2	3	4	5	6	7	
	服務慇懃	1	2	3	4	5	6	7	
	樂意侍奉顧客	1	2	3	4	5	6	7	
	會主動去了解顧客需求	1	2	3	4	5	6	7	
	會主動提供意見給顧客選擇菜式	1	2	3	4	5	6	7	
	會向顧客匯報起菜時間	1	2	3	4	5	6	7	
	俱備熟練的工作技巧	1	2	3	4	5	6	7	
	熟識餐牌上的菜式，配料及煮食方法	1	2	3	4	5	6	7	
	有能力去提供快捷的服務	1	2	3	4	5	6	7	
	有能力去全面解答顧客的問題	1	2	3	4	5	6	7	
	穿著整齊的制服	1	2	3	4	5	6	7	
	穿著的制服美觀吸引	1	2	3	4	5	6	7	

		預期“ <u>這間酒樓</u> ”的表現						
Q4d	酒樓樓面的環境	差劣。 優越						
	佈置	1	2	3	4	5	6	7
	空調溫度	1	2	3	4	5	6	7
	舒適程度	1	2	3	4	5	6	7
	衛生程度	1	2	3	4	5	6	7
	座位分佈及間格	1	2	3	4	5	6	7

		預期“ <u>這間酒樓</u> ”的表現						
Q4e.	你預期整體服務表現	差劣。 優越						
	(包括、食物、員工表現及環境)	1	2	3	4	5	6	7

Q5a. 性別：

男 女

Q5b. 年齡組別：

18 - 25 26 - 30

31 - 35 36 - 40

41 - 45 46 - 50

- 多謝回答第一部份問卷 -

Q6. 指示：請你就今次用膳，表達你對這間酒樓在以下各項服務表現的意見。假如你認為這間酒樓的服務表現優越，請圈上數目字“7”。假如你認為這間酒樓的服務表現並不優越，請在“1”至“6”的數目字，圈上其中一個。（“1”代表差劣，“7”代表優越）

		差劣。 優越						
Q6a.	食物方面							
	食物味道	1	2	3	4	5	6	7
	食物份量	1	2	3	4	5	6	7
	食物賣相	1	2	3	4	5	6	7
	食物營養價值	1	2	3	4	5	6	7
	菜式(獨特)	1	2	3	4	5	6	7
	菜式(種類)	1	2	3	4	5	6	7
Q6b.	遞送食物方面							
	等候遞送食物的時間	1	2	3	4	5	6	7
	遞送食物的次序	1	2	3	4	5	6	7
Q6c.	員工表現							
	態度友善	1	2	3	4	5	6	7
	服務慇懃	1	2	3	4	5	6	7
	樂意侍奉顧客	1	2	3	4	5	6	7
	會主動去了解顧客需求	1	2	3	4	5	6	7
	會主動提供意見給顧客選擇菜式	1	2	3	4	5	6	7
	會向顧客匯報起菜時間	1	2	3	4	5	6	7
	穿著整齊的制服	1	2	3	4	5	6	7
	穿著的制服美觀吸引	1	2	3	4	5	6	7
	俱備熟練的工作技巧	1	2	3	4	5	6	7
	熟識餐牌上的菜式，配料及煮食方法	1	2	3	4	5	6	7
	有能力去提供快捷的服務	1	2	3	4	5	6	7
	有能力去全面解答顧客的問題	1	2	3	4	5	6	7

差劣。 優越

6d. 酒樓樓面的環境

佈置	1	2	3	4	5	6	7
空調溫度	1	2	3	4	5	6	7
舒適程度	1	2	3	4	5	6	7
衛生程度	1	2	3	4	5	6	7
座位分佈及間格	1	2	3	4	5	6	7

六：請你就今次用膳，表達你對這間酒樓的整體服務質素，價錢，價值和滿意程度的意見。

7a. 就今次用膳經歷，請表達你對這酒樓整體服務的滿意程度 (包括食物、員工表現、環境)

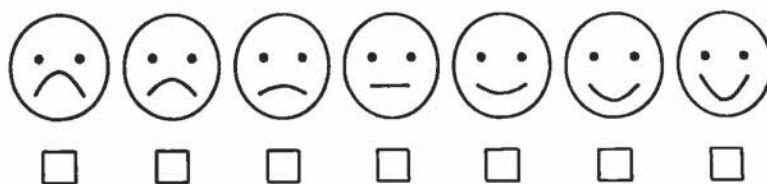
非常不滿意 1 2 3 4 5 6 7 非常滿意

就今次用膳過程，你對這酒樓的服務感覺是怎樣？

非常不愉快 1 2 3 4 5 6 7 非常愉快

非常不舒適 1 2 3 4 5 6 7 非常舒適

7b. 請在下列的圖案，選擇最貼近你對這酒樓服務的滿意程度，並在方格劃上“✓”
(包括食物、員工表現、環境)



8a. 就今次用膳，你覺得等候服務所付出的時間是多少？

很少時間 1 2 3 4 5 6 7 很多時間

低於預期 1 2 3 4 5 6 7 高於預期

8b. 就今次整體的服務表現，(包括食物、員工表現、環境)，你覺得今次用膳所付出的價錢怎樣？

非常便宜 1 2 3 4 5 6 7 非常昂貴

非常合理 1 2 3 4 5 6 7 非常不合理

低於預期 1 2 3 4 5 6 7 高於預期

Q8c. 相對其它酒樓，你覺得所付的價錢怎樣？

較其它酒樓 為便宜	1	2	3	4	5	6	7	較其它酒樓 為貴
				差不多				

Q8d. 你覺得這酒樓的地點怎樣？

非常方便	1	2	3	4	5	6	7	非常不方便
------	---	---	---	---	---	---	---	-------

Q9a. 就今次整體的服務表現，你覺得所付出的金錢是否值得？

非常不值得	1	2	3	4	5	6	7	非常值得
-------	---	---	---	---	---	---	---	------

Q9b. 就今次整體的服務表現，你覺得所付出的時間是否值得？

非常不值得	1	2	3	4	5	6	7	非常值得
-------	---	---	---	---	---	---	---	------

Q9c. 就今次整體的服務表現，你覺得前來這酒樓用膳所消耗的體力是否值得？

非常不值得	1	2	3	4	5	6	7	非常值得
-------	---	---	---	---	---	---	---	------

Q10. 就今次用膳，你覺得這酒樓提供的服務質素怎樣？(包括食物、員工表現、環境)

是最差的其 中一間	1	2	3	4	5	6	7	是最好的其 中一間
--------------	---	---	---	---	---	---	---	--------------

低於這個 行業的標準	1	2	3	4	5	6	7	高於這個 行業的標準
---------------	---	---	---	---	---	---	---	---------------

質素很低	1	2	3	4	5	6	7	質素很高
------	---	---	---	---	---	---	---	------

指示：請在下列問題，表達你會實行以下問題的內容的可能性？

絕對不會。 絕對會

- | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|
| Q11a. 你會否再次光顧這間酒樓？ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Q11b. 你會否推薦這間酒樓給你的親友？ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Q11c. 如再要選擇，你會否首選這間酒樓？ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Q11d. 你會否在親友面前稱讚這間酒樓？ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Q11e. 你會否成為這間酒樓的忠實顧客？ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Q12. 綜合今次及過往在這間酒樓用膳的經歷，你覺得這間酒樓整體服務質素是怎樣？
(包括食物、員工表現、環境)

- | | | | | | | | | |
|-----------|---|---|---|---|---|---|---|-----------|
| 是最差的其中一間 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 是最好的其中一間 |
| 低於這個行業的標準 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 高於這個行業的標準 |
| 質素很低 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 質素很高 |

第三部份

(在這部份收集的個人資料，目的是將資料分類。你所提供的資料將會絕對保密)。

Q13. 性別：

男

女

Q14. 年齡組別：

18 - 25

26 - 30

31 - 35

36 - 40

41 - 45

46 - 50

Q15. 婚姻狀況：

未婚

已婚

其它

Q16. 教育程度：

- 小學或下程度
- 中學程度
- 預科程度
- 大專或以上程度
- 其它

Q17. 職業組別：

- | | |
|------------------------------------|-------------------------------|
| <input type="checkbox"/> 專業人仕/行政人員 | <input type="checkbox"/> 管理人員 |
| <input type="checkbox"/> 白領 | <input type="checkbox"/> 藍領 |
| <input type="checkbox"/> 學生 | <input type="checkbox"/> 家庭主婦 |
| <input type="checkbox"/> 退休 | <input type="checkbox"/> 沒有工作 |
| <input type="checkbox"/> 企業家/自僱 | <input type="checkbox"/> 其它 |

Q18. 每月平均收入：

- | | |
|--|--|
| <input type="checkbox"/> HK\$5,000 或以下 | <input type="checkbox"/> \$5,001 – 10,000 |
| <input type="checkbox"/> HK\$10,001 – 15,000 | <input type="checkbox"/> \$15,001 – 20,000 |
| <input type="checkbox"/> HK\$20,001 – 25,000 | <input type="checkbox"/> \$25,001 – 30,000 |
| <input type="checkbox"/> HK\$30,001 – 35,000 | <input type="checkbox"/> \$35,001 – 40,000 |
| <input type="checkbox"/> HK\$40,001 – 45,000 | <input type="checkbox"/> \$45,001 – 50,000 |
| <input type="checkbox"/> Above \$50,001 | |

請填上閣下的姓名及聯絡地址，以便我們可以將禮物寄到府上

- 多謝閣下參與這項研究，所有資料將會絕對保密 -

Appendix 5.6

Comparison of the Demographic Characteristics and Expectations Between the Respondents and the Non-respondents

Demographic Characteristics

Variables	Respondents	Non-respondents	χ^2 statistics
Sex			
Male	78 (37.3)	14 (38.9)	0.0322
Female	131 (62.7)	22 (61.1)	
Age			
18 - 25	50 (23.9)	3 (8.3)	11.9774
26 - 30	41 (19.6)	7 (19.4)	
31 - 35	46 (22.0)	9 (25.0)	
36 - 40	29 (13.9)	5 (13.9)	
41 - 45	21 (10.0)	10 (27.8)	
46 - 50	22 (10.5)	2 (5.6)	

(Column 2 & 3 - Percentages are in parentheses)

(Column 4 - p-values are in parentheses)

Normative Expectations

Variables	Respondents (Means)	Non- respondents (Means)	t-statistics
1. Food			
- taste	5.44	5.33	0.58
- portion	4.99	4.97	0.07
- presentation	5.32	5.03	1.48
- nutritional value	4.54	4.06	2.28*
- uniqueness	5.08	4.72	1.67
- variety	5.12	4.78	1.61
2. Food Order and Delivery			
- order of food delivery	5.14	4.92	1.21
- speed of food delivery	5.14	4.86	1.50
3. Service Attitudes			
- polite and friendly	5.36	5.31	0.31
- serving customers sincerely	5.35	5.33	0.11
- willing to serve customers	5.31	5.25	0.28
- inform customers how long the food will be ready	4.33	3.97	1.36
- take the initiative to find out what customers needs	4.95	4.94	0.04
- offer suggestions to customers when required	4.95	4.94	0.04
4. Staff Competent			
- possess the ability to provide efficient service	4.90	4.94	-0.23
- know about the menu items and methods of cooking	4.75	4.89	-0.79
- possess the ability to answer customer questions clearly and completely	4.86	4.97	-0.57
- experienced and competent at doing their job	5.03	5.08	-0.23
5. Staff Appearance			
- neat and tidy uniforms	5.33	5.11	1.20
- attractive uniforms	5.07	4.92	0.80

6. Environmental Factors			
- interior decoration	5.41	5.00	2.26*
- layout of seats and tables	5.25	4.69	2.83*
- indoor temperature	5.24	4.89	1.94
- comfortable	5.42	4.81	3.10*
- hygiene in the dining area	5.36	4.75	3.03*

(* - statistically significant at 5 % level)

Predictive Expectations

Variables	Respondents (Means)	Non- respondents (Means)	t- statistics
1. Food			
- taste	4.48	4.56	-0.41
- portion	4.49	4.22	1.37
- presentation	4.29	4.06	1.63
- nutritious value	3.94	3.33	3.02*
- uniqueness	4.10	3.83	1.29
- variety	4.33	3.75	2.61*
2. Food Order and Delivery			
- order of food delivery	4.29	4.31	-0.09
- speed of food delivery	4.41	4.42	-0.03
3. Service Attitudes			
- polite and friendly	4.47	4.44	0.13
- serving customers sincerely	4.31	4.44	-0.71
- willing to serve customers	4.27	4.36	-0.40
- inform customers how long the food will be ready	3.56	3.33	0.88
- take the initiative to find out what customers' needs	4.06	4.11	-0.26
- offer suggestions to customers when required	3.98	4.08	-0.46
4. Staff Competent			
- possess the ability to provide efficient service	4.13	4.19	-0.34
- know about the menu items and methods of cooking	3.97	4.19	-1.18
- possess the ability to answer customers' questions clearly and completely	4.06	4.25	-0.89
- experienced and competent at doing their job	4.20	4.11	0.39
5. Staff Appearance			
- neat and tidy uniforms	4.33	4.17	0.84
- attractive uniforms	4.11	4.03	0.47

6. Environmental Factors			
- interior decoration	4.36	4.19	1.06
- layout of seats and tables	4.14	4.81	1.77
- indoor temperature	4.35	4.08	1.74
- comfortable	4.23	3.97	1.34
- hygiene in the dining area	4.22	3.97	1.25

(* - statistically significant at 5 % level)

Appendix 5.7

Comparison of the Demographic Characteristics and Perceptions Between the Main Sample and the Control Group

Demographic Characteristics

Variables	Main Sample	Control Group	χ^2 statistics
Sex			
Male	78 (37.3)	19 (38.0)	0.008
Female	131 (62.7)	31 (62.0)	
Age			
18 - 25	50 (23.9)	8 (16.0)	4.798
26 - 30	41 (19.6)	8 (16.0)	
31 - 35	46 (22.0)	9 (18.0)	
36 - 40	29 (13.9)	11 (22.0)	
41 - 45	21 (10.0)	8 (16.0)	
46 - 50	22 (10.5)	6 (12.0)	
Marital Status			
Single	100 (48.1)	18 (36.0)	3.047
Married	106 (51.1)	32 (64.0)	
Divorced	2 (1.0)		
Education Attainment			
Primary or below	27 (13.0)	7 (14.0)	1.585
Secondary	93 (44.7)	20 (40.0)	
Post-secondary	25 (12.0)	9 (18.0)	
Tertiary or above	63 (30.3)	13 (26.0)	
Occupation			
Professional / Executive	40 (19.2)	8 (16.0)	As there was a significant number of cells have expected frequency less than five, therefore χ^2 statistic was not used.
White collar	76 (36.5)	20 (40.0)	
Student	22 (10.6)	3 (6.0)	
Entrepreneurs / Self-employed	7 (3.4)	0 (0.0)	
Managerial	9 (4.3)	2 (4.0)	
Blue collar	14 (6.7)	3 (6.0)	
Housewife	26 (12.5)	9 (18.0)	
Unemployed	5 (2.4)	2 (4.0)	
Others	9 (4.3)	3 (6.0)	

(Column 2 & 3 - Percentages are in parentheses)

Variables	Main Sample	Control Group	
Personal Monthly Income			
\$ 5,000 or below	51 (24.5)	13 (26.0)	As there was a significant number of cells have expected frequency less than five, therefore χ^2 statistic was not used.
\$ 5,001 - \$ 10,000	44 (21.2)	8 (16.0)	
\$ 10,001 - \$ 15,000	49 (23.6)	12 (24.0)	
\$ 15,001 - \$ 20,000	23 (11.1)	7 (14.0)	
\$ 20,001 - \$ 25,000	14 (6.7)	3 (6.0)	
\$ 25,001 - \$ 30,000	13 (6.3)	4 (8.0)	
\$ 30,001 or above	14 (6.7)	3 (6.0)	

(Column 2 & 3 - Percentages are in parentheses)

Perceived Performance

Variables	Main Sample (Means)	Control Group (Means)	t-statistics (p- values)
1. Food			
- taste	4.55	4.62	0.49
- portion	4.46	4.48	0.13
- presentation	4.40	4.48	0.50
- nutritional value	4.03	3.86	-1.05
- uniqueness	4.20	4.7	2.95*
- variety	4.27	4.26	-0.06
2. Food Order and Delivery			
- order of food delivery	4.22	4.34	0.68
- speed of food delivery	4.11	4.28	0.98
3. Service Attitudes			
- polite and friendly	4.41	4.32	-0.50
- serving customers sincerely	4.22	4.18	-0.22
- willing to serve customers	4.17	4.22	0.25
- inform customers of how long until the food will be ready	3.74	3.80	0.29
- take the initiative to find out what customers needs	3.81	3.58	-1.16
- offer suggestions to customers when required	3.48	3.48	0.00
4. Staff Competent			
- possess the ability to provide efficient service	4.09	4.28	1.05
- know about the menu items and methods of cooking	4.13	4.22	0.53
- possess the ability to answer customer questions clearly and completely	3.95	4.08	0.68
- experienced and competent at doing their job	4.22	4.40	1.10
5. Staff Appearance			
- neat and tidy uniforms	4.30	4.60	1.72
- attractive uniforms	4.01	4.06	0.28

(* - statistically significant at 5 % level)

Variables	Main Sample (Means)	Control Group (Means)	t -statistics
6. Environmental Factors			
- interior decoration	4.33	4.32	0.68
- layout of seats and tables	4.04	4.04	0.00
- indoor temperature	4.29	4.32	0.18
- comfortable	4.20	4.18	-0.11
- hygiene in the dining area	4.23	4.34	0.66

(* - statistically significant at 5 % level)

Appendix 5.8

PRELIS Results

The following lines were read from file C:\PHD\TRY1.SPL:

```
DA NI=104 NO=209
RA FI=c:\PHD\ONE.DAT FO;
(3X,8X,2X,2X,2X,104F1.0,2X,2X,2X,2X,2X,2X)
LA
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10
B11 B12 B13 B14 B15 B16 B17 B18 B19 B20 B21 B22 B23 B24 B25 B26
E1 E2 E3 E4 E5 E6 E7 E8 E9 E10 E11 E12 E13 E14 E15 E16 E17 E18
E19 E20 E21 E22 E23 E24 E25 E26 S1 S2 S3 S4 P1 P2 P3 P4 P5 P6 P7
P8 P9 P10 P11 P12 P13 P14 P15 P16 P17 P18 P19 P20 P21 P22 P23 P24 P25
V4 V5 V6 V7 V8 V9 V10 V11 V12 V13 V14 V15 V16 V17 V18 F1 F2 F3 F4 F5 V19 V20
V21
CO ALL
OU MA=KM
```

TOTAL SAMPLE SIZE = 209

UNIVARIATE SUMMARY STATISTICS FOR CONTINUOUS VARIABLES

VARIABLE	MEAN	ST. DEV.	SKEWNESS	KURTOSIS	MINIMUM	FREQ.	MAXIMUM	FREQ.
B1	5.435	0.949	-0.358	-0.312	3.000	5	7.000	23
B2	4.986	1.111	-0.396	0.302	1.000	1	7.000	15
B3	5.316	1.054	-0.587	0.535	1.000	1	7.000	21
B4	4.536	1.160	-0.703	1.271	1.000	7	7.000	5
B5	5.081	1.184	-0.282	-0.436	2.000	4	7.000	23
B6	5.120	1.169	-0.418	-0.224	2.000	4	7.000	22
B7	5.144	1.042	-0.472	0.306	2.000	3	7.000	16
B8	5.139	1.002	-0.253	0.054	2.000	2	7.000	16
B9	5.364	1.025	-0.425	-0.045	2.000	1	7.000	25
B10	5.354	1.042	-0.494	-0.140	2.000	1	7.000	23
B11	5.311	1.026	-0.303	-0.216	2.000	1	7.000	24
B12	4.947	1.123	-0.471	0.470	1.000	2	7.000	13
B13	4.952	1.147	-0.447	0.163	1.000	1	7.000	14
B14	4.330	1.458	-0.439	-0.137	1.000	12	7.000	10
B15	5.029	1.037	-0.527	0.496	1.000	1	7.000	10
B16	4.751	0.933	-0.129	-0.503	2.000	1	7.000	2
B17	4.900	1.072	-0.319	-0.181	2.000	4	7.000	9
B18	4.861	1.049	-0.173	-0.165	2.000	3	7.000	10
B19	5.335	1.030	-0.229	-0.244	2.000	1	7.000	28
B20	5.072	1.087	-0.234	-0.122	2.000	3	7.000	19
B21	5.411	1.001	-0.290	-0.503	3.000	6	7.000	27
B22	5.239	1.010	-0.297	-0.181	2.000	1	7.000	19
B23	5.411	1.039	-0.579	0.812	1.000	1	7.000	29
B24	5.359	1.079	-0.407	-0.171	2.000	1	7.000	30
B25	5.254	1.064	-0.401	0.372	1.000	1	7.000	24
B26	5.435	0.875	-0.539	-0.073	3.000	4	7.000	14
E1	4.483	0.996	-0.234	0.240	1.000	1	7.000	2
E2	4.493	1.106	-0.143	-0.166	1.000	1	7.000	4
E3	4.292	1.041	-0.196	0.114	1.000	2	7.000	1
E4	3.943	1.095	-0.462	0.476	1.000	8	6.000	13
E5	4.096	1.160	-0.207	-0.080	1.000	4	7.000	1
E6	4.330	1.260	-0.339	-0.066	1.000	5	7.000	4
E7	4.411	1.020	-0.429	0.968	1.000	2	7.000	3
E8	4.287	1.080	-0.431	0.549	1.000	3	7.000	2

E9	4.469	1.033	-0.220	0.047	2.000	9	7.000	3
E10	4.306	1.057	-0.269	0.236	1.000	2	7.000	1
E11	4.268	1.076	-0.225	0.100	1.000	2	7.000	1
E12	4.057	1.104	-0.266	-0.063	1.000	3	7.000	1
E13	3.981	1.221	-0.251	-0.256	1.000	6	7.000	1
E14	3.560	1.417	-0.015	-0.577	1.000	20	7.000	2
E15	4.196	1.170	-0.406	0.111	1.000	5	7.000	1
E16	3.971	1.037	-0.308	0.100	1.000	3	6.000	12
E17	4.129	1.078	-0.283	0.034	1.000	2	7.000	1
E18	4.062	1.169	-0.487	0.123	1.000	7	6.000	20
E19	4.335	1.141	-0.176	-0.223	1.000	1	7.000	4
E20	4.110	1.093	-0.131	-0.375	1.000	1	7.000	1
E21	4.364	1.029	0.105	-0.425	2.000	5	7.000	2
E22	4.349	1.060	-0.174	-0.287	2.000	10	7.000	2
E23	4.230	1.085	-0.218	-0.151	1.000	1	7.000	2
E24	4.220	1.109	-0.296	0.028	1.000	2	7.000	2
E25	4.148	1.097	-0.254	0.198	1.000	3	7.000	2
E26	4.397	0.995	-0.067	0.314	2.000	8	7.000	4
S1	4.469	1.105	-0.902	1.383	1.000	6	7.000	1
S2	4.493	1.061	-0.895	1.424	1.000	5	6.000	32
S3	4.421	1.103	-0.460	0.416	1.000	3	7.000	2
S4	4.722	1.114	-0.826	1.657	1.000	5	7.000	6
P1	4.550	0.893	-0.296	0.047	2.000	3	7.000	1
P2	4.464	1.010	-0.099	0.242	1.000	1	7.000	3
P3	4.402	1.005	-0.187	-0.271	2.000	6	7.000	2
P4	4.033	1.053	0.057	0.584	1.000	2	7.000	4
P5	4.196	1.090	-0.195	-0.086	1.000	2	7.000	2
P6	4.273	1.022	-0.105	-0.333	2.000	9	7.000	1
P7	4.225	1.153	-0.545	0.509	1.000	6	7.000	2
P8	4.105	1.126	-0.474	0.417	1.000	5	7.000	2
P9	4.407	1.123	-0.648	0.436	1.000	4	7.000	1
P10	4.220	1.172	-0.383	-0.054	1.000	4	7.000	1
P11	4.172	1.252	-0.494	0.198	1.000	9	7.000	2
P12	3.813	1.282	-0.393	-0.198	1.000	14	7.000	1
P13	3.742	1.319	-0.033	-0.347	1.000	12	7.000	2
P14	3.483	1.391	-0.111	-0.499	1.000	24	7.000	2
P15	4.301	1.088	-0.329	0.006	1.000	2	7.000	1
P16	4.014	1.120	-0.132	-0.169	1.000	3	7.000	1
P17	4.215	1.036	-0.547	-0.023	1.000	1	6.000	15
P18	4.129	1.060	-0.310	-0.100	1.000	2	6.000	18
P19	4.091	1.125	-0.569	0.371	1.000	7	6.000	17
P20	3.952	1.180	-0.492	0.300	1.000	10	7.000	1
P21	4.330	1.057	-0.052	-0.504	2.000	8	7.000	1
P22	4.292	1.027	-0.019	-0.252	2.000	8	7.000	2
P23	4.201	1.155	-0.135	-0.166	1.000	3	7.000	2
P24	4.234	1.082	-0.134	0.056	1.000	2	7.000	2
P25	4.043	1.166	-0.250	0.062	1.000	5	7.000	2
V4	4.033	1.416	-0.296	-0.588	1.000	9	7.000	4
V5	4.110	1.198	-0.028	0.230	1.000	4	7.000	6
V6	4.234	0.984	0.553	0.817	2.000	5	7.000	7
V7	3.995	0.943	0.044	0.407	2.000	13	7.000	2
V8	4.139	0.852	-0.035	1.044	1.000	1	7.000	1
V9	4.096	1.015	0.113	0.576	1.000	1	7.000	3
V10	3.617	1.386	-0.185	-0.406	1.000	20	7.000	3
V11	4.225	1.097	-0.435	0.898	1.000	5	7.000	3
V12	4.091	0.974	-0.657	1.042	1.000	3	7.000	1
V13	4.191	0.972	-0.043	0.709	1.000	1	7.000	2
V14	4.057	0.886	-0.825	2.541	1.000	5	6.000	8
V15	3.603	1.088	0.005	-0.076	1.000	6	6.000	9
V16	4.177	0.937	-0.680	1.130	1.000	3	6.000	10
V17	4.158	0.914	-0.548	1.438	1.000	3	6.000	12

V18	4.163	0.952	-0.770	0.970	1.000	3	6.000	8
F1	4.555	1.322	-0.473	0.297	1.000	6	7.000	13
F2	4.115	1.399	-0.345	-0.312	1.000	11	7.000	5
F3	3.923	1.392	-0.165	-0.373	1.000	12	7.000	4
F4	3.828	1.414	-0.227	-0.343	1.000	17	7.000	4
F5	3.885	1.450	-0.276	-0.364	1.000	18	7.000	5
V19	4.287	0.973	-0.635	1.035	1.000	3	6.000	17
V20	4.263	0.977	-0.549	0.958	1.000	2	7.000	1
V21	4.234	1.008	-0.769	1.127	1.000	4	6.000	15

Appendix 5.9

Results of Confirmatory Factor Analysis for "Service Attitudes"

```
confirmatory factor analysis
observed variables:
p9 p10 p11 p12 p13 p14
covariance matrix:
1.262
1.141 1.374
1.194 1.270 1.566
1.043 1.128 1.210 1.643
0.884 0.956 0.982 1.259 1.741
0.745 0.778 0.878 1.163 1.438 1.934
sample size 209
latent variables att
relationships
p9 = 1*att
p10 p11 p12 p13 p14 = att
path diagram
lisrel output: va rs mi ss sc
```

confirmatory factor analysis

COVARIANCE MATRIX TO BE ANALYZED

	p9	p10	p11	p12	p13	p14
p9	1.26					
p10	1.14	1.37				
p11	1.19	1.27	1.57			
p12	1.04	1.13	1.21	1.64		
p13	0.88	0.96	0.98	1.26	1.74	
p14	0.74	0.78	0.88	1.16	1.44	1.93

confirmatory factor analysis

PARAMETER SPECIFICATIONS

LAMBDA-X

	att
p9	0
p10	1
p11	2
p12	3
p13	4
p14	5

PHI

att
6

THETA-DELTA

p9	p10	p11	p12	p13	p14
-----	-----	-----	-----	-----	-----
7	8	9	10	11	12

confirmatory factor analysis
 Number of Iterations = 9

LISREL ESTIMATES (MAXIMUM LIKELIHOOD)

LAMBDA-X

	att
p9	1.00
p10	1.06 (0.05) 22.83
p11	1.12 (0.05) 22.19
p12	1.04 (0.06) 17.20
p13	0.90 (0.07) 12.59
p14	0.79 (0.08) 9.62

PHI

att

1.05 (0.12) 8.50

THETA-DELTA

p9	p10	p11	p12	p13	p14
-----	-----	-----	-----	-----	-----
0.21 (0.03) 7.65	0.19 (0.03) 6.86	0.24 (0.03) 7.30	0.51 (0.06) 9.08	0.89 (0.09) 9.71	1.27 (0.13) 9.94

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

p9	p10	p11	p12	p13	p14
0.83	0.86	0.85	0.69	0.49	0.34

GOODNESS OF FIT STATISTICS

CHI-SQUARE WITH 9 DEGREES OF FREEDOM = 183.45 (P = 0.0)
 ESTIMATED NON-CENTRALITY PARAMETER (NCP) = 174.45

MINIMUM FIT FUNCTION VALUE = 0.88
 POPULATION DISCREPANCY FUNCTION VALUE (F0) = 0.84
 ROOT MEAN SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.31

EXPECTED CROSS-VALIDATION INDEX (ECVI) = 1.00
 ECVI FOR SATURATED MODEL = 0.20
 ECVI FOR INDEPENDENCE MODEL = 5.79

CHI-SQUARE FOR INDEPENDENCE MODEL WITH 15 DEGREES OF FREEDOM = 1191.44
 INDEPENDENCE AIC = 1203.44
 MODEL AIC = 207.45
 SATURATED AIC = 42.00
 INDEPENDENCE CAIC = 1229.49
 MODEL CAIC = 259.56
 SATURATED CAIC = 133.19

ROOT MEAN SQUARE RESIDUAL (RMR) = 0.18
 STANDARDIZED RMR = 0.10
 GOODNESS OF FIT INDEX (GFI) = 0.76
 ADJUSTED GOODNESS OF FIT INDEX (AGFI) = 0.44
 PARSIMONY GOODNESS OF FIT INDEX (PGFI) = 0.33

NORMED FIT INDEX (NFI) = 0.85
 NON-NORMED FIT INDEX (NNFI) = 0.75
 PARSIMONY NORMED FIT INDEX (PNFI) = 0.51
 COMPARATIVE FIT INDEX (CFI) = 0.85
 INCREMENTAL FIT INDEX (IFI) = 0.85
 RELATIVE FIT INDEX (RFI) = 0.74

CRITICAL N (CN) = 25.57

CONFIDENCE LIMITS COULD NOT BE COMPUTED DUE TO TOO SMALL P-VALUE FOR CHI-SQUARE

confirmatory factor analysis

FITTED COVARIANCE MATRIX

	p9	p10	p11	p12	p13	p14
p9	1.26					
p10	1.12	1.37				
p11	1.18	1.26	1.57			
p12	1.09	1.16	1.23	1.64		
p13	0.95	1.01	1.07	0.98	1.74	
p14	0.83	0.89	0.94	0.86	0.75	1.93

FITTED RESIDUALS

	p9	p10	p11	p12	p13	p14
p9	0.00					
p10	0.02	0.00				
p11	0.01	0.01	0.00			
p12	-0.05	-0.03	-0.02	0.00		
p13	-0.06	-0.05	-0.08	0.28	0.00	
p14	-0.09	-0.11	-0.06	0.30	0.69	0.00

SUMMARY STATISTICS FOR FITTED RESIDUALS

SMALLEST FITTED RESIDUAL = -0.11
 MEDIAN FITTED RESIDUAL = 0.00
 LARGEST FITTED RESIDUAL = 0.69

STEMLEAF PLOT

```
- 0|198665532000000
  0|112
  2|80
  4|
  6|9
```

STANDARDIZED RESIDUALS

	p9	p10	p11	p12	p13	p14
p9	0.00					
p10	3.45	0.00				
p11	1.68	2.02	0.00			
p12	-2.65	-2.11	-0.85	0.00		
p13	-2.54	-2.40	-3.25	6.47	0.00	
p14	-2.86	-4.02	-1.85	5.75	9.69	0.00

SUMMARY STATISTICS FOR STANDARDIZED RESIDUALS

SMALLEST STANDARDIZED RESIDUAL = -4.02
 MEDIAN STANDARDIZED RESIDUAL = 0.00
 LARGEST STANDARDIZED RESIDUAL = 9.69

STEMLEAF PLOT

```
- 0|433332221000000
  0|223
  0|66
  1|0
```

LARGEST NEGATIVE STANDARDIZED RESIDUALS

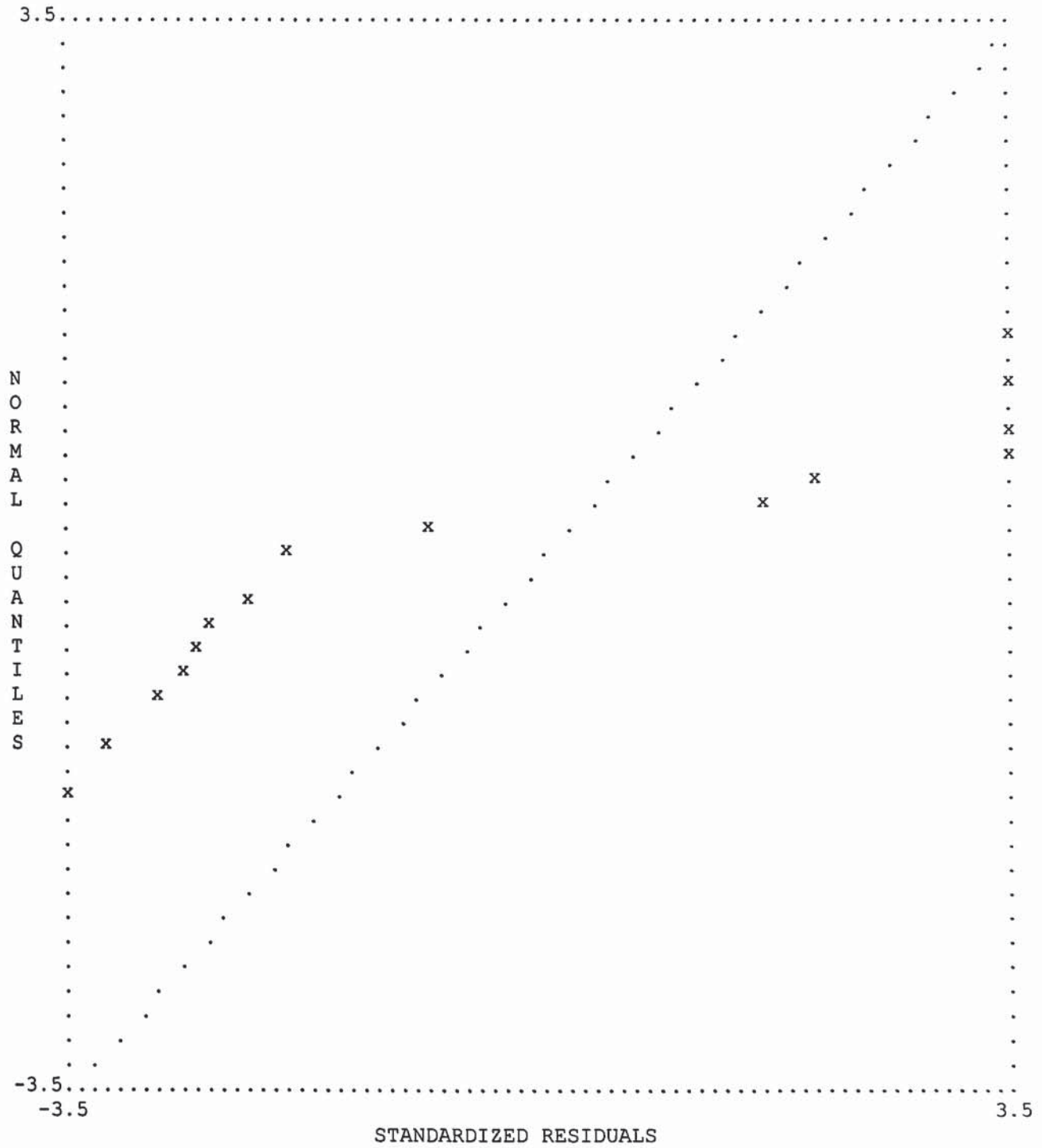
RESIDUAL FOR p12 AND p9 -2.65
 RESIDUAL FOR p13 AND p11 -3.25
 RESIDUAL FOR p14 AND p9 -2.86
 RESIDUAL FOR p14 AND p10 -4.02

LARGEST POSITIVE STANDARDIZED RESIDUALS

RESIDUAL FOR p10 AND p9 3.45
 RESIDUAL FOR p13 AND p12 6.47
 RESIDUAL FOR p14 AND p12 5.75
 RESIDUAL FOR p14 AND p13 9.69

confirmatory factor analysis

QPLOT OF STANDARDIZED RESIDUALS



confirmatory factor analysis
 MODIFICATION INDICES AND EXPECTED CHANGE

NO NON-ZERO MODIFICATION INDICES FOR LAMBDA-X

NO NON-ZERO MODIFICATION INDICES FOR PHI

MODIFICATION INDICES FOR THETA-DELTA

	p9	p10	p11	p12	p13	p14
p9	- -					
p10	11.93	- -				
p11	2.83	4.07	- -			
p12	7.02	4.47	0.73	- -		
p13	6.43	5.78	10.59	41.85	- -	
p14	8.16	16.14	3.42	33.04	93.93	- -

EXPECTED CHANGE FOR THETA-DELTA

	p9	p10	p11	p12	p13	p14
p9	- -					
p10	0.09	- -				
p11	0.05	0.06	- -			
p12	-0.08	-0.06	-0.03	- -		
p13	-0.09	-0.09	-0.13	0.33	- -	
p14	-0.12	-0.17	-0.09	0.35	0.74	- -

COMPLETELY STANDARDIZED EXPECTED CHANGE FOR THETA-DELTA

	p9	p10	p11	p12	p13	p14
p9	- -					
p10	0.07	- -				
p11	0.03	0.04	- -			
p12	-0.06	-0.04	-0.02	- -		
p13	-0.06	-0.06	-0.08	0.20	- -	
p14	-0.08	-0.10	-0.05	0.19	0.40	- -

MAXIMUM MODIFICATION INDEX IS 93.93 FOR ELEMENT (6, 5) OF THETA-DELTA

confirmatory factor analysis
 COVARIANCES

X - KSI

	p9	p10	p11	p12	p13	p14
att	1.05	1.12	1.18	1.09	0.95	0.83

confirmatory factor analysis
 STANDARDIZED SOLUTION

LAMBDA-X

	att

p9	1.02
p10	1.09
p11	1.15
p12	1.06
p13	0.93
p14	0.81

PHI

att

1.00

confirmatory factor analysis
 COMPLETELY STANDARDIZED SOLUTION

LAMBDA-X

	att

p9	0.91
p10	0.93
p11	0.92
p12	0.83
p13	0.70
p14	0.58

PHI

att

1.00

THETA-DELTA

p9	p10	p11	p12	p13	p14
-----	-----	-----	-----	-----	-----
0.17	0.14	0.15	0.31	0.51	0.66

Appendix 5.10

Results of the Measurement Models

Environmental Factor

confirmatory factor analysis
observed variables:
p21 p22 p23 p24 p25
covariance matrix:
1.116
0.749 1.054
0.866 0.782 1.334
0.831 0.676 0.919 1.171
0.769 0.680 1.078 0.865 1.359
sample size 209
latent variable environ
relationships
p21 = 1*environ
p22 p23 p24 p25= environ
path diagram

Sample Size = 209

COVARIANCE MATRIX TO BE ANALYZED

	p21	p22	p23	p24	p25
p21	1.12				
p22	0.75	1.05			
p23	0.87	0.78	1.33		
p24	0.83	0.68	0.92	1.17	
p25	0.77	0.68	1.08	0.86	1.36

Number of Iterations = 7

LISREL ESTIMATES (MAXIMUM LIKELIHOOD)

p21 = 1.00*environ, Errorvar.= 0.38 , R² = 0.66
(0.044)
8.50

p22 = 0.88*environ, Errorvar.= 0.48 , R² = 0.55
(0.075) (0.052)
11.87 9.16

p23 = 1.21*environ, Errorvar.= 0.24 , R² = 0.82
(0.078) (0.039)
15.62 6.29

p24 = 1.05*environ, Errorvar.= 0.36 , R² = 0.69
(0.075) (0.044)
13.92 8.24

p25 = 1.13*environ, Errorvar.= 0.41 , R² = 0.69
(0.081) (0.051)
13.96 8.21

COVARIANCE MATRIX OF INDEPENDENT VARIABLES

environ

0.74
(0.11)
6.98

GOODNESS OF FIT STATISTICS

CHI-SQUARE WITH 5 DEGREES OF FREEDOM = 34.76 (P = 0.0000017)
ESTIMATED NON-CENTRALITY PARAMETER (NCP) = 29.76

MINIMUM FIT FUNCTION VALUE = 0.17
POPULATION DISCREPANCY FUNCTION VALUE (F0) = 0.14
ROOT MEAN SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.17

EXPECTED CROSS-VALIDATION INDEX (ECVI) = 0.26
ECVI FOR SATURATED MODEL = 0.14
ECVI FOR INDEPENDENCE MODEL = 3.59

CHI-SQUARE FOR INDEPENDENCE MODEL WITH 10 DEGREES OF FREEDOM = 735.96

INDEPENDENCE AIC = 745.96
MODEL AIC = 54.76
SATURATED AIC = 30.00
INDEPENDENCE CAIC = 767.67
MODEL CAIC = 98.18
SATURATED CAIC = 95.14

ROOT MEAN SQUARE RESIDUAL (RMR) = 0.042
STANDARDIZED RMR = 0.036
GOODNESS OF FIT INDEX (GFI) = 0.93
ADJUSTED GOODNESS OF FIT INDEX (AGFI) = 0.80
PARSIMONY GOODNESS OF FIT INDEX (PGFI) = 0.31

NORMED FIT INDEX (NFI) = 0.95
NON-NORMED FIT INDEX (NNFI) = 0.92
PARSIMONY NORMED FIT INDEX (PNFI) = 0.48
COMPARATIVE FIT INDEX (CFI) = 0.96
INCREMENTAL FIT INDEX (IFI) = 0.96
RELATIVE FIT INDEX (RFI) = 0.91

CRITICAL N (CN) = 91.29

CONFIDENCE LIMITS COULD NOT BE COMPUTED DUE TO TOO SMALL P-VALUE FOR CHI-SQUARE

SUMMARY STATISTICS FOR FITTED RESIDUALS

SMALLEST FITTED RESIDUAL = -0.07
MEDIAN FITTED RESIDUAL = 0.00
LARGEST FITTED RESIDUAL = 0.09

STEMLEAF PLOT

- 0|76
- 0|3211100000
0|
0|669

SUMMARY STATISTICS FOR STANDARDIZED RESIDUALS

SMALLEST STANDARDIZED RESIDUAL = -3.26
MEDIAN STANDARDIZED RESIDUAL = 0.00
LARGEST STANDARDIZED RESIDUAL = 5.22

STEMLEAF PLOT
 - 2|364
 - 0|985400000
 0|
 2|09
 4|2

LARGEST NEGATIVE STANDARDIZED RESIDUALS
 RESIDUAL FOR p23 AND p21 -2.64
 RESIDUAL FOR p25 AND p21 -3.26
 LARGEST POSITIVE STANDARDIZED RESIDUALS
 RESIDUAL FOR p22 AND p21 3.90
 RESIDUAL FOR p24 AND p21 2.99
 RESIDUAL FOR p25 AND p23 5.22

THE MODIFICATION INDICES SUGGEST TO ADD AN ERROR COVARIANCE
 BETWEEN AND DECREASE IN CHI-SQUARE NEW ESTIMATE
 p22 p21 15.2 0.14
 p24 p21 8.9 0.10
 p25 p21 10.6 -0.12
 p25 p23 27.3 0.21

Staff Competent

confirmatory factor analysis

observed variables:
 p19 p18 p20 p17
 covariance matrix:
 1.266
 0.820 1.123
 0.985 0.924 1.392
 0.822 0.765 0.828 1.074
 sample size 209
 latent variable competent
 relationships
 p19 = 1*competent
 p18 p20 p17 = competent
 path diagram

Sample Size = 209

COVARIANCE MATRIX TO BE ANALYZED

	p19	p18	p20	p17
p19	1.27			
p18	0.82	1.12		
p20	0.98	0.92	1.39	
p17	0.82	0.76	0.83	1.07

Number of Iterations = 4

LISREL ESTIMATES (MAXIMUM LIKELIHOOD)

p19 = 1.00*competent, Errorvar.= 0.36 , R² = 0.72
 (0.048)
 7.43

p18 = 0.93*competent, Errorvar.= 0.33 , R² = 0.71
(0.064) (0.043)
14.62 7.59

p20 = 1.07*competent, Errorvar.= 0.35 , R² = 0.75
(0.070) (0.050)
15.23 6.97

p17 = 0.88*competent, Errorvar.= 0.36 , R² = 0.66
(0.063) (0.045)
13.91 8.11

COVARIANCE MATRIX OF INDEPENDENT VARIABLES

competent

0.91
(0.12)
7.36

GOODNESS OF FIT STATISTICS

CHI-SQUARE WITH 2 DEGREES OF FREEDOM = 5.06 (P = 0.080)
ESTIMATED NON-CENTRALITY PARAMETER (NCP) = 3.06
90 PERCENT CONFIDENCE INTERVAL FOR NCP = (0.0 ; 13.83)

MINIMUM FIT FUNCTION VALUE = 0.024
POPULATION DISCREPANCY FUNCTION VALUE (F0) = 0.015
90 PERCENT CONFIDENCE INTERVAL FOR F0 = (0.0 ; 0.066)
ROOT MEAN SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.086
90 PERCENT CONFIDENCE INTERVAL FOR RMSEA = (0.0 ; 0.18)
P-VALUE FOR TEST OF CLOSE FIT (RMSEA < 0.05) = 0.19

EXPECTED CROSS-VALIDATION INDEX (ECVI) = 0.10
90 PERCENT CONFIDENCE INTERVAL FOR ECVI = (0.087 ; 0.15)
ECVI FOR SATURATED MODEL = 0.096
ECVI FOR INDEPENDENCE MODEL = 2.63

CHI-SQUARE FOR INDEPENDENCE MODEL WITH 6 DEGREES OF FREEDOM = 538.51
INDEPENDENCE AIC = 546.51
MODEL AIC = 21.06
SATURATED AIC = 20.00
INDEPENDENCE CAIC = 563.88
MODEL CAIC = 55.79
SATURATED CAIC = 63.42

ROOT MEAN SQUARE RESIDUAL (RMR) = 0.017
STANDARDIZED RMR = 0.014
GOODNESS OF FIT INDEX (GFI) = 0.99
ADJUSTED GOODNESS OF FIT INDEX (AGFI) = 0.94
PARSIMONY GOODNESS OF FIT INDEX (PGFI) = 0.20

NORMED FIT INDEX (NFI) = 0.99
NON-NORMED FIT INDEX (NNFI) = 0.98
PARSIMONY NORMED FIT INDEX (PNFI) = 0.33
COMPARATIVE FIT INDEX (CFI) = 0.99
INCREMENTAL FIT INDEX (IFI) = 0.99
RELATIVE FIT INDEX (RFI) = 0.97

CRITICAL N (CN) = 379.93

SUMMARY STATISTICS FOR FITTED RESIDUALS

SMALLEST FITTED RESIDUAL = -0.03
 MEDIAN FITTED RESIDUAL = 0.00
 LARGEST FITTED RESIDUAL = 0.02

STEMLEAF PLOT

- 2|19
 - 0|0000
 0|2559

SUMMARY STATISTICS FOR STANDARDIZED RESIDUALS

SMALLEST STANDARDIZED RESIDUAL = -2.17
 MEDIAN STANDARDIZED RESIDUAL = 0.00
 LARGEST STANDARDIZED RESIDUAL = 1.22

STEMLEAF PLOT

- 2|22
 - 1|
 - 0|0000
 0|
 1|0022

Food Taste and Variety

confirmatory factor analysis

observed variables:

p1 p2 p3 p4 p5 p6

covariance matrix:

0.797
 0.450 1.019
 0.590 0.543 1.011
 0.510 0.393 0.587 1.109
 0.569 0.452 0.652 0.782 1.187
 0.556 0.459 0.582 0.592 0.802 1.045

sample size 209

latent variable food

relationships

p1 = 1*food

p3 p4 p5 p6 = food

path diagram

Sample Size = 209

COVARIANCE MATRIX TO BE ANALYZED

	p1	p3	p4	p5	p6
p1	0.80				
p3	0.59	1.01			
p4	0.51	0.59	1.11		
p5	0.57	0.65	0.78	1.19	
p6	0.56	0.58	0.59	0.80	1.04

Number of Iterations = 7

LISREL ESTIMATES (MAXIMUM LIKELIHOOD)

p1 = 1.00*food, Errorvar.= 0.35 , R² = 0.56
 (0.041)
 8.60

p3 = 1.12*food, Errorvar.= 0.46 , R² = 0.55
(0.11) (0.053)
10.46 8.66

p4 = 1.18*food, Errorvar.= 0.49 , R² = 0.56
(0.11) (0.057)
10.57 8.59

p5 = 1.40*food, Errorvar.= 0.32 , R² = 0.73
(0.12) (0.048)
12.10 6.72

p6 = 1.23*food, Errorvar.= 0.37 , R² = 0.64
(0.11) (0.047)
11.38 7.88

COVARIANCE MATRIX OF INDEPENDENT VARIABLES

food

0.44
(0.07)
6.05

GOODNESS OF FIT STATISTICS

CHI-SQUARE WITH 5 DEGREES OF FREEDOM = 29.25 (P = 0.000021)
ESTIMATED NON-CENTRALITY PARAMETER (NCP) = 24.25

MINIMUM FIT FUNCTION VALUE = 0.14
POPULATION DISCREPANCY FUNCTION VALUE (FO) = 0.12
ROOT MEAN SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.15

EXPECTED CROSS-VALIDATION INDEX (ECVI) = 0.24
ECVI FOR SATURATED MODEL = 0.14
ECVI FOR INDEPENDENCE MODEL = 2.73

CHI-SQUARE FOR INDEPENDENCE MODEL WITH 10 DEGREES OF FREEDOM = 558.21
INDEPENDENCE AIC = 568.21
MODEL AIC = 49.25
SATURATED AIC = 30.00
INDEPENDENCE CAIC = 589.93
MODEL CAIC = 92.68
SATURATED CAIC = 95.14

ROOT MEAN SQUARE RESIDUAL (RMR) = 0.037
STANDARDIZED RMR = 0.038
GOODNESS OF FIT INDEX (GFI) = 0.95
ADJUSTED GOODNESS OF FIT INDEX (AGFI) = 0.84
PARSIMONY GOODNESS OF FIT INDEX (PGFI) = 0.32

NORMED FIT INDEX (NFI) = 0.95
NON-NORMED FIT INDEX (NNFI) = 0.91
PARSIMONY NORMED FIT INDEX (PNFI) = 0.47
COMPARATIVE FIT INDEX (CFI) = 0.96
INCREMENTAL FIT INDEX (IFI) = 0.96
RELATIVE FIT INDEX (RFI) = 0.90

CRITICAL N (CN) = 108.28

CONFIDENCE LIMITS COULD NOT BE COMPUTED DUE TO TOO SMALL P-VALUE FOR CHI-SQUARE

SUMMARY STATISTICS FOR FITTED RESIDUALS

SMALLEST FITTED RESIDUAL = -0.05
MEDIAN FITTED RESIDUAL = 0.00
LARGEST FITTED RESIDUAL = 0.09

STEMLEAF PLOT

- 0|55
- 0|431000000
0|14
0|59

SUMMARY STATISTICS FOR STANDARDIZED RESIDUALS

SMALLEST STANDARDIZED RESIDUAL = -3.51
MEDIAN STANDARDIZED RESIDUAL = 0.00
LARGEST STANDARDIZED RESIDUAL = 4.24

STEMLEAF PLOT

- 2|554
- 0|3600000
0|15
2|89
4|2

LARGEST NEGATIVE STANDARDIZED RESIDUALS
RESIDUAL FOR p5 AND p1 -3.51
LARGEST POSITIVE STANDARDIZED RESIDUALS
RESIDUAL FOR p3 AND p1 4.24
RESIDUAL FOR p5 AND p4 2.83
RESIDUAL FOR p6 AND p5 2.92

THE MODIFICATION INDICES SUGGEST TO ADD AN ERROR COVARIANCE			
BETWEEN	AND	DECREASE IN CHI-SQUARE	NEW ESTIMATE
p3	p1	18.0	0.15
p5	p1	12.3	-0.13
p5	p4	8.0	0.12
p6	p5	8.5	0.13

Staff Appearance and Food Delivery

confirmatory factor analysis

observed variables:

p15 p16 p8 p7

covariance matrix:

1.183
0.919 1.255
0.634 0.603 1.329
0.636 0.691 0.991 1.268

sample size 209

latent variable staff order

relationships

p15 = 1*staff

p16 = staff

p8 = 1*order

p7 = order

path diagram

Sample Size = 209

COVARIANCE MATRIX TO BE ANALYZED

	p15	p16	p8	p7
p15	1.18			
p16	0.92	1.25		
p8	0.63	0.60	1.33	
p7	0.64	0.69	0.99	1.27

Number of Iterations = 6

LISREL ESTIMATES (MAXIMUM LIKELIHOOD)

p15 = 1.00*staff, Errorvar.= 0.30 , R² = 0.74
 (0.070)
 4.29

p16 = 1.04*staff, Errorvar.= 0.30 , R² = 0.76
 (0.093) (0.075)
 11.26 3.92

p8 = 1.00*order, Errorvar.= 0.41 , R² = 0.69
 (0.078)
 5.25

p7 = 1.08*order, Errorvar.= 0.20 , R² = 0.84
 (0.095) (0.079)
 11.29 2.55

COVARIANCE MATRIX OF INDEPENDENT VARIABLES

	staff	order
staff	0.88 (0.13) 6.82	
order	0.60 (0.10) 6.34	0.92 (0.14) 6.55

GOODNESS OF FIT STATISTICS

CHI-SQUARE WITH 1 DEGREE OF FREEDOM = 4.07 (P = 0.044)
 ESTIMATED NON-CENTRALITY PARAMETER (NCP) = 3.07
 90 PERCENT CONFIDENCE INTERVAL FOR NCP = (0.060 ; 13.41)

MINIMUM FIT FUNCTION VALUE = 0.020
 POPULATION DISCREPANCY FUNCTION VALUE (F0) = 0.015
 90 PERCENT CONFIDENCE INTERVAL FOR F0 = (0.00029 ; 0.064)
 ROOT MEAN SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.12
 90 PERCENT CONFIDENCE INTERVAL FOR RMSEA = (0.017 ; 0.25)
 P-VALUE FOR TEST OF CLOSE FIT (RMSEA < 0.05) = 0.10

EXPECTED CROSS-VALIDATION INDEX (ECVI) = 0.11
 90 PERCENT CONFIDENCE INTERVAL FOR ECVI = (0.092 ; 0.16)
 ECVI FOR SATURATED MODEL = 0.096
 ECVI FOR INDEPENDENCE MODEL = 2.19

CHI-SQUARE FOR INDEPENDENCE MODEL WITH 6 DEGREES OF FREEDOM = 447.84
 INDEPENDENCE AIC = 455.84

MODEL AIC = 22.07
SATURATED AIC = 20.00
INDEPENDENCE CAIC = 473.21
MODEL CAIC = 61.15
SATURATED CAIC = 63.42

ROOT MEAN SQUARE RESIDUAL (RMR) = 0.014
STANDARDIZED RMR = 0.011
GOODNESS OF FIT INDEX (GFI) = 0.99
ADJUSTED GOODNESS OF FIT INDEX (AGFI) = 0.90
PARSIMONY GOODNESS OF FIT INDEX (PGFI) = 0.099

NORMED FIT INDEX (NFI) = 0.99
NON-NORMED FIT INDEX (NNFI) = 0.96
PARSIMONY NORMED FIT INDEX (PNFI) = 0.17
COMPARATIVE FIT INDEX (CFI) = 0.99
INCREMENTAL FIT INDEX (IFI) = 0.99
RELATIVE FIT INDEX (RFI) = 0.95

CRITICAL N (CN) = 340.09

SUMMARY STATISTICS FOR FITTED RESIDUALS

SMALLEST FITTED RESIDUAL = -0.03
MEDIAN FITTED RESIDUAL = 0.00
LARGEST FITTED RESIDUAL = 0.03

STEMLEAF PLOT

- 2|8
- 0|4000000
0|3
2|0

SUMMARY STATISTICS FOR STANDARDIZED RESIDUALS

SMALLEST STANDARDIZED RESIDUAL = -2.01
MEDIAN STANDARDIZED RESIDUAL = 0.00
LARGEST STANDARDIZED RESIDUAL = 2.01

STEMLEAF PLOT

- 2|00
- 1|
- 0|000000
0|
1|
2|00

Appendix 5.11

Results of Analysis of Variance

Perceived Encounter Quality

	Sum of Squares	df	Mean square	F	Sig
Between Groups	11.623	2	5.811	8.420	0.000
Within Groups	142.183	206	0.690		
Total	153.805	208			

Multiple Comparisons – Bonferroni Method

Groups (I)	(J)	Mean Difference (I – J)	Std. Error	Sig.	95 % Confidence level	
					Lower Bound	Upper Bound
1	2	0.407914	0.171585	0.055	-6.238458E-03	0.822067
	3	0.657698*	0.162546	0.000	0.265362	1.050033
2	1	-0.407914	0.171585	0.055	0.822067	6.23876E-03
	3	0.249783	0.128149	0.158	-5.952926E-02	0.559096
3	1	-0.657698*	0.162546	0.000	-1.050033	-0.265362
	2	-0.249783	0.128149	0.158	-0.559096	5.95293E-02

(* - The mean difference is significant at the 5 % level)

(According to Watson et al. (1990), Bonferroni's method works quite well if the number of multiple comparisons is not very large.)

Customer Satisfaction

	Sum of Squares	df	Mean square	F	Sig
Between Groups	15.139	2	7.570	8.301	0.000
Within Groups	187.841	206	0.912		
Total	202.980	208			

Multiple Comparisons – Bonferroni Method

Groups (I)	(J)	Mean Difference (I – J)	Std. Error	Sig.	95 % Confidence level	
					Lower Bound	Upper Bound
1	2	0.408853	0.197220	0.118	-6.717497E-02	0.884881
	3	0.737309*	0.186831	0.000	0.286358	1.188261
2	1	-0.408853	0.197220	0.118	-0.884881	6.71750E-02
	3	0.328456	0.147295	0.158	-2.706844E-02	0.683981
3	1	-0.737309*	0.186831	0.000	-1.188261	-0.286358
	2	-0.328456	0.147295	0.080	-0.683981	2.70684E-02

(* - The mean difference is significant at the 5 % level)

Perceived Global Quality

	Sum of Squares	df	Mean square	F	Sig.
Between Groups	14.810	2	7.405	9.455	0.000
Within Groups	161.335	206	0.783		
Total	176.146	208			

Multiple Comparisons – Bonferroni Method

Groups (I)	(J)	Mean Difference (I – J)	Std. Error	Sig.	95 % Confidence level	
					Lower Bound	Upper Bound
1	2	0.523139*	0.182777	0.014	8.19728E-02	0.964305
	3	0.751271*	0.173148	0.000	0.333346	1.169197
2	1	-0.523139*	0.182777	0.014	-0.964305	-8.197279E-02
	3	0.228133	0.136508	0.289	-0.101355	0.557620
3	1	-0.751271*	0.173148	0.000	-1.169197	-0.333346
	2	-0.228133	0.136508	0.289	-0.557620	0.101355

(* - The mean difference is significant at the 5 % level)

Purchase Intentions

	Sum of Squares	df	Mean square	F	Sig.
Between Groups	21.554	2	10.777	7.366	0.001
Within Groups	301.376	206	1.463		
Total	322.929	208			

Multiple Comparisons – Bonferroni Method

Groups (I)	(J)	Mean Difference (I – J)	Std. Error	Sig.	95 % Confidence level	
					Lower Bound	Upper Bound
1	2	0.474849	0.249810	0.176	-0.128115	1.077813
	3	0.876098*	0.236650	0.001	0.304897	1.447299
2	1	-0.474849*	0.249810	0.176	-1.077813	0.128115
	3	0.401249	0.186572	0.098	-4.907866E-02	0.851576
3	1	-0.876098*	0.236650	0.001	-1.447299	-0.304897
	2	-0.401249	0.186572	0.098	-0.851576	4.90787E-02

(* - The mean difference is significant at the 5 % level)

Recommendation Intentions

	Sum of Squares	df	Mean square	F	Sig.
Between Groups	38.015	2	19.007	11.783	0.000
Within Groups	332.313	206	1.613		
Total	370.328	208			

Multiple Comparisons – Bonferroni Method

Groups (I)	(J)	Mean Difference (I – J)	Std. Error	Sig.	95 % Confidence level	
					Lower Bound	Upper Bound
1	2	0.821730*	0.262319	0.006	-0.188574	1.454887
	3	1.202080*	0.248500	0.000	0.602278	1.801883
2	1	-0.821730*	0.262319	0.006	-1.454887	-0.188574
	3	0.380350	0.195915	0.161	-9.252677E-02	0.853227
3	1	-1.202080*	0.248500	0.000	-1.801883	-0.602278
	2	-0.380350	0.195915	0.161	-0.853227	9.25268E-02

(* - The mean difference is significant at the 5 % level)

Appendix 6.1

Main Questionnaire

Questionnaire no: _____

There are three parts to this questionnaire. Please follow the directions in each part.

Directions: In this part, please think about a restaurant that you consider its service performance is the best in the industry. For each of the following service attributes, please rate the level of service performance you expect the best restaurant will deliver. If you expect it will perform excellently on an attribute, then circle 7. If you expect it will not perform excellently on an attribute, then circle a number from 1 to 6.

My expectations of the “Best” restaurant

	Poor.....	Excellent
Q1a. <u>Food attributes</u>		
Taste of food	1 2 3 4 5 6 7	
Portion of food	1 2 3 4 5 6 7	
Presentation of food	1 2 3 4 5 6 7	
Nutritional value of food	1 2 3 4 5 6 7	
Variety of dishes	1 2 3 4 5 6 7	
Uniqueness of dishes	1 2 3 4 5 6 7	
Q1b. <u>Food Delivery</u>		
Speed of food delivery	1 2 3 4 5 6 7	
Order of food delivery	1 2 3 4 5 6 7	
Q1c. <u>Serving Staff</u>		
Employees are willing to serve customers	1 2 3 4 5 6 7	
Employees are serving customers sincerely	1 2 3 4 5 6 7	
Employees are experienced and competent at doing their job	1 2 3 4 5 6 7	
Employees know about the menu items and methods of cooking	1 2 3 4 5 6 7	

	Poor.....						Excellent
Employees have the ability to provide efficient service	1	2	3	4	5	6	7
Employees possess the ability to answer customer questions clearly and completely	1	2	3	4	5	6	7
Employees inform customers about how long until the food will be ready	1	2	3	4	5	6	7
Employees offer suggestions to customers when required	1	2	3	4	5	6	7
Employees takes the initiative to find out what customers needs	1	2	3	4	5	6	7
Employees are courtesy and friendly	1	2	3	4	5	6	7
Employees wear neat and tidy uniform	1	2	3	4	5	6	7
Employees wear attractive uniform	1	2	3	4	5	6	7
Q1d <u>Dining Environment</u>							
Temperature of the dining area	1	2	3	4	5	6	7
Hygiene of the dining area	1	2	3	4	5	6	7
Interior decoration	1	2	3	4	5	6	7
Layout of the seats and tables	1	2	3	4	5	6	7
Comfortable	1	2	3	4	5	6	7
Q1e. Your expectations of the overall service (including food, service personnel and environment)	1	2	3	4	5	6	7

Part II

Q2. Please indicate below whether you have consumed at “_____” since the last interview.

Yes No

If your answer is yes, please answer the following questions and the questions in Part III. If your answer is no, you are only required to answer the questions in Part III.

Please write down below, how long ago was the last time that you consumed at “_____” ? (e.g., about one week ago)

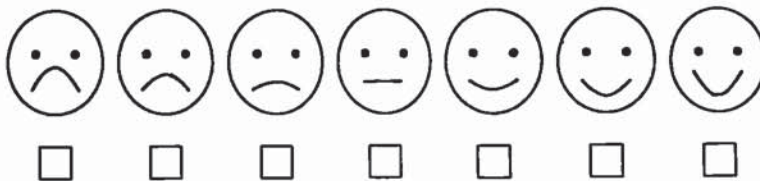
Q4. Based on the recent encounter, how did you feel about the overall service experience (including food, service, environment) ?

Very unpleasant 1 2 3 4 5 6 7 Very pleasant

Very dissatisfied 1 2 3 4 5 6 7 Very satisfied

I did not enjoy it at all 1 2 3 4 5 6 7 I enjoyed it very much

Please mark on one of the seven faces below the position which most reflects your feelings towards the overall service experience.



Q5a Based on the service you have received at the recent encounter (including food, service, environment), how did you perceive the price you have paid ?

Not worthwhile at all 1 2 3 4 5 6 7 Very worthwhile

Based on the service you have received at the recent encounter (including food, service, environment), how did you perceive the time you have spent in waiting to be served ?

Not worthwhile at all 1 2 3 4 5 6 7 Very worthwhile

Based on the service you have received at the recent encounter (including food, service, environment), how did you perceive the efforts you have made in coming to the restaurant ?

Not worthwhile at all 1 2 3 4 5 6 7 Very worthwhile

Q6. Based on the past experience, what do you think of the overall quality of the service provided by “_____” (including food, service, environment) ?

One of the worst	1	2	3	4	5	6	7	One of the best
Low quality	1	2	3	4	5	6	7	High quality
Lower than the standard of this industry	1	2	3	4	5	6	7	Higher than the standard of this industry

Part III

Directions: In this part, I would like to know your expectations of the service to be provided by “_____”. For each of the following service attributes, please rate the level of service performance you expect this restaurant will deliver. If you expect it will perform excellently on an attribute, then circle 7. If you expect it will not perform excellently on an attribute, then circle a number from 1 to 6.

My expectations of “_____”

Q7a. Food attributes Poor.....Excellent

Taste of food	1	2	3	4	5	6	7
Portion of food	1	2	3	4	5	6	7
Presentation of food	1	2	3	4	5	6	7
Nutritional value of food	1	2	3	4	5	6	7
Variety of dishes	1	2	3	4	5	6	7
Uniqueness of dishes	1	2	3	4	5	6	7

Q7b. Food Delivery

Speed of food delivery	1	2	3	4	5	6	7
Order of food delivery	1	2	3	4	5	6	7

Q7c. Serving Staff

Employees are willing to serve customers	1	2	3	4	5	6	7
Employees are serving customers sincerely	1	2	3	4	5	6	7
Employees are experienced and competent at doing their job	1	2	3	4	5	6	7

My expectations of “ _____ ”

Poor.....Excellent

Employees know about the menu items and methods of cooking	1	2	3	4	5	6	7
Employees have the ability to provide efficient service	1	2	3	4	5	6	7
Employees possess the ability to answer customer questions clearly and completely	1	2	3	4	5	6	7
Employees inform customers of how long until the food will be ready	1	2	3	4	5	6	7
Employees offer suggestions to customers when required	1	2	3	4	5	6	7
Employees takes the initiative to find out what customers needs	1	2	3	4	5	6	7
Employees are courtesy and friendly	1	2	3	4	5	6	7
Employees wear neat and tidy uniform	1	2	3	4	5	6	7
Employees wear attractive uniform	1	2	3	4	5	6	7
Q7d. <u>Dining Environment</u>							
Temperature of the dining area	1	2	3	4	5	6	7
Hygiene of the dining area	1	2	3	4	5	6	7
Interior decoration	1	2	3	4	5	6	7
Layout of the seats and tables	1	2	3	4	5	6	7
Comfortable	1	2	3	4	5	6	7
Q7e. Your expectations of the overall service (including food, service personnel and environment)	1	2	3	4	5	6	7

- End of Questionnaire –

Thank-you for your participation in this important study. All the information you provided will be kept strictly confidential. Please return the completed questionnaire in the stamped envelope at your earliest convenience.

Appendix 6.2

Main Questionnaire (Chinese version)

問卷編號： _____

多謝閣下參與這項有關服務質素和顧客滿意程度的學術研究。這問卷分三部份，請依照指示回應每部份的問題。

第一部份

指示：請你表達你預期“最好”的一間酒樓在以下各項服務的表現。假如你預期該酒樓將會提供優越的服務，請圈上數目字“7”。假如你預期該酒樓將不會提供優越的服務，請在“1”至“6”的數目字，圈上其中的一個。（“1”代表差劣，“7”代表優越）

		預期“最好”的一間表現									
		差劣	。	。	。	。	。	。	。	。	優越
Q1a.	食物方面										
	味道	1	2	3	4	5	6	7			
	份量	1	2	3	4	5	6	7			
	賣相	1	2	3	4	5	6	7			
	營養價值	1	2	3	4	5	6	7			
	菜式(獨特)	1	2	3	4	5	6	7			
	菜式(種類)	1	2	3	4	5	6	7			
Q1b.	遞送食物方面										
	等候遞送食物的時間	1	2	3	4	5	6	7			
	遞送食物的次序	1	2	3	4	5	6	7			
Q1c.	員工表現										
	態度友善	1	2	3	4	5	6	7			
	服務慇懃	1	2	3	4	5	6	7			
	樂意侍奉顧客	1	2	3	4	5	6	7			
	會主動去了解顧客需求	1	2	3	4	5	6	7			
	會主動提供意見給顧客選擇菜式	1	2	3	4	5	6	7			
	會向顧客匯報起菜時間	1	2	3	4	5	6	7			

員工表現

預期“最好”的一間表現

差劣 優越

俱備熟練的工作技巧	1	2	3	4	5	6	7
熟識餐牌上的菜式，配料及煮食方法	1	2	3	4	5	6	7
有能力去提供快捷的服務	1	2	3	4	5	6	7
有能力去全面解答顧客的問題	1	2	3	4	5	6	7
穿著整齊的制服	1	2	3	4	5	6	7
穿著的制服美觀吸引	1	2	3	4	5	6	7

Q1d. 酒樓樓面的環境

佈置	1	2	3	4	5	6	7
空調溫度	1	2	3	4	5	6	7
舒適程度	1	2	3	4	5	6	7
衛生程度	1	2	3	4	5	6	7
座位分佈及間格	1	2	3	4	5	6	7

Q1e. 你預期整體服務表現

差劣 優越

(包括、食物、員工表現及環境) 1 2 3 4 5 6 7

第二部份

Q2. 在上一次問卷調查，你光顧了“_____”酒樓。請問你從上一次訪問至今的一段時間內有沒有再次光顧該酒樓？

有

沒有

Q3. 如有的話，請你回答下列問題和第三部份的問題。如沒有的話，只須回答第三部份的問題。

請你填寫最近一次光顧該酒樓大約是何時？(例如：一星期之前)

Q4. 就最近一次的用膳經歷，請表達你對該酒樓整體服務的滿意程度(包括食物、員工表現、環境)。請圈上最能反映你的意見的代表數字。
(“1”代表非常不滿意，“7”代表非常滿意)

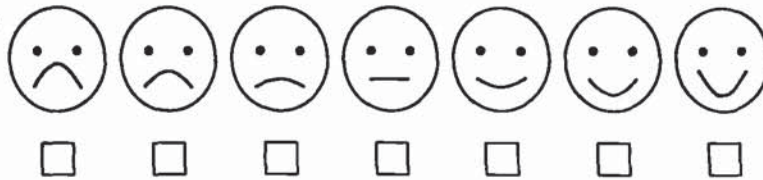
非常不滿意 1 2 3 4 5 6 7 非常滿意

就最近一次用膳過程，你對該酒樓的服務感覺是怎樣？

非常不愉快 1 2 3 4 5 6 7 非常愉快

非常不舒適 1 2 3 4 5 6 7 非常舒適

在下列的方格，請選擇最能反映你對在該酒樓用膳的滿意程度，並劃上“✓”



Q5. 就最近一次在該酒樓用膳所獲得的整體服務，你覺得所付出的金錢是否值得？

非常不值得 1 2 3 4 5 6 7 非常值得

就最近一次在該酒樓用膳所獲得的整體服務，你覺得所付出的時間是否值得？

非常不值得 1 2 3 4 5 6 7 非常值得

就最近一次在該酒樓用膳所獲得的整體服務，你覺得所消耗的體力前來這酒樓用膳是否值得？

非常不值得 1 2 3 4 5 6 7 非常值得

Q6. 綜合過往在該酒樓用膳的經歷，你覺得它的整體服務質素是怎樣？(包括食物、員工表現、環境)。請圈上最能反映你的意見的代表數字。

最差的其中一間 1 2 3 4 5 6 7 最好的其中一間

低於這個行業標準 1 2 3 4 5 6 7 高於這個行業標準

質素很低 1 2 3 4 5 6 7 質素很高

第三部分

請你表達你預期在下次光顧“_____”酒樓時所獲得的各項服務表現(包括、食物、員工表現及環境)。假如你預期該酒樓將會提供優越的服務，請圈上數目字“7”。假如你預期該酒樓將不會提供優越的服務，請在“1”至“6”的數目字，圈上其中的一個。
(“1”代表差劣，“7”代表優越)

		預期“_____”的表現							
		差劣	。	。	。	。	。	。	優越
		1	2	3	4	5	6	7	
Q7a.	食物方面								
	味道	1	2	3	4	5	6	7	
	份量	1	2	3	4	5	6	7	
	賣相	1	2	3	4	5	6	7	
	營養價值	1	2	3	4	5	6	7	
	菜式(獨特)	1	2	3	4	5	6	7	
	菜式(種類)	1	2	3	4	5	6	7	
Q7b.	遞送食物方面								
	等候遞送食物的時間	1	2	3	4	5	6	7	
	遞送食物的次序	1	2	3	4	5	6	7	
Q7c.	員工表現								
	態度友善	1	2	3	4	5	6	7	
	服務慇懃	1	2	3	4	5	6	7	
	樂意侍奉顧客	1	2	3	4	5	6	7	
	會主動去了解顧客需求	1	2	3	4	5	6	7	
	會主動提供意見給顧客選擇菜式	1	2	3	4	5	6	7	
	會向顧客匯報起菜時間	1	2	3	4	5	6	7	
	俱備熟練的工作技巧	1	2	3	4	5	6	7	
	熟識餐牌上的菜式，配料及煮食方法	1	2	3	4	5	6	7	
	有能力去提供快捷的服務	1	2	3	4	5	6	7	
	有能力去全面解答顧客的問題	1	2	3	4	5	6	7	
	穿著整齊的制服	1	2	3	4	5	6	7	
	穿著的制服美觀吸引	1	2	3	4	5	6	7	

