

MONASH UNIVERSITY
THESIS ACCEPTED IN SATISFACTION OF THE
REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

ON..... 4 May 2004.....

Sec. Research Graduate School Committee

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**DELIVERING SERVICE QUALITY IN CALL CENTRES:
CUSTOMERS' RESPONSES AND FRONTLINE EMPLOYEES' VIEWS**

A thesis submitted in fulfilment
of the requirements for the degree of
Doctor of Philosophy

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January 2004

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ABSTRACT

This project investigated the delivery of service quality from call centres by considering customers' responses and frontline employees' views. In doing so, the project addressed three key research questions. First, it sought customers' expectations of service quality from call centres and tested whether customers' perceptions of customer orientation were related to those expectations. Second, the project aimed to establish whether the perceived service quality of call centres was related to customers' commitment and service loyalty to the providing organisations. Having considered customers' views, the project then adopted an organisational perspective. The third major research question was to explore frontline employees' views on the organisational factors that affect their ability to deliver service quality to customers.

Data were collected from three call centres. Cross-sectional studies were conducted with customers of the first two call centres. In particular, end consumers of insurance services ($n=289$) and business customers of online banking ($n=325$) were surveyed by mail. Measures were refined using exploratory and confirmatory factor analyses, and their reliability established. Hypotheses were tested using hierarchical regression analyses and structural equation modelling. Data collection in the third call centre, which forms part of a telecommunications company, involved ten focus groups with frontline employees ($n=58$). Employees were encouraged to discuss the factors that help and hinder them to deliver service quality to customers. Data were interpreted by using a qualitative method involving content analysis and frequency counts.

Two types of customers' service quality expectations were measured, their predictions about the service quality of the call centre, and their views on the minimum level of service they consider adequate. Both types of expectations were found to be consistently high but the interrelationship expected between them, based on zone of tolerance theory, was not confirmed. In contrast to past studies of customer orientation, most of which have used employees' views, the study measured customers' perceptions of the customer orientation of the call centres. Customer-perceived customer orientation demonstrated links with customers' predictions of service quality for both samples, but was found not to be associated with customers' expectations about adequate levels of service. Consequently, it appears that managing customers' expectations of service quality may be different in call centres, when compared to other contexts.

A key finding from the project is that customers' perceptions of the service quality of call centres is related to their service loyalty to the providing organisations. This finding is important in demonstrating that non-core and after-sales service from call centres contributes to customers' intended behaviours about the service organisation, and their likely retention. In establishing the link, the project discriminated between service loyalty (intended behaviours) and customer commitment (feelings) and used them in tests of alternative structural models. Direct links were found between each of the three variables, perceived service quality, customer commitment and service loyalty. The models also included two dimensions of customer-perceived customer orientation, customer focus and customer feedback. In the best fitting model for each customer sample, customer focus was found to be related to both perceived service quality and service loyalty, but customer feedback was related only to customer commitment. These findings provide one explanation of how customer-perceived customer orientation might produce results for organisations, presently an under-researched area.

The third major aim of the project was concerned with identifying the factors that affect the ability of frontline employees to deliver service quality to customers. Nine major themes were identified from focus group discussions. Factors found to essentially hinder the delivery of service quality included management's emphasis on sales as customer service, the efficiency demands of call centre work, and stress arising from managing customer encounters over the telephone, including restrictions and tensions caused by quality assurance regimes. Employee-job fit was considered fundamental to the delivery of service quality because of its influence on employees' customer service orientation, and their ability to manage stress. Factors found to facilitate work and foster positive employee attitudes, such as teams and human resource management practices, have been evident in service climate and service profit chain studies. However, the present findings suggest that, to understand the delivery of service quality in call centres, such factors need to be integrated with service delivery factors, such as role stress, and factors describing the work demands specific to the unique environment of call centres.

STATEMENT OF AUTHORSHIP

This thesis contains no material that has been accepted for the award of any other degree or diploma in any university or other institution. To the best of my knowledge, the thesis contains no material previously published or written by another person, except where due reference is made in the text of this thesis. Selected findings from the thesis have been presented at conferences and published in refereed proceedings and journals.¹

Signed: _____

23/1/04

¹The following articles and presentations have been based on the research reported in the thesis.

Refereed journal articles

Dean, A. (forthcoming 2004). Rethinking customer expectations of service quality: Are call centres different? *Journal of Services Marketing*, accepted February, 2003

Dean, A. (2002). Service quality in call centres: Implications for customer loyalty. *Managing Service Quality*, 12(6), pp. 414-423.

Refereed conference papers

Dean, A. (2002). Interrelationships between organisational and customer variables in service delivery: A review of evidence. In J. McColl-Kennedy & S. Rundle-Thiele (Eds.) *Proceedings of the International Services Marketing Conference*. The University of Queensland, Brisbane, 3-5 July, pp15-28.

Dean, A. (2002). Service quality in call centres: Implications for customer loyalty. In A. Sohal & R. Cooney (Eds.) *Proceedings of the Sixth International Research Conference on Quality, Innovation and Knowledge Management*, Monash University, Kuala Lumpur, 17-20 February 2002 (CD-ROM, ISBN 0-732602198-4).

Dean, A. (2002). Service quality in call centres: An exploration of customer expectations and their implications. In G. Elliott & J. Barnes (Eds.) *2001 SERVSIG Services Research Conference: New Horizons in Services Marketing*. American Marketing Association, Macquarie University Graduate School, Sydney, 26-28 May 2001, pp.6-7.

ACKNOWLEDGEMENTS

I am indebted to my supervisor, Professor Phyllis Tharenou, for her guidance in the research process and her attention to my needs. At all stages during the conception, analysis and reporting of this project, Professor Tharenou has been assiduous. In sharing her exceptional knowledge and skills in research, her generosity with her time and expertise is without comparison. It has been a privilege for me to learn from her.

I wish to acknowledge the invaluable assistance on statistical analysis provided by Mr Brian Cooper, Research Fellow in the Department of Management, Monash University. I am very grateful to him.

My thanks are extended to my colleagues at the Gippsland Campus from whom I have received much encouragement. Also, I would like to thank the members of my family for their interest and practical support, most particularly my daughter, Vivienne Gibson.

This research project was funded by the Department of Management, Monash University. Without financial assistance, it would not have been possible.

Finally, I would like to express my appreciation to the managers of the call centres who facilitated the project, their frontline employees, and their customers.

CHAPTER 1

INTRODUCTION

This research program investigates customer and employee perspectives on the quality of service delivered by frontline employees in call centres during their voice-to-voice encounters with customers. Chapter 1 outlines why the research area has been chosen and why it is important for both theory and practice. The discussion first places the project in the context of call centres. It then considers the role and importance of customers' perceptions of service quality, followed by organisational theories that have been used to explain the delivery of service quality by frontline employees. Throughout the discussion, major concepts are defined, the relationships between them considered, and questions that have not been answered in previous studies are identified. Chapter 1 concludes with a model that shows how the research questions will be addressed in the three studies that constitute the thesis.

Call centres as a means of customer service

There has been consistent recent growth in call centre services worldwide. The call centre of the present is predicted to evolve into the customer access centre of the future, providing a new competitive basis for many organisations (Anton, 2000; Feinberg, Hokama, Kadam & Kim, 2000). The Australian Council of Trade Unions (2002) stated that the call centre industry is one of the fastest growing in the world, increasing globally every year by 40 percent. In Australia, call centres are the fastest growing industry, with growth occurring at a rate of 25 percent each year (Barrett, 2001). Scholars have suggested that the rapid growth in frontline work has resulted from service based competition, and the opportunity for high volume, low cost service delivery via telephone-related technology (Callaghan & Thompson, 2001; Frenkel, Korczynski, Shire & Tam, 1999).

In many organisations, call centres provide the major customer interface, especially for after-sales service, supplementary services, information and complaint resolution. During such encounters between frontline employees and customers, the quality of service is evaluated (Gummesson, 1998). In contexts other than call centres, customers' evaluations of service quality have been shown to lead to customer satisfaction and loyalty (Cronin, Brady & Hult, 2000; Zeithaml et al., 1996) and a link demonstrated between loyalty and organisational profits (Hallowell, 1996; Reichheld & Sasser, 1990). Hence, managing customers' experiences of call centre encounters is likely to have important implications for company strategy and success. Despite the growth of call centres as a means of providing customer

service, call centre research, from a customer perspective, is very limited (Armistead, Kiely, Hole & Prescott, 2000; Burgers, de Ruyter, Keen & Streukens, 2000). Consequently, the project commences by taking a customer perspective on call centre services.

Most of the research on call centres has focused on the nature of call centre work (e.g., Houlihan, 2002; Taylor & Bain, 1999), issues of control and surveillance (e.g., Fernie & Metcalf, 1999; Frenkel, Tam, Korczynski & Shire, 1998) and employee responses (e.g., Deery, Iverson & Walsh, 2002; Knights & McCabe, 1998). In general, the research has found that managers emphasise efficiency goals and productivity targets, and that they subject employees to high levels of monitoring and stressful working environments (Knights & McCabe, 1998; Taylor & Bain, 1999). The reputed focus on efficiency, at the expense of employee well-being, suggests that employees may have difficulty delivering high levels of service quality to customers. However, as for customer research, there are few studies that have investigated employees' perceptions about customer service (Armistead et al., 2002; Gilmore 2001; Wallace, Eagleson & Waldersee, 2000). Therefore, the current project also seeks employees' views about their ability to deliver high quality service.

Definition of a call centre

The definition of call centres provided by Taylor and Bain (1999) has been adopted for the project. The definition has three essential elements. First, a call centre is a dedicated operation with employees focused entirely on the customer service function. Second, those employees are using telephones and computers simultaneously, and third, the calls are processed and controlled by an automatic distribution system.

The definition above can be applied widely to frontline or 'boundary spanning' employees who use integrated telephone and computer technology to provide customer service. However, Taylor, Mulvey, Hyman and Bain (2002) have noted that frontline employees in call centres do not represent a homogeneous group. Employee roles can be interpreted in relation to different levels of standardisation, flexibility and autonomy, call volumes; and the levels of knowledge, and analytical and social skills that are required. For example, a call centre can have relatively unskilled and poorly paid service workers responding to customer requests within a tightly controlled, heavily monitored and time restricted system. In contrast, the definition can also apply where highly skilled, well paid knowledge workers respond to a lower volume of calls and have different priorities in terms of time and quality measures. Taylor et al. (2002) proposed a continuum of call centres with extremes essentially marked by whether the emphasis is 'quantity' or 'quality'. Within the

current project data are collected from three call centres, two of which represent the opposite ends of the quantity/quality classification suggested by Taylor et al. (2002).

The third call centre in the project meets the definition of Taylor and Bain (1999) but differs from the other call centres in that employees are expected to make sales when they provide customer service by taking inbound calls. On Taylor et al.'s (2002) continuum, the third call centre lies towards the 'quantity' end of the continuum. It is more clearly distinguished from the other two call centres in the classification provided by Wallace et al. (2000). Wallace et al. suggested that call centres can be represented by three groups, based on the managerial emphasis on customer service when compared to efficiency. The classification groups are based on 'transactions' (e.g., routine enquiries), 'sales' (e.g., selling phone contracts) or 'solutions' (e.g., professional services online). In the project, two call centres are investigated from the customer perspective (meeting the classifications of transactions and solutions) and one from the employee perspective (meeting the intermediate classification of sales).

Call centre work and customer service

Frenkel et al. (1998) noted that, in providing call centre services, organisations are concerned with both customisation of their products and standardisation of their processes.

Customisation is necessary to meet the ever increasing expectations of consumers (Hamer, Shaw-Ching Liu & Sudharsan, 1999) and standardisation enables employee training, consistent responses to customer enquiries, and the ability to cater to a mass market (Frenkel et al., 1998). Organisations are therefore attempting to meet both budgetary and service priorities, and descriptions of the call centre environment provide cause for considerable concern. Studies have found that an emphasis on control and efficiency has been at the expense of employee stress and turnover, and customer service priorities (Knights and McCabe, 1998; Taylor and Bain, 1999; Wallace et al., 2000). Taylor and Bain (1999) referred to the 'sweatshop' approach and suggested that call centres are little more than a return to Taylorism and 'an assembly line in the head'. Authors have investigated control and employee empowerment, with studies suggesting that production-line approaches dominate call centre management (Gilmore, 2001; Houlihan, 2002; Kinnie, Hutchinson & Purcell, 1999).

Other studies report inadequate or problematic attention to HRM policies and practices (Richardson & Marshall, 1999; Wallace et al., 2000). Wallace et al. (2000) reported four Australian cases in which they concluded that a 'sacrificial HR strategy' was evident because

high turnover and employee burnout were tolerated, in order to maintain efficiency. In general, call centre studies have found that efficiency and productivity targets frequently conflict with customer service objectives, and that efficiency takes precedence over customer service (Batt, 1999; Knights & McCabe, 1998; Singh, 2000). Such findings lead to questions about the importance of customer priorities and the extent to which employees are able to provide high levels of service quality.

In summary, call centre services have grown rapidly and have the potential to impact on organisational success, through customer responses to service delivery and their subsequent loyalty to providing organisations. However, despite their apparent strategic importance, call centres have attracted very little research which focuses on service quality, from either the customer or the employee perspective. Further, call centre managers appear to emphasise the quantity of work performed by employees, rather than the quality of service delivered to customers. Unanswered questions about customer expectations and experiences of service quality from call centres are therefore central to the initial research questions in the project.

Customer-perceived service quality and its implications

The delivery of service is the integrating factor between an organisation and its customers (Johnston, 1994; Moorman & Rust, 1999). Service quality, as assessed by customers, is defined as the measure of excellence or superiority of that service delivery (Parasuraman, Zeithaml & Berry, 1988). It is important for managers to understand and monitor customer-perceived service quality so that they can make investments in quality that bring apposite returns to the organisation (Zahorik, Rust & Keiningham, 2000). The measurement of customer-perceived service quality has been the subject of much debate and controversy in the literature for the past decade (e.g., Brown, Churchill & Peter, 1993; Dabholkar, Shepherd & Thorpe, 2000; Parasuraman, Zeithaml & Berry, 1994a; Teas, 1994). Researchers agree that customer-perceived service quality is a judgment that involves customers assessing service excellence against various forms of expectations (Robledo, 2001; Zeithaml, Berry & Parasuraman, 1993). However, customers are believed to have different types and levels of expectations (Zeithaml et al., 1993) and perceptions of service quality may lead to changed expectations for the next service encounter (Pitt & Jeantrout, 1994). Hence, both service quality expectations and perceptions are of research interest. The next two sections consider the role and importance of these two areas.

The role of service quality expectations

The different types of expectations proposed in service quality theory include an adequate (minimum) level of expectations, a desired level, and a predicted (forecast) level (Oliver, 1993; Zeithaml et al., 1993). Adequate (minimum) expectations are assumed to be the base of a zone of tolerance with respect to service quality delivery. Zeithaml et al. (1993) defined the zone of tolerance as the region in which customers are prepared to accept variations in the quality of service delivery. Customers' desired level of service forms the upper boundary of the zone of tolerance and studies have demonstrated that it is stable and subject to few fluctuations. In contrast, the adequate (minimum) level that customers are willing to accept as satisfactory moves in response to different circumstances (Dion, Javalgi & Diloranzo-Aiss, 1998; Walker & Baker, 2000). Understanding the movement of the adequate level is important because, when the zone of tolerance gets narrower, the range in which service quality is acceptable gets narrower. Thus, customers will be harder to please and managers will have less flexibility in service delivery (de Carvalho & Leite, 1999; Zeithaml et al., 1993).

Researchers have suggested that the third type of service delivery expectations, predicted (forecast) service quality, is related to adequate (minimum) expectations (Oliver, 1993; Zeithaml et al., 1993). That is, if customers predict high levels of service, then the adequate (minimum) level that they will accept also becomes higher. However, very few studies have tested this proposition (e.g., Boulding, Kalra, Staelin & Zeithaml, 1993; Kalamas, Laroche & Cezard, 2002) and no studies appear to have investigated different types of service quality expectations in call centres. To do so would contribute to apparently untested theory about the zone of tolerance, and provide useful information for call centre managers. In particular, knowing whether customers' predictions about service levels affect their adequate (minimum) expectations would assist managers to determine various means of influencing customers' minimum expectations. Also, understanding expectations should assist managers to influence customers' subsequent perceptions about the quality of service. Perceived service quality is considered next.

Perceived service quality

As already noted, empirical studies, which have been conducted in a variety of industries, demonstrate that customer perceptions of service quality lead to other customer attitudes (e.g., loyalty), and ultimately to organisational profits (Bloemer, de Ruyter & Wetzels, 1999; Hallowell, 1996; Zeithaml, Berry & Parasuraman, 1996). However, the studies have focused

on the 'core' services of organisations. Grönroos (2000) defined a core service as the reason for a company being on the market. Call centres are usually not core services, rather they fill the role of facilitating or supporting services, and many provide after-sales service. Grönroos (2000) emphasised that facilitating and supporting services can be a source of competitive advantage. Thus, call centres are of particular interest. However, de Ruyter and Wetzels (2000) noted that empirical work that involves customers' assessments of service from call centres has been very limited. Their study appears to be the only investigation that has tested the links between customer-perceived service quality of a call centre and measures of customer commitment or service loyalty to the providing organisation. Consequently, further research in this area is necessary.

In the current project, customer commitment and service loyalty are defined and operationalised separately. Customer commitment is defined as the strength of a customer's identification with, and involvement in, a particular organisation (developed from Porter et al.'s [1974] definition of organisational commitment). That is, customer commitment reflects customers' feelings about the organisation. In contrast, service loyalty reflects customers' behavioural intentions. Service loyalty is defined as the customers' overall evaluation of their position in response to the service, which involves decisions about future patronage and the likelihood of engaging in positive and active communication about the organisation (Caruana, 2002). The distinction resembles employee studies in which organisational commitment, and intentions to leave, are defined and measured as separate constructs. For example, the study by Allen and Meyer (1990) in which they demonstrated that affective and continuance components of employee organisational commitment are empirically different constructs.

Customer commitment and service loyalty are believed to have different effects because customers can appear to be loyal to an organisation but they may not feel committed. Such customers would be recognised as spuriously loyal in the loyalty classification scheme proposed by Dick and Basu (1994). Customers demonstrating spurious loyalty have a low relative attitude (level of attachment) but a high repeat patronage level. Bendapudi and Berry (1997) explained that customers may be constrained by an existing relationship with a service provider, for example, customers who have purchased insurance or made telecommunications contracts. In these cases, the customer's intended loyalty may be for reasons other than feelings of affective commitment. Hence, customer commitment (feelings) and service loyalty (behavioural intentions) may have different consequences for organisations, and managers would benefit by knowing the factors that are separately related to them.

The relationships between perceived service quality, customer commitment and service loyalty are important for two main reasons. First, as noted previously, call centres provide the major customer interface in many service organisations. Managing call centres is an opportunity for organisations to develop positive customer relationships, demonstrated by customers' feelings of commitment and intentions to remain loyal to the company (Ojasolo, 2001; Zabava Ford, 2001). However, only a few studies report customers' experiences of call centres (e.g., Armistead et al., 2002; Burgers et al., 2000) or integrate customer commitment and service loyalty into models with other variables such as service quality (e.g., Zins, 2001). Second, scholars have suggested that managing service loyalty should be a key organisational concern because of the contribution of loyalty to profitability and competitive advantage in contexts other than services (Gremler & Brown, 1996; Zins, 2001). That is, the relationship between perceived service quality and customer responses, such as commitment and loyalty, remains under-researched in services and untested for after-sales and supplementary services, such as call centres.

Customer orientation and service quality

Customer orientation is defined as the degree to which an organisation emphasises meeting customer needs and expectations for service quality (Schneider, White & Paul, 1998). Customer orientation is important to market success both directly by its contribution to profitability (Narver & Slater, 1990) and indirectly through its role in customer service climate and consequent delivery of service quality (Schneider et al., 1998). However, scholars note that customers' opinions on customer orientation are scarce (Brady & Cronin, 2001). Customer orientation studies have traditionally adopted an employee view, rather than customer perceptions. Further, to this author's knowledge, customer orientation, as perceived by customers, has not been specifically linked with service quality expectations, nor with service quality perceptions.

Investigating the links between a company's customer orientation, as perceived by customers, to both service quality expectations and perceptions contributes to the literature in two major ways. First, a high level of customer orientation is said to arise from meeting customers' needs and expectations of service quality, and has been developed from service climate theory. In prior studies, Schneider et al. (1998) have linked service climate, as assessed by employees, with the service quality provided to customers. However, a specific relationship between customer orientation and perceived service quality does not appear to have been tested. Second, nor do the relationships between customer orientation, as perceived

by customers, and service quality expectations appear to have been tested. Understanding whether elements of customer orientation are related to customers' service quality expectations and perceptions would extend service climate theory and provide managers with information that enables them to set service priorities.

Integrating perceived customer orientation and service quality of call centres into a model with customer commitment and service loyalty to the providing organisation provides new insights into the potentially strategic role that can be played by after-sales and supplementary services. Past commitment studies have focused on employee commitment. However, customer commitment is of increasing importance to research in services, because of its potential role in service relationships (Fullerton, 2003; Wetzels et al., 2000). In relation to service loyalty, scholars have called for more research that tests its relationships with other variables like service quality (Caruana, 2002).

In summary, there is a great deal of literature on the conceptualisation and measurement of service quality (e.g., Cronin & Taylor, 1994; Grönroos, 1994; Gummesson, 1998; Parasuraman, Zeithaml & Berry, 1985; 1988, 1994a; 1994b; Roest & Pieters, 1997; Rust & Oliver, 1994; Zeithaml et al., 1996; Zeithaml, 2000). Further, managing service quality expectations has been acknowledged as a major opportunity for organisations to develop positive long-term relationships with their customers, but authors note that expectations management has attracted little research attention (Ojasolo, 2001; Zabava Ford, 2001). In developing zone of tolerance theory, Zeithaml et al. (1993) proposed a relationship between adequate (minimum) and predicted (forecast) expectations. Since then, investigations of the zone of tolerance have been scarce. Exceptions include the studies by Dion et al. (1998), de Carvalho and Leite (1999) and Walker and Baker (2000). Testing the proposed relationship is important because the width of the zone of tolerance is likely to reflect the variation in services that customers are willing to accept, while remaining satisfied with the service (Johnston, 1995; Parasuraman, Berry & Zeithaml, 1991). Study 1 tests the link in call centres.

Studies have demonstrated that perceived service quality is an antecedent of customer loyalty and consequently important to organisational success (Heskett, Sasser & Schlesinger, 1997; Zeithaml, 2000) but the effects in the services area are under-researched (Gremler & Brown, 1996; Zins, 2001). Additionally, customer commitment has rarely been tested separately from service loyalty (Pritchard et al., 1999), and few studies have simultaneously investigated the variables with service quality (Harrison-Walker, 2001). Scholars also note that the relationships and implications of service quality in after-sales environments, such as

call centres, appear almost untested (de Ruyter & Wetzels, 2000). In particular, to the author's knowledge, no studies report testing whether the perceived service quality of call centres is a strategic concern for providing organisations; that is, whether it is related to customers' commitment and loyalty to the service provider. Study 2 pursues this question.

Organisations and the delivery of service quality

Whereas Studies 1 and 2 take a customer perspective on service quality, the third study considers organisational factors that affect the ability of employees to deliver service quality. A variety of previous work has contributed to the relevant literature. The work includes service quality gaps theory (Parasuraman et al., 1985; Zeithaml, Berry & Parasuraman, 1988), customer service climate (Borucki & Burke, 1999; Schneider et al., 1998), the service profit chain (Heskett, Jones, Loveman, Sasser & Schlesinger, 1994; Schlesinger & Heskett, 1991) and internal service quality studies (Gilbert & Parhizgari, 2000; Lewis & Gabrielson, 1998). Overall, researchers agree that the role of frontline staff is critical and the focus of the studies has been to establish the factors that lead to high levels of service orientation and performance. The studies have generated a wide variety of organisational factors, briefly considered below, which reflect different emphases, but none of the studies were conducted, and nor do they appear to have been tested, in call centres or similar supplementary service environments.

Service quality gaps theory generated seven organisational factors that were assumed to contribute to the service delivery gap, that is, the difference between service quality specifications and the service actually delivered (Zeithaml et al., 1988). The factors included teamwork, role conflict, role ambiguity, employee-job fit, technology-job fit, perceived control and supervisory control. The service climate studies of Schneider, Wheeler and Cox (1992) and Schneider et al. (1998) partially covered these factors under their "general facilitative conditions" but placed much more emphasis on explicit human resource management issues, as did Borucki and Burke's (1999) "concern for employees". Similarly, service climate studies have not specifically identified the employee-job fit of gaps theory, a factor which appears to be critical in call centres (Callaghan & Thompson, 2002; Wallace et al., 2000).

A different and more holistic approach to service quality delivery is provided by service profit chain studies. These studies link internal service quality to external customer value (a function of quality and costs), and financial returns for the organisation (Heskett et al., 1997; Hallowell & Schlesinger, 2000). Factors contributing to internal service quality

have varied in different studies (Caruana & Pitt, 1997; Gilbert & Parhizgari, 2000; Lewis & Gabrielson, 1998; Reynoso & Moores, 1997) and have not been integrated with gaps theory or service climate theory. However, some internal service quality studies have highlighted factors that seem as though they would be important in call centres. For example, Edvardsson et al. (1997) demonstrated a relationship between internal service quality and employee stress, and call centre studies have reinforced the likely importance of employee role stress to service delivery (Brown & Maxwell, 2002; de Ruyter, Wetzels & Feinberg, 2001).

The findings from various call centre studies suggest organisational factors that might be relevant to explaining employees' delivery of service quality to customers in the current project. In particular, teams and team leaders appear to assume important roles. Batt (1999) found that self-managed teams in call centres increased both employees' self-reported service quality and their sales figures. Batt suggested that the effect of teams on improved service quality arose predominantly from group problem-solving, learning and social interaction. Armistead et al. (2002) also found that teams contributed to problem-solving skills and that team leaders in call centres have non-traditional supervisory roles in that they have responsibility for the morale, motivation and performance of team members. Other factors shown to affect service quality have included management support (Singh, 2000), autonomy (de Ruyter et al., 2001) and job insecurity (Batt, 1999).

Many call centre studies have identified effects of the work environment on employees, which would be expected to subsequently affect service quality. The two most commonly noted effects are employee burnout caused by workload pressures and managing customers (Deery et al., 2002; Singh, 2000). Workload pressures arise not only from the high levels of monitoring and surveillance (Brown & Maxwell, 2002), but also from role conflict, that is, the conflict between productivity demands and employees' desires to deliver service quality to customers (de Ruyter et al., 2001; Knights & McCabe, 1998; Singh, 2000). Finally, studies have shown that employees in call centres specifically seek socio-emotional support (Gilmore & Moreland, 2000; Wallace et al., 2000).

In summary, a wide variety of organisational factors emerge from past service quality and service climate studies, some of which appear as though they may be important in call centres, for example, employee-job fit, teamwork, and role stressors, such as role conflict and role ambiguity (Batt, 1999; de Ruyter et al., 2001; Singh, 2000). However, it is not clear which of the many factors from previous studies should be included in call centre studies. Further, it is possible that there are other factors, specific to the call centre environment, which might affect the ability of employees to deliver service quality to customers. Hence, it

appeared necessary to directly seek the views of frontline employees in order to identify the factors in that context. Study 3 pursues this goal.

Questions guiding the research project

Call centres are of particular contemporary interest because of their recent rapid growth worldwide, their competitive importance as a means of service delivery, and the special circumstances they present to customers, frontline employees and managers. The previous sections in this chapter have identified three major areas for investigation in the current research project. The first area concerns customers' expectations. Past call centre studies have emphasised working environments that are likely, perhaps, to result in customers expecting, and experiencing, low levels of service quality and customer orientation from call centres. However, these propositions, and theory concerned with different types of service quality expectations, have not been tested in call centres. The first major question guiding the project is therefore:

What are customers' expectations of service quality from call centres, and are those expectations related to their perceptions of customer orientation?

The second major area of interest arises from the potential contribution of call centres to positive customer attitudes and the likely retention of those customers. Call centres are not a core service of most organisations and are characterised by their role in after-sales or supplementary service provision. For core services, perceived service quality has been shown to result in positive customer attitudes and subsequent organisational profits (Cronin et al., 2000; Heskett et al., 1997). However, the same sequence does not appear to have been confirmed in relation to the quality of service delivery from call centres. Further, to the author's knowledge, service quality has not been specifically linked to service loyalty, or other variables that may be of strategic importance, such as customer-perceived customer orientation or customer commitment. That is, it is unclear whether the service quality of a call centre contributes to customers' overall responses to organisations and their likely retention as customers. The second overall question therefore emerges as:

What are the relationships between the perceived service quality of call centres and customers' commitment and service loyalty to the providing organisations?

The third major area of interest concerns the organisational perspective on the delivery of service quality. As well as managing customer encounters, frontline employees in call centres

are confronted with organisational expectations in relation to service delivery and productivity, and subjected to extensive monitoring and surveillance (Brown & Maxwell, 2002; Taylor & Bain, 1999). However, very little research attention has been directed to investigating whether organisational factors, such as those in the service quality gaps theory of Zeithaml et al. (1988) and the service climate studies of Schneider et al. (1998) and Borucki and Burke (1999) apply in call centres. Further, researchers in call centres have called for more investigation into the factors that assist frontline employees to manage the call centre environment and simultaneously deliver high levels of service quality (de Ruyter et al., 2001; Singh, 2000). Consequently, the third overall question guiding the project is:

What organisational factors, as perceived by frontline employees, affect the delivery of service quality in call centres?

Investigation of the research questions

The project adopts a broad view. Its overall aim is to investigate customer and employee perspectives on the delivery of service quality from call centres. Three studies are used, with each study investigating one of the research questions outlined above. Figure 1.1 provides an overview of the three studies.

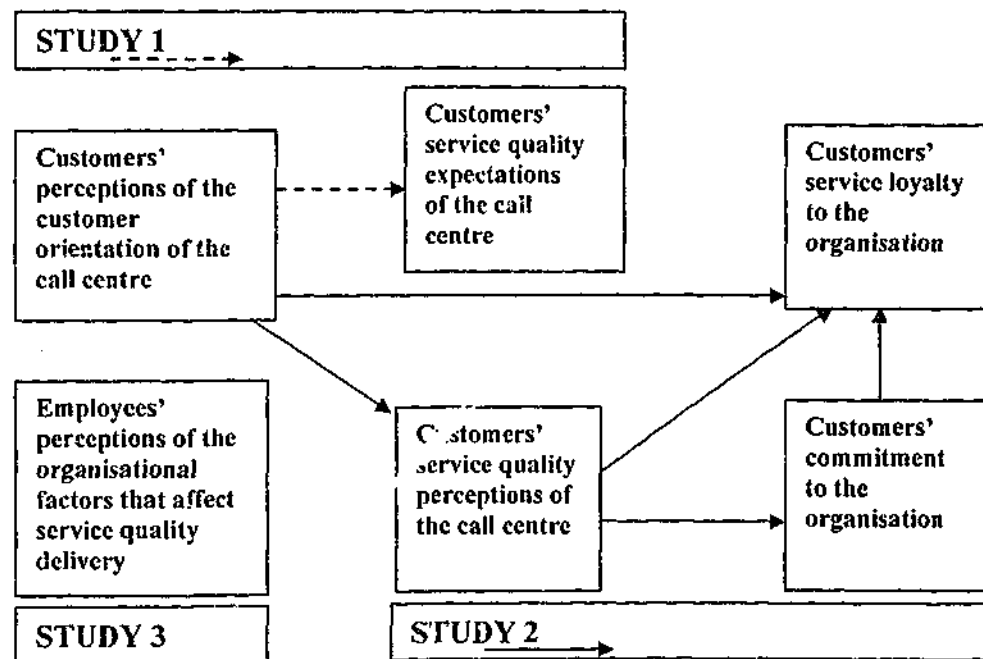


Figure 1.1 Overview of the research project

Incorporating the perspectives of both customers and frontline employees in the project was necessary to address the research questions. Also, it was considered important because the dual viewpoint reflects the nature of service quality delivery, which occurs at the interface of an organisation with its customers. Scholars have suggested that the delivery of high quality in services is interdisciplinary and includes the domain of marketing (customer needs), operations (delivery systems) and human resource management (managing contact employees) (Grönroos, 2000; Heskett, 1995; Moorman & Rust, 1999).

The project uses a combination of quantitative and qualitative methodologies. Studies 1 and 2 use a quantitative, positivist approach. The overall research questions guiding the studies evolved from a substantial body of literature and the key variables (e.g., perceived service quality) were known. The purpose of the studies was to verify and extend existing theory, based on customer attitudes, in the special environment of call centres. Consequently, a quantitative design was appropriate (Creswell, 1994). In contrast, Study 3 used a qualitative design. This design was necessary to identify which elements of the extensive theory related to the delivery of service by frontline employees was applicable in the particular context of call centres. To do this, the research question had to be explored with participants in their natural setting to build an overall picture, and a qualitative approach was therefore appropriate (Creswell, 1994). Focus groups were used because they can generate data related to themes imposed by a researcher and enrich the data by the group's interactive discussion (Lee, 1999).

The next section outlines the content of the chapters in the thesis and provides more details on each of the three studies.

Structure of the thesis

There are five chapters in the thesis. Chapter 1 has provided the background and overall rationale for the research project. The next three chapters will report the studies shown in Figure 1.1. That is:

- Chapter 2: Study 1 – Customers' perceptions of customer orientation and their expectations of service quality from call centres
- Chapter 3: Study 2 – Customers' service quality perceptions of call centres and their commitment and loyalty to service providers
- Chapter 4: Study 3 – Frontline employees' perceptions of organisational factors that affect the delivery of service quality

Chapter 5 integrates and concludes the project. Chapters 2 to 5 are now discussed in more detail.

Chapter 2 – Study 1

The overall aim of Study 1 was to investigate customers' expectations of service quality from call centres and to test proposed relationships between perceived customer orientation and those expectations (top left part of Figure 1.1).

Study 1 first sought to establish whether customers expected (predicted) low levels of service from call centres, and whether their predicted expectations were related to the minimum level of service they considered adequate. This objective arose from theory on services management that identifies different types of service expectations and proposes that they are related (Zeithaml et al., 1993). Understanding the relationship is important because movement of expectation levels is believed to affect the width of the customers' zone of tolerance and, consequently, their assessment of service quality and intended behaviors (Cronin et al., 2000).

The second aim of Study 1 was to test whether perceived customer orientation of the call centre was related to customers' service quality expectations. To the author's knowledge, previous theory has not empirically tested links between customer orientation and service quality expectations, even though Schneider et al. (1998) have linked them conceptually via employee-perceived service climate and customer-perceived service quality studies. To do so was important because testing whether the elements of customer orientation (for example, perceived customer commitment, interest in customer feedback) are related to customer expectations of service quality provides insights into the precise role of customer orientation, currently unexplored (Brady & Cronin, 2001). Thus, Study 1 draws on customer orientation from existing service climate theory, but uses a customer perspective, rather than the employee perspective of past studies.

Study 1 adopted a cross-sectional survey method. It tested and extended previous service quality theory in a new setting. Variables and propositions based on existing literature were used and therefore the quantitative approach was suitable for the study (Creswell, 1994). Call centre customers from two different types of call centres, in different industries, constituted the samples. Study 1A used end consumers of a call centre for insurance services. Study 1B used business customers of online banking. The two call centres were chosen because they represented different extremes of the quantity/quality call centre classification provided by Taylor et al. (2002). In addition, the customers of the respective call centres differed in accordance with the description of 'consumers' (Study 1A) and 'customers' (Study 1B) provided by Parasuraman and Grewal (2000a).

Data were collected by mail surveys, using mailing lists provided by the participating organisations. The survey measures included perceived customer orientation, customers' predictions (forecasts) about the service quality of the call centres (predicted expectations), and the minimum level of service that they considered adequate (adequate expectations). Exploratory factor analyses and reliability checks were used to refine scales. Hierarchical regression analyses were used to test hypotheses. Data on age, gender and the time elapsed since the customer's last encounter with the call centre were collected and used as controls in the regression analyses.

Chapter 3 – Study 2

Study 2 tested the second key research question. That is, whether customers' perceptions of the service quality of call centres (bottom middle box in Figure 1.1) is related to their commitment and service loyalty to the providing organisations. The question is important because call centres are not core services of the organisations. Study 2 also tested whether perceived service quality mediates proposed relationships between customer-perceived customer orientation with customer commitment and service loyalty.

Study 2 employed the same two customer samples (Studies 2A and 2B) and data collection method as Study 1. Measures for each of the main variables were developed from existing literature. The measures were refined by exploratory and confirmatory factor analyses, and reliability checks.

A quantitative method was used to explain relationships predicting customer commitment and service loyalty. The method was chosen because the main aim was to verify and integrate previous theories by testing their applicability to voice-to-voice service encounters in call centres. Structural equation modelling was appropriate for the analysis because it enables simultaneous testing of a number of relationships (Tabachnick & Fidell, 2001). Such testing is considered very useful when one dependent variable becomes an independent variable in subsequent dependence relationships (Hair et al., 1998). This was the case for perceived service quality in Study 2. Consequently, Study 2 developed and tested an integrated model involving customer-perceived customer orientation and perceived service quality of the call centre, and customers' commitment and service loyalty to the organisation. Theoretical reasoning was used to produce a series of nested models for investigation and goodness-of-fit statistics were employed to determine the best fitting model.

Chapter 4 – Study 3

Having considered customer views on service quality in Studies 1 and 2, Study 3 considered the views of frontline employees. In particular, Study 3 investigated the third research question. That is, it aimed to identify the organisational factors that influence service quality delivery in call centres, from the perspective of frontline staff. A qualitative approach was adopted because neither service quality nor customer orientation appears to have been explored on the basis of employee data from call centres. Hence, it was necessary to build a holistic picture of the factors influencing the service delivery process by reporting detailed views from the frontline staff with that responsibility.

In Study 3, frontline employees of a telecommunications call centre were interviewed in ten focus groups. Data were subjected to content analysis and frequency counting. The ‘what’ question of Study 3 was essentially exploratory and designed to establish which previous theories, or elements of them, or other factors, appeared to be most important in the specific context. It could then be followed up by ‘why’ questions during discussions. The analysis and interpretation of data from Study 3 facilitated the development of a specific model for service quality delivery in call centres, for future testing.

Chapter 5 – Conclusion

Chapter 5 concludes the project. It summarises and interprets the findings in an integrated manner, and outlines the major theoretical contributions of the project. The limitations of the studies are discussed and used to identify new research questions and highlight areas for future activity. Chapter 5 concludes by discussing the practical implications of the project for managers of organisations who use call centres, for operations and human resource managers within call centres, and finally for supervisors and team leaders.

Conclusion to Chapter 1

This chapter has introduced the current research project and the three studies that constitute it. The chapter commenced by outlining the reasons for the location of the studies within call centres. Service quality theory was then discussed, from both the customer and employee perspectives, and questions of interest in the contemporary environment of call centres were developed. The discussion highlighted three research problems that drive each of three studies. The first question is concerned with the relationships between customer-perceived customer orientation and service quality expectations (Study 1). The second question seeks to test the relationships between customer-perceived customer orientation and service quality of call centres with customer commitment and service loyalty to providing organisations (Study

2). To provide a balanced view, service quality theory was then considered from an organisational and employee perspective, and the third overall research question identified. That is, which organisational factors affect the ability of frontline employees to deliver service quality in call centres (Study 3). The chapter concluded by outlining how the three research problems are investigated in the studies. The next chapter commences this process of investigation.

CHAPTER 2

STUDY 1 – CUSTOMERS' PERCEPTIONS OF CUSTOMER ORIENTATION AND THEIR EXPECTATIONS OF SERVICE QUALITY FROM CALL CENTRES

INTRODUCTION

Study 1 investigates customers' expectations of service quality from call centres, and then tests whether they are related to customers' perceptions of customer orientation. The specific aims of the study are first, to establish whether customers expect (predict) low levels of service quality. Second, to test whether customers' predictions are related to the minimum level of service quality they consider adequate and third, to test proposed relationships between perceived customer orientation of the call centre and the two types of service quality expectations.

The discussion in Chapter 1 outlined various findings from previous call centre studies. The studies showed that managers emphasise efficiency (Armistead et al., 2002; Gilmore & Moreland, 2000), and frontline employees experience tensions between maintaining required levels of productivity and delivering service quality to customers (Batt, 1999; Knights & McCabe, 1998). Singh (2000) found that, when faced with conflicting goals, employees sacrificed service quality for productivity. Similarly, Brown and Maxwell (2002) found that managers neglected customer service in the pursuit of sales. Consequently, while espoused management objectives may be to the contrary, customer orientation and service quality do not appear to be priorities in the reality of service delivery in call centres. This suggests that employees may have difficulty delivering high levels of service quality, and customer experiences may lead them to expect low levels of service. Therefore, Study 1 commences by seeking customer expectations of service quality from call centres.

Discussion about the role and importance of service quality expectations has been evident in the literature for some years (Grönroos, 1984; Haywood-Farmer, 1988; Lewis & Booms, 1983; Parasuraman et al., 1985). Originally, the debate focused on using expectations for service quality measurement. In this project, perceived service quality is defined as:

“the consumer's judgment about an entity's excellence or superiority” (Parasuraman, Zeithaml & Berry, 1988, p. 14).

Discussing the definition, Parasuraman et al. noted that service quality is a form of attitude and results from a comparison of expectations with perceptions of performance. Much subsequent literature has tested the psychometric properties of different measurement models

involving service quality expectations and perceptions (e.g., Brown et al., 1993; Cronin & Taylor, 1992, 1994; Dion et al., 1998; Parasuraman et al., 1994a; Teas, 1994; Zeithaml et al., 1993). Recently, consensus appears to have been reached that the measurement of service quality should seek the consumer's direct judgment about an entity's excellence and should not include expectations (Cronin et al., 2000; Dabholkar et al., 2000).

While researchers appear to agree about not using expectations in service quality measurement, the significance of different expectations in managing service quality is still not well understood and is believed to be important (Clow, Kurtz, Ozment & Ong, 1997; Diaz-Martin, Iglesias, Vazquez & Ruiz, 2000; Johnson and Mathews, 1997; Robledo, 2001). In particular, scholars have emphasised the importance of expectations in diagnosing problems of service delivery, and in creating and sustaining long-term customer relationships which ultimately lead to profits (Ojasolo, 2001; Pitt & Jeantrout, 1994; Walker & Baker, 2000; Zabava Ford, 2001). Consequently, in seeking customer expectations of service quality from call centres, Study 1 investigates relationships between different types of customer expectations and their possible links to customer perceptions of the customer orientation of call centres, in order to provide new insights for managers. The next section defines and discusses the relevant variables and develops the hypotheses for testing.

Development of hypotheses

The relationship between predicted expectations and adequate expectations

In the service quality and customer satisfaction literatures, expectations are interpreted differently. In service quality, expectations have a normative role, that is, they are standards that arise from norms based on past experience, and they provide the consumer's view of what *should* happen. In comparison, in the customer satisfaction literature, expectations are usually linked to what consumers forecast, that is, they have a more predictive role and they relate to what *will* happen (Zeithaml et al., 1993). The role of expectations in service quality is made more complex by theory suggesting that different levels of normative (service quality) expectations exist and that the expectations associated with service quality and customer satisfaction are interdependent (Oliver, 1993; Zeithaml et al., 1993). However, few studies have tested this interdependence (e.g., Boulding et al., 1993) and, to this author's knowledge, there is only one study of service quality expectations in call centres (Burgers et al., 2000). Study 1 therefore investigates both areas, that is, different types of expectations, and their relationship. These are now discussed in turn.

The different levels of normative expectations used in service quality theory include adequate and desired expectations, and they identify the lower and upper boundaries of the customer's zone of tolerance (ZOT) for service delivery. The ZOT represents an area of variation in service quality, which ranges from what customers consider 'adequate' to what they 'desire' (Zeithaml et al., 1993). The ZOT is based on the assumption that customers recognise and are willing to accept a degree of heterogeneity in service quality (Johnston, 1995; Liljander & Strandvik, 1993). In Study 1, the adequate (minimum) expectations of service quality are defined as:

"the minimum level of service quality that customers consider adequate".

(Parasuraman et al., 1994b, p. 224).

The desired level of service expectations is defined as the level of service that the customer hopes to receive (Zeithaml et al., 1993, p. 6). Empirical evidence has shown that customers readily distinguish between desired and adequate expectation levels (Walker & Baker, 2000), and when either or both of the expectations standards change, the boundaries of the ZOT move. If the zone gets narrower, customer satisfaction is harder to achieve (Boulding et al., 1993; Zeithaml et al., 1993).

The authors of ZOT theory proposed, and subsequently confirmed, that desired expectations are relatively stable but that adequate expectations move up and down according to consumer circumstances and needs (Parasuraman et al., 1991; Zeithaml et al., 1993). Other studies have produced consistent findings, demonstrating that the desired service level tends to be highly positively skewed, and that the adequate level varies more (Danaher & Haddrell, 1996; Dean, 1999; Dion et al., 1998; Parasuraman et al., 1994b; Peterson & Wilson, 1992; Walker & Baker, 2000). Hence, interest in Study 1 focuses on the level and movement of adequate expectations, rather than desired expectations. Zeithaml et al. (1993) proposed that adequate expectations move in response to a third type of expectations, customers' predictions about service levels.

The definition of predicted expectations is drawn directly from the customer satisfaction literature where expectations are accepted as a consumer forecast of performance or service outcomes (Oliver, 1993; Parasuraman et al., 1988; Zeithaml et al., 1993). Thus, predicted (forecast) expectations are defined as:

"forecasts made by customers about the level of service that they are likely to experience during a service encounter" (developed from Zeithaml et al., 1993, p. 2).

Predicted expectations are believed to affect the adequate level of expectations. Based on their data from focus groups, Zeithaml et al. (1993) proposed that if customers predict good service, their levels of adequate service are likely to be higher than if they predict poor service. Applying this proposition to customers of call centers, it appears that if a customer rings a call centre at a time when service consultants are likely to be very busy, the customer may predict lower levels of service quality in terms of queuing. Thus the customer may be prepared to accept longer waiting times (a lower adequate level of service quality). Similarly, the customer might predict that the consultant will be in a hurry and so the customer lowers their expectations in terms of the adequate or minimum service level on the attribute relating to the consultant taking enough time to provide the required service.

Figure 2.1 shows the ZOT, the proposed relationship between adequate and predicted expectations. Figure 2.1 expands the top middle box (Customers' service quality expectations) of Figure 1.1 and illustrates why predicted expectations may be important to understanding service quality in call centres.

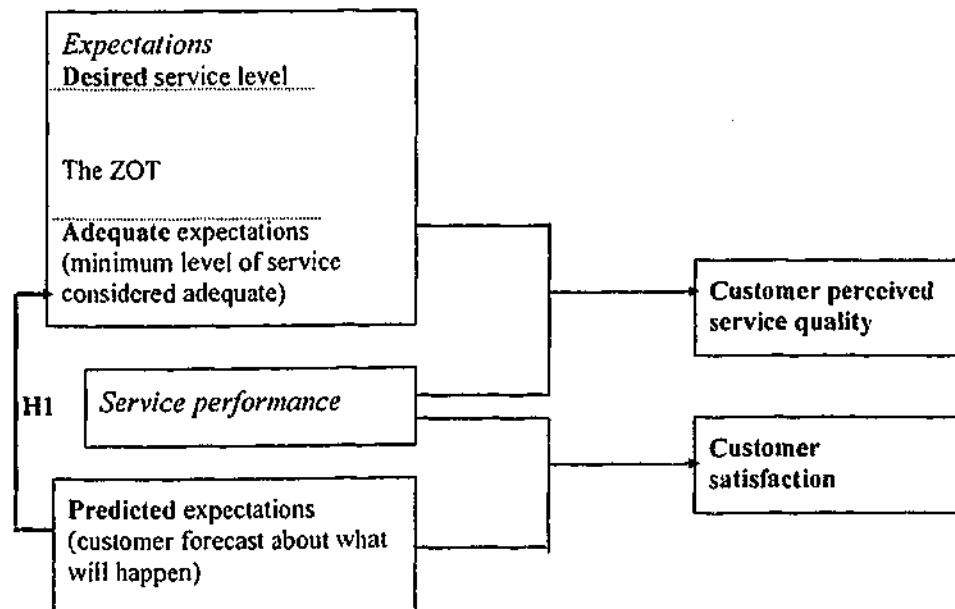


Figure 2.1 Service expectations and their links to quality and satisfaction
(Developed from Oliver, 1993; Zeithaml et al., 1993)

Few researchers appear to have tested the relationship between predicted and adequate expectations, even though they continue to recognise its potential importance to service quality perceptions (e.g., Kalamas et al., 2002). An exception is the study with auto repair service personnel by Dion et al. (1998). In a related study, Wirtz and Bateson (1999) demonstrated that customers' predictions about variation in performance influenced their

satisfaction. Hence, based on the conceptual development of the ZOT concept (Zeithaml et al., 1993), its further testing with respect to predicted expectations (Dion et al., 1998), and the service quality and customer satisfaction literatures on expectations, the first hypothesis emerges:

H1 Predicted (forecast) expectations will be positively related to adequate (minimum) expectations. That is, when customers predict low levels of service quality, their adequate level of expectations for service quality will also be low.

The next hypotheses in Study 1 consider whether customer perceptions of customer orientation are related to service quality expectations (predictions and adequate levels). The theoretical basis of these questions is now developed.

Hypotheses involving perceived customer orientation

Study 1 also measures customers' views of the customer orientation of the organisation. Customer orientation is referred to throughout as 'perceived customer orientation' in order to distinguish it from customer orientation, which has generally been evaluated by employees (e.g., Schneider et al., 1998; Yagil & Gal, 2000). Perceived customer orientation is defined as: "the customer's perception of the degree to which an organization emphasises meeting customer needs and expectations for service quality" (developed from Schneider et al., 1998).

Perceived customer orientation is a major component of service climate, as assessed by employees. In empirical studies in USA banks, Schneider and his colleagues have repeatedly linked an overall measure of employee-perceived service climate to customer-perceived service quality (Schneider et al., 1980; 1992; 1998; Schneider & Bowen, 1985; Schneider, 1990; 1994). Thus, customer-perceived customer orientation is likely to be important to customers' expectations and perceptions of service quality. However, few studies have considered the role of customer orientation in service encounters, despite its recognition as a factor critical to the success of a service organisation (Brady & Cronin, 2001).

Study 1 operationalises perceived customer orientation by drawing on two elements of Schneider et al.'s (1998) service climate construct. Those elements were 'customer orientation' and 'customer feedback'. Schneider et al. (1998, p. 153) stated that their customer orientation scale measured "the degree to which an organization emphasizes, in multiple ways, meeting customer needs and expectations for service quality". Additionally, they

measured customer feedback in terms of "the solicitation and use of feedback from customers regarding service quality" (Schneider et al., 1998, p. 153). Study 1 incorporated both elements into the customer perspective of customer orientation, defined above. Incorporating the two dimensions is likely to broaden the understanding of how, overall, perceived customer orientation is linked to service quality expectations (Study 1) and perceptions (Study 2). To this authors' knowledge, testing these links, using the customer's perspective, has not previously occurred. Schneider et al.'s third dimension of service climate, managerial practice, is not considered in Study 1 because customers cannot assess it. Rather, the actions that managers take to support their employees with respect to service quality are considered in Study 3.

The relationships between perceived customer orientation and service quality expectations

As stated above, Schneider et al. (1998) have linked service climate to service quality but the link was between an employee-perceived global measure of service climate and service quality perceptions. Study 1 is concerned with whether customer orientation, as perceived by customers, is related to their expectations of service quality. In Study 1, perceived customer orientation arises from service climate which, as Schneider et al. (1998) noted, maps well onto Narver and Slater's (1990) construct of market orientation, further reflecting its emphasis on customer orientation. Additionally, because perceived customer orientation is linked to perceived service quality, it is likely to be linked to the expectations on which service quality evaluation is based. That is, if the perceived customer orientation of call centres is high, then customers' service expectations will also be high. As adequate expectations are believed to be dynamic (Zeithaml et al., 1993), Hypothesis 2 proposes that perceived customer orientation will move in accordance with them:

H2 Perceived customer orientation of the call centre will be positively related to customers' adequate (minimum) expectations of service quality.

Similarly, if customer orientation of the call centre is perceived to be high, predicted (forecast) expectations are likely to be higher. The rationale for this relationship is based not only on service climate studies (Schneider et al., 1998; Yoon et al., 2001) but on the study by Boulding et al. (1993) in which high levels of perceived service quality subsequently resulted in higher predictions of service quality. Therefore Hypothesis 3 emerges:

H3 Perceived customer orientation of the call centre will be positively related to customers' predicted (forecast) expectations of service quality.

Figure 2.2 provides a summary of the hypotheses guiding Study 1. The perceived customer orientation variable incorporates both the customer orientation and customer feedback components of Schneider et al.'s (1998) service climate construct.

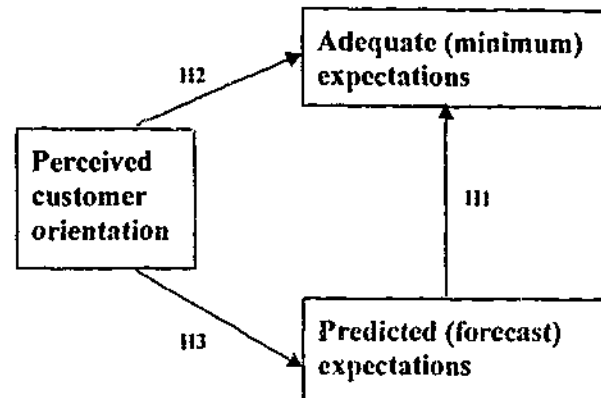


Figure 2.2 Model to guide Study 1

Testing the links between customer orientation and service quality expectations is important for two major reasons. First, because knowledge about whether the elements of perceived customer orientation (for example, perceived customer commitment, interest in customer feedback) are related to customer expectations of service quality will extend existing service climate theory. Second, the tests present a customer perspective, rather than the employee perspective of past studies (e.g., Borucki & Burke, 1999; Schneider et al., 1998).

Kandampully (1997; 1998) developed and advocated the concept of an organisation's 'service loyalty', which means demonstrating a commitment to customers by understanding and consistently meeting their expectations, before expecting loyalty in return. Perceived customer orientation in Study 1 closely parallels Kandampully's (1998) service loyalty and provides a focus for organisational activity that is likely to influence customers' attitudes and loyalty to the service provider.

The relationship between predicted and adequate expectations (H1 in Figure 2.2) is of particular interest because movement of the adequate level of expectations affects the width of the zone of tolerance (Zeithaml et al., 1993). A wider ZOT for an attribute means that it is less important or essential (de Carvalho & Leite, 1999; Walker & Baker, 2000) and customers are likely to be more tolerant of variations in service levels (Johnston, 1995; Parasuraman et al., 1991). The link between predicted and adequate expectations gives managers more flexibility because, as Boulding et al. (1993) noted, managers are more likely to be able to influence

predicted expectations and indirectly affect customers' adequate expectations, than to be able to directly influence their attitude about adequate service levels.

METHOD

This section outlines the overall research design, details of the sample for Study 1 and the nature of the call centres from which the sample is drawn. It then provides an overview of the measures and discusses the method of analysis.

Overall research design

Study 1 used a cross-sectional field study design. A survey was the preferred method of data collection because the purpose of the study was to test hypotheses and draw conclusions about the population (Creswell, 1994). The survey was conducted at one point in time and a mail-out procedure adopted. The mail-out design was chosen because it was felt that a telephone survey may lead to biased results as the survey content sought customers' views about a telephony environment. Data were collected from customers of two call centres.

Sample

Study 1 consists of two studies, Study 1A and Study 1B, which represent two different call centres, and different industries and service contexts. In both cases, respondents were already customers of the organisations and were seeking after-sales service. However, in line with the framework provided by Parasuraman & Grewal (2000a), the two samples are readily distinguishable in that one represents the more specific type of customer, the end 'consumer', while the other represents business 'customers'. Study 1A was drawn from the end consumers of an insurance company whereas Study 1B comprised small business customers of online banking. More details on the nature of the call centres are provided in the Data collection section.

In both studies, 2000 surveys were posted. For Study 1A, 312 surveys were returned, providing a response rate of 15.6%. Perusal of the surveys resulted in rejection of 23 surveys as unusable due to large amounts of missing data, or little or no variation in responses, reducing the sample size to 289 (14.5%). Similar to Study 1A, 2000 surveys were posted in Study 1B and 339 (17.0%) were returned, providing 325 (16.3%) usable sets of data. Issues arising from the response rates are discussed immediately after the Data collection section. Follow-up activities were not permitted by the participating organisations so the final sample for Study 1 is based on these two sets of respondents. Table 2.1 shows their characteristics.

Table 2.1 Characteristics of the samples (Studies 1A and 1B)

Variable	Study 1A		Study 1B	
	Number	Percent	Number	Percent
Gender				
Male	136	49	101	32
Female	143	51	215	68
Age				
18 to 24	0	0	13	4
25 to 34	38	13	73	23
35 to 44	69	24	104	33
45 to 54	85	30	90	28
55 to 64	53	19	36	11
65 and over	42	15	4	1
Mean age	49.7		42.6	
When last call made				
During last 3 days	11	4	23	7
During last week	26	9	34	11
Previous 2-4 weeks	123	43	107	33
More than 4 weeks ago	124	44	155	48
Reason for making call				
Seeking information	159	57	192	61
Complaint requiring explanation	4	1	21	7
Complaint requiring action	25	9	42	13
Make a payment	62	22	62	20
Other reason	30	11		
Number of years a customer of organisation				
Less than one year	1	0	7	2
1 to 2 years	1	0	31	10
3 to 5 years	4	1	61	19
More than 5 years	282	98	217	69
Preference for consultant				
Male	3	1	12	4
Female	12	4	5	2
No preference	274	95	302	95
Industry of employment ^{a, b}				
Property & business services			63	20
Construction & trade			45	15
Retail trade			42	14
Wholesale trade			29	9
Finance & insurance			16	5
Health & community services			16	5
Transport & storage services			16	5
Manufacturing			14	5
Cultural & recreational services			12	4
Education			11	4

^a Based on Australian & New Zealand Standard Industrial Classification (ANZSIC).

^b Not applicable for the consumer sample (Study 1A).

Table 2.1 shows that the respondents to Study 1A were 49% male, predominantly in the 35 to 54 years age group (average age 49.7 years), and were almost entirely made up of long standing customers of the organisation. The organisation from which the sample was drawn has 1.3 million insurance customers, of whom 54% are male and 46% female. The average age is 46.3 years and the average length of patronage is 14.3 years. Thus, the sample for Study

1A resembles the population quite closely but it is still possible that the views of the respondents (15%) do not represent the 85% who did not respond.

In contrast to Study 1A, two-thirds (68%) of the respondents in Study 1B were female and they were younger (average age 42.0 compared to 49.7 for Study 1A). Most respondents had called for information or assistance with the on-line banking facility (61%) or to make a complaint (20%). More than half of the respondents in this small business sample worked in property and business services (20%), construction and related trade services (15%), and either retail or wholesale trade (23%). Property and business services included, for example, technical, computer, marketing and business management services, recruitment and security services. The remainder of the respondents represented a wide variety of industry categories. It is not known if the 325 respondents in Study 1B were representative of the sample of 2000. The bank was unable to provide demographic details of their users in the small business category and so the representativeness of the sample could not be formally checked. However, the call centre manager believed the characteristics of the sample to be indicative of the call centre clientele. More discussion on response rates and the possibility of non-response bias is included within the next section.

Data collection

As previously stated, Studies 1A and 1B collected data from customers of two call centres. The organisations downloaded the names and addresses of random samples of customers who had recently used their call centre, and provided mailing labels for envelopes into which surveys could be placed. The studies were conducted in Melbourne, Australia. Covering letters from the organisation and the researcher were attached to the front of the surveys, and a reply paid envelope included. Appendix 1 (pp. 164-171) provides a copy of the covering letter from the researcher and the survey, which were modified to reflect the names of the two organisations. In Appendix 1, names of the variables have been added in brackets at the beginning of the corresponding measures and, for clarity, variables have been shown on separate pages.

Respondents in Study 1A were end consumers ($n=289$, 15%) of an insurance company. The company sells motor vehicle, home and property insurance and consumers use the call centre predominantly for claims, payments, information and complaints. The call centre employs 400 frontline staff who provide a 24-hour service and take about five million calls per year. Employees manage a large volume of calls and are expected to complete them,

including processing and any post-call work, within tight time schedules. Thompson, Warhurst and Callaghan (2001) would classify these frontline staff as typical service workers.

Respondents in Study 1B were drawn from the customers of a bank ($n=325$, 16%). They were all small businesses (annual turnover less than Au\$100 million) who pay a monthly fee (Au\$80) for call centre support and 500 transactions (for example, enquiries, payments, data exchanges, statements, payrolls). The call centre is essentially a help-desk for the bank's online service facility. All employees in the call centre have university-level qualifications in information technology and are expected to provide excellent service to business consumers who may not be technology literate, and so they do not have a time limit on their calls. They have to identify customer problems and their causes, and assist the customer to solve them. In contrast to the service workers of Study 1A, Thompson et al. (2001) would classify these frontline staff as knowledge workers.

The two call centres satisfy the definition of Taylor and Bain (1999) adopted in the study but they represent quite different scenarios for both organisations and their client groups. The call centre for end consumers of insurance (Study 1A) is a service that accompanies the insurance product. Consumers do not pay extra for the service and it operates at considerable cost to the providing organisation. It represents the routine, time-controlled, high volume service work at the 'quantity' end of Taylor et al.'s (2002) classification. In contrast, the call centre for the small business customers of the bank (Study 1B) attracts a fee and is in itself a service 'product'. From the organisation's perspective, the business call centre is a potential revenue source and its managers are cognisant of both cost and revenue factors. It represents the customised, flexible, lower volume knowledge work at the 'quality' end of Taylor et al.'s (2002) call centre classification. Testing the theory in these two very different call centres provides a basis for drawing more general conclusions than would otherwise be possible.

While a mail-out survey design was considered appropriate for the study, it has the disadvantage of low response rates. Therefore steps were taken to increase the response rate by ensuring clarity in the appearance and wording of the survey, avoiding undue length, including a letter from the organisation to encourage participation, and providing a reply paid envelope (Armstrong & Overton, 1977; Dillman, 1991). However, the response rates of the mail surveys mean that the results may be biased, due to nonresponse error (Martin, 1994). Consequently, more discussion on this issue is provided next, and Appendix 2 (p. 172) presents more details on problems of mail surveys, and in particular, their low response rates.

Response rates

The low return rate from the mail surveys means that the views of most of the population are not known and therefore has implications for generalisability of the findings. However, Dillman (1991) notes that a low response rate does not necessarily entail nonresponse error, because the views of the population may be the same as the sample. The problem is that the effects are unknown.

One means of identifying potential differences between respondents and non-respondents is to compare findings for early and late respondents (Armstrong & Overton, 1977). The assumption is that the attitudes of late respondents are likely to resemble those of non-respondents. Study 1 used this procedure. The samples for Studies 1A and 1B were each split into two groups of early and late respondents. Early respondents returned the surveys within a two-week period. Having identified the groups, *t*-tests for the differences between means on the major variables were then used to check for differences. Table A2.1 (Appendix 2, p. 174) shows the results for the variables used in Study 1. No significant differences between early and late respondents were found.

As previously noted, the sample in Study 1A had fewer males (49% compared to 54%) and was slightly older (49.7 years compared to 46.3 years) than the population of consumers. These small differences may have resulted in nonresponse bias based on gender or age. Gender and age did not lead to different customer expectations in a previous call centre study (Burgers et al., 2000) but small effects were reported in the study of segmentation based on expectations by Webster (1989). Therefore, to control for possible effects in the study, gender and age were included in the first step of the hierarchical regression analyses used to test Hypotheses 1-3, in both Studies 1A and 1B. The use of hierarchical regression to check for differences in results due to these demographics does not rule out nonresponse bias but, if there are no effects, it likely reduces the implications for the study.

The low response rate in Study 1 may not be atypical of other studies involving customer data. Baruch (1999) discussed response rates for academic studies and noted that marketing studies, where response rates have been cited in the range of 10-20%, tend to be lower than in other contexts. Further, marketing (customer) response rates appear to be declining overall, with Kosek (1998) suggesting that the decline is due to potential respondents' lack of time and the effects of other media such as voicemail. However, these trends do not change the unknown bias. Therefore limitations of generalisability induced by a low response rate are discussed further in terms of the Limitations of Study 1 (p. 53).

Measures

A structured survey was sent to the customers of each call centre (Appendix 1, pp. 165-171). The survey measured a number of variables using multi-item scales: perceived customer orientation, predicted expectations, adequate expectations, perceptions of service quality, customer commitment and loyalty. Where possible, scales available from the literature were customised for the study, and pretested. Demographic data and open-ended questions were included. The first three of the variables (perceived customer orientation, adequate expectations, predicted expectations) form the basis of Study 1. The scales for the other variables are discussed and used in Study 2. The next sections briefly outline the sources of the items comprising the scales relevant to Study 1. Their psychometric properties are reported in the Results sections with respect to each of Studies 1A and 1B.

The measures of variables are presented below, starting with the independent variable (customer-perceived customer orientation), followed by the dependent variables (service quality expectations), and finally, by the measures of the controls. Open-ended questions were included at the end of the survey to check the content validity of the quantitative measures for service quality expectations.

Perceived customer orientation

Perceived customer orientation was measured by using Schneider et al.'s (1998) definition, that is, customers' perceptions of the degree to which an organisation emphasises meeting their needs and expectations for service quality. The measure consisted of 9, 7-point items ranging from 1, strongly disagree to 7, strongly agree (Appendix 1, p. 165). In previous studies (e.g., Schneider et al., 1998), customer orientation has been measured with employees' responses, so Study 1 adapted the scales for customers. The first six items were taken directly from the customer orientation scale developed by Narver and Slater (1990). A typical item reads: "The call centre at XYZ has the main objective of keeping me satisfied". To explore specific actions taken by the organisation, such as encouraging informal feedback regarding services, three extra items were included. Of these, Items 7 and 9 were adapted from Schneider et al. (1998), and Item 8 from Sin and Tse (2000). In their original study, Narver and Slater (1990) found that the six items in the customer orientation scale had a coefficient alpha of .86 and they demonstrated the construct validity. In subsequent studies, again with employees, the same authors (Slater & Narver, 1994) and Lukas and Ferrell (2000) found the scale robust, with alpha values of .88 and .83 respectively.

Predicted (forecast) expectations

Predicted (forecast) expectations were measured using 10, 7-point items ranging from 1, very low quality to 7, very high quality (Appendix 1, p. 166). A typical item reads:

"In relation to getting a problem solved or a request answered in one call, the level of service I PREDICT I will get is..."

Seven of the 10 items in the two expectations scales were drawn from the instrument developed and tested by Burgers et al. (2000) in relation to consumers' general expectations of call centre representatives, and building on previous work by Bearden, Malhotra and Uscategui (1998), Boshoff (1999) and Parasuraman et al. (1985). Burgers et al. (2000) found that their scale comprised 16 items representing four factors, adaptiveness, assurance, empathy and authority. However, in Study 1, the 16 items were reduced to seven because the scale had to be repeated for the two types of expectations and pre-testing with graduate students indicated that the instrument was too long. Seven items were chosen in order to retain items from each of the four dimensions and in similar proportion to the numbers of items in the Burgers et al. (2000) scale.

The four factors of Burgers et al. were represented by Items 4-6 (adaptiveness), Items 7-8 (assurance), Item 9 (empathy) and Item 10 (authority). The first three items in the 10-item expectations scales covered areas shown to be important in other studies, namely core service outcome (Feinberg et al., 2000; Powpaka, 1996), and the time spent in queues and during the service encounter (Davis & Heineke, 1998; Durrande-Moreau, 1999; Martin & Smart, 1994).

Adequate (minimum) expectations

Adequate expectations were measured by repeating the battery of 10 items that was used for predicted levels of quality, with the wording changed slightly. For example:

"In relation to getting a problem solved or a request answered in one call, the level of service that I consider to be ADEQUATE is..."

Controls

To enable a description of the sample, and to serve as controls in hierarchical regression analyses, six demographic and other items were measured. The items were gender (scored 1 "male", 2 "female"), age (scored 1 "18 to 24", 2 "25 to 34", 3 "35 to 44", 4 "45 to 54", 5 "55 to 64", 6 "65 and over"), number of years a customer of XYZ organisation (scored 1 "less than one year", 2 "1 to 2 years", 3 "3 to 5 years", 4 "more than 5 years), preference for male/female consultant (1 "male", 2 "female", 3 "no preference"), reason for making last call to the call centre (1 "seeking information", 2 "complaint requiring explanation", 3 "complaint

requiring action", 4 "other"), and time elapsed since last call (1 "less than 3 days", 2 "3 days to one week", 3 "2 to 4 weeks", 4 "more than 4 weeks").

The controls were included first in the hierarchical regressions to render the sample comparable and assess the links of customer orientation to expectations beyond sample characteristics (Cohen & Cohen, 1983). These particular controls were used because Webster (1989) found that age and gender had small effects on customer expectation levels, and the time elapsed since using a service was found to be important in the service expectations study of Johnson and Mathews (1997).

Open-ended questions

To check the face validity of the expectations scales in Studies 1A and 1B, respondents were asked the open-ended question, "What do you expect in relation to quality in call centres?". The qualitative data were then subjected to content analysis and the frequency of major themes established by counting. More details of the procedure and a summary of the results are provided in Appendix 3 (pp. 175-177).

Results of survey pre-testing

When the draft survey had been developed from the literature, it was pre-tested with two groups of graduate students (13 and 19 respectively). The students completed the survey and then participated in discussions about its clarity, ease of use, and potential problems. The process resulted in significant improvements in the scales in terms of clarity and readability. Prior to execution, four academic staff and two representatives from the first participating organisation then checked the draft survey. The second process resulted in a small number of changes to wording.

Method of analysis

In each of Studies 1A and 1B, the analyses involved two main stages. First, the measures were subjected to exploratory factor analysis and reliability assessments. Second, hierarchical regression was used to test hypotheses. These two stages are discussed following Table 2.2, which summarises the steps in the data analysis and the standards used for interpreting results.

Table 2.2 Standards used in performing and interpreting statistical analyses during Study 1

Stage in the analysis	Criteria adopted	Source
Exploratory factor analysis		
Preliminaries	Need a sample size greater than 150	Hinkin (1995)
	Sample to item ratio at least 4:1 with 10:1 desirable	Hinkin (1995)
	Use two multi-item measures together, not single measures	Hinkin (1995)
	Use principal components analysis (unity diagonals) if 20 or more variables	Nunnally & Bernstein (1994)
	Use oblique rotation	Ford et al. (1986)
Output	Need eigenvalues > 1 and evidence from scree plot to rotate factors	Tinsley & Tinsley (1987)
	Need factor loadings > .32	Tabachnick & Fidell (2001)
	Double loading when > .30 on two factors (therefore dropped)	Nunnally & Bernstein (1994)
Reliability checks		
Scale	Alpha value > .80 adequate	Nunnally & Bernstein (1994)
Item	Item-to-total < .30, item dropped	De Vaus (1990)
	'Alpha-if-item deleted' used to check for potential scale improvement	De Vaus (1990)
Normality of data	Skewness and kurtosis < 1.96	Hair et al. (1998)
Hierarchical regression analysis	Pairwise deletion for missing data	Nunnally & Bernstein (1994)
	Order of entry determined a priori	Robins (1987)
	Controls entered first	Cohen & Cohen (1983)
Multicollinearity	Intercorrelation > .70 first indicator of problem	Tabachnick & Fidell (2001)
	Tol < .60 unacceptable	Tabachnick & Fidell (2001)
	VIF > 1.70 unacceptable	Tabachnick & Fidell (2001)

Note. Tol=Tolerance; VIF= Variance Inflation Factor.

Development of the measures: Factor analysis

In accordance with the recommendations of Hinkin (1995), Study 1 used exploratory factor analysis to check the dimensionality of the scales and to refine them by identifying poorly loading and cross-loading items. The first criterion to be met was concerned with the sample size number compared to the number of items in the analysis. Hinkin (1995) noted that suggestions range from 4:1 to 10:1. Drawing on the work of Guadagnoli and Velicer (1988), Hinkin (1995, p. 973) stated that "in most cases a sample size of 150 observations should be sufficient to obtain an accurate solution in exploratory factor analysis as long as item intercorrelations are reasonably strong". Guadagnoli and Velicer (1988, p. 271) had refuted the idea that more observations are needed as sample size increases and suggested that interpretability depends on the number of variables demonstrating a particular loading. They suggested that four or more variables with loadings greater than .60 indicates a good fit to the population for sample sizes greater than 150, with lower loadings (.40 or less) requiring a larger sample size or more variables to describe the component. As the sample size for Studies 1A ($n=289$) and 1B ($n=325$) exceeded Hinkin's (1995) rule-of-thumb of 150, the number and size of variable loadings on each component was used as an indication of the stability of the factor structure. Further, in Study 1, the sample to item ratio exceeded 15:1 for each factor analysis, well above the desired ratio of 10:1 (Hinkin, 1995).

Having ensured that the sample size was adequate for factor analysis, decisions were required about the items to be entered together and whether to conduct principal components analysis (PCA), rather than the procedure of factor analysis. For scale evaluation, Hinkin (1995, p. 981) stated that approaches "other than within-measure factor analysis and relationships with criterion variables" should be used to provide evidence of discriminant validity. Hence, Study 1 used more than one multi-item scale in each factor analysis. This required entering 19 or more variables in each analysis and led to the decision to use principal components analysis. In particular, Nunnally and Bernstein (1994, p. 536), "strongly recommend(ed) a component solution when there are 20 or more variables in the exploratory factor analysis". Thus the technique of PCA was adopted, and to allow for correlation between components, oblique rotation was adopted (Ford, MacCallum & Tait, 1986).

Once the output from the PCA was obtained, it was interpreted using several criteria. Firstly, to determine the number of factors, both eigenvalues and the scree plot were used. Eigenvalues greater than 1 were considered first, but the distinct change in gradient in the scree plot was used to verify or change the number of factors (Norusis, 1993a; Tinsley &

Tinsley, 1987). Secondly, using the rule-of-thumb provided by Tabachnick and Fidell (2001), only factor loadings greater than .32 (10% overlapping variance) were interpreted. When an item double loaded, guidance provided by Nunnally and Bernstein (1994, p. 536) was used to decide whether it should be dropped. They stated that "Each factor should have some variables which correlate with it nearly exclusively and variables correlating highly with that factor should not correlate more than .30 with any other factor." Hence, variables that loaded more than .30 on two factors were dropped.

Reliability analyses

As well as principal components analysis, reliability scores were also used to establish construct validity of the measures. Dimensionality, established during factor analysis, shows the items that represent the same concept. Hair, Anderson, Tatham and Black (1998) noted that such items are usually internally consistent, or strongly associated with one another. To test internal consistency, reliability analyses were used. The overall 'standardised item alpha' for the scale was inspected first and standards for interpretation were adopted from Nunnally and Bernstein (1994, p. 265). That is, a minimum coefficient alpha of .70 was considered necessary for construct validation, with .80 and above indicating levels of internal consistency that are adequate for group research. This process resulted in measures that represented a single construct (unidimensional) and demonstrated high internal consistency (reliable).

Testing normality of the distributions

Because the use of multivariate statistical techniques assume that the data originate from an interval scale and demonstrate normality, the kurtosis and skewness of the items were explored prior to further analyses. Tabachnick and Fidell (2001) state that ideally, for normality, the skewness and kurtosis values should be close to zero. However, Hair et al. (1998, p. 73) suggest that the distributions are sufficiently normal to be used in statistical analysis when the values do not exceed an absolute value of 1.96 (.05 error level). Hence, skewness and kurtosis values of 1.96 were used to indicate the cutoff point for normality.

Hypothesis testing: Regression analyses

Hypotheses 1, 2 and 3 were tested using hierarchical regression analyses. The rationale for using hierarchical regression was to determine and partial out the possible effects due to controls so that the true effects due to the predictor variables could be established (Cohen & Cohen, 1983; Tabachnick & Fidell, 2001). Robins (1987, p. 706) stated that "for tests of theoretical models, hierarchical entry, with the order determined a priori by the investigator, is almost always to be preferred [over simultaneous or stepwise methods]." Study 1 tests theory

and needed to ensure that results were not confounded by other variables. Therefore, in Step 1 demographic variables (gender and age) and an item indicating the time elapsed since the customer's last use of the call centre were entered. Step 2 entered the independent variables being tested for a relationship with the dependent variable. The overall R^2 (the variance actually explained), the R^2 change and F change for each step, and the beta weights (indicating the magnitude of the relationships) were reported and interpreted for each regression (Cohen & Cohen, 1983; Robins, 1987).

Pairwise deletion was used in all regression analyses because, in comparison to listwise deletion, it causes fewer data to be lost and is preferable when there are a few, random omissions (Nunnally & Bernstein, 1994, p. 123).

Multicollinearity

Regression analysis requires that predictor variables not be multicollinear. Wampold and Freund (1987) explained that multicollinearity may make the unique contribution of the independent variables unclear and the estimates of population parameters unstable. Hence, it was necessary to ensure that multicollinearity did not affect the analyses and their interpretation. Tabachnick & Fidell (2001) state that a bivariate correlation of .70 or more in the same analysis is likely to result in multicollinearity and, in such cases, researchers should consider omitting one of the variables or generating a composite score. In Studies 1A and 1B, the intercorrelations were in the range of .50 to .70 and so multicollinearity diagnostics, tolerance (Tol) and variance inflation factor (VIF) scores, were used to assess whether there was a problem. Tabachnick and Fidell explain that the tolerance should be as close as possible to one but that Tol values "as high as .5 or .6 may pose difficulties in testing and interpreting regression coefficients" (2001, p. 118). Given that the VIF is the reciprocal of the tolerance (Norusis, 1993b, p. 355), a tolerance of .5 would result in a VIF of 2.0, and a tolerance of .6 gives a VIF of 1.7. Therefore, tolerances of less than .6 and VIF values of 1.7 or more have been interpreted as indicating unacceptable levels of multicollinearity. In such cases, the regression was run again, using composite scores of the highly correlated independent variables.

Having outlined the overall research design, the respondents, the measures, and the method of analysis in this section, the results for the customers of the two call centres are now provided.

RESULTS

This section commences with the factor analyses, reliability scores and normality tests for the measures. Absolute values for predicted and adequate expectations are then reported, followed by the results of the hypothesis testing. The results for Study 1A and Study 1B are integrated within each section, and an overall comparison of the findings with respect to the hypotheses is provided at the end of the section.

Factor analyses of the measures

Perceived customer orientation

To assess the dimensionality of perceived customer orientation and establish its discriminant validity from expectations, a principal components analysis of the items comprising the customer orientation and adequate expectations scales was conducted. Table 2.3 gives the results.

Table 2.3 shows a very similar pattern for both the consumer (Study 1A) and business (Study 1B) samples. In each case, three factors with eigenvalues greater than one emerged, and the change in gradient of the scree plots similarly indicated three factors. The factors explained 69.4% and 71.5% of the variance respectively.

Perceived customer orientation differentiated from adequate expectations for both studies. However, it was not unidimensional and split into two factors, customer feedback and customer focus. In Study 1A, customer feedback consisted of five items (numbers 5 to 9), related to feedback from customers and other organisational activity to monitor customers' views. The items included evaluation of quality, encouraging feedback, attending to after-sales-service and monitoring customer satisfaction. However, in Study 1B, item 7, "The organisation does a good job keeping me informed of changes which affect me" double-loaded. In the next factor analysis involving customer orientation (Table 2.4), Item 7 cross-loaded again in Study 1B. That is, it correlated more than .30 on two factors and was therefore dropped from Study 1B (Nunnally & Bernstein, 1994).

The other customer orientation factor, customer focus, exhibited the same pattern for both samples. It consisted of the first four items which include understanding customer needs, maintaining a commitment to customers, creating value for them, and having a customer satisfaction objective. Customer focus was retained unchanged for both samples.

The two perceived customer orientation factors, customer feedback and customer focus, demonstrated correlations of .48 (Study 1A) and .43 (Study 1B) which indicates a moderate relationship between them (Cohen, 1988).

Table 2.3 Principal components analysis of items in the customer orientation and adequate expectations scales (Studies 1A and 1B)

	Study 1A			Study 1B		
	F1 (A)	F2 (A)	F3 (A)	F1 (B)	F2 (B)	F3 (B)
Shortened Items						
<u>Customer orientation.</u> The XYZ organisation...						
1. Maintains a commitment to me	.02	.15	<u>-.82</u>	-.01	<u>.94</u>	-.11
2. Constantly creates value for me	.05	.12	<u>-.80</u>	.04	<u>.78</u>	.13
3. Understands my needs	.04	.13	<u>-.84</u>	.00	<u>.91</u>	.01
4. Has a satisfaction objective	.04	.14	<u>-.82</u>	.00	<u>.91</u>	.00
5. Monitors my satisfaction level	-.06	<u>.72</u>	-.18	.02	.07	<u>.88</u>
6. Attends to after-sales service	-.01	<u>.73</u>	-.21	.02	.09	<u>.83</u>
7. Keeps me informed of changes	-.00	<u>.57</u>	-.21	-.03	<u>.51</u>	<u>.33</u>
8. Encourages informal feedback	-.01	<u>.85</u>	.00	.02	.06	<u>.88</u>
9. Asks me to evaluate quality	-.07	<u>.91</u>	.05	-.06	-.11	<u>.94</u>
<u>Service quality.</u> My adequate expectations in relation to...						
10. Getting my problem solved in one call	<u>.76</u>	.03	.11	<u>.78</u>	.06	-.08
11. The time spent waiting in a queue	<u>.52</u>	.24	<u>.32</u>	<u>.53</u>	-.11	.00
12. The consultant not rushing me	<u>.85</u>	-.06	.01	<u>.86</u>	.12	-.04
13. Being assisted to define my problem	<u>.88</u>	-.04	-.08	<u>.88</u>	.02	-.01
14. Having different problems solved	<u>.84</u>	-.01	.07	<u>.88</u>	.06	-.03
15. The consultant being calm if I am angry	<u>.81</u>	-.01	-.11	<u>.80</u>	.00	.02
16. Having steps in the process explained	<u>.86</u>	-.15	-.12	<u>.89</u>	.05	-.02
17. Being assured about confidentiality	<u>.77</u>	.05	-.05	<u>.73</u>	-.02	.15
18. Being treated with empathy	<u>.88</u>	-.05	-.08	<u>.87</u>	-.03	.02
19. The consultant having the authority to solve my problem	<u>.82</u>	-.07	-.01	<u>.84</u>	-.04	-.03
Eigenvalues	6.47	4.45	4.36	6.61	4.29	4.16
Variance	34.59	28.40	6.37	34.86	27.25	9.40
Intercorrelations						
Factor 1						
Factor 2	.02			.02		
Factor 3	.08	-.48		-.04	.43	

Note. F1 (A) is Adequate expectations. F2 (A) is Customer feedback. F3 (A) is Customer focus. F1 (B) is Adequate expectations. F2 (B) is Customer focus. F3 (A) is Customer feedback.

In Study 1A, the measures for customer feedback and customer focus had reliabilities of .88 and .92 respectively. In Study 1B, each measure demonstrated an alpha coefficient of .92. Hence, all measures were more than adequate for group research.

Adequate (minimum) expectations

The factor analysis (Table 2.3) indicated that adequate expectations differentiated from customer orientation and was unidimensional. In both studies it consisted of one factor with all items, except queuing (Item 11) in Study 1A, loading exclusively on the factor. Queuing also loaded, to a smaller extent (.32) on customer focus. It was therefore deleted from the measure for the hypothesis testing, but retained for comparison of absolute values for customer expectations. The other nine items in the adequate (minimum) expectations scale of Study 1A demonstrated a Cronbach's alpha value of 0.93. For Study 1B, the alpha value for the ten items constituting the adequate expectations measure was .94.

Predicted (forecast) expectations

To assess whether the predicted (forecast) expectations scale was unidimensional, the 10 items comprising the scale were factor analysed with the nine items comprising the customer orientation scale, as for adequate (minimum) expectations. As before, principal components analysis and oblique rotation were used. Table 2.4 gives the results. These results are similar to those in Table 2.3, with three factors demonstrating eigenvalues greater than one, for both studies. The expectations scale discriminated from the two customer orientation factors, with 73.7% of the variance explained in Study 1A and 71.8% explained in Study 1B. The 10 items of the predicted (forecast) expectations scale demonstrated a coefficient alpha of .86 (Study 1A) and .94 (Study 1B).

Table 2.4 Principal components analysis of items in the customer orientation and predicted expectations scales (Studies 1A and 1B)

	Study 1A			Study 1B		
	F1 (A)	F2 (A)	F3 (A)	F1 (B)	F2 (B)	F3 (B)
Shortened Items						
<u>Customer orientation.</u> The XYZ organisation...						
1. Maintains a commitment to me	.24	.16	<u>-.69</u>	.15	-.06	<u>-.82</u>
2. Constantly creates value for me	.21	.15	<u>-.67</u>	-.04	.17	<u>-.80</u>
3. Understands my needs	.11	.20	<u>-.74</u>	.11	.06	<u>-.83</u>
4. Has a satisfaction objective	.15	.17	<u>-.73</u>	.06	.05	<u>-.86</u>
5. Monitors my satisfaction level	-.01	<u>.76</u>	-.15	.01	<u>.86</u>	-.10
6. Attends to after-sales service	.04	<u>.76</u>	-.13	-.02	<u>.80</u>	-.16
7. Keeps me informed of changes	.17	<u>.53</u>	-.11	.06	<u>.36</u>	<u>-.47</u>
8. Encourages informal feedback	.02	<u>.89</u>	.08	.04	<u>.86</u>	-.07
9. Asks me to evaluate quality	-.11	<u>.97</u>	.05	-.02	<u>.93</u>	.07
<u>Service quality.</u> My predicted expectations in relation to...						
10. Getting my problem solved in one call	<u>.73</u>	-.02	-.29	<u>.78</u>	-.11	-.13
11. The time spent waiting in a queue	<u>.45</u>	.24	-.11	<u>.56</u>	-.06	-.12
12. The consultant not rushing me	<u>.51</u>	.01	.29	<u>.74</u>	-.08	-.19
13. Being assisted to define my problem	<u>.80</u>	-.01	-.23	<u>.82</u>	-.05	-.12
14. Having different problems solved	<u>.85</u>	-.04	-.19	<u>.89</u>	-.05	-.06
15. The consultant being calm if I am angry	<u>.77</u>	.06	-.06	<u>.77</u>	.05	.02
16. Having steps in the process explained	<u>.82</u>	.03	-.12	<u>.85</u>	-.04	-.02
17. Being assured about confidentiality	<u>.70</u>	.18	.12	<u>.70</u>	.25	.22
18. Being treated with empathy	<u>.87</u>	.02	-.07	<u>.90</u>	.07	.05
19. The consultant having the authority to solve my problem	<u>.83</u>	-.05	-.15	<u>.90</u>	-.01	.02
Eigenvalues	8.29	6.63	5.22	7.95	4.43	5.91
Variance	53.09	10.62	6.14	47.42	16.52	7.85
Intercorrelations						
Factor 1						
Factor 2	.49			.24		
Factor 3	-.35	-.43		-.49	-.35	

Note. F1 (A) is Predicted expectations. F2 (A) is Customer feedback. F3 (A) is Customer focus. F1 (B) is Predicted expectations. F2 (B) is Customer focus. F3 (A) is Customer feedback.

Open-ended questions on customers' service quality expectations

Because the customer expectation scales had not been used previously, open-ended questions were used to gather data in order to confirm content validity of the scales. Details of the procedure and results are provided in Appendix 3 (pp. 175-177). In summary, the same three themes dominated the responses from both end consumers (Study 1A) and business customers (Study 1B). The most frequently mentioned theme was the responsiveness of the service, indicated by prompt answering of customer calls and quick resolution of issues. The second most frequent theme was service consultants' attitudes, with respondents dominating attributes such as polite, helpful, patient, empathetic and reassuring. The third theme was also

concerned with service consultants but focused on their level of knowledge so that the customer did not have to be transferred to other areas, and could have their queries answered in one call. The findings demonstrate the face validity of the items in the service quality expectations scales. More specifically, the qualitative data reinforce the need to include measures related to queuing, consultants' attitudes and problem resolution.

Overall, the measures for customer orientation, adequate expectations and predicted expectations demonstrated almost identical properties for Studies 1A and 1B. The customer orientation measure consisted of two factors, customer feedback and customer focus, which are considered separately in subsequent analyses. The measures for predicted (forecast) expectations and adequate (minimum) expectations were unidimensional and discriminated from the customer orientation factors. Finally, qualitative data confirm that the items in the service quality expectations scales capture the major areas of expectations identified by customers.

Kurtosis and skewness of the distributions

Outliers were identified by visual inspection of box plots. Based on boxplots for each variable, a total of three surveys were rejected from the consumer sample and no surveys were rejected from the business sample.

Table 2.5 provides the kurtosis and skewness of the main variables (two types of service quality expectations and the two customer orientation factors). The data indicate that the distributions are sufficiently normal to be used in statistical analysis because the values do not exceed an absolute value of 1.96 (Hair et al., 1998, p. 73).

Table 2.5 Kurtosis and skewness of variables

Item	Study 1A		Study 1B	
	Kurtosis	Skewness	Kurtosis	Skewness
Predicted (forecast) expectations	1.59	-0.23	.32	-.62
Adequate (minimum) expectations	-0.12	-0.36	.92	-.65
Customer feedback	-0.48	0.01	.26	.71
Customer focus	0.34	-0.58	.03	-.44

Correlation matrix

Table 2.6 gives the mean values, standard deviations and intercorrelations of the variables.

Table 2.6 Means, SDs and intercorrelations of major variables (Study 1A top coefficient; Study 1B lower coefficient)

Variables	M	SD	1	2	3	4	5	6
1. Gender	1.51	0.50						
	1.68	0.47						
2. Age	3.97	1.24	-.34***					
	3.23	1.09	-.35***					
3. Time since last call	3.27	0.78	-.09	.15*				
	3.24	0.91	.01	.07				
4. Adequate expectations	5.24	0.96	.09	-.01	.04			
	5.31	1.03	.06	.16**	.07			
5. Predicted expectations	4.84	1.20	-.07	.15*	.20**	.08		
	4.90	1.12	.03	-.06	.11	.11		
6. Customer feedback	3.52	1.41	-.07	.18**	.10	-.07	.55***	
	2.69	1.33	.08	-.10	.07	-.04	.29***	
7. Customer focus	4.74	1.32	-.10	.17**	.21**	-.03	.62***	-.64***
	4.37	1.32	.05	.10	.07	.03	.57***	-.47***

Note. M = mean; SD = standard deviation.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2.6 shows that the customer orientation factors are highly associated with one another (.64 for the consumer sample, .47 for the business sample). Further, high levels of association are demonstrated between customer focus and predicted expectations in both samples (.62 and .57), and between customer feedback and predicted expectations for the consumer sample (.55). These high levels of association are of concern because they suggest multicollinearity may exist and separate effects may be difficult to interpret (Wampold & Freund, 1987). The bivariate correlations did not exceed the rule-of-thumb of .70 for 'logic' problems suggested by Tabachnick and Fidell (2001, p. 84) but, because they were quite high, a conservative approach was adopted. Consequently, tolerances (Tols) and variance inflation factors (VIFs) are assessed and reported in the regression analyses.

The discussion is now directed first, to the values customers' assigned to the different types of expectations and, second, to hypothesis testing.

Customers' service quality expectations

Because of the perceptions of poor service climate in call centres (Taylor & Bain, 1999; Wallace et al., 2000), it was envisaged that customers may have low expectations of quality. This was not found to be the case. The items comprising adequate and predicted expectations and *t*-tests to demonstrate the differences between means are provided in Tables 2.7 (consumer sample) and 2.8 (business sample). Examination of the mean scores indicates

relatively high predicted expectations and unexpectedly high levels of adequate expectations. Additionally, adequate expectations exceeded predicted expectations on every item for both samples.

Table 2.7 Service quality expectations for the consumer sample

	Service quality in relation to...	Predicted level	SD	Adequate level	SD	t-test	r
1	Getting my problem solved or request answered in one call	5.04	1.39	5.19	1.12	-1.71	.07
2	The time spent waiting in a queue for service	3.99	1.66	4.87	1.47	6.44***	-.09
3	The service consultant taking enough time and not rushing me	5.17	1.29	5.28	1.11	-1.18	.16**
4	The service consultant assisting me to define my problem or question more specifically	4.95	1.36	5.16	1.16	2.41*	.20**
5	The service consultant being able to solve different questions or problems	4.94	1.43	5.25	1.15	-2.97**	.038
6	The service consultant remaining calm and friendly if (when) I was angry (if applicable)	5.28	1.23	5.32	1.21	-0.34	.18**
7	The service consultant providing explanations about steps in the service process or reasons for problems	5.05	1.40	5.26	1.16	-2.18*	.082
8	The service consultant assuring me about the confidentiality of my information (or how it would be used) (if applicable)	4.87	1.51	5.19	1.37	-3.02**	.20**
9	The service consultant treating me with empathy (treating my problem as important)	5.03	1.47	5.40	1.18	-3.59***	.09
10	The service consultant having the authority to solve my problem	4.64	1.69	5.36	1.20	-6.04***	.09
	<i>Mean</i>	4.84	1.25	5.24	0.96	-3.46**	.075

Note. All values based on responses to a scale from 1 (very low quality) to 7 (very high quality).

*p<.05. **p<.01. ***p<.001.

Table 2.8 Service quality expectations for the business sample

	Service quality in relation to...	Predicted level	SD	Adequate level	SD	t-test	r
1	Getting my problem solved or request answered in one call	5.23	1.31	5.40	1.17	-1.83	.13*
2	The time spent waiting in a queue for service	4.00	1.60	4.86	1.56	-7.08***	.09
3	The service consultant taking enough time and not rushing me	4.96	1.36	5.29	1.24	-3.58***	.20**
4	The service consultant assisting me to define my problem or question more specifically	4.97	1.31	5.27	1.19	-3.23**	.14*
5	The service consultant being able to solve different questions or problems	5.02	1.35	5.39	1.23	-3.91***	.13*
6	The service consultant remaining calm and friendly if (when) I was angry (if applicable)	5.18	1.24	5.34	1.25	-1.62	.12*
7	The service consultant providing explanations about steps in the service process or reasons for problems	5.01	1.35	5.32	1.24	-2.89*	-.02
8	The service consultant assuring me about the confidentiality of my information (or how it would be used) (if applicable)	4.69	1.48	5.26	1.46	-5.21***	.17**
9	The service consultant treating me with empathy (treating my problem as important)	4.91	1.47	5.35	1.25	-4.24***	.12*
10	The service consultant having the authority to solve my problem	4.98	1.51	5.54	1.24	-5.18***	.06
	Mean	4.89	1.13	5.28	1.03	-4.60***	.11

Note. All values based on responses to a scale from 1 (very low quality) to 7 (very high quality).

* $p < .05$. ** $p < .01$. *** $p < .001$.

The *t*-tests for the difference between means in Tables 2.7 and 2.8 present a similar pattern for the studies. In Study 1A, seven of the 10 pairs of corresponding items for predicted and adequate expectations demonstrated a significant difference, whereas eight pairs were significantly different in Study 1B. However, the results were consistent. In both studies, the corresponding pairs for Item 1 (getting the request answered in one call) and Item 6 (the service consultant remaining calm and friendly) were not significantly different. Additionally, Item 3, the service consultant taking enough time, was not significantly different for the consumer sample. Overall, the data show that customers predicted expectations were different to their adequate expectations, and both exhibited quite high levels. The specific relationship between the variables is discussed next.

Hypothesis 1

Hypothesis 1 proposed that customers' predicted (forecast) expectations of service quality would be positively related to their adequate (minimum) expectations. That is, when customers predict low levels of service quality, their adequate level of expectations will also be low. To test Hypothesis 1, a hierarchical regression analysis was performed. Table 2.9 gives the results. The data indicate that adequate (minimum) expectations were not related to predicted (forecast) expectations in this study, and therefore Hypothesis 1 was not supported. The only difference between the two studies is that age and gender were weakly related to adequate expectations in Study 1B.

Table 2.9 Results of hierarchical regression to test Hypothesis 1

Predictor variables	Study 1A		Study 1B	
	Criterion variable		Criterion variable	
	Adequate expectations		Adequate expectations	
	Beta	Beta	Beta	Beta
Step 1: Controls				
Age	.03	.03	.20**	.21**
Gender	.11	.11	.13*	.13*
Time elapsed since last call	.05	.05	.05	.04
R ² change	.01		.04	
F change	1.06		4.19*	
Step 2: Predicted expectations		.07		.11
R ² change		.01		.01
F change		1.47		3.59
Adj R ²	.03	.07	.03	.04
Degrees of freedom	3, 270	4, 269	3, 281	4, 280

*p<.05. **p<.01. ***p<.001.

Hypothesis 2

Hypothesis 2 tested whether customer-perceived customer orientation of the call centre was related to customers' adequate (minimum) expectations of service quality. Table 2.10 shows that no significant effects were demonstrated in the regression analyses and Hypothesis 2 was not supported. As in the previous regression, a small effect for age and gender was demonstrated for the business sample (Study 1B) but no significant effects were found for either customer orientation factor. Therefore, Hypothesis 2 was not supported.

Table 2.10 Results of hierarchical regression to test Hypothesis 2

Predictor variables	Study 1A		Study 1B	
	Criterion variable		Criterion variable	
	Adequate expectations		Adequate expectations	
	Beta	Beta	Beta	Beta
Step 1: Controls				
Age	.03	.03	.20**	.20**
Gender	.11	.11	.13*	.14*
Time elapsed since last call	.05	.05	.05	.05
R ² change	.01		.04	
F change	1.06		4.20*	
Step 2: Customer orientation				
Customer focus		-.07		-.09
Customer feedback		.01		.08
R ² change		.00		.01
F change		.51		.92
Adj R ²	.01	.02	.03	.03
Degrees of freedom	3, 270	5, 268	3, 282	5, 280

*p<.05. **p<.01. ***p<.001.

Hypothesis 3

Hypothesis 3 tested whether customer-perceived customer orientation of the call centre was related to customers' predicted (forecast) expectations of service quality. As for Hypotheses 1 and 2, the relationship was explored by regression analysis. Tables 2.11 and 2.12 provide the results.

Table 2.11 Results of hierarchical regression to test Hypothesis 3 (consumer sample) using two variables for customer orientation

Predictor variables	Criterion variable					
	Predicted expectations					
	Beta	Tol	VIF	Beta	Tol	VIF
Step 1: Controls						
Age	.11	.87	1.15	.00	.98	1.03
Gender	-.02	.88	1.13	-.01	.88	1.13
Time elapsed since last call	.13*	.96	1.03	.02	.87	1.15
R ² change	.03					
F change	3.17*					
Step 2: Customer orientation						
Customer feedback				.25***	.54	1.84
Customer focus				.45***	.56	1.80
R ² change				.39		
F change				90.73		
Adj R ²	.02			.41***		
Degrees of freedom	3, 270			5, 268		

*p<.05. **p<.01. ***p<.001.

Table 2.12 Results of hierarchical regression with predicted expectations as the dependent variable (business sample)

Predictor variables	Criterion variable Predicted expectations					
	Beta	Tol	VIF	Beta	Tol	VIF
Step 1: Controls						
Age	-.07	.87	1.15	-.01	.86	1.16
Gender	.00	.87	1.14	-.01	.87	1.15
Time elapsed since last call	.11	.99	1.01	.07	.99	1.01
R ² change	.02					
F change	1.53					
Step 2: Customer orientation						
Customer feedback				.02	.78	1.29
Customer focus				.56***	.78	1.29
R ² change				.32		
F change				65.54***		
Adj R ²	.01			.32		
Degrees of freedom	3, 278			5, 276		

*p<.05. **p<.01. ***p<.001

Tables 2.11 and 2.12 show that Hypothesis 3 was supported. That is, perceived customer orientation was related to predicted (forecast) expectations of service quality. Both customer orientation factors demonstrated significant standardised beta weights for the consumer sample. However, only customer focus was significant in the business sample where customer feedback did not demonstrate a significant link to predicted expectations. That is, for this group of respondents, perceptions of the organisation's understanding and commitment to customers were related to their forecasts about service quality levels, but the organisation's monitoring of customer satisfaction and soliciting of customer feedback did not. No relationships were demonstrated for age or gender.

Inspection of Tables 2.11 and 2.12 suggests a potential problem with multicollinearity of customer feedback and customer focus in the consumer sample (Study 1A, Table 2.11). In particular, these two variables exhibited tolerances which are less than .60 and VIF values which are greater than 1.70 (Tabachnick & Fidell, 2001). Hence, the regression was repeated twice omitting each variable, one at a time, in order to compare the adjusted R² and beta values to the values obtained when both variables were entered (Table 2.11). Firstly, customer feedback was not entered in Step 2. This resulted in an adjusted R² of .38 and a beta value for customer focus of .62 (compared to .45 in Table 2.11). Secondly, customer focus was not entered, resulting in an adjusted R² of .31 and a beta value for customer feedback of .54 (compared to .25 in Table 2.11). The similar adjusted R² values and the large increases in beta values for the single factors suggested that they are multicollinear. Consequently, the

regression to test Hypothesis 3, for Study 1A, was repeated using a single mean score for customer orientation (Tabachnick & Fidell, 2001). Table 2.13 gives the results.

Table 2.13 Results of hierarchical regression to test Hypothesis 3 (consumer sample) using a single customer orientation variable

Predictor variables	Criterion variable Predicted expectations					
	Beta	Tol	VIF	Beta	Tol	VIF
Step 1: Controls						
Age	.10	.87	1.15	.00	.85	1.18
Sex	-.04	.88	1.14	-.02	.88	1.14
Time elapsed since last call	.15*	.98	1.02	.04	.95	1.05
R ² change	.04					
F change	3.96*					
Step 2: Customer orientation						
				.63***	.93	1.08
R ² change				.36		
F change				162.19		
Adj R ²	.02			.41***		
Degrees of freedom	3, 266			4, 265		

*p<.05. **p<.01. ***p<.001.

As expected, Table 2.13 demonstrates a significant beta weight for the relationship between the overall customer orientation construct and predicted expectations of service quality. Hypothesis 3 was therefore supported.

Comparison of results for Studies 1A and 1B

Table 2.14 provides a summary of the results for Studies 1A and 1B. The findings were almost identical for the two call centres. The only difference was with respect to the relationship between the two customer orientation factors and predicted (forecast) expectations (Hypothesis 3).

Table 2.14 Comparison of findings for Studies 1A and 1B

	Study 1A	Study 1B
	Consumer sample	Business sample
H1 Proposed relationship between predicted and adequate levels of service quality	No relationship found	No relationship found
H2 Proposed relationship between customer orientation and adequate expectations	No relationship found	No relationship found
H3 Proposed relationship between customer orientation and predicted expectations	The customer orientation factors, customer focus and customer feedback, were both related to predicted expectations but the effects could not be interpreted separately	Only customer focus was related to predicted expectations

DISCUSSION

Studies 1A and 1B assessed customers' expectations of service quality in call centres and the links between expectations and customers' perceptions of the customer orientation of the participating organisation. Customer expectations have been consistently acknowledged in the literature as the basis on which service quality and customer satisfaction judgements are formed (Oliver, 1993; Parasuraman et al., 1988). However, despite the growth in call centres worldwide, there appears to be only one reported study on customer expectations of call centre service in the literature (Burgers et al., 2000). Customer expectations of call centres are of particular interest because the call centre environment is reported as one where an emphasis on efficiency may result in customers experiencing low levels of service quality, and consequently having low levels of expectations (Hamer et al., 1999). In Study 1 this did not appear to be the case. Absolute values for predicted and adequate expectations were distinct and quite high. Further, the values assigned to adequate expectations exceeded predicted expectations on each of the 10 items for both the consumer and business samples.

Study 1 contributes to previous knowledge on service quality expectations and perceived customer orientation in several ways. First, it suggests that, in call centres, predicted expectations seem unlikely to be related to adequate expectations. Second, neither customer orientation factor, customer feedback nor customer focus, appears to be related to

adequate expectations. However, perceived customer orientation does demonstrate a relationship to predicted expectations, variables which have not been previously empirically linked. In addition, the effect may be different for the consumer sample when compared to the business sample. For the end consumers in Study 1A, customer feedback and customer focus could not be differentiated and, overall, demonstrated a strong link to predicted expectations. For the business customers in this study, the results suggest that customer feedback is not related to predicted expectations.

The following discussion elaborates further on the findings by considering service quality expectations first, then customer orientation. However, before proceeding to the discussion, it is noted that both the consumer and business samples had low response rates (15.6% and 17.0% respectively) and non-respondents may have held different views. There is no basis for discerning what attitudes (e.g., dissatisfied) the groups of customers who did not respond to the survey may have had. Consequently, the possible bias due to nonresponse is unknown.

Expectations of quality

Initially, customers were asked to indicate their expectations of service quality with respect to two different levels of expectations, their adequate (minimum) levels and their predicted (forecast) levels. Adequate expectations constitute the base level of the customers' zone of tolerance (ZOT) and are believed to be dynamic in that they move in response to the customer's needs and circumstances. Predicted (forecast) expectations are the basis of customer satisfaction evaluations and are believed to be a major influence on the movement of the adequate (minimum) level (Zeithaml et al., 1993).

The findings for both the consumer and business samples do not support the assumptions based on previous call centre studies (Batt, 1999; Frenkel et al., 1998; Taylor & Bain, 1999) and ZOT theory (Johnston, 1995; Zeithaml et al., 1993). Firstly, both adequate (minimum) expectations and predicted (forecast) expectations were attributed fairly high scores in the two call centres. Secondly, adequate (minimum) expectations were not related to predicted (forecast) expectations. That is, the findings of Study 1 do not support the theory about the proposed interdependence of service quality and customer satisfaction, via customer expectations (Oliver, 1993; Zeithaml et al., 1993). Rather, they may indicate that, in call centre environments, adequate expectations are not dynamic because they were consistently high and were not related to predicted (forecast) expectations. This would mean, for example, that if customers predict that the service consultant is on a time limit and will not want to take

much time to assist them, they do not reduce their expectations about the adequate (minimum) level of service that should be delivered.

Issues that emerge from the findings question whether customers have higher adequate expectations of service quality in call centres generally, or from these particular call centres, or whether the effect is for the insurance and banking industries, when compared to other industries. Another possibility is that customers' adequate expectations have risen to a very high level and are remaining there. It seems possible that more than one explanation may be true. Authors note that increasingly sophisticated technology has contributed to customers' expectations of service (Balt, 2000) and call centre operations are expected to reflect leading technologies (Anton, 2000). Additionally, the services literature suggests that, in general, customers' expectations of service quality rise over time (see, for example, Hamer et al., 1999). However, these trends do not explain the relative position of adequate expectations at a high level, and higher than predicted expectations in both research contexts. Also, given the very different nature of the two call centres used in the study, the consistent findings with respect to adequate expectations seem to indicate that customers using call centres may be generally less tolerant of variations in service. This arises because, although 'desired' levels of service performance (the top of the ZOT) were not pursued in the studies, the high level of adequate (minimum) expectations suggests that the ZOT may be very narrow for call centre services and customers may be placed below the 'satisfactory' line of the ZOT. An important question is the likely consequences of this possible placement, in terms of customers' attitudes and on-going loyalty to the organisation providing the service.

In developing the scale to measure the two types of expectations, the Burgers et al. (2000) study was employed. Burgers et al. had explored customer expectations of behaviours of customer service representatives in call centres and found four factors: adaptiveness, assurance, empathy and authority. In addition to items that measure the Burgers et al. factors, items to cover time taken and queuing, and getting a problem resolved in one call were added to the scale, based on literature from other industries (Davis & Heineke, 1998; Powpaka, 1996). An open-ended question seeking expectations of service quality in call centres was added and content analysed (Appendix 3). Open-ended data suggested that the key quality issues for customers seeking service from a call centre are, in order of priority, prompt service, positive consultant attitudes (friendly, helpful, polite) and knowledgeable consultants (who can answer queries and resolve issues quickly). These findings highlight the importance of process quality in call centre services.

Perceived customer orientation

The second area of theory was concerned with the construct of customer orientation as perceived by customers. Perceived customer orientation adapted two of the three major components of Schneider et al.'s (1998) employee-based service climate construct, namely, customer orientation (customer focus in Study 1) and customer feedback. In doing so, perceived customer orientation measured the emphasis that the organisation places on meeting customer needs and expectations for service quality, and the extent to which the organisation solicits and uses customer feedback. Hence, it was expected that customer orientation would be related to customer expectations.

Of particular interest was whether perceived customer orientation was related to adequate and predicted expectations. The findings provided conflicting results. Customer orientation consisted of two factors concerned with customer focus and customer feedback. Neither factor demonstrated a relationship to the adequate (minimum) expectations of service quality. This result does not support the theory. If adequate expectations moved in accordance with customer needs and contextual circumstances, high levels of perceived customer orientation would be expected to result in high levels of expectations, and the reverse should also apply. It appears that, for these samples, customers do not change their adequate (minimum) expectations of service, regardless of the perceived level of customer orientation of the call centre. However, the nonsignificant result needs to be interpreted with caution because it is possible that the measure of adequate expectations was invalid, and the study relating the variables was cross-sectional, when a longitudinal study would have been preferable.

In contrast to adequate (minimum) expectations, customer orientation was found to be related to predicted expectations but with different links demonstrated by the two samples. Both customer orientation factors were related to predicted expectations in the consumer sample but only customer focus demonstrated the relationship in the business sample. As the elements of customer focus include a commitment to customers, creating value for them and having a customer satisfaction objective, it is not surprising that it was associated with customers' predicted expectations. A germane question seeks reasons for the lack of association between customer feedback and predicted expectations for the business sample. Customer feedback consists of items about monitoring customers' satisfaction, encouraging their feedback and evaluations of quality, and attending to after-sales service. Intuitively, it seems that positive views on these items would lead to higher predictions of service quality. It is possible that the added complexity due to the fee that business customers pay, is

responsible for the lack of association. In particular, customers' predictions may be based on their understanding of what they have paid for, rather than outcomes resulting from organisational activity to support a customer orientation. Another possible explanation is due to the nature of the sample. A large proportion (69%) of the business customers had been a customer of the bank for more than five years with another 19% in the 3-5 years bracket (Table 2.1). Experienced customers may not change their predictions of service according to whether or not the bank seeks their views. Maybe other factors, such as past practice, have more effect on their expectations.

Overall, the results highlight the different relationships demonstrated by perceived customer orientation with adequate and predicted expectations. More importantly, from a theoretical perspective, they suggest that predicted expectations and perceived customer orientation are closely related.

Limitations of Study 1

Studies 1A and 1B fit the description of Mitchell (1985, p. 192) in that they are done in the field, involve no manipulations, are cross-sectional, and use correlations as the basis for regression analysis. Mitchell (1985) noted that such studies are subject to issues of sampling, validity of measures, and analyses and inferences. The following section considers limitations with respect to these areas and, in doing so, highlights the implications for generalisability. Response rates are considered first, followed by method variance and then cross-sectional data.

A major limitation with respect to sampling arises from the low response rate to the mail surveys (Appendix 2). Gendall et al. (1995) noted that if there is a difference between respondents and nonrespondents on any variable, there is potential for nonresponse error which increases in proportion to the nonresponse rate. Practical problems meant that nonrespondents were not tested in Study 1 and possible differences to respondents' views are unknown. The important issue that emerges is whether responses of 15.6% and 17.0% are sufficiently representative of the target populations to be able to generalise the findings to the groups from which they are drawn, and more widely. Both samples were a reasonable size ($n=289$ and $n=325$), and Study 1A resembled the population in terms of age, gender and number of years a customer of the organisation but normative data were not available for Study 1B. Hence, the lack of information on nonrespondents and the possibility of nonresponse bias mean that questions surrounding generalisability are a major limitation of Study 1.

Other major limitations relate to the use of cross-sectional data and method variance. A high potential for method variance exists when "multiple measures with similar formats are used in a particular study" (Mitchell, 1985, p. 198). Studies 1A and 1B both fall into this category. Lindell and Whitney (2001) suggested that method variance causes inflation of the correlations. Consequently, relationships may appear stronger than they are. Survey error also arises from using cross-sectional data, which does not test the stability of variables over time (Mitchell, 1985). To overcome this limitation, the relationships should be tested in a longitudinal study, with data for independent variables collected at Time 1 and dependent variables at Time 2. The need for longitudinal studies is highlighted by findings in other service contexts, which have demonstrated that customer expectations change with time and experience (Boulding et al. 1993; Kalanias et al., 2002). Overall, to reduce sources of error due to cross-sectional data and method variance, future studies should include multiple measures of constructs, in different formats within a questionnaire, or with different samples, and use a longitudinal design.

Variations across a number of call centre settings and different observers are not accounted for in the study. Study 1 used two call centres located at opposite ends of the quantity/quality continuum proposed by Taylor et al. (2002), and with end consumers (Study 1A) and business customers (Study 1B). However, the conclusions would be strengthened if data from respondents using services from call centres at other positions on the continuum were available. A related limitation is that Study 1 used samples from only two industries: insurance and banking services. Customers of their call centre services may have different experiences to customers in other industries. For example, Feinberg et al. (2002) found that the operational determinants of caller satisfaction in banking and financial call centre services did not reflect the findings from 18 other industries that they investigated.

In summary, major limitations of the study relate to the method and sample. In particular, data were collected by mail-out surveys in cross-sectional field studies. Low response rates were obtained and questions of validity in relation to method variance and analyses arise (Armstrong & Overton, 1977; Lindell & Whitney, 2001; Mitchell, 1985). Further, a longitudinal research design was not used, nonresponse bias was not tested, and only two industries (insurance and banking) were represented, with both samples from Australia. Hence, the findings have limited generalisability to different populations, measures, and circumstances.

Future research

The present study considered theory concerned with customers' adequate and predicted expectations of service quality from call centres, and the links to customer orientation. There was an unexpected lack of association between predicted and adequate expectations for both the consumer and business samples. This finding suggests that further testing of theory concerning the zone of tolerance is warranted to determine whether managing customer expectations in call centres is different to other contexts. As noted previously, the finding may have been due to the measures, or the cross-sectional design. Hence, in conducting future research, attention to the measures and using a longitudinal design would reduce the likelihood of the results reflecting design limitations, rather than call centre realities.

Future studies on the zone of tolerance in call centres should also include 'desired' expectations. In particular, the studies may wish to consider the position of customers' adequate expectations in relation to both predicted and desired expectations. This is important because, if, as found in Study 1, adequate expectations are skewed highly positively, the zone of tolerance becomes very narrow or may even be non-existent in call centres. Perhaps a different conceptualization is necessary. In either case, whether customers are harder to please than anticipated, and the implications for their satisfaction levels and their continuing relationships with the service providers are important questions.

The present study could be extended from perceived customer orientation and service quality expectations to other customer attitudes, such as service quality perceptions and customer commitment. In the current study, perceived customer orientation demonstrated a significant association with predicted expectations. The literature suggests that customer orientation, as perceived by employees, is a likely antecedent of service quality perceptions because of the demonstrated links between customer service climate, organisational practices and service quality (Hartline & Ferrell, 1996; Kamakura, Mittal, de Rosa & Mazzon, 2002; Schneider et al., 1998; Yoon et al., 2002). Hence, future research could test possible relationships between perceived customer orientation, perceptions of service quality, and other customer attitudes to demonstrate the precise contribution that investments in customer orientation might make to service organisations. Kandampully (1998) stated that the broad conceptual area relating to the customers' perceptions of the service attitude of providers is relatively unexplored and there is scope for research that investigates the dimensions and effects due to the organisation's perceived 'service loyalty' to its customers. Findings from Study 1 have contributed to closing this gap by showing that customer focus and customer feedback are both related to predicted expectations for end consumers, but customer feedback

does not demonstrate the relationship for this group of business customers. These findings support Kandampully (1998) in suggesting that there is scope for further research to investigate the expressed and unexpressed messages that organisations give to their customers, and the effects of those messages on customer attitudes.

To measure the effects of service quality expectations and perceptions, perceived customer orientation and service loyalty of call centres, as suggested above, more development work needs to be done on the scales. For example, constructs that have shown strong associations in Study 1 (such as customer focus and service quality predictions) need to be distinguished by exploring and testing more items. In doing so, the measures would be developed, and their construct validity could be assessed further.

Prior to Study 1, to the author's knowledge, relationships between perceived customer orientation of the providing organisation and customer expectations of service quality had not been tested in call centres. Nor have perceptions of service quality, and the behavioral sequence that leads to customer commitment and loyalty been tested separately, or holistically, in call centres. Extensive evidence exists in a variety of industries to show that service quality perceptions are related to customer commitment and loyalty (Bloemer et al., 1999; Cronin et al., 2000; Shemwell, Yavas & Bilgin, 1998; Zeithaml, 2000). An important question that emerges for future research is therefore the extent to which the service quality of the call center really matters for the organisation. That is, are customers' service quality expectations and perceptions of call centres related to their commitment and loyalty to the providing organisations? This question is the focus of Study 2.

Practical applications

Scholars have noted that customer expectations have an important role in service delivery (Hamer et al., 1999; Kalamas et al., 2002; Zabava Ford, 2001), especially for firms with a high content of unobservable quality (Boulding et al., 1993). Findings from this study suggest that managing expectations in call centres may require rethinking and possible changes to practice. The following recommendations are organised into three categories: managing adequate expectations, managing predictions of quality, and enhancing perceived customer orientation. The only major difference for business services, when compared to end consumers, is highlighted in the final section.

For the two samples used in the study, the adequate expectation level behaved more like the 'desired' or 'should' service levels of previous studies (e.g., Boulding et al., 1993; Walker and Baker, 2000). That is, customers' adequate (minimum) expectations were skewed

positively and were consistently high on all key attributes of the service quality scale. Further, adequate expectations were restricted in range, with little variation in the attributes. In their study of health clubs, Walker and Baker (2000) found that the more 'essential' the attribute, the higher its corresponding adequate expectations, and they suggested pursuing excellence on the more essential service dimensions. If this study is representative of call centres, all key attributes are essential, and the issue is how managers might address such high overall levels of adequate expectations. Two approaches emerge. The first is concerned with the zone of tolerance and the second with comparative emphases on different types of expectations.

The high absolute levels of adequate expectations (high minimum standards) suggest a very narrow zone of tolerance for call centres on the attributes that constitute it. Therefore, considerable importance may be attached to each attribute (de Carvalho & Leite, 1999; Walker & Baker, 2000) and customer satisfaction with call centre services may be harder to achieve than expected (Johnston, 1995). Zeithaml et al. (1993) noted that the zone of tolerance can be zero on specific attributes (the provider either has the attribute or not) and, in such circumstances, the customer's tolerance is minimal. Hence, call centre managers do not have the luxury of selecting dimensions on which to excel, rather they need to balance three major areas: customers achieving an outcome, lack of queuing, and service consultant behaviors. Qualitative data supports the importance of these three areas and none of them appears less important in this study. However, given the lack of non-verbal cues and the critical role of the customer interaction in call centre service, the skills of frontline service providers may take on increased importance. Service consultants need to be trained and managed so that they always treat customers with empathy, and in a calm and friendly manner. In their studies of call centres in the UK, Armistead et al. (2002) noted that service consultants require a complex and largely unacknowledged set of personal skills including the ability to adapt to the mood and needs of customers. Such skills are likely to require careful selection, development and recognition, emphasising the role of human resource management in call centres. Finally, managers should ensure that frontline service consultants have the authority to answer and resolve customers' questions and issues in one call.

The second approach to managing expectations, arising from the study and drawing on the work of Boulding et al. (1993), would be to manage adequate expectations downward. This suggestion emerges because 'should' expectations (normative views based on what is desired) appear to decrease perceptions of the actual service delivered (Boulding et al., 1993). Therefore, improved assessments of service quality may result when customer expectations of what 'should' happen are decreased. The base level of 'should' is the customer's adequate

(minimum) expectation. However, finding a means of decreasing adequate levels in customers' minds is not likely to be easy. An alternative, which is probably more realistic, is to emphasise customers' predictions. Boulding et al. (1993) also found that 'will' expectations (predictions) positively influence perceptions of quality, which subsequently influences behavioral intentions. Hence, managers are likely to be better served by focusing their attention on what their firm will provide (predicted expectations) rather than adequate levels. That is, to engage in activities that increase predicted expectations of service quality without changing adequate levels. Again, this is unlikely to be easy. However, in the current study, perceived customer orientation is related to predicted expectations (and not adequate expectations) and so focusing on the elements of customer orientation is recommended.

Perceived customer orientation consisted of two factors in Study 1, which provided different links and, therefore, different implications for consumer and business samples. For both end consumers and business customers, the factor, customer focus, is related to predictions of quality. Attention to it, therefore, appears to be a means of managing quality expectations. Customer focus includes demonstrating a commitment to customers, creating value for them and having the main objective of customer satisfaction. The factor, customer feedback, demonstrates a weaker relationship with predictions of quality for the consumer sample, and no relationship for the business sample. Activities involving end consumers that support the relationship include attending to after-sales service, monitoring customer satisfaction and encouraging customer feedback on the quality of service. The service predictions of business customers do not appear to be influenced by such organisational activities involved in gathering customer feedback. Hence, the outcomes associated with customer focus take on more importance than the processes used to achieve them.

In summary, in managing customers' expectations of service quality in call centres, findings from Study 1 suggest that practitioners should emphasise customer-perceived customer orientation not only because this construct is likely to have positive outcomes itself but also, because it is related to predicted expectations. While respondents to the surveys were existing customers of firms, those firms are likely to be concerned with managing their call centres to ensure that existing customers remain. Understanding and using customers' predictions of quality, and influencing customer perceptions of the customer orientation of the call centers are likely to be beneficial starting points.

Conclusion to Study 1

Study 1 has indicated that, for the call centres of the participating organisations, customers have very high levels of adequate (minimum) expectations and that these adequate expectations appear to behave independently from predicted (forecast) expectations. The findings are in conflict with assumptions from the literature (Zeithaml et al., 1993) and it appears that service quality theory may have some distinct differences in call centres. The first major finding is that the width of the zone of tolerance appears to be very narrow because adequate expectations are consistently high, and service quality and customer satisfaction are not linked by the interdependence of adequate (minimum) expectations and predicted (forecast expectations).

The second major finding is that perceived customer orientation is associated with predicted (forecast) expectations but not adequate (minimum) expectations. This finding supports customer orientation theory in a general sense, in that customer orientation has been shown to be linked to customers' attitudes, customer retention and profitability (Chang & Chen, 1998; Kohli et al., 1993; Narver & Slater, 1990). However, the finding extends current knowledge because previous studies have considered customer orientation in the context of the employee's view of market orientation, and therefore they have not tested the relationship between customer-perceived customer orientation and customer expectations.

Using call centres is a fundamental process of service in many organisations. Study 1 has investigated customer expectations of service quality from call centres, and tested whether perceived customer orientation of the providing organisation is related to expectations. Study 2 is also concerned with perceived customer orientation, but the focus of the study shifts to customers' perceptions of the service quality delivered by call centres, and whether it matters for customer loyalty to the organisation.

CHAPTER 3

STUDY 2 – CUSTOMERS' SERVICE QUALITY PERCEPTIONS OF CALL CENTRES AND THEIR COMMITMENT AND LOYALTY TO SERVICE PROVIDERS

INTRODUCTION

Study 1 tested links between perceived customer orientation and customer expectations of service quality from call centres. However, the studies did not link the constructs to customers' perceptions of quality nor place them in the behavioural sequence that is believed to lead to customer commitment and loyalty. Therefore, in the next study, the project is extended in this way. That is, Study 2 tests possible relationships between perceived customer orientation and perceived service quality of call centres, and customers' self-reported commitment and loyalty to the providing organisations. Study 2A investigates the questions for the consumer sample used in Study 1A, while Study 2B uses the business sample of Study 1B.

The fundamental question guiding Study 2 is whether the service quality delivered by the call centre ultimately matters to customer loyalty. Investigating this question is important because direct relationships have been demonstrated between service quality, service encounter satisfaction and customers' self-reported loyalty in contexts other than call centres (Butcher, Sparks & O'Callaghan, 2001; Ranaweera & Neely, 2003). Despite such findings, authors question the precise loyalty implications of service quality because the effects have been shown to vary across industries (Bloemer et al., 1999; Cronin et al., 2000). Additionally, to this author's knowledge, there is no evidence that the theory has been tested in call centres. The only related study appears to be that by de Ruyter and Wetzels (2000), who found that the listening behaviour of service consultants in a telecommunications sample was indirectly related to business customers' intentions to use the call centre again. Study 2 therefore contributes to knowledge in that it tests whether the quality of service delivery in a call centre is related to customers' self-reported loyalty to the providing organisation. Because loyalty is to the service provider, it is a form of customer loyalty, specifically named 'service loyalty'.

In testing the relationship between perceived service quality and service loyalty, Study 2 uses a theoretical model involving several other variables. Caruana (2002) noted that service loyalty is particularly important because of its final effect on repurchasing by customers. However, few service loyalty studies have integrated the construct with other variables like service quality and no studies appear to have done this in call centres. The other constructs

used in Study 2 include the explanatory construct of customer orientation, and the outcome and mediator of customer commitment. Customer orientation is important to organisations because it contributes to profits both directly (Narver & Slater, 1990) and through its role in service climate (Schneider et al., 1998). Customer orientation, as perceived by employees, is a dimension of an organisation's service climate, which Schneider et al. (1998) found to be related to customers' perceptions of service quality. However, Brady and Cronin (2001) raised questions about how customer orientation influences organisational outcomes and noted the need for such explanations to include the customer's perspective. Study 2 responds to the call for more research into customer-perceived customer orientation and tests its relationships to perceived service quality, customer commitment and service loyalty.

Similarly to customer orientation, in the past, commitment has been measured predominantly in employee studies (e.g., Allen & Meyer, 1990). However, interest in customer commitment and its contribution to service relationships has increased over the past decade, indicated by empirical work in both consumer (Fullerton, 2003; Garbarino & Johnson, 1999; Pritchard et al., 1999) and business services (Morgan & Hunt, 1994; Wetzels, de Ruyter & Lemmink, 2000). Previous studies have rarely distinguished customer commitment from loyalty but some recent studies have focussed on establishing their separate definitions and effects (Fullerton, 2003; Harrison-Walker, 2001; Pritchard et al., 1999). In other studies, customer commitment has been conceived as an affective or psychological attitude towards a service provider (Harrison-Walker, 2001) whereas service loyalty continues to be used to measure behavioural intentions or actual behaviours (Fullerton, 2003; Zeithaml et al., 1996). Study 2 adopts this distinction and incorporates measures of both customer commitment and service loyalty into the theoretical model summarised in Figure 1.1 (p. 12).

Apart from theory development, the inclusion of separate constructs for customer commitment and service loyalty is important because they may have different implications for managers of call centres. Call centre customers are generally in a relationship with the service provider and they, perhaps, remain loyal for a period of time because they are 'constrained' rather than 'dedicated' (Bendapudi & Berry, 1997). Constraints may be due to an investment in the relationship, bonds, or the poor quality of alternatives (Hocutt, 1998). Hence, gaining an understanding of the extent to which customers' experiences of call centres affect their feelings about an organisation (commitment) and intentions to remain a customer (service loyalty) should help managers to determine priorities for the on-going process of service delivery.

In summary, the central research question in Study 2 investigates whether perceived service quality of call centres is related to customers' commitment and service loyalty to the providing organisations. To investigate the question, Study 2 uses an integrated model to test relationships between several key areas: perceived customer orientation, perceived service quality, and customer commitment and service loyalty. In testing the relationships, Study 2 investigates whether perceived service quality has a mediating role between perceived customer orientation with service loyalty and customer commitment. No other reported models appear to have integrated these areas. Figure 3.1 proposes a model for testing and refinement to guide the study. Figure 3.1 differs from Figure 1.1 in that perceived customer orientation is shown as customer focus and customer feedback, the two factors which constituted it in Study 1. Paths from both factors are shown to perceived service quality, service loyalty and customer commitment.

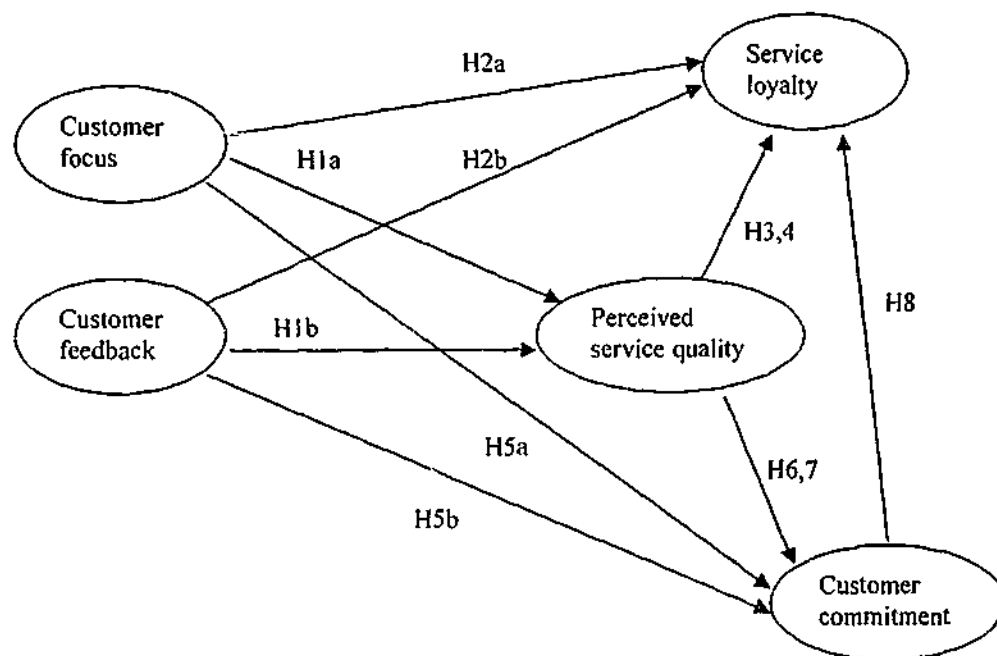


Figure 3.1 Model to guide Study 2

Relationships between variables and development of hypotheses

This section considers the relationships between the major variables and develops the hypotheses summarised in Figure 3.1. The relationships are discussed in three sections. First, links between perceived customer orientation, perceived service quality and service loyalty are proposed (paths in the top part of Figure 3.1). Second, links between perceived customer orientation, perceived service quality and customer commitment are proposed (paths in the

bottom part of Figure 3.1). Finally, the relationship between customer commitment and service loyalty is considered.

The perceived customer orientation – perceived service quality – service loyalty links

Study 2 uses the same definition of perceived customer orientation as Study 1. That is, perceived customer orientation is the degree to which an organisation emphasises meeting customer needs and expectations for service quality (Schneider et al., 1998). Perceived customer orientation consists of items concerned with the organisation's focus on customers and activities to solicit customer evaluations of its work and service.

Perceived service quality was defined in Chapter 1 as the customers' cognitive assessments of the overall superiority of the service (developed from Parasuraman et al., 1988). Study 2 measures perceived service quality using the same battery of items that were used for service quality expectations in Study 1.

As stated previously, in Study 2 customer loyalty is to a service provider and is therefore service loyalty, rather than 'brand' loyalty, which has been developed in relation to goods (Oliver, 1999). Service loyalty is a customer's response to the service provider and is defined as:

"The degree to which a customer possesses and expresses a positive attitude towards the service provider and intends to remain a customer of that provider" (developed from Caruana, 2002, p. 813).

Caruana (2002) had drawn on the work of Gremler and Brown (1996) and emphasised that service loyalty incorporates a cognitive assessment by the customer, which leads to a favourable attitude and decisions about future patronage. Overall, service loyalty is a form of customer loyalty, which is distinct from actual repurchase behaviours although it reflects customers' intentions, including the likelihood that they will engage in positive and active communication about the service provider.

The relationship between customer orientation and perceived service quality

As already noted in chapters 1 and 2, perceived customer orientation has been developed from the construct of service climate and studies have demonstrated that service climate (as perceived by employees) is related to customer perceptions of service quality (Schneider et al., 1998; Yoon, Beatty & Suh, 2001). Other studies have demonstrated a relationship between customer orientation, customer service perceptions and customers' outcome behaviours (Brady & Cronin, 2001; Kelley & Hoffman, 1997). For example, Kelley and Hoffman (1997) found that customers who perceive that their agents are customer-oriented,

when compared to a sales orientation, are more likely to have favourable perceptions of service quality. Therefore, it appears that, if customers perceive the customer orientation component of service climate to be at a high level, then they will indicate high levels of service quality. This leads to the first hypothesis, that customers' perceptions of the customer orientation of the call centre will be positively related to their perceptions of service quality. However, perceived customer orientation has been conceptualised and measured in terms of customer focus and customer feedback, and these dimensions emerged as separate factors in Study 1. Therefore, Hypothesis 1 is presented as H1a and H1b to test the separate relationships:

H1a Customer focus will be positively related to perceived service quality.

H1b Customer feedback will be positively related to perceived service quality.

The relationship between perceived customer orientation and service loyalty

Marketing scholars consider customer orientation to be one of three dimensions of market orientation (Kohli, Jaworski & Kumar, 1993; Lukas & Ferrell, 2000). A market orientation has been shown to result in a customer-driven company, which is rewarded with customer loyalty and retention, and consequently superior performance (Narver & Slater, 1990). Schneider et al. (1998) stated that much of their construct of service climate maps well onto the construct of market orientation. Thus, the common element, customer orientation, may be associated with both service quality and customer loyalty. If an organisation demonstrates high levels of customer orientation, such as having a priority to produce value for customers, then customers are likely to respond by demonstrating positive loyalty attitudes and behaviours. For example, customers would engage in positive communication and intend to continue as customers of the organisation (Brady & Cronin, 2001). Hence, the second hypothesis proposes a positive relationship between perceived customer orientation and service loyalty. As for Hypothesis 1, H2a and H2b test the relationship in terms of the two dimensions of perceived customer orientation.

H2a Customer focus will be positively related to service loyalty.

H2b Customer feedback will be positively related to service loyalty.

The relationship between perceived service quality and service loyalty

In general, empirical studies, in a variety of industry settings, provide compelling evidence for a direct relationship between service quality and customer loyalty, measured in terms of behavioural intentions (e.g., Boulding et al., 1993; Cronin et al., 2000; Taylor & Baker, 1994;

Zeithaml et al., 1996). In addition, several branches of services theory substantiate the relationship as follows. Parasuraman and Grewal (2000b) noted that cumulative insights from their own studies (service quality theory), service profit chain theory (Heskett et al., 1997), and customer loyalty studies (Reichheld, 1993) support a general notion that service quality enhances value, which contributes to customer loyalty. Recent studies reinforce the findings, for example, in retail banking (Caruana, 2002) and veterinary services (Harrison-Walker, 2001). Ranaweera & Neely (2003), in a postal survey of telephone users, found that perceptions of service quality have a direct linear relationship with customers' behavioural intentions. This finding is important to Study 2 because it was conducted in a mass service, with relatively low and irregular customer contact, as in call centres.

The only related call centre study appears to be that of de Ruyter and Wetzels (2000). They found that the listening behaviour of service consultants was positively related to customer satisfaction, which was positively related to customers' intentions to call again. That is, customers' responses to service encounters led to at least one dimension of service loyalty. Overall, given the comprehensive literature that supports the link between service quality and loyalty, as behavioural intentions, in other industries and for core services, Hypothesis 3 suggests that there will be a positive relationship in call centres. That is:

H3 Perceived service quality will be positively related to customer loyalty.

Having hypothesised that perceived customer orientation and perceived service quality are both related to service loyalty (H2 and H3), the next consideration is whether they behave independently. Study 2 proposes that they do not. Literature from different disciplines suggests that perceived service quality will mediate the relationship between perceived customer orientation and service loyalty. First, Schneider and his colleagues have repeatedly demonstrated a link between customer service climate and customers' evaluations of service quality (Schneider & Bowen, 1985; Schneider, Parkington & Buxton, 1980; Schneider, Holcombe & White, 1997; Schneider et al., 1998). Customer service climate consists of three major dimensions, two of which, customer orientation and customer feedback, form the perceived customer orientation construct in Study 2. Because service climate has been shown to be related to perceived service quality in these studies, it is proposed that perceived customer orientation will also be related to it.

Second, separate streams of research have produced a model of 'Customer Relationship Economics' (Storbacka, Strandvik & Grönroos, 1994) and the Service Profit Chain (Heskett et al., 1997). In these models high levels of service quality contribute to

organisational profitability via strong relationships with customers, and customer loyalty and retention. The studies suggest that there is a sequence in which customer orientation will be linked to service quality, which will eventually be linked to service loyalty. Hypothesis 4 is therefore proposed:

H4 Perceived service quality will mediate the link between perceived customer orientation and service loyalty.

The perceived customer orientation – perceived service quality - customer commitment links

This section first considers the perceived customer orientation factors and their possible relationships with customer commitment (lower part of Figure 3.1, p. 62). Having done so, it then proposes a link between perceived service quality and customer commitment, and mediation by perceived service quality in the customer orientation to customer commitment relationship.

Study 2 defines customer commitment as a positive attitude, which is consistent with 'affective commitment' as it is used in services literature (e.g., Wetzels et al., 2000). That is:

Customer commitment is the strength of a customer's identification with and involvement in a particular organisation (developed from Porter, Steers, Mowday & Boulian, 1974, p. 604).

This definition arises from the organisational commitment literature because, in contrast to employee commitment, little customer research has been conducted on commitment (Pritchard, Havitz & Howard, 1999). Appendix 4 (pp. 178-182) discusses the development of customer commitment and shows how researchers in services (e.g., Fullerton, 2003; Harrison-Walker, 2001; Morgan & Hunt, 1994) have drawn heavily on previous work from organisational studies involving employee commitment. Table A4.1 (Appendix 4, p. 179) provides a summary of recent empirical studies involving customer commitment. The table highlights the relatively small number of reported studies and illustrates the dependence on definitions and measures of customer commitment that arise from employee commitment. Hence, Study 2 also drew on this literature.

The relationship between perceived customer orientation and customer commitment

To the author's knowledge, no studies have specifically tested the links between perceived customer orientation and customer commitment. However, theory development (Kandampully, 1998) and findings from related studies (e.g., Brady & Cronin, 2001) suggest that the two variables are likely to be related. Kandampully (1997) emphasised that

organisations must understand and build on customers' needs if they are to expect returns in the form of ongoing customer relationships. In a later paper Kandampully (1998) develops the concept of an organisation's 'service loyalty', the demonstration of an organisation's commitment to its customers. He concludes (p. 439) that "a true, loyal relationship between a firm and its customer is created by the organisation's ability to connect emotionally and forge a long-term bond with the customer." Study 2 proposes that where customers perceive high levels of customer orientation and have a 'voice' in the relationship, they will connect with and feel a psychological attachment to the firm, that is, they will demonstrate commitment.

Using a sample from three different service industries, Brady & Cronin (2001) found that perceived customer orientation was indirectly related to behavioural outcomes. Their measure for behavioural outcomes encompassed both service loyalty and elements of customer commitment, as defined in Study 2, because it included repurchase and word-of-mouth intentions, and customers' feelings of loyalty. Hence, the next hypothesis proposes that the perceived customer orientation of call centres will be related to customers' feelings about the providing organisation. As for Hypotheses 1 and 2, two separate hypotheses are proposed to account for the two customer orientation factors.

H5a Customer focus will be positively related to customer commitment.

H5b Customer feedback will be positively related to customer commitment.

The relationship between perceived service quality and customer commitment

Consistent with their definitions, Study 2 includes customer commitment and service loyalty as separate constructs. Fullerton (2003) noted that very few studies have tested the possible relationship between perceived service quality and customer commitment. However, as stated already, many studies have demonstrated a positive relationship between perceived service quality and customer loyalty (Boulding et al., 1993; Cronin et al., 2000; Parasuraman et al., 1994a; Ranaweera & Neely, 2003; Taylor & Baker, 1994; Zeithaml et al., 1996). Some studies provide evidence for a relationship between perceived service quality and customer commitment because they interpreted customer loyalty broadly. In doing so, their constructs of service loyalty encapsulated affective commitment (see Appendix 4, Figure A4.1, p. 181). Summaries of services studies in this category are shown in Appendix 4, Table A4.1 (p. 179) (Harrison-Walker, 2001; Kelley & Davis, 1994; Zins, 2001). Approaching the relationship from a service failure perspective, Pritchard et al. (1999) noted that if a brand fails to perform (perceived service quality is low), the process of identifying with that brand (customer

commitment) will be difficult to accommodate. Thus, perceived service quality is likely to be related to customer commitment.

The business call centre study by de Ruyter and Wetzels (2000) also appears to provide evidence for a link between perceived service quality and customer commitment. In their study, de Ruyter and Wetzels suggested that service consultants' 'attentiveness' closely resembled the perceived service quality of the process and resulted in customers having a feeling of being cared for, and positive affect towards the organisation. Similarly, in Study 2, perceived service quality of the process would be expected to lead to positive feelings about the organisation and therefore customer commitment. Hence Hypothesis 6 is proposed:

H6 Perceived service quality will be positively related to customer commitment.

The previous two hypotheses (H5 and H6) have proposed relationships between each of perceived customer orientation and perceived service quality with customer commitment. Similarly to the relationships leading to service loyalty, Study 2 also proposes that perceived customer orientation and perceived service quality do not act independently on customer commitment. The study by Brady and Cronin (2001) demonstrated direct paths between perceived customer orientation and employee service performance, employee service performance and overall service quality, and overall service quality to behavioural outcomes. In discussing the outcomes of organisational service loyalty discussed above, Kandampully (1998) emphasised the need for organisations to deliver consistent and superior quality of service. These findings suggest that customer orientation will be linked to perceived service quality, which will be subsequently linked to customer commitment. Hypothesis 7 is therefore proposed:

H7 Perceived service quality will mediate the link between perceived customer orientation and customer commitment.

The relationship between customer commitment and service loyalty

The few studies that consider customer commitment and service loyalty as separate constructs within the same study, suggest that they are closely related. Zins (2001) conceptualised customer commitment as measuring the strength of customers' attitudes towards the service provider, with service loyalty as an outcome behaviour based on attitude. By analyzing the components of customer commitment for airline and hotel customers, Pritchard et al. (1999) found that customer commitment preceded service loyalty. Using structural equations in a study of veterinary services and hair salons, Harrison-Walker (2001) found that affective

commitment led to positive word-of-mouth behaviours. Thus, while customer commitment and service loyalty are defined differently and operationalised separately in Study 2, Hypothesis 8 proposes that they will be related:

H8 Customer commitment will be positively related to service loyalty.

In summary, Study 2 tests eight hypotheses as shown in Figure 3.1 (p. 62). The study provides an original contribution to the literature in that it uses structural equation modelling to test the whole model simultaneously. In addition, the study answers the call for research that investigates the role of customer-perceived customer orientation in customer relationships (Brady & Cronin, 2001) and integrates service loyalty with other customer attitudes (Caruana, 2002). More specifically, Study 2 tests the direct and mediating relationships of perceived service quality of call centres with perceived customer orientation, and customers' commitment and loyalty responses to the service providers. The method by which this is achieved is outlined next.

METHOD

Study 2 is comprised of two studies, using the same design and samples as Studies 1A and 1B, that is, a consumer sample (Study 2A) and a business sample (Study 2B). The Method section in Study 1 described the sample, data collection procedures and the participating call centres (pp. 25-8). This section outlines the variables used in Study 2 and details the method of analysis using structural equation modelling.

Measures

Study 2 used measures for perceived customer orientation (also used in Study 1), perceived service quality, customer commitment and service loyalty.

Perceived customer orientation

Perceived customer orientation scale consisted of nine items each with a 7-point Likert response scale, ranging from 1, strongly disagree, to 7, strongly agree. In Study 1, the items represented two factors, customer focus and customer feedback. A typical item for customer focus read: "The call centre at the XYZ organisation understands my needs". A typical item for customer feedback read: "The call centre at the XYZ organisation encourages informal feedback regarding its services". See Appendix 1, p. 165.

Perceived service quality

Perceived service quality was measured using ten 7-point items, ranging from 1, very low quality, to 7, very high quality. A typical item read "My assessment of the service quality of the XYZ call centre in relation to the service consultant being able to solve different problems is ..". See Appendix 1, p. 168.

Study 2 did not include expectations of quality in the measurement of perceived service quality. This decision was based on the agreement amongst researchers that the most psychometrically rigorous means of measuring service quality is to use scores for perceptions of quality, without including measures of expectations (Cronin et al., 2000; Dabholkar et al., 2000; Page & Spreng, 2002).

Service loyalty

The customer loyalty 'preference' scale developed and refined by Zeithaml et al. (1996), and confirmed in subsequent studies as a measure of service loyalty (Bloemer et al., 1999; de Ruyter & Bloemer, 1999), was adopted unchanged in Study 2. Five, 7-point items from 1, strongly disagree, to 7, strongly agree were used. A typical item read "I would recommend XYZ company to someone who seeks my advice". See Appendix 1, p. 169.

Customer commitment

Customer commitment was measured by using ten, 7-point items ranging from 1, strongly disagree, to 7, strongly agree. Consistent with previous services studies (e.g., Garbarino & Johnson, 1999; Harrison-Walker, 2001), Study 2 adapted the short Organizational Commitment Questionnaire (OCQ) of Mowday, Steers and Porter (1979) to a measure suitable for customers, rather than employees. Two extra items were included from the scale developed by White and Schneider (2000), which emphasised commitment of customers to a relationship with a service provider. See Items 9 and 10, Appendix 1 (p. 169).

In conjunction with service loyalty, the customer commitment measure was refined by both principal components and confirmatory factor analyses. The Results section provides details of the scale refining process for each of the major variables in Studies 2A and 2B.

Respondents

The respondents for Study 2 are the same as Study 1, and details were provided in Table 2.1 (p. 26). In summary, the sample consisted of customers of two call centres, end consumers of insurance ($n=289$) (Study 2A) and business customers of online banking ($n=325$) (Study 2B). Chapter 2 highlighted issues with respect to the response rates and Appendix 2 (p. 172-173)

discusses mail survey response rates in more detail. The values attributed to major variables by early and late respondents were compared for Study 2, as well as for Study 1. Table A2.2 (Appendix 2, p. 174) shows that no significant differences between means were detected by the *t*-tests.

Study 1 provided details of the participating call centres. To reiterate briefly, the two call centres are located at the opposite ends of the call centre classification provided by Taylor et al. (2002). Further, the call centre for the business banking customers (Study 2B) differed from Study 2A in three major ways. First, the business call centre is an 'online help desk' facility and the primary purpose of the call centre is to provide customer service without time constraints. Second, to have access to the helpdesk service, customers pay a monthly fee. In Study 2A, the insurance customers did not pay extra for the call centre service. Third, the technical nature of the call centre work in Study 2B means that there is a greater emphasis on delivering service quality.

Method of analysis

The overall strategy of analysis for Study 2 used exploratory factor analysis in conjunction with structural equation modelling (SEM). It consisted of four major steps. In the first step, the literature was used to develop a structural model and identify hypotheses to be tested (Figure 3.1, p. 62). Step 2 involved refining the measures using exploratory factor analysis and reliability scores. Step 3 used confirmatory factor analysis to further refine the measures, ensure their unidimensionality, and establish the fit of the overall measurement model. In Step 4, the structural and measurement models were jointly estimated, and Hypotheses 1 – 8 were tested. Each of these steps involved statistical considerations and required decisions with respect to standards of interpretation. Appendix 5 (pp. 183 – 199) provides a detailed discussion of the issues, the statistical procedures and criteria used, and the rationale for doing so. Table 3.1 (p. 72) presents a summary of the standards and their sources used during the analysis. Following the table, the content of Appendix 5 is briefly reviewed.

Table 3.1 Standards of interpretation used during statistical analyses

Step in the analysis	Standard for interpreting output	Source
Principal components analysis ^a	Eigenvalues >1, discontinuity in scree plot Loadings >.32 interpreted Items cross-loading >.30 dropped	Tinsley & Tinsley (1987) Tabachnick & Fidell (2001) Nunnally & Bernstein (1994)
Reliability ^a	Coefficient alpha >.80	Nunnally & Bernstein (1994)
Preliminary CFA ^b	Item intercorrelations >.90 Factor loadings <.50 or >.95 Factor loadings > twice standard error <i>t</i> -values >1.96 R^2 <.50 indicating weak relationship	Hair et al. (1998) Bagozzi & Yi (1988) Anderson & Gerbing (1988) Hair et al. (1998) Jöreskog & Sörbom (1999)
Item parcelling ^b	When the number of indicators per latent factor >3 and total >20	Landis et al. (2000) Bentler & Chou (1987)
Testing the measurement model ^b	<i>Measures of fit</i> Chi-square for comparison, smaller better GFI, AGFI, NFI, NNFI, CFI > .90 PNFI for comparison, larger better RMSR <.08 RMSEA <.06 <i>Lack of fit</i> Standardised residuals > 2 Modification indices > 8 <i>Reliability</i> Individual item reliability >.50 Composite reliability of scales >.60 Average variance extracted >.50	Fassinger (1987) Medsker et al. (1994) Hair et al., 1998 Hu & Bentler (1999) Hu & Bentler (1999) Bagozzi & Yi (1988) Jöreskog & Sörbom (1999) Hair et al. (1998) Bagozzi & Yi (1988) Bagozzi & Yi (1988)
Structural model ^b	Chi-square difference test significant Δ NFI, Δ NNFI >.01 Other indices as for the measurement model Total coefficient of determination (R^2) Parameter estimates confirming hypotheses Critical <i>z</i> -values for each parameter >1.96 Correlations between latent constructs <.90	Bagozzi & Yi (1988) Widaman (1985) Medsker et al. (1994) Bagozzi & Yi (1988) Kline (1998) Hair et al. (1998)

Note. CFA = Confirmatory factor analysis; GFI = Goodness-of-Fit Index; AGFI = Adjusted Goodness-of-Fit Index; NFI = Normed Fit Index; NNFI = Non-Normed Fit Index; CFI = Comparative Fit Index; PNFI = Parsimonious fit index; RMSR = Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation

^a Criteria for interpretation fully explained in Study 1, pp. 34-35.

^b Criteria for interpretation fully explained in Appendix 5, pp. 183-199.

Appendix 5 commences with an introduction to structural equation modelling (pp. 183-187). It covers fundamental considerations, which include developing a structural model, the logic in estimating and respecifying the measurement model prior to testing the structural model, and ensuring validity and reliability. Step 2 (p. 187) summarises the decisions made, and standards adopted, during scale refinement using exploratory factor analyses and reliability checks. The next section provides a detailed justification of the methods used during Step 3, that is, the confirmatory factor analyses (pp. 187-196). The discussion includes achieving unidimensionality, model identification, item parcelling, sample size, normality and independence. Practical considerations about the type of matrix, the method of parameter estimation, and the number of constructs to be tested together are outlined. Next, Step 3 discusses criteria used in examining the output (p. 192), establishing measures for overall fit and exploring reasons for lack of fit (pp. 193-196). The final part of Appendix 5 is concerned with decisions made and criteria used during Step 4, testing the structural model (pp. 197-199). Nested models, changes in fit, structural alternatives and output are discussed.

RESULTS

This section reports the results according to the steps in the method of analysis. That is, exploratory factor analyses are reported first, followed by confirmatory factor analyses, and then the tests of the structural model. The results for the two studies are integrated, with the consumer sample (Study 2A) reported before the business sample (Study 2B).

Exploratory factor analyses

The first step in the method of analysis was to test the scales using exploratory factor analysis. Two principal components analyses (PCAs) were used as an initial basis for refining the measures of Studies 2A and 2B. The detailed rationale for these steps and the results for each study are provided in Appendix 6 (pp. 200-205). In summary, the items comprising service loyalty and customer commitment were first analysed in one PCA, and their scales refined. Second, the refined measures for service loyalty and customer commitment, and all items from the other two major variables (perceived customer orientation and perceived service quality) were entered together, providing an overall PCA. All PCAs were interpreted using the criteria outlined in Table 3.1.

In the initial PCAs for service loyalty and customer commitment, five cross-loading items were identified in Study 2A (Table A6.1, p. 200). The same five items formed a separate factor in Study 2B (Table A6.3, p. 204). Hence those items were deleted from the

current study. This step resulted in two distinct factors which were consistent with the definitions of service loyalty (intended behaviours) and customer commitment (positive feelings). When the refined scales for service loyalty and customer commitment were subjected to a PCA with the other variables in Study 2, very similar results were produced for both studies (Table A6.2, p. 202 and Table A6.4, p. 205). Five factors emerged, which represented the major variables, with very few items cross-loading.

Confirmatory factor analyses

Construct validity of the five main variables in each of Studies 2A and 2B was further established by confirmatory factor analyses (CFAs). CFAs facilitate refining of the measures by investigating the structures of the scales and identifying items with large error variances. The results of the initial CFAs, and the minor modifications that resulted from them are discussed in detail in Appendix 7 (pp. 207-212). The first step involved testing for unidimensional scales (Gerbing & Anderson, 1988; Jöreskog & Sörbom, 1993). Several CFAs were used to achieve this. In particular, separate CFAs were performed for the two customer orientation factors (Tables A7.1 and A7.2, pp. 207-208); perceived service quality (Tables A7.3 and A7.4, pp. 209-210); and service loyalty and customer commitment (Tables A7.5 and A7.6, pp. 211-212). The factors to be analysed simultaneously were chosen based on their conceptual closeness and relatively high intercorrelations in the corresponding PCAs (Appendix 6, Tables A6.3 and A6.4). When the unidimensionality of the scales had been established through the CFAs reported in Appendix 7, the overall measurement model was tested for all constructs simultaneously, in accordance with the recommendation of Jöreskog and Sörbom (1993).

The overall measurement model

It was expected that the overall measurement model would consist of five distinct latent variables, based on the original development of the constructs and the preliminary CFAs (Appendix 7, pp. 207-212). That is, distinct latent variables were expected for customer focus, customer feedback, perceived service quality, service loyalty and customer commitment. However, in accordance with the recommendations of Hinkin (1995), five possible models were tested and compared, including a single factor and a five factor model. The different models were derived as shown in Table 3.2.

Table 3.2 Derivation of factor models used in testing the measurement model

One factor model	All measures loaded onto one latent factor (discriminant validity cannot be established between the latent constructs)
Three factor model	Three latent factors based on conceptually close measures <ul style="list-style-type: none"> • customer focus and customer feedback • perceived service quality • service loyalty and customer commitment
Four factor model	Customer focus, customer feedback and perceived service quality entered as separate factors, service loyalty and customer commitment retained together as one factor.
Alternative four factor model	Customer focus and customer feedback retained as one factor, perceived service quality, service loyalty and customer commitment entered as separate factors.
Five factor model	All five measures representing distinct constructs

In testing the measurement models, missing data were handled by using the maximum likelihood procedure recommended by Schafer and Graham (2002) and available in SPSS 11.5 and LISREL 8.52. Initially, in accordance with the recommendations of Jöreskog and Sörbom (1993) for Likert scales, polychoric matrices and weighted least squares for parameter estimation were used. However, this procedure did not generate a result and the covariance matrix and maximum likelihood estimation (ML) were therefore used. Further details of the rationale behind these decisions are provided in Appendix 5 (p. 190-191).

Table 3.3 provides the overall results for Study 3A and Table 3.4 provides them for Study 3B. The change in chi-square has been calculated by moving down the tables in sequence, except for the alternative four factor model. For example,

$$\Delta\chi^2(\text{Three factor model}) = \chi^2(\text{Three factor model}) - \chi^2(\text{One factor model}).$$

Table 3.3 Comparison of goodness-of-fit indices for the overall measurement models (Study 2A)

Model	df	χ^2	$\Delta\chi^2$	GFI	AGFI	NFI	NNFI	PNFI	CFI	RMSEA	SRMR
One factor	275	4462	-	.45	.35	.89	.89	.82	.90	.23	.10
Three factor	272	2387	2075***	.60	.52	.93	.94	.85	.94	.16	.08
Four factor	269	2001	386***	.64	.57	.94	.95	.85	.95	.15	.08
Alternative four ^a	269	1089	1298***	.77	.72	.96	.97	.86	.97	.10	.06
Five factor ^b	265	709	380***	.84	.80	.97	.98	.86	.98	.08	.05

Note. χ^2 =chi-squared; df=degrees of freedom; GFI=Goodness-of-Fit Index; AGFI=Adjusted Goodness-of-Fit Index; NFI=Normed Fit Index; NNFI=Non-Normed Fit Index; PNFI=Parsimony Normed Fit Index; CFI=Comparative Fit Index; RMSEA=Root Mean Square Error of Approximation; SRMR=Standardised Root Mean Square Residual.

*p<.05. **p<.01. ***p<.001

^a $\Delta\chi^2$ based on comparison to three factor model

^b $\Delta\chi^2$ based on comparison with alternative four factor model

The data in Table 3.3 support the five factor model over all other models. In particular, when the alternative four factor model and the five factor model are compared, the change in chi-

squared ($\Delta\chi^2 = 380$) is significant. Further, the changes in fit indices indicate improvement and exceed Widaman's (1985) criterion of .01, for example, $\Delta\text{GFI} = .07$; $\Delta\text{AGFI} = .08$. Similarly, the errors are reduced ($\Delta\text{RMSEA} = .02$). However, the absolute values for the GFI (.84) and AGFI (.80) do not exceed the rule of thumb of .90 which was adopted in the study (Hair et al., 1998; Medsker, Williams & Holahan, 1994). Given that the SEM analysis is based on a two-stage strategy, these results may have been adequate to proceed. However, further refinement of the measurement model was possible by aggregation of some items. This step is discussed following the results for the measurement models in Study 2B, shown next.

Table 3.4 Comparison of goodness-of-fit indices for the overall measurement models (Study 2B)

Model	df	χ^2	$\Delta\chi^2$	GFI	AGFI	NFI	NNFI	PNFI	CFI	RMSEA	SRMR
One factor	252	6021***	-	.39	.28	.82	.81	.75	.83	.27	.14
Three factor	249	3102***	2919***	.56	.47	.90	.90	.81	.91	.19	.10
Four factor	246	1775***	1327***	.69	.62	.94	.94	.84	.95	.14	.09
Alternative four ^a	246	1638***	1464***	.70	.64	.94	.94	.84	.95	.13	.07
Five factor ^b	242	465***	1173***	.89	.86	.98	.99	.86	.99	.06	.05

Note. χ^2 =chi-squared; df=degrees of freedom; GFI=Goodness-of-Fit Index; AGFI=Adjusted Goodness-of-Fit Index; NFI=Normed Fit Index; NNFI=Non-Normed Fit Index; PNFI=Parsimony Normed Fit Index; CFI=Comparative Fit Index; RMSEA=Root Mean Square Error of Approximation; SRMR=Standardised Root Mean Square Residual.

*p<.05. **p<.01. ***p<.001

^a $\Delta\chi^2$ based on comparison with three factor model

^b $\Delta\chi^2$ based on comparison with alternative four factor model

As expected, the data in Table 3.4 support the five factor model for Study 2B. When the five factor and alternative four models in Table 3.4 are compared: $\Delta\text{GFI} = .19$; $\Delta\text{AGFI} = .22$, and the errors are reduced, $\Delta\text{RMSEA} = .07$. However, the absolute values of the fit indices for the five factor model do not meet all the standards set out in Table 3.1. Thus, as for Study 2A, the fit was improved by aggregating items into item parcels, discussed next.

Further refinement of the measurement model using item parcels

To improve the fit of the measurement model, the number of observed variables was reduced by using item parcels, as advocated by Hall, Snell and Singer Foust (1999). The rationale for this step arose by considering both the number of observed variables and the sample size. The factor models in Tables 3.3 and 3.4 each used 25 observed variables, taken directly from the refined, unidimensional scales. This number exceeded 20, as recommended by researchers using structural models (Harris & Schaubroeck, 1990; Kishton & Widaman, 1994). Further, the use of 25 observed variables resulted in 60 estimated parameters for the five factor model. When the sample sizes (289, 325) were compared to the number of estimated parameters

ratios of 4.8 to 1 and 5.4 to 1 were produced, which were bordering on unsatisfactory. The ratio of sample size to estimated parameters should be at least 5:1 with 10:1 more desirable (Bentler & Chou, 1987; Hair et al., 1998). To address these issues, two item parcels were constructed for each latent variable, by randomly assigning items to parcels. Two item parcels with random assignation was chosen based on the findings of Landis, Beal and Tesluk (2000). Landis et al. compared this procedure with five other approaches, such as pairing items with the highest and lowest loadings, and found that random assignation of variables to item parcels produced equivalent fit and was easier to implement. Consequently, the random procedure, using two parcels, was adopted.

The higher level of aggregation of indicators, achieved through item parcelling, was considered appropriate because the purpose of the study was to test relationships between consumers' perceptions and overall attitudes. Bagozzi and Edwards (1995) provided guidelines for determining the necessary depth of constructs and indicators and concluded that total or partial aggregation models are likely to be appropriate when global hypotheses are under scrutiny (p. 82). Further, item parcelling meant that procedural recommendations for using LISREL could be adhered to because the 10 item parcels resulted in 30 estimated parameters for the five factor model in each study. Therefore the ratio of sample sizes (289, 325) to estimated parameters was 9.6 to 1 (Study 2A) and 10.8 to 1 (Study 2B), which fell at the desirable end of the acceptable range of Bentler and Chou (1987). Once the 10 item parcels (two for each latent construct) were constructed, the six factor measurement model was tested again.

Table 3.5 provides the fit indices for the measurement model using item parcels. The table shows that the final model demonstrated an improvement on the five factor models in Tables 3.3 and 3.4, and good fit according to the criteria in Table 3.1.

Table 3.5 Goodness-of-fit indices for the final measurement model using item parcels

Model	χ^2	df	$\Delta\chi^2$	GFI	AGFI	NFI	NNFI	PNFI	CFI	RMSEA	SRMR
Five factor, using parcels (Study 2A)	37	25	672*** ^a	.97	.92	.99	.99	.55	.99	.04	.02
Five factor, using parcels (Study 2B)	75	25	390*** ^b	.96	.90	.98	.98	.55	.99	.08	.03

Note. χ^2 =chi-squared; df=degrees of freedom; GFI=Goodness-of-Fit Index; AGFI=Adjusted Goodness-of-Fit Index; NFI=Normed Fit Index; NNFI=Non-Normed Fit Index; PNFI=Parsimony Normed Fit Index; CFI=Comparative Fit Index; RMSEA=Root Mean Square Error of Approximation; SRMR=Standardised Root Mean Square Residual.

^aWhen compared to the five factor model in Table 3.3.

^bWhen compared to the five factor model in Table 3.4.

*p<.05. **p<.01. ***p<.001.

Table 3.6 provides details of factor loadings and *t*-values for each item parcel in the final measurement model.

Table 3.6 Factor loadings and t-values for final measurement models (Studies 2A and 2B)

Observed variables	Study 2A		Study 2B	
	Factor loading	<i>t</i> -value	Factor loading	<i>t</i> -value
<u>Customer focus</u>				
Item parcel 1 (satisfaction objective, committed to customers)	.94	20.63	.90	19.53
Item parcel 2 (creates value, understands customer needs)	.91	19.56	.94	20.94
<u>Customer feedback</u>				
Item parcel 3 (monitors satisfaction, attends to after-sales service)	.87	16.42	.92	19.29
Item parcel 4 (encourages feedback, seeks quality evaluations)	.77	14.24	.88	18.00
<u>Perceived service quality</u>				
Item parcel 7 (variety of problems defined and solved)	.91	19.62	.90	19.09
Item parcel 8 (services explained and problems considered important)	.95	20.77	.91	19.35
<u>Customer commitment</u>				
Item parcel 9 (care about company, relationship important)	.88	18.36	.94	20.67
Item parcel 10 (feel a sense of loyalty and belonging to company)	.99	23.09	.92	22.46
<u>Service loyalty</u>				
Item parcel 11 (speak positively, recommend the company to others)	.94	20.50	.91	21.71
Item parcel 12 (consider as first choice, likely to do more business)	.88	18.53	.96	21.22

Note. All *t*-values are significant at $p < .001$.

Properties and intercorrelations of major variables

Table 3.7 provides a summary of the main variables (based on the item parcels), which were used to analyse the structural model and test hypotheses. The values for the composite reliability and average variance extracted were calculated using the formulae provided by Hair et al. (1998, p. 612). Appendix 5 (p. 186) provides details of the methods used for the calculations. Table 3.7 shows that the variables were sufficiently normal to be used in multivariate analysis because the skewness and kurtosis values did not exceed 1.96 (Hair et al., 1998). Further, Bagozzi and Yi's (1988) criteria for composite reliability ($>.60$) and average variance extracted ($>.50$) were met.

Table 3.7 Properties of refined measures used in the consumer (Study 2A) and business (Study 2B) samples

Variable	Kurtosis	Skewness	Composite reliability	Average variance extracted
Study 2A				
Customer focus	.31	-.58	.92	.86
Customer feedback	-.50	.15	.81	.68
Perceived service quality	.87	-.92	.93	.87
Service loyalty	.71	-1.11	.93	.88
Customer commitment	-.53	-.29	.91	.83
Study 2B				
Customer focus	.08	1.30	.92	.85
Customer feedback	.23	.67	.90	.81
Perceived service quality	.69	-.72	.90	.82
Service loyalty	-.62	-.43	.93	.87
Customer commitment	-.34	.08	.93	.88

Note. All measures were reduced to two items during item parcelling and all values shown are for the item parcels.

Table 3.8 gives the means, standard deviations and intercorrelations of the variables used to test the structural equations.

Table 3.8 Means, standard deviations, and intercorrelations of major variables after item parcelling

(Consumer sample is the top number and business sample is the bottom number)

Variables	<i>M</i>	<i>SD</i>	1	2	3	4
1 Customer focus	4.73	1.32				
	4.38	1.30				
2 Customer feedback	3.52	1.41	.64***			
	2.73	1.32	.47***			
3 Perceived service quality	5.14	1.31	.70***	.50***		
	5.06	1.19	.55***	.35***		
4 Service loyalty	5.33	1.61	.69***	.54***	.69***	
	4.40	1.49	.55***	.41***	.57***	
5 Customer commitment	4.37	1.58	.59***	.53***	.57***	.66***
	3.56	1.48	.44***	.49***	.42***	.73***

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 3.8 shows that measures in the consumer sample generally demonstrated higher levels of association than for the business sample. In particular, when compared to the associations for corresponding variables in Study 2A, the r values in Study 2B are lower except for service loyalty and customer commitment ($r = .73$). However, in Study 2A, customer focus demonstrated strong associations with perceived service quality ($r = .70$) and service loyalty ($r = .69$). Not surprisingly, perceived service quality and service loyalty were strongly

associated in the same study ($r=.69$). Tabachnick & Fidell (2001) noted that high correlations are of some concern because of a possible problem with multicollinearity, discussed next.

Issues arising from possible multicollinearity

Multicollinearity can cause problems with both interpretation of results, and very importantly, it can cause instability in the estimated parameters of the structural model. Tabachnick and Fidell (2001) explained multicollinearity in terms of conceptual and statistical issues. Conceptual issues arise because two highly correlated variables contain redundant information and explaining separate effects is problematic. Statistical issues are caused because the variance between the latent variables cannot be partitioned and parameter estimates may become unreliable. When the variables are singular (totally redundant), the matrix inversion required in structural equation modelling cannot be performed (Tabachnick & Fidell, 2001). Tabachnick and Fidell suggest that interpreting effects can be difficult when two variables demonstrate a bivariate correlation of .70 or more, but that statistical problems arising from multicollinearity tend to occur at much higher correlations. Both Tabachnick and Fidell (2001) and Hair et al. (1998) nominate a correlation of .90 before structural models are likely to become unstable. Study 2 adopted this rule-of-thumb.

To reduce the likelihood of multicollinearity by ensuring that variables were discriminated from one another, the derivation of the factor models (Table 3.2) included different factors for variables that may have been highly correlated. In particular, the four factor model tested the measurement model when service loyalty and customer commitment were retained as one factor. The chi-squared values and goodness-of-fit indices confirmed discriminant validity between the five variables in both studies (Tables 3.3 and 3.4). Consequently, all variables were retained for the structural analysis but it was noted that further checking for multicollinearity would be advisable. Anderson and Gerbing (1988) proposed that two variables cannot be discriminated if, when constrained to unity during SEM, the chi-squared difference indicates better fit. That is, the variables are better represented by one construct. This 'unity test' for multicollinearity was used for variables whose correlation exceeded .70 in the final structural model. It is reported at the conclusion of the testing of the structural models, in the next section.

The structural model and hypothesis testing

Figure 3.1 (p. 62) shows the hypothesised model guiding Study 2. The model includes paths from both customer orientation factors (customer focus and customer feedback) to the other

three variables (perceived service quality, service loyalty and customer commitment). In addition, perceived service quality has been hypothesised to mediate the relationships between customer orientation with service loyalty, and customer orientation with customer commitment. This section reports the testing of the hypotheses using structural equations.

Testing the structural model

A sequence of structural models was tested to establish the best representation of the data commencing with the fully saturated model in Figure 3.1. More details on comparing structural models is outlined in Appendix 5 (pp. 197-199). Jöreskog and Sörbom (1993, p. 119) suggested ordering nested models in terms of decreasing numbers of parameters (increasing degrees of freedom). Overall, Study 2 aimed to adopt this format but also included separate tests for the customer orientation factors and for mediation, so some steps used the same number of degrees of freedom. Thus, the models are not strictly nested although the number of degrees of freedom increases down the overall sequence in the table. Table 3.9 provides a summary of the structural models tested and the rationale for them. The selection of the models and the order in which they were tested was designed to incorporate theory in addition to the fit of the data (Hair et al., 1998; Hurley, Scandura, Schriesheim, Brannick, Seers, Vandenberg et al., 1997; Jöreskog & Sörbom, 1993). The first model in Table 3.9 is the most flexible model, in which all variables are related, and under which other models are nested. The final model, Model 10, is the control model for uncorrelated latent variables.

Models 6 to 9 in Table 3.9 test whether perceived service quality mediates other paths. To demonstrate mediation, Baron and Kenny (1986) proposed that three requirements must be met. First, the independent variable (the perceived customer orientation factors) must be related to the mediator (perceived service quality), that is Hypotheses 1a and 1b must be true. Second, the independent variable (the perceived customer orientation factors) must be related to the dependent variable (i.e H2a and H2b, to service loyalty; and H5a and H5b, to customer commitment). Third, the mediator variable must exclude the independent variable when both are entered together. In SEM, the third requirement means that the fully mediated model (only indirect paths) needs to represent a better fit than the unmediated model (only direct paths) or the partially mediated model (direct and indirect paths). Where the first two requirements of Baron and Kenny (1986) are met, Models 6 and 8 are used to test for full mediation by perceived service quality of the customer orientation to service loyalty (Model 6) and customer orientation to customer commitment (Model 8) paths. These models are then

compared to both the unmediated models (Models 7 and 9 respectively) and the best fitting partially mediated model, derived in comparison to Model 1.

Table 3.9 Structural models tested and the theoretical rationale for them

Model	Hypothesis	Theoretical rationale
1	-	Fully saturated model (Figure 3.1) The most flexible model. All paths between latent variables were estimated.
2	H1a and H1b	Removal of relationships between perceived customer orientation (customer focus and customer feedback) and perceived service quality.
3	H3	Removal of the relationship between perceived service quality and service loyalty.
4	H6	Removal of the relationship between perceived service quality and customer commitment.
5	H8	Removal of the relationship between perceived customer commitment and service loyalty.
6	H2a and H2b	<i>Tests for full mediation by perceived service quality of the customer orientation to service loyalty relationship (indirect paths).</i> 3a Removal of relationship between customer focus and service loyalty. 3b Removal of relationship between customer feedback and service loyalty.
7	H4	<i>Direct effects model for customer orientation to service loyalty.</i> 4a The paths between customer focus and perceived service quality, and perceived service quality to service loyalty are fixed at zero (direct effect of customer focus on service loyalty) 4b The paths between customer feedback and perceived service quality, and perceived service quality to service loyalty are fixed at zero (direct effect of customer feedback on service loyalty)
8	H5a and H5b	<i>Tests for full mediation by perceived service quality of the customer orientation to customer commitment relationship (indirect paths).</i> 5a Removal of relationship between customer focus and customer commitment. 5b Removal of relationship between customer feedback and customer commitment.
9	H7	<i>Direct effects model for customer orientation to customer commitment.</i> 6a The paths between customer focus and perceived service quality, and perceived service quality to customer commitment are fixed at zero (direct effect of customer focus on customer commitment). 6b The paths between customer feedback and perceived service quality, and perceived service quality to customer commitment are fixed at zero (direct effect of customer feedback on customer commitment).
10	-	Uncorrelated structural model Control model to test the fit when there are no relationships between latent variables.

Table 3.10 provides a comparison of results for Study 2A. The table is based on the complete example for reporting a sequence of models in Tabachnick and Fidell (2001, p. 746). Thus, it shows the chi-squared values, degrees of freedom, CFI and chi-square differences. PNFI values have been added because parsimony is used as a criterion for decision-making. Full details of the fit indices are provided in Appendix 8 (Table A8.1, p. 213).

Table 3.10 Comparison of nested models for the consumer sample (Study 2A)

Model	χ^2	df	CFI	PNFI	χ^2_{diff}
1 Hypothesised (saturated) model	37.13	25	.99	.55	-
2a CF to PSQ removed (H1a)	90.25***	26	.99	.57	M1 – M2a = -53.12*** (much worse fit)
2b CB to PSQ removed (H1b)	37.61	26	.99	.57	M1 – M2b = -0.48 (no significant difference in fit)
3 PSQ to SL removed (H3)	52.71**	27	.99	.59	M2b – M3 = -15.10*** (much worse fit)
4 PSQ to CC removed (H6)	61.46***	27	.99	.59	M2b – M3 = -23.85*** (much worse fit)
5 CC to SL removed (H8)	72.03***	27	.99	.59	M2b – M3 = -34.42*** (much worse fit)
6a CF to SL removed (indirect paths only - full mediation)	54.23**	27	.99	.59	M2b – M6a = -16.62*** (much worse fit)
6b CB to SL removed (indirect paths only - full mediation)	37.26	27	.99	.60	M2b – M6b = 0.35 (no significant difference in fit)
7a CF to PSQ and PSQ to SL removed (direct path from CF to SL – unmediated model)	52.53**	27	.99	.59	M2b – M7a = -14.92*** (much worse fit)
7b CB to PSQ and PSQ to SL removed (direct path from CB to SL – unmediated model)	Analysis not performed because path between CB and PSQ not significant (Model 2b)				
8a CF to CC removed (indirect paths only - full mediation)	38.68	28	1.00	.62	M6b – M8a = -1.42 (no significant difference in fit)
8b CB to CC removed (indirect paths only - full mediation)	71.00***	29	.99	.63	M8a – M8b = -32.32*** (much worse fit)
9a CF to PSQ removed and PSQ to CC removed (direct effects for CF – unmediated model)	Analysis not performed because path between CF and CC not significant (Model 8a)				
9b CB to PSQ removed and PSQ to CC removed (direct effects for CB – unmediated model)	Analysis not performed because path between CB and PSQ not significant (Model 2b)				
10 Control model	867.94***	35	.82	.63	M8a – M10 = -829.26*** (much worse fit)

Note. CC = customer commitment; CB = customer feedback; CF = customer focus; SL = service loyalty; PSQ = perceived service quality; χ^2 = chi-square; df = degrees of freedom; χ^2_{diff} = chi-square difference; CFI = Comparative Fit Index; PNFI = Parsimony Normed Fit Index.

*p<.05. **p<.01. ***p<.001.

In Table 3.10, paths in sequential models were fixed at zero to determine whether improvements could be made on the hypothesised model (Model 1). Where significant improvements were not achieved, the previous model was retained as the basis for comparison. The models and results are now discussed in order.

Model 2 tested for relationships between the perceived customer orientation factors and perceived service quality (Hypothesis 1). Model 2a showed that the path between customer focus (CF) and perceived service quality should be retained. In contrast, when the path between customer feedback (CB) and perceived service quality was removed (Model 2b), the chi-square difference test and fit indices (Appendix 8, Table A8.1, p. 213) did not show any significant differences to Model 1. This finding was not surprising because the path removed in Model 2b was not significant in Model 1. Thus, Model 2b, the more parsimonious model, was adopted for further comparisons.

The next three models (3, 4 and 5) tested for specific hypothesised relationships (H3, H6 and H8). The results indicated that the relevant paths should be retained because the fit, in each case, was much worse than that achieved in Model 2b.

Models 6 and 7 tested for mediation by perceived service quality of the perceived customer orientation to service loyalty relationship. Two models were necessary in each case (M6a, M6b and M7a, M7b) to test separately the two customer orientation factors (CF and CB). These are considered in turn. The data in Table 3.10 show that perceived service quality partially mediates the relationship between customer focus and service loyalty. This is because Models 6a (indirect paths only) and 7a (direct path only) both produce worse fit than Model 2b (has both indirect and direct paths). Hence partial mediation is evident. In contrast, mediation by perceived service quality of the proposed customer feedback to service loyalty relationship is not evident. Model 6b (removal of the relationship between customer feedback and service loyalty) did not produce better or worse fit than Model 2b. Again, this result was not surprising because the path was not significant in Model 2b. That is, one of Baron and Kenny's (1986) basic requirements for mediation, that the independent variable be related to the mediator, was not met and therefore Model 7b was not tested. Because Model 6b was more parsimonious than Model 2b, and all other fit indices were the same (Table A8.1, p. 213) Model 6b was subsequently adopted as the best fitting model.

Models 8 and 9 were proposed to test for mediation by perceived service quality of the customer orientation to customer commitment links. However, similarly to Model 7b above, mediation was not evident because the basic relationship between the independent variable (customer focus) and dependent variable (customer commitment) was not evident (tested in

Model 8a). Similarly, the necessary link between the independent variable (customer feedback) and the mediator variable (perceived service quality) (tested in Model 2b) was not present.

Model 8a was adopted as the final model of best fit. It was chosen above Model 6b because it produced the same acceptable fit indices (e.g., AGFI=.95, NNFI=.99, RMSEA=.04, SRMR=.02) and was more parsimonious (PNFI=.62 compared to .60).

Final structural model for Study 2A

Figure 3.2 shows the final model for the consumer sample of Study 2A, including standardised path coefficients, their significance levels and *t*-values (in brackets).

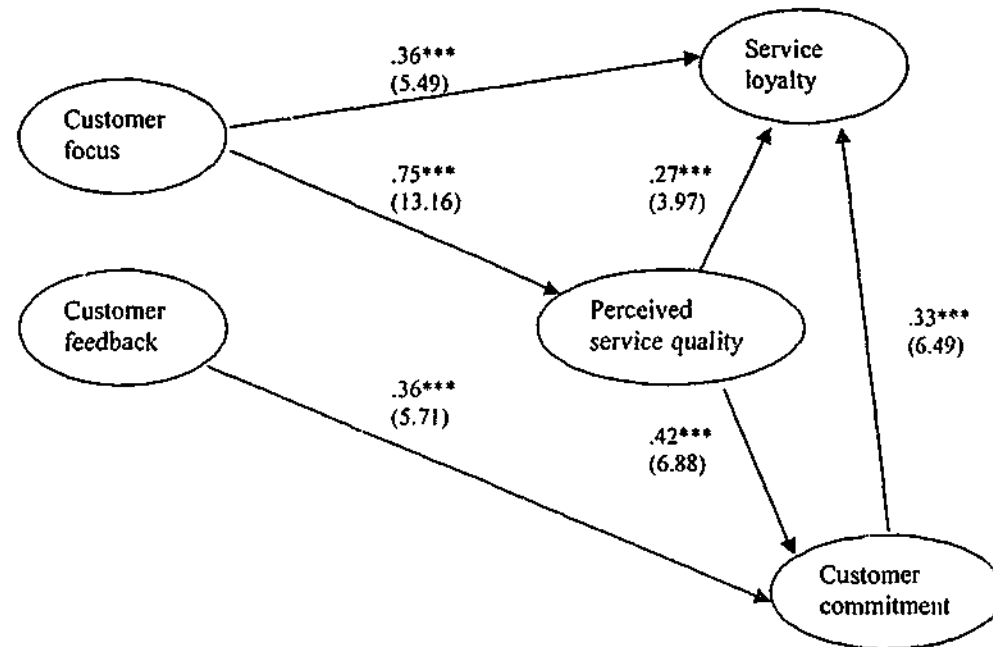


Figure 3.2 Parameter estimates for final structural model (Study 2A, n=289)

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

The squared multiple correlations (R^2 values) for the structural equations were .71 for service loyalty, .49 for customer commitment and .57 for perceived service quality. Based on the standardised coefficients shown in Figure 3.2, the two independent variables (customer focus and customer commitment) leading to service loyalty make approximately equal contributions to the variance while the mediator (perceived service quality) makes slightly less. Similarly, perceived service quality and customer feedback contribute, approximately equally, to customer commitment but the relationships only explain 49 percent of the variance. Finally, a very strong relationship appears to exist between customer focus and perceived service

quality. This relationship is considered further in the next paragraph which discusses the final correlation between the latent variables.

The correlations between the latent variables in the final model were inspected to check for potential problems with multicollinearity. The largest correlations were between customer focus and service loyalty (.76) and customer focus with perceived service quality (.75). While these values exceed the value of .70 recommended by Tabachnick and Fidell (2001) for interpretability, they are less than the .90 rule-of-thumb used to highlight possible statistical problems in SEM (Hair et al., 1998; Tabachnick & Fidell, 2001). Hence, the correlations were unlikely to have destabilised the parameter estimates in SEM (Hair et al., 1998). However, because the two correlations mentioned above exceeded .70, the analysis was re-run using guidelines by Anderson and Gerbing (1988). That is, the correlation between highly correlated variables was set at one. The chi-squared difference test was significantly different for each of the pairs of variables (-251.80 and -188.48). This result was not surprising, given that the five factor measurement model produced best fit (Table 3.3, p. 75) but it confirmed that the pairs of latent variables, customer focus and service loyalty, and customer focus and perceived service quality, were not redundant.

The structural model for Study 2B

Similarly to Study 2A, the final step of the analysis for Study 2B used structural equation modelling to jointly estimate the structural and measurement models, and test Hypotheses 1 – 8. Table 3.9 (p. 82) listed the structural models that were compared for Study 2A. The same models and rationale were used in Study 2B. In summary, ten models were tested, four of which tested requirements for mediation of other variables by perceived service quality (Models 6 to 9). Table 3.11 provides the results.

Table 3.11 Comparison of nested models for the business sample (Study 2B)

Model	χ^2	df	CFI	PNFI	χ^2_{diff}
1 Hypothesised (saturated) model	74.58***	25	.99	.55	-
2a CF to PSQ removed (H1a)	141.55***	26	.97	.56	M1 - M2a = -66.97 (much worse fit)
2b CB to PSQ removed (H1b)	76.01***	26	.99	.57	M1 - M2b = -1.43 (no significant difference in fit)
3 PSQ to SL removed (H3)	100.03***	27	.98	.59	M2b - M3 = -24.02 (much worse fit)
4 PSQ to CC removed (H6)	87.45***	27	.98	.59	M2b - M4 = -11.44 (much worse fit)
5 CC to SL removed (H8)	158.18***	27	.96	.57	M2b - M5 = -82.17 (much worse fit)
6a CF to SL removed (indirect paths only - full mediation)	91.03***	27	.98	.59	M2b - M6a = -15.02 (much worse fit)
6b CB to SL removed (indirect paths only - full mediation)	80.11***	27	.99	.59	M2b - M6b = -4.10 (slightly worse fit)
7a CF to PSQ and PSQ to SL removed (direct path from CF to SL - unmediated model)	98.70***	26	.98	.56	M2b - M7a = -22.69 (much worse fit)
7b CB to PSQ and PSQ to SL removed (direct path from CB to SL - unmediated model)	Analysis not performed because path between CB and PSQ not significant (Model 2b)				
8a CF to CC removed (indirect paths only - full mediation)	77.66***	27	.99	.59	M2b - M8a = -1.65 (no significant difference in fit)
8b CB to CC removed (indirect paths only - full mediation)	108.54***	27	.97	.58	M2b - M8b = -32.53 (much worse fit)
9a CF to PSQ removed and PSQ to CC removed (direct path from CF to CC - unmediated model)	85.62***	26	.99	.57	M2b - M9a = -9.61 (worse fit)
9b CB to PSQ removed and PSQ to CC removed (direct path from CB to CC - unmediated model)	Analysis not performed because path between CB and PSQ not significant (Model 2b)				
10 Control model	734.35***	35	.82	.64	M8a - M10 = -582.11 (much worse fit)

Note. CC = customer commitment; CF = customer focus; SL = service loyalty; PSQ = perceived service quality; CB = customer feedback; χ^2 = chi-square; df = degrees of freedom; χ^2_{diff} = chi-square difference; CFI = Comparative Fit Index.

*p < .05. **p < .01. ***p < .001.

The data for each model in Table 3.11 are now considered in turn, as they were for Study 2A (Table 2.10). Model 1, the fully saturated model provided the initial base for comparing other models. In Model 2a, the customer focus to perceived service quality path was fixed at zero but this produced a large negative chi-square difference suggesting a worse fitting model. In

contrast, the chi-square for Model 2b was not significantly different to that for Model 1 and the other fit statistics (Appendix 8, Table A8.2, p. 214), were identical or slightly better (e.g., AGFI and PNFI). Thus, Model 2b was used in subsequent comparisons. Model 2b excluded the path from customer feedback to perceived service quality, and so eliminated the possibility of mediation, by perceived service quality, of relationships involving customer feedback.

Models 3, 4 and 5, which tested Hypotheses 3, 6 and 8, produced models of significantly worse fit than Model 2b. Consequently, the paths that had been fixed at zero in each one were kept free in subsequent models and Model 2b retained as the model for comparison.

Models 6 and 7 tested whether perceived service quality mediated the customer orientation to service loyalty relationship. As for Study 2A, the two customer orientation factors were tested separately. The data suggest that perceived service quality partially mediates the customer focus to service loyalty relationship. This is evident because the chi-square values for Model 2b (with both indirect paths and the direct path) were significantly higher than for Model 6a (with indirect paths, representing full mediation) and Model 7a (with one direct path, representing the unmediated model). Again, similarly to Study 2A, perceived service quality was found to not mediate the customer feedback to service loyalty relationship. This was because customer feedback did not demonstrate a significant relationship to perceived service quality (Model 2b), that is, the first criterion for mediation outlined by Baron and Kenny (1985), that the independent variable be related to the mediator, was not met.

Models 8 and 9 tested whether perceived service quality mediated the customer orientation to customer commitment relationship. Mediation is not apparent for either customer focus or customer feedback. The factors are considered in turn. For mediation by perceived service quality of the proposed customer focus to customer commitment link, first the independent variable (customer focus) must be related to the dependent variable (customer commitment). While the two variables demonstrated an intercorrelation of .44 (Table 3.8, p. 79), when all relationships were analysed simultaneously in SEM (Model 1) the path between them was not significant (standardised coefficient of .13, $t=1.89$). Further, Model 8a (representing full mediation) needed to produce a better fit than Model 9a (unmediated model) and Model 2b (partial mediation). The fit of Models 8a and 2b was indistinguishable so this further requirement was not met. Hence, it was assumed that mediation was not occurring.

Mediation by perceived service quality of the proposed customer feedback to customer commitment relationship was not tested (Model 9b) because Model 2b had found that customer feedback (the independent variable) was not significantly related to the mediator (perceived service quality). However, Model 8b was tested to check for a relationship between customer feedback and customer commitment (H5b). In contrast to Model 8a, in which the path for customer focus could be deleted, the results indicated that the path between customer feedback and customer commitment should be retained.

For Study 2B, Model 8a was adopted as the model of best fit. The chi-square differences and fit statistics for Models 8a, 2b and 1 did not show significant differences. Hence, Model 8a, which excluded the nonsignificant paths in the other models, was chosen.

Final structural model for Study 2B

Figure 3.3 shows the output for Model 8a (Table 3.11, p. 87), including significant paths, standardised path coefficients and significance levels. This model has essentially the same fit statistics as Models 1 and 2b (Table A8.2, p. 214) but was chosen as the final model because it is slightly more parsimonious, resulting from fixing the nonsignificant paths in Model 1 at zero. That is, customer feedback to perceived service quality (Model 2b) and customer focus to customer commitment (Model 8a) were removed.

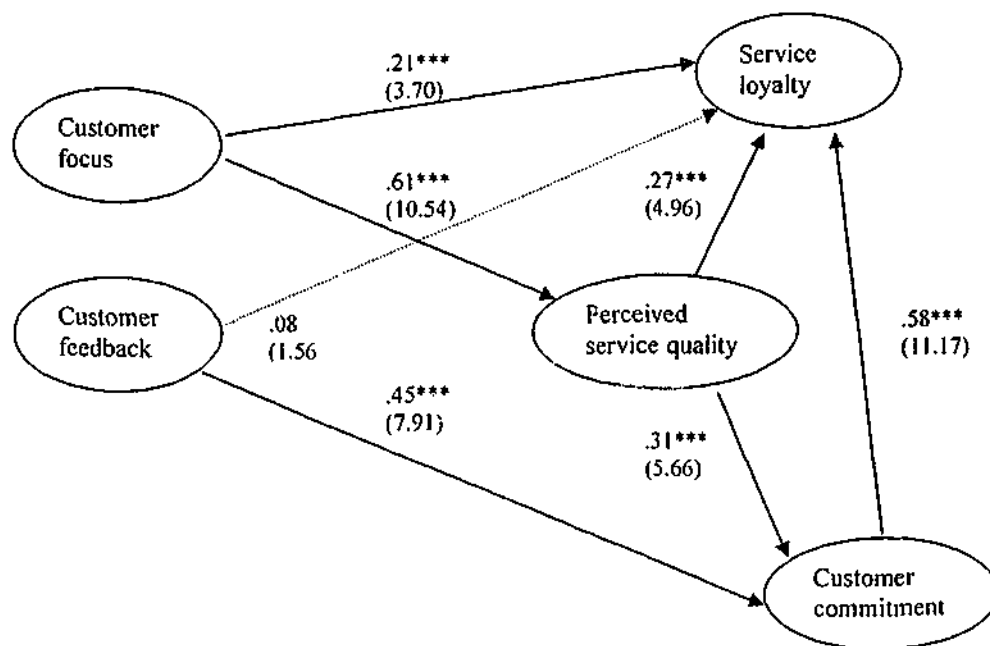


Figure 3.3 Parameter estimates for final structural model (Study 2B, $n=325$)
* $p<.05$. ** $p<.01$. *** $p<.001$.

The only difference between the structural models for Studies 2A and 2B is the nonsignificant path for the relationship between customer feedback and service loyalty in Study 2B. The squared multiple correlations for the structural equations are also similar, with values of .70 for service loyalty, .39 for customer commitment and .37 for perceived service quality.

The correlations between the latent constructs in the final model were all less than .64 except for customer commitment and service loyalty (.75). Hence, because the correlations were well below the rule-of-thumb of .90, the variables did not appear to demonstrate multicollinearity problems that would lead to unstable parameters (Hair et al., 1998). The only issue was the possible difficulty in interpreting differences between customer commitment and service loyalty because the correlation exceeded the .70 cut-off suggested by Tabachnick and Fidell (2001). To be consistent with Study 2A, the unity of test of Anderson and Gerbing (1988) was run on these two variables for the final structural model. The test produced a much larger chi-square (781.29), confirming the distinctness of the constructs.

Results of hypothesis testing

The structural models (Tables 3.10 and 3.11) and the path coefficients shown in Figures 3.2 and 3.3 provide the results necessary to test Hypotheses 1 to 8. The tables and figures indicate identical overall findings for the two samples of call centre customers in Studies 2A and 2B. Hence, the results of the hypothesis testing for the two studies are reported together. Table 3.12 (p. 92), at the conclusion of the discussion, provides a summary of the hypotheses and the findings.

The first two hypotheses test proposed relationships between the two customer orientation factors with each of perceived service quality and service loyalty. Figure 3.2 (p. 85) and Figure 3.3 (p. 89) show that customer focus demonstrated a relationship with the dependent variable in each case but customer feedback did not. That is, H1 and H2 were supported for one customer orientation factor but not the other. Specific tests for the relationships were conducted in Models 2 and 6 in Table 3.10 (p. 83) and Table 3.11 (p. 87). When the paths involving customer focus (Models 2a and 6a) were removed the fit of the models diminished, indicating that relationships existed and the paths should be retained. In contrast, when the paths involving customer feedback (Models 2b and 6b) were removed, the fit of the models was not affected, or only very slightly affected (Model 6b, Study 2B). Hence, the paths could be deleted from the models. For Model 6b, Study 2B the path was initially retained but was found not to represent a significant relationship.

Hypothesis 3 was supported as shown by the results for Model 3 in both Table 3.10 (p. 83) and Table 3.11 (p. 87). That is, perceived service quality was positively related to service loyalty for both samples.

Hypothesis 4 tested for mediation by perceived service quality of the proposed links between the customer orientation factors and service loyalty. Models 6 and 7 in Tables 3.10 and 3.11 provided the tests. As discussed on page 84 (Study 2A) and page 88 (Study 2B), different results were found for the two customer orientation factors. The link between customer focus and service loyalty was partially mediated by perceived service quality in both studies. This effect is shown by the existence of both direct and indirect paths between the variables in Figure 3.2 (p. 85) and Figure 3.3 (p. 89). In contrast to customer focus, there was no link between customer feedback and perceived service quality (H1b, demonstrated in Model 2b). Hence, as discussed previously, the first condition for mediation was not met (Baron & Kenny, 1986) and Hypothesis 4 was not supported for customer feedback.

Models 8a and 8b in Tables 3.10 (p. 83) and 3.11 (p. 87) tested Hypothesis 5 and produced the same results for both samples. Specifically, Model 8a removed the customer focus to customer commitment relationship and produced no significant changes in the overall fit of the data. This finding showed that the proposed link was not supported. In contrast, Model 8b, in which the customer feedback to customer commitment relationship was removed, produced much worse fit and provided evidence for the existence of the relationship. The standardised beta coefficients of .36 ($p < .001$) (Figure 3.2, p. 85) and .45 ($p < .001$) (Figure 3.3, p. 89) for customer feedback to customer commitment in the final structural models confirm the relationship.

Evidence for the positive relationship between perceived service quality and customer commitment (Hypothesis 6) was provided by Model 4 in both Table 3.10 (p. 83) and Table 3.11 (p. 87).

Hypothesis 7 tested whether perceived service quality mediated the proposed relationships between the customer orientation factors and customer commitment. As for Hypothesis 4, evidence with respect to mediation was discussed immediately after Tables 3.10 (pp. 84-5) and 3.11 (p. 88). In summary, mediation was not supported in either study because the basic requirements in terms of relationships between variables were not met. However, Figure 3.2 (p. 85) and Figure 3.3 (p. 89) show that indirect paths existed between customer focus and customer commitment.

The final hypothesis, number 8, was supported, as shown by Model 5 in Tables 3.10 and 3.11. That is, customer commitment was positively related to service loyalty, as shown by the standardised coefficients of .33 ($p < .001$) in Figure 3.2, and .58 ($p < .001$) in Figure 3.3.

Table 3.12 Summary of results of hypothesis testing

Hypothesis	Findings
H1a Customer focus will be positively related to perceived service quality	H1a supported
H1b Customer feedback will be positively related to perceived service quality	H1b not supported
H2a Customer focus will be positively related to service loyalty	H2a supported
H2b Customer feedback will be positively related to service loyalty	H2b not supported
H3 Perceived service quality will be positively related to service loyalty	H3 supported
H4 Perceived service quality will mediate the link between customer orientation and service loyalty	H4 partial mediation for customer focus but not supported for customer feedback
H5a Customer focus will be positively related to customer commitment	H5a not supported
H5b Customer feedback will be positively related to customer commitment	H5b supported
H6 Perceived service quality will be positively related to customer commitment	H6 supported
H7 Perceived service quality will mediate the relationship between perceived customer orientation and customer commitment	H7 not supported for customer focus or customer feedback
H8 Customer commitment will be positively related to service loyalty	H8 supported

DISCUSSION

In contrast to Study 1, which focussed on customers' expectations of service quality from call centres, the overall aims of Study 2 were concerned with customers' experiences of service quality. First, Study 2 tested whether customers' perceptions of service quality of call centres were directly related to their commitment and service loyalty to the providing organisations. Second, the study investigated whether perceived service quality had a mediating role between perceived customer orientation and the dependent variables. This section interprets the findings of Study 2. In doing so, it is emphasised that Study 2 used a cross-sectional method, which may have suffered from common method variance. No inference with respect to causality can be made from the results. As well, the data were self-reported by customers

and based on perceptions and attitudes, rather than actual behaviours. However, Study 2 has strengths in that it used structural equation modelling to test theoretically based propositions that were derived from prior empirical relationships, and there were consistent findings for two samples of customers from call centres at the extremes of the classification provided by Taylor et al. (2002).

Study 2 found that customers' perceptions of the customer orientation and service quality of call centres are related to their commitment and service loyalty to the providing organisations. In doing so, Study 2 integrated the variables into a model which provides several major findings. First, perceived service quality of call centres is directly related to both service loyalty and customer commitment to the providing organisations. Second, the two customer orientation factors demonstrate different relationships. Customer focus is related to both perceived service quality and service loyalty while customer feedback demonstrates a relationship only to customer commitment. Third, perceived service quality partially mediates the relationship between customer focus and service loyalty, but customer feedback acts independently on customer commitment. The contribution of these findings is summarised below.

First, service quality theory (e.g., as developed by Parasuraman et al., 1988; Cronin et al., 2000; Dabholkar et al., 2000) does not appear to have been tested in non-core services such as call centres. Testing the theory is important because call centres have a role as the only customer interface in many organisations, which means that they may affect customer attitudes and, subsequently, profits. Study 2 confirms that perceived service quality of call centres is likely to contribute to customer retention, via commitment and service loyalty. Second, service loyalty and customer commitment, which are both under-researched in the services literature, were distinguished from one another and a measure developed for customer commitment. Third, to this author's knowledge, the model of Study 2 is the first to integrate dimensions of customer-perceived customer orientation with perceived service quality, customer commitment and service loyalty. By identifying the separate relationships of customer focus and customer commitment, the study contributes to greater understanding of the specific benefits that perceived customer orientation may provide in retaining customers.

The next section interprets the findings in more detail. It commences by discussing whether perceived service quality of call centres ultimately matters in relation to customers' attitudinal responses. The discussion is then extended to consider the findings that involve perceived customer orientation.

Perceived service quality of the call centre and customers' loyalty and commitment to the providing organisation

The first question guiding Study 2 was concerned with whether customers' experiences of service quality from call centres are related to their feelings (customer commitment) and intentions (service loyalty) towards the providing organisation. Study 2 suggests that they are. As shown in Figures 3.2 (p. 85) and 3.3 (p. 89), perceived service quality is related to both service loyalty and customer commitment.

The relationship between perceived service quality and service loyalty means that customers' perceptions of the quality of service they receive from the service consultant in the call centre may be linked to their intentions to provide positive communication about the company and to remain a customer. This finding supports the relationship between perceived service quality and service loyalty relationship which has been demonstrated in theory about service quality (Zeithaml et al., 1996), the service profit chain (Heskett et al., 1997) and customer relationship economics (Storbacka et al., 1994). Study 2 responds to the call for research that specifically uses service loyalty (Bloemer et al., 1999; Cronin et al., 2000) and, more importantly, tests the theory in call centres (de Ruyter & Wetzels, 2000). Consequently, after-sales services, such as call centres, may have considerable strategic importance for providing organisations because the service they provide is related to customers' behavioural intentions with respect to the providing organisation.

As for service loyalty, the two samples in Study 2 indicated positive relationships from perceived service quality to customer commitment. Understanding customers' feelings (their commitment) as well as their intended behaviours (loyalty) is important because, as Bendapudi and Berry (1997) noted, it is quite feasible for customers to be (temporarily) loyal to a company because they are constrained by an existing relationship. Hence, they may not feel committed. Such a situation arises when customers are already in a relationship for service provision, for example, insurance services or online banking support in the current studies, and to exit the relationship would probably incur financial and inconvenience costs. Study 2 is consistent with the small number of previous studies that have tested a link between service quality and customer commitment for core services (Harrison-Walker, 2001; Kelley & Davis, 1994) and extends those previous findings to include call centre services.

Sequences of effects in services have generally not included customer commitment, for example, service profit chain studies, as reported by Heskett et al. (1997). Recent studies involving customer commitment have found that it precedes loyalty (Fullerton, 2003;

Pritchard et al., 1999). Study 2 does not dispute this previous finding, but it suggests that perceived service quality has a positive link to both customer commitment and service loyalty. Therefore, Study 2 contributes to the emerging knowledge on customer commitment by indicating the direct link of perceived service quality to customer loyalty, as well as through customer commitment. However, it is possible that the direct positive relationship between perceived service quality and service loyalty may be more marked in after-sales services because of the constrained relationship, mentioned above, in which customers are temporarily bound to service providers. Hence, measuring customer commitment is important in understanding their likely long-term loyalty.

Perceived customer orientation and customers' loyalty and commitment to the providing organisation

Brady and Cronin (2001) noted that very few studies have investigated customers' perceptions of customer orientation, even though employee-perceived customer orientation has been found to contribute to organisational performance. Employee-perceived customer orientation is one dimension of service climate, as defined by Schneider et al. (1998) but studies which have linked service climate to customer-perceived service quality have used global measures and not specifically linked customer orientation to service quality. Additionally, customer orientation does not appear to have been tested in any model with perceived service quality, service loyalty or customer commitment. Study 2 therefore addressed these gaps as follows.

In Study 2, customer-perceived customer orientation consisted of two factors, customer focus and customer feedback, which demonstrate different relationships to perceived service quality, customer commitment and service loyalty. Customer focus means that the organisation creates value for customers and emphasises customer satisfaction. Figures 3.2 and 3.3 show that customer focus is related to service loyalty. Further, some of the effect of customer focus on service loyalty is transmitted by perceived service quality. Not surprisingly, this means that customers use the quality of service delivery as an indicator of the organisation's commitment to understanding and meeting their needs. These relationships add to previous knowledge in that they suggest that perceived service quality may not have the dominant role, as the interface between organisations and customers, which Heskett et al. (1997) have demonstrated in past studies. Rather, the findings suggest that understanding customer orientation may require a synthesis of customer orientation and service quality

theory arising from both market (customer) orientation studies (e.g., Slater & Narver, 1994) and service climate studies (e.g., Scheider et al., 1998).

In contrast to the relationship with service loyalty, customer focus does not demonstrate a relationship with customer commitment. Consequently, it appears that customers' views on the customer focus of the call centre may be related to their intentions to remain with the organisation but not their feelings of identification and involvement. In service contexts, the distinction is important and a new insight. Similarly, the other customer orientation factor, customer feedback, demonstrates a relationship with customer commitment but not with service loyalty. That is, the organisation's activities in monitoring customer satisfaction and encouraging feedback on the quality of their service are related to positive feelings about the company but not customers' immediate intentions to remain loyal. The lack of association contradicts previous theory in which a market orientation, which includes gathering and disseminating customer feedback, contributes to service loyalty (Slater & Narver, 1994). Overall, placing an emphasis on customer feedback seems to be a means of increasing customer commitment which may then increase the likelihood of long-term sustained relationships. The specific relationship between customer feedback and customer commitment provides an avenue for future research to extend previous studies in which affective commitment has been found to have greater effects on loyalty than continuance commitment (e.g., Fullerton, 2003; Harrison-Walker, 2001; Wetzels et al., 2000).

At present, the means by which customer-oriented service firms benefit from their approach, either directly or indirectly, are not well understood (Brady & Cronin, 2001). Study 2 indicates that the dimensions of perceived customer orientation (customer focus and customer feedback) behave differently with respect to customer commitment and service loyalty. Customer focus is directly related to service loyalty and has some of its link transmitted by perceived service quality. Customer feedback is directly related to customer commitment, and appears not to be transmitted through perceived service quality. In contrast, customer focus does not demonstrate a relationship to customer commitment, and customer feedback does not demonstrate one with service loyalty. These relationships involving the customer orientation factors show how organisations may benefit from their customer-oriented behaviours.

To summarise, this project had its genesis in the important role that service quality is believed to perform between service organisations and their customers. Study 2 placed perceived service quality at the centre of a model that has customer orientation as an input, and customer commitment and service loyalty as outputs. The results suggest that perceived

service quality is related to both service loyalty and customer commitment, and transmits customer focus, but not customer feedback. Additionally, customer focus has a direct link to service loyalty, and customer feedback a direct link to customer commitment. These links suggest more complexity than the linear sequence between customer commitment and service loyalty demonstrated in previous studies (e.g., Fullerton, 2003; Pritchard et al., 1999), and indicate the importance of the overall model presented in Study 2.

Limitations of Study 2

Study 2 used the same samples as Study 1 and therefore was subject to the same limitations due to the research design and data collection. A major limitation is lack of generalisability of the findings because of the low response rates from the mail surveys. Other major limitations are common method variance, cross-sectional data, and untested causality. Finally, there are limitations in relation to the method of analysis using structural equation modelling.

Whereas data collection by mail-out surveys was considered most feasible for accessing customers of call centres, it gave low response rates (15.6% and 17.0%) and calls into question the generalisability of the findings through response bias. Most people in the samples did not respond and those that did may not truly represent either the sample or the population from which it was drawn. That is, nonresponse error may have caused unknown bias in the results. Access to nonrespondents was not permitted by the organisations that participated in Studies 1 and 2 and, consequently, estimating nonresponse error by further data collection was not possible. However, tests for the differences between early and late respondents on major variables (Table A2.2, p. 174) did not produce any significant differences. Hence, the likelihood of nonresponse bias is decreased (Armstrong & Overton, 1977) but not removed. Nonrespondents might have had lower perceived service quality or less commitment or loyalty. To this author's knowledge, past services studies do not provide evidence of whether nonresponse is from those most unhappy with the service or least committed to the organisation. Hence, specific implications of nonresponse are unclear. Finally, with respect to the mail survey design, Study 2 was concerned with attitudes not behaviours, and there were no objective measures used. Rather all attitudes were self-reported, and were therefore subject to social desirability bias (Mitchell, 1985).

In a cross-sectional correlational study, where multiple measures with similar formats are used Mitchell (1985) noted that common method variance may occur. Lindell and Whitney (2001) explained that correlations between major variables tend to occur because data are collected in the same format at the same time. This means that the correlations are

inflated and the variables may look more related than they really are. However, Harris and Schaubroeck (1990) argued that latent variable models, such as those used in Study 2, are useful when a researcher is concerned about eliminating common method effects. Spector (1987) suggested comparing a one factor model to all other models. In the confirmatory factor analyses of Study 2, the test of the one factor model produced poor fit statistics when compared to all other models (Table 3.3, p. 75 and Table 3.4, p. 76). Thus, common method variance was unlikely to be a major problem in the study.

Another limitation arising from potential difficulties with the survey method, is the use of the same sample for both scale development and for assessing construct validity. In such cases, Hinkin (1995) notes that factors may be sample specific and inclined toward high reliability. Study 2B re-tested the assumptions from Study 2A with a different sample in a different industry and likely reduced the possibility that the results were caused by common method variance. Hinkin (1995) stated that the use of an independent sample to provide an application of the measure in a substantive context enhances generalisability and, also, that when hypotheses using the measure are confirmed, confidence in its construct validity is increased. Hence, using two independent samples would have reduced, but could not eliminate, the likelihood of problems arising from common method variance.

Cross-sectional designs provide a weaker test of models than longitudinal studies. With cross-sectional data, the presumed causal ordering of variables is an untested assumption (Cronin et al., 2000) and should be precluded (de Ruyter & Wetzels, 2000). In Study 2 evidence of causal effects could not be inferred and hence, structural parameters were interpreted in terms of positive relationships between constructs. A longitudinal design, in which a time interval exists between antecedent and consequence, or in which each variable is measured at more than one point in time, would have been preferable (Kelloway, 1996).

The second major area of limitations in Study 2 concerns structural equation modelling. In particular, limitations may have existed due to the specification of the model. Firstly, 'omitted variables bias' may have distorted results. Jöreskog and Sörbom (1993, p. 112) stated:

"Most often, the independent constructs in the model account for only a fraction of the variation and covariation in the dependent constructs, because there may be many other variables that are associated with the dependent constructs, but are not included in the model."

The aggregation of omitted variables is represented in a set of error terms, which include the variation and covariation in the dependent constructs unaccounted for by the independent constructs. Kelloway (1996) noted that omitted variable bias may mask or overstate the true relationship between independent and dependent variables. In Study 2, the major variables of interest were included. The model was not designed to specify all possible influences on customers' affective responses (commitment) and behavioural intentions (loyalty) but to integrate variables not previously included in service quality / service loyalty models. It is acknowledged that other variables have been included in models where service quality has led to behavioural intentions, for example, customer satisfaction and service value (Cronin et al., 2000), and trust (Morgan & Hunt, 1994). Hence, a limitation of Study 2 is that all endogenous variables were not included in the model and, consequently, biased parameter estimates may have resulted (Kelloway, 1996). However, the R^2 values for service loyalty (.71 in Study 2A and .70 in Study 2B) indicate that much of it is explained. In contrast, the R^2 values for customer commitment (.49 in Study 2A and .39 in Study 2B) suggest that other variables need to be identified for future models.

Another limitation that relates to the use of structural equation modelling is that the researcher determines the model testing procedures and there are many possibilities. Jöreskog and Sörbom (1993, p. 114) stated:

"If a model *fits* the data, it does not mean that it is the "*correct*" model or even the "*best*" model. In fact, there can be many *equivalent* models, all of which will fit the data equally well as judged by any goodness-of-fit measure."

In Study 2, care was taken to use substantive theoretical reasoning in defining the hypothesised model and then establishing a sequence of nested models to reduce the likelihood that an equivalent model, of better fit, not be tested. However, Tabachnick and Fidell (2001) noted that the sequence of nested models can affect the results. Further, because the theoretical constructs are not observable, the theory cannot be tested directly (Jöreskog & Sörbom, 1993). Jöreskog and Sörbom (1993, p. 112) stated "All one can do is examine the *theoretical validity* of the postulated relationships in a given context". Consequently, limitations in Study 2 are that the structural model may have had either specification errors (omitted critical variables) or testing errors, in that every alternative configuration involving the variables was not tested.

Finally, the conclusions of the study require further testing with other samples and in different call centres. Studies 2A and 2B generated consistent findings using two samples, representing different types of customers (end consumers and business customers), industries

(insurance and banking), and call centres (high quantity emphasis versus a high quality emphasis). However, low mail-survey response rates and the possibility of common method variance mean that the results require further validation. Data from diverse customer samples using other types of call centres, within and across different industries, and having the measurement of the independent and mediator variables precede the dependent variables, would enhance the limited generalisability of the results.

Future research

The results of this study suggest several directions for future research. The first concerns the measurement of service quality. To measure service quality, Studies 1 and 2 customised a scale developed by Burgers et al. (2000), based on consumer expectations of service consultants in call centres. The scale does not appear to have been tested since its development and the number of items in the scale was reduced during the confirmatory factor analysis process in Study 2. While the measure showed discriminant validity (Tables A6.2 and A6.4) and good reliability (.96 in Study 2A and .95 in Study 2B) further investigation of the elements of call centre service quality seems warranted. For example, Zahorik et al. (2000) suggested that four major components are necessary to judge customers' views of call centres: contact personnel, access, automated contact, and problem handling. The final scale in Study 2 did not include all these elements.

A difference between the consumer and business samples that was not explored was the fact that respondents in Study 2B had to pay extra to gain access to the call centre service. Other studies have shown that price, and the related concept, value, add complexity. For example, Ranaweera and Neely (2003) found that high service quality at the expense of a reasonable price decreased customers' behavioural intentions in a telephone service. Cronin et al. (2000) found that perceived service quality and value both had direct effects on behavioural intentions, whereas Hartline and Jones (1996) suggested that value may be more closely associated with word-of-mouth communication than is service quality. Hence, future studies, especially where specific charges exist for call centre services, may wish to incorporate a variable to determine value (a function of quality and cost) and establish its relationships to both customer commitment and service loyalty. Including value in the model may identify issues specific to particular types of call centres, such as for business-to-business services.

In researching customer commitment, Fullerton (2003) and Pritchard et al. (1999) commented that it is an under researched area in services. Study 2 has identified relationships

between each of customer feedback and perceived service quality with customer commitment. However, as noted previously, the variance in customer commitment explained by the structural equations suggests that future work to identify other contributing factors would be useful. Also, Study 2 developed a new measure for customer commitment. The measure demonstrated discriminant validity in both exploratory (Appendix 6) and confirmatory (Appendix 7) factor analyses and reliability (.94 in Study 2A and .93 in Study 2B). However, the customer commitment items were adapted predominantly from the major measure of employee organisational commitment (Porter et al., 1974) and included only two items about customers' commitment to a relationship. Future studies may wish to extend and further refine the scale.

Perceived customer orientation consisted of two factors for both samples, and these factors exhibit different characteristics in the final models (Figures 3.2 and 3.3). Customer focus is related to service loyalty and customer feedback is related to customer commitment. Brady and Cronin (2001) called for research that investigates the outcome effects of customer focus. Study 2 has contributed to this call, but it is possible that other factors may explain customers' perceptions of the customer orientation of call centres. Qualitative research with both customers and employees is needed to identify other elements that may contribute to a customer orientation, followed by further quantitative testing.

Finally, the service climate within call centres may vary across industries. Call centre studies have tended to focus on employees, productivity, and control issues (e.g., Fernie & Metcalf, 1999; Singh, 2001; Taylor & Bain, 1999). De Ruyter and Wetzels (2000) and Gilmore and Moreland (2000) noted that studies have neglected issues pertaining to customer needs. Hence there is much scope for research in call centres that explores the organisational bases and facilitators of service quality. Study 3 pursues such research.

Practical applications

Call centres are the major, and sometimes the only, customer interface for many organisations. Managers should therefore have a keen interest in customers' attitudes and responses to the service delivered by their call centres. Several major findings from Study 2 suggest that such interest is justified. First, perceived service quality of the call centre is positively related to both customers' commitment and service loyalty to the providing organisation. Second, customers' views of the customer orientation of the call centre also demonstrate direct positive relationships to service loyalty and customer commitment.

Finally, customer commitment is related to service loyalty. The practical implications of these major findings are considered in turn.

In Study 2, service loyalty consisted of customers' intentions to engage in positive communication about the organisation and to continue doing business there. Therefore, increasing service loyalty is an important aim for businesses. Customers' perceptions of the quality of service delivery in the call centres was positively related to their service loyalty to the providing organisations. Hence, the elements that constitute perceived service quality provide a strategic focus for call centre managers. In particular, perceived service quality means service consultants having the skills to define and solve problems, explain the process to customers, and treat them with empathy. Consequently, as well as product knowledge, customer service consultants in call centres require several other skills. In particular, they need analytical skills to process information and resolve customer queries, organisational knowledge and support to facilitate problem resolution, and high levels of communication skills to enable them to manage customer interactions. Providing the training in such skills represents an important challenge for call centre managers and, as Callaghan and Thompson (2002) noted, needs to be done in association with careful recruitment.

Another means of increasing service loyalty is to use customer focus. The customer focus component of perceived customer orientation contained items about maintaining a high level of commitment to customers, understanding their needs, creating value for them, and having customer satisfaction as a major objective. While these items reflect desirable views, the manner by which they may be attained by organisations is not obvious. However, customer focus is unlikely to be conveyed if, as noted in recent studies (de Ruyter and Wetzels, 2000; Gilmore, 2001), call centre managers continue to place an extreme emphasis on productivity, and efficiency-related performance models are used. Such approaches instigate frontline staff to rush calls to completion and do not give them scope to do the individual problem solving that is likely to enhance perceived customer focus.

The call centre provides an opportunity for positive contact with customers during which explicit and implicit messages about customer focus can be conveyed. For example, service consultants can take the time to understand customers' needs and actively endeavour to create value. In these situations, service consultants need special skills and the time to use them with customers. Once again, appropriate training and selection of staff with particular attributes is highlighted. However, training and recruitment may enable consultants to be customer-oriented and to deliver high levels of service quality but does not ensure it. The service climate, as defined by Schneider et al. (1998) must expect, support and reward

customer service quality. Service climate includes managerial practices such as supervision and feedback on performance, many aspects of human resource management, and systems and logistics support.

The other perceived customer orientation factor, customer feedback, which included organisational activity related to soliciting and using customer feedback, demonstrates a direct positive relationship to customer commitment. Customer commitment is also related to service loyalty for the consumer and business samples. This link to service loyalty means that affectively committed customers are likely to engage in positive word-of-mouth activity and to remain customers. Managers therefore need to identify and work on aspects of service that develop affective commitment. Fullerton (2003, p. 342) noted that, while his study identified loyalty benefits of enhancing affective commitment, "it is less clear how affective commitment is developed and nurtured". He suggested that it is a function of the totality of customer interactions with, and evaluations of, the service provider. Call centres, as the major customer interface, have a critical role here. However, how do managers develop a sense of identification and involvement in their customers? Study 2 has clearly identified customer feedback as a means of doing so. That is, it appears that organisations can develop customer commitment by monitoring customer satisfaction, encouraging informal feedback and seeking evaluations of the quality of their work and service. In practice, managers need to gather customer feedback and act on it. Direct communication with customers provides an opportunity to gain first-hand information about customers' needs and wants rather than having them defined by managers who are likely to have limited access to, and knowledge of, the firm's customers. If managers can use their resources to generate, disseminate, and be responsive to customer data, the firm should be perceived as being interested in customer feedback. Study 2 suggests that customer commitment will follow.

Overall, the practical implications of Study 2 highlight the importance of frontline service workers, and the need for an environment that expects and engenders high levels of service. In call centres, where customisation and judgment in service encounters are necessary, developing the skills of customer contact personnel is an important strategy in building service loyalty and customer commitment. Selection, induction and on-going training are important. However, frontline staff cannot deliver service quality without the motivation to do so, through appropriate recognition, and efficient internal support processes. Through their frontline personnel, managers are able to communicate positively with customers and gather feedback so that it can drive improvement initiatives in their call centres and wider organisations. In doing so, managers are demonstrating their customer orientation and

fostering high levels of service quality. That is, they are setting the scene for positive customer responses and likely customer retention.

Conclusion to Study 2

Study 2 used a cross-sectional field study and quantitative analysis to investigate customers' responses to service provision by two call centres ($n=289$ and $n=325$). The study developed a model around perceived service quality (bottom part of Figure 1.1, p. 12). The findings of the study show that the service quality of call centres ultimately matters to organisational success. This assumption is based on a positive relationship between perceived service quality and the outcomes of customer commitment and service loyalty. Additionally, customers' perceptions of the customer orientation of the call centres was measured in terms of customer focus and customer feedback, and these variables separately linked with the mediator, perceived service quality, and the outcome variables, customer commitment and service loyalty (Figure 3.2, p. 85 and Figure 3.3, p. 89). Having established the links, the factors that contribute to high levels of service quality delivery from call centres become the focus of future research. An exploration of these elements, from the perspective of service employees, is the focus of Study 3.

CHAPTER 4

STUDY 3 – FRONTLINE EMPLOYEES' PERCEPTIONS OF ORGANISATIONAL FACTORS THAT AFFECT THE DELIVERY OF SERVICE QUALITY

INTRODUCTION

Study 3 seeks employees' views on the organisational factors that facilitate or inhibit their ability to deliver service quality to customers. Identifying the factors is strategically important to managers because Study 2 demonstrated that customers' perceptions of the service quality of the two call centres in the study were related to their commitment and self-reported loyalty to the providing organisations. Consequently, Study 3 focuses on the operational level and aims to establish the organisational factors that lead to customers' perceiving high levels of service quality from a call centre.

Frontline employees work in unique environments in call centres. In particular, they must manage customer interactions over the telephone, they are generally expected to adhere to strict efficiency targets, and are subjected to high levels of monitoring and control (Brown & Maxwell, 2002; Houlihan, 2002). Call centre work has been shown to result in high levels of employee stress (Knights & McCabe, 1998; Taylor & Bain, 1999; Wallace et al., 2000). The stress has been attributed to service encounters which require emotional labour, that is, the demonstration of appropriate feelings and responses (Ashforth & Humphrey, 1993; Sturdy, 1998) and the pressure upon employees to meet productivity goals at the same time as delivering quality customer service (Deery et al., 2002; Kinnie et al., 2000; Singh, 2000). However, call centre studies have not specifically reported any relationship between factors causing stress and the ability of employees to deliver service quality, and nor have call centres been used to develop or test the theoretical frameworks that identify organisational factors leading to customer-perceived service quality. Study 3 therefore asks frontline employees from a call centre about the work environment and how it affects their ability to deliver service to customers.

The main frameworks that have been used in previous studies to explore service quality delivery include customer service climate (Schneider et al., 1998), the service quality gaps model (Zeithaml et al., 1988) and the service profit chain (Heskett et al., 1997). Different studies have identified organisational factors that lead directly to service quality (Zeithaml et al., 1988), to customer service climate and consequently service quality (Borucki & Burke,

1999; Schneider et al., 1998; Yoon et al., 2001), to internal service quality (Caruana & Pitt, 1997; Lewis & Gabrielson, 1998; Reynoso & Moores, 1997) and to the cycle of failure in which service quality is not delivered in service profit chain studies (Heskett et al., 1997). The scope of the variables makes it difficult to compare the findings and generalise results and, where comparable, past studies are equivocal about the organisational features that facilitate the delivery of service quality. Further, there is a heavy reliance on samples from banks in the USA and, to a lesser extent on other services such as insurance and retail services. Hence, Study 3 seeks to understand the factors that apply in call centres. Because the study sought context-bound information that would lead to understanding a phenomenon, a qualitative approach was appropriate (Creswell, 1994). Study 3 pursues the views of frontline employees because their perspectives are central to the research question, a further characteristic of qualitative research (Lee, 1999).

This chapter commences by briefly discussing the variables that have been used in prior studies, in order to demonstrate the factors that contribute to service quality delivery in contexts other than call centres. It then considers two specific issues relating to service quality in call centres, the potential conflict between quality and productivity, and performance monitoring. In considering different perspectives, the discussion identifies the questions to be asked of frontline employees. Following the introduction, details of the method are outlined, and the results are provided and discussed. Finally, the chapter highlights limitations of the study and its implications for practice.

Organisational factors that affect service quality delivery

Studies 1 and 2 pursued customers' expectations and perceptions of service quality, using definitions and measures from Services Management and Marketing literature. No call centre studies appear to have investigated employees' views on the meaning of service quality. Hence, before discussing the organisational factors that might affect service quality, Study 3 asked employees about their understanding of service quality and customer service in call centre encounters. That is:

What does service quality mean in call centres?

As noted above, the variables that have been used to investigate the factors that lead to the delivery of service quality are diverse but they have arisen predominantly from several areas of theory. Service climate studies, service quality gaps theory and service profit chain theory

represent the theoretical 'bins' of Miles & Huberman (1994) which define Study 3. They are now briefly considered in turn.

Service climate is a general orientation to service, that emphasises human resource practices, managerial priorities and customer orientation. Service climate studies have identified factors such as 'concern for customers' and 'concern for employees' (Borucki & Burke, 1999), incorporated dimensions of customer orientation (Rogg, Schmidt, Schull & Schmidt, 2001; Schneider et al., 1998) or resulted in customer oriented behaviours by employees (Kelley, 1992; Peccei & Rosenthal, 2000). The emphasis on customers, fundamental to service climate studies, is important because Studies 1 and 2 in the current project demonstrated a positive relationship between customer-perceived customer orientation and service quality.

Service climate studies have found a direct link between a positive service climate for employees, and customers' evaluations of service quality (Borucki & Burke, 1999; Schneider et al., 1997; 1998). Other studies have shown that service climate is related to employee attitudes which subsequently affect service quality for customers (Hartline & Ferrell, 1996; Yagil & Gal, 2002; Yoon et al., 2001). Hence, service climate appears to be important to service quality delivery. However, no service climate studies have been reported in call centres or contexts other than face-to-face encounters between employees and customers. Schneider et al. (1998, p. 151) defined service climate in terms of "employee perceptions of the practices, procedures and behaviours that get rewarded, supported, and expected with regard to customer service and customer service quality". Thus, this definition was used in formulating a question to explore employees' views on the service climate. That is:

In your work, what is expected and rewarded with respect to service quality?

The service quality 'gaps model' assumes that high levels of customer perceived service quality depend on minimising various gaps (Parasuraman et al., 1985; Zeithaml et al., 1988). Gap 3, the service performance gap, is the discrepancy between specifications for the service and its actual delivery by frontline employees to customers (Zeithaml et al., 1988). Based on focus group data from several industries, Zeithaml et al. proposed that the size of Gap 3 can be explained by teamwork, employee-job fit, technology-job fit, perceived control, supervisory control systems, role conflict and role ambiguity. However, in a later empirical study, Parasuraman, Berry and Zeithaml (1992) found positive associations only between teamwork, horizontal communication and service quality. In their more recent study of Gap 3

in the airline industry, Chenet, Tynan and Money, (2000) found that only employee-job fit and perceived control directly affected service quality. Hence, findings from the studies have demonstrated considerable inconsistencies.

The service profit chain places the delivery of service quality at the centre of a sequence which commences with organisational activity related to 'internal service quality', such as workplace and job design, and human resources policies and practices. These practices contribute to employee behaviours which produce results for customers, measured in terms of service quality and customer perceived value (Heskett et al., 1994; Schlesinger & Heskett, 1991). Internal service quality was one Schneider et al.'s (1998) foundation issues for service climate and shows considerable overlap with Borucki and Burke's (1999) 'concern for employees'. Internal service quality may be of particular importance in call centres because Edvardsson, Larsson and Setterlind's (1997) study of service workers in a Swedish computer company ($n=495$) demonstrated an inverse relationship between employee stress and employees' perceptions of internal quality. However, factors important to internal service quality have varied in empirical studies. For example, findings have emphasised managing customer expectations (Caruana & Pitt, 1997), service orientation to excellence (Lytle, Hom & Mokwa, 1998) and organisational structures and processes (Gilbert & Parhigari, 2000; Lewis & Gabrielson, 1998). The studies have generated more than 20 measures, which are very comprehensive and untested in call centres. Hence, it is unclear which elements are likely to apply for call centre employees.

The uncertainty in the literature about the organisational factors that ultimately lead to high levels of customer-perceived service quality is increased in the under researched area of voice-to-voice encounters in a telephony environment (de Ruyter & Wetzels, 2000). For example, using a sample from a telecommunications call centre, Singh (2000) found that greater task control and boss support shielded frontline employees from burnout and built their commitment but the effects on service quality were not significant. Overall, call centre studies have not sought employees' views on the delivery of service quality to customers, despite the importance of employee performance during service encounters with customers (Zeithaml et al., 1988). Hence, Study 3 seeks employees' opinions and asks them to specifically identify the organisational factors affecting service quality. That is:

What helps you to deliver high quality service to customers?

What hinders you from delivering high quality service to customers?

Frontline work in call centres

Theory about the delivery of service quality by employees in customer service positions in call centres may be different to other situations because, as noted previously, call centre employees work in special circumstances. Differences are evident in several areas. As well as managing customer interactions, two other particular demands are placed on frontline employees. First, call centre managers emphasise productivity targets which may conflict with the delivery of customer service. Second, to achieve targets, managers subject employees to high levels of monitoring and control.

The relationship between service quality delivery and employee productivity is a continuing debate in the services literature (Parasuraman, 2002; Silvestro, 2002; Singh, 2000). In call centres, authors discuss conflicts such as 'hard versus soft goals' (Taylor & Tyler, 2000), tangible and intangible measures of service quality (Gilmore & Moreland, 2000) and 'Taylorism versus tailorism' (Korczyński, 2001). These authors, and others (e.g., Houlihan, 2002; Kinnie et al., 2000; Taylor and Bain, 1999), have contended that an emphasis on quantitative targets takes priority over customer service goals. Several empirical studies have demonstrated the precedence that employees place on targets when compared to service quality. For example, Batt (1999) and Singh (2000) both found that, when faced with conflicting demands, frontline employees in call centres (telecommunications and financial services respectively), reduced the service quality delivered to customers in order to maintain their productivity. Similarly, Knights and McCabe (1998) found that employees, in a telephone banking call centre, sacrificed customer service to manage the stress associated with work intensity. Recently, Parasuraman (2002) outlined potential conflicts and synergy between service quality and productivity in call centres, and called for research in this area. Overall, the literature suggests that employees are likely to experience conflicts between productivity demands and service quality in call centres but it gives little guidance about what managers might do to assist employees to manage these conflicts. Consequently, employees were asked:

Do your productivity targets make it difficult for you to deliver service quality to customers? How do you manage this conflict?

In call centres, studies have shown that, to achieve targets and ensure quality, managers closely monitor employees, and provide little opportunity for worker initiative or control (e.g., Callaghan & Thompson, 2001; Gilmore, 2001; Knights & McCabe, 1998; Taylor & Bain,

1999). However, theory about the relationship between control and quality in services is unclear. In a study of employee responses to quality management in six UK organisations, Edwards, Collinson and Rees (1998) found that favourable views of quality, as expressed by employees, were strongest where the monitoring of workers was most intense. In contrast, Gilmore (2001) found that frontline employees in call centres were aware of service quality problems and felt that the environment was too restrictive to allow them to answer customer queries effectively and efficiently. Overall, scholars note that the technology of call centres is used to heavily monitor employee performance, especially during customer interactions, but the studies are inconclusive in establishing in what way high levels of monitoring affect employees' ability to deliver service quality. Hence Study 3 included a question about the quality management regimes in the call centre:

How do the quality management processes in the call centre help you?

In summary, previous work suggests, but does not agree on, many potential factors that could affect service quality in call centres. None of the relevant theory (e.g., Parasuraman et al., 1988; Schneider et al., 1998) had been developed or tested in call centre environments. Hence, it was necessary to get frontline staff from call centres to talk about service delivery to identify the factors most relevant to their work. The questions identified above seek responses to 'what' and 'how' and therefore require an exploratory research approach (Creswell, 1994). Using focus groups was a means of stimulating such discussion. Brewerton and Millward (2001, p. 81) noted that "the aim of focus groups is to get closer to participants' understandings and perspectives of certain issues." Participants 'focus' on a topic and are encouraged to engage with one another so that their opinions on issues can emerge and develop in a relatively informal meeting, overseen by a non-judgmental moderator (Wilkinson & Birmingham, 2003). Hence, focus groups were considered well suited to the study.

Summary of research questions asked in Study 3

Table 4.1 provides a list of the questions shown in the order they were presented to participants during the focus groups.

Table 4.1 Research questions used in focus group interviews

Number	Question
1	What are the major differences between call centre work and other customer contact positions?
2	What does service quality mean in call centres?
3	In your work, what is expected and rewarded with respect to service quality?
4	What helps you deliver high quality service to customers?
5	What hinders you from delivering high quality service to customers?
6	Do your productivity targets make it difficult for you to deliver service quality to customers? How do you manage this conflict?
7	How do the quality management processes in the call centre help you?
8	If you were the manager of a call centre, what would you do to help service consultants provide a high quality service to customers?

In explaining the overall aim of the research to participants, organisational factors were defined as 'the structures, processes and practices that exist in the call centre'. Consistent with the approach adopted by Schneider et al. (1992), participants were asked to concentrate on the features of their work and the organisation rather than how they were feeling about the work. That is, they were asked about the factors that assisted or inhibited them in delivering service quality to customers, not whether they were satisfied with the conditions of their work.

METHOD

Research design

As noted above, Study 3 used focus group interviews, which were chosen because the aim of the study was to draw out employees' experiences and insights. Wilkinson and Birmingham (2003, p. 94) stated that data collection using focus groups should be considered when the intention of the research is to explore the issues under questions from the subjects' own perspectives. This was the case in Study 3. More structured methods, such as surveys or individual interviews, may have omitted or obscured factors important in the context.

A major advantage of focus groups is that they are enriched by group interaction, which stimulates the thoughts of participants and possibly produces insights which would not otherwise arise (Holloway & Wheeler, 1996; Lee, 1999). Krueger (2000) explains the importance of the social orientation of focus group interviews. In particular, Krueger noted

that people are influenced by the comments of others and the focus group acknowledges and uses their interdependence. In the focus groups, participants could be encouraged to interpret and discuss one another's comments resulting in greater understanding of the issues affecting the quality of service delivered to customers. Finally, focus groups allow the immediate input of several persons on particular issues thereby yielding a substantial amount of data in a short time (Wellington, 2000).

Open-ended questions were used throughout the focus groups and, in accordance with the recommendations of Creswell (1994), assumptions implied by words such as 'impact', 'relate' and 'cause' were avoided.

The research setting

The call centre used in Study 3 was chosen for several reasons. Firstly, it is similar to the call centres used for Studies 1 and 2 in that it meets the definition of Taylor and Bain (1999) and frontline employees are responsible for taking inbound calls and essentially providing after-sales service. However, the call centre in Study 3 was different to those in Studies 1 and 2 in that employees are expected to make new or further sales, an extension of the concept of 'customer service' into 'customer solutions' (Armistead et al., 2002; Sturdy, 2000). Because it involves both service and sales, the call centre of Study 3 lies between those for Studies 1 and 2 on the classification scale provided by Wallace et al. (2000). Secondly, the call centre for Study 3 was chosen because it is in the telecommunications industry, whereas the other call centres are in insurance services (Study 1) and business banking (Study 2). Finally, the call centre for Study 3 is relatively new and had been operating for only two years at the time of data collection. The recent establishment of the call centre was important to Study 3 because many employees were able to compare their call centre work to other types of work, or to their experiences in other call centres, facilitating their identification of the factors that affect them.

In the call centre of Study 3, frontline employees perform integrated telephone and computer work in response to inbound customer calls. They work 6-8 hour shifts in irregular weekly patterns. Employees take incoming calls for service enquiries (such as billing questions, product information and contract options) and, in finding customer 'solutions', they are expected to make sales (transfers to higher value or new contracts, and additional products). Employees are organised into teams on the floor and each team has a leader who is responsible for supporting and mentoring team members.

Employees are individually measured, daily, according to their performance on 'sales', 'talk time', 'wrap time' and 'adherence' targets. They are expected to average no more than 300 seconds total handling time per call (talk time plus 'wrap' or follow up time). The quality of service they provide is anonymously assessed, twice weekly, by a quality assurance (QA) officer who records and evaluates their interactions with customers. Employees receive feedback by email and sometimes it is discussed with them. Team performance is also assessed daily and results for all teams are displayed on a white board on the call centre floor.

Sample

The sample consisted of 58 participants, interviewed in ten focus groups. Table 4.2 shows the characteristics of each group and the total demographics for the sample. Overall, the participants were predominantly female (64%), had an average age of 29.3 years, and most had no previous call centre experience (78%).

Table 4.2 Characteristics of focus group participants

Group	1	2	3	4	5	6	7	8	9	10	Total (%)
Number in group	5	4	6	9	5	6	7	3	6	7	58 (100)
Gender											
Male	1	2	3	3	2	2	2	1	3	2	21 (36)
Female	4	2	3	6	3	4	5	2	3	5	37 (64)
Age											
18 to 24	3	3	4	3	0	3	4	1	2	5	28 (48)
25 to 34	1	0	1	6	2	1	1	1	1	1	15 (26)
35 to 44	0	1	1	0	1	0	1	1	0	1	6 (10)
45 to 54	1	0	0	0	1	0	1	0	3	0	6 (10)
55 to 64	0	0	0	0	1	2	0	0	0	0	3 (5)
Previous call centre experience											
Yes	3	1	0	2	1	2	2	1	0	1	13 (22)
No	2	3	6	7	4	4	5	2	6	6	45 (78)

Data collection

As stated above, data collection took the form of ten focus groups constituted from frontline employees. Participants for the focus groups were recruited by an employee who had the special task of controlling replacement staff for the teams on the floor. Where 'full' teams (no absences due to illness or other activities) were operating, she randomly selected service consultants from each team and asked if they would like to attend the focus group. If so, they were provided with details of a time and venue.

Participants in the groups were provided with an explanatory letter about the research and required to complete a consent form (Appendix 9, p. 215). They were assured about the

confidentiality of the information, and that neither raw data, nor any means of identifying groups would be provided to management. Participants were also informed that their contribution was entirely voluntary and, if desired, they could discontinue their involvement in the group at any time, without explanation.

Focus groups ranged in size from 3 to 9 participants. Focus groups were conducted over a two week period at times designed to capture a balance of morning and afternoon shifts (five groups from each type) and day of the week (two groups each day, Monday to Friday).

The focus groups were conducted on-site, in a training room, at the call centre, during work hours, and facilitated by the researcher. Discussions ranged in length from one, to one and a half hours. All discussions were tape recorded and transcribed verbatim. Immediately following the focus groups, the researcher made summary field notes, highlighting the emphases adopted in the groups and any probes that might be useful for future groups.

To ensure that groups were as close as possible to being replicable, a standard procedure was adopted and used. The procedure was based on the three steps outlined by Wilkinson and Birmingham (2003). Suggestions by Lee (1999), and Brewerton and Millward (2001) were used to prepare for the groups and as references for reflecting on minor problems encountered in managing groups. Each group commenced by welcoming the participants, explaining the purpose and context of the group, how it would be managed, and making introductions. During the next step, the questions shown in Table 4.1 were presented to the participants in approximately the same order. The participants were encouraged to interact and discuss their opinions and perceptions with one another. The questions had been designed to flow naturally but slight variations on the order occurred when the discussion moved in different but relevant directions. The third step involved thanking the participants, giving them the opportunity for further input, telling them again how the data would be used and wishing them well.

Overall, because of the distinctive nature of work in call centres, the discussions with frontline employees in Study 3 commenced with the question that asked the differences between call centre work and other types of frontline customer service positions that participants had held. As suggested by Lee (1999), this question provided a relaxed and easy opening to the discussion, prior to the questions that required more depth of thought. The discussion then moved into service quality and its delivery, and this emphasis was maintained throughout the remainder of the focus group sessions. All questions shown in Table 4.1 were considered in response to the overall research question because the factors could be

mentioned anywhere during the discussions, not just in response to questions 4 and 5. Hence, consistent with the analytical approach adopted by Bateman, O'Neill and Kenworthy-U'Ren (2002), the transcripts were used in their entirety for the analysis.

Method of analysis

Analysis of the qualitative data consisted of the three major steps outlined by Miles and Huberman (1994): data reduction, data displays, and conclusion drawing/verification. The data reduction step involved coding the text to identify topics and themes, and frequency counts to obtain a sense of the relative strength of the themes. In the second step, Study 3 used matrix displays to assemble information into an accessible compact form, which facilitated its interpretation (Miles & Huberman, 1994). The third step, conclusion drawing and verification, involved interpreting the meaning of the data and testing its plausibility by revisiting the transcripts to confirm the conclusions in their original context. Each of these steps is discussed in more detail below.

The first step of the analysis was data reduction, achieved by content coding and counting. Content coding involves identifying and labelling what participants talked about (Tesch, 1990). Before coding can occur, data must be converted into specific units of information that can be analysed. Stewart and Shamdasani (1990) noted that units can be defined in different ways, one of which is 'thematic', and represented by recurring systems of beliefs or explanations. Study 3 adopted the thematic approach, which Stewart and Shamdasani (1990) say is often employed by focus group analysts. Study 3 identified units for coding by the way the information was divided within the discussion. Words, statements and dialogue were all permissible, as long as they could be regarded as independent of each other, and had clearly identified boundaries (Stewart & Shamdasani, 1990).

Once the meaning of a unit of information for coding was established, content coding was performed in accordance with the steps of Tesch (1990, p. 138). Spiegelman, Terwilliger and Fearing (1953) suggested that the reliability of content analysis can be demonstrated by achieving consistency amongst analysts or consistency through time. Study 3 adopted the former approach, using two independent coders (the author and a research assistant). Firstly, the two coders read all transcripts in their entirety to get a sense of the whole. Then they used two transcripts, without consultation, to identify and generate a list of topics that were talked about. The researchers met, compared their lists of recurring topics and calculated the inter-rater reliability using the ratio of number of agreements to the sum of agreements and

disagreements (Miles & Huberman, 1994, p. 64; Spiegelman et al., 1953, p. 178). By checking to see that the codes accurately reflected the content of the data and jointly modifying them, inter-rater reliability was increased to a minimum of 90% for all topics, as recommended by Miles and Huberman (1994). Further transcripts were then coded, the list of codes extended as necessary, and the process repeated. Once the topics were established, together the coders defined themes (clusters of topics). The use of independent researchers and repeated clarification of constructs increased the reliability and validity of the content analysis (Miles & Huberman, 1994; Spiegelman et al., 1953).

The next part of data reduction was to check the transcripts from each focus group for evidence that the topics had been mentioned. Kitzinger and Barbour (1999) emphasised that focus groups are not oral surveys and that tallies, taken out of context, can be misleading. However, they suggested that systematic counting decreases assumptions based on impressions, and is useful as a means of presenting focus group data. Hence, a frequency count of topics was performed. Lee (1999) suggested that there are three approaches to counting the number of times a key topic is mentioned in focus groups. First, the absolute frequency can be used. That is, counting the total number of times a topic is mentioned by any person. Second, frequency by individual persons can be used. That is, counting how many different persons mentioned a topic. The third approach is frequency by focus groups. Study 3 adopted the first and third methods for several reasons. Absolute frequencies were counted to gain a measure of the overall strength of the topics and themes. Reporting the frequency per group illustrated whether themes were identified widely across the groups, or were of particular importance to one or more focus groups. By starting the analysis with groups, this approach references the group context but retains the ability to recognise the contribution of individuals (Kitzinger & Barbour, 1999, p. 16).

The findings are reported based on the inductive approach outlined above. That is, a display of topics and themes is shown for each focus group, and interpreted in terms of the overall research question. Thus, in Study 3, the factors (independent variables) affecting service quality delivery (dependent variable) in the call centre were identified. During the discussion, the findings are compared to factors that have been shown to exist in previous service quality and call centre studies. As Miles and Huberman (1994) suggested, matrix displays were used to aid interpretation of the themes and to highlight differences

In summary, the method of analysis initially involved data reduction by having two researchers code the data for topics and then count the frequency of the coded topics. The

researchers did the coding 'blind', calculated their agreement statistically, explored reasons for disagreements, and decided on an adjusted coding. The process produced topics and themes that showed what was talked about. To complete the data reduction a count of the total number of times a topic was mentioned (absolute frequency) was performed and reported with its percentage of the total. Additionally, the number of focus groups who discussed the topic at least once was tabulated. While these steps produced frequencies to assist in interpreting the results, as Yin (1989) states, the overall purpose of the coding was to seek analytical insights, rather than statistical generalisation.

The next steps, data display and data interpretation focused on what was actually said about the topics, and what it meant in relation to the overall research question. That is, what organisational factors affect the ability of employees to deliver service quality to customers.

RESULTS

In this section, data from the content analysis are analysed and presented with respect to how they answer the research question and provide potential insights into managing call centre employees. The section reports the main themes that emerged, and their effects on service quality delivery, as explained by employees. Quotes have been included to illustrate the view presented by one or more employees. The quotes are not necessarily representative of the group or the sample, and have not been edited.

Factors that affect the delivery of service quality

Table 4.3 shows the nine major themes, their absolute frequencies, percentage of the total, and frequency across the focus groups, resulting from the data reduction process. Table A10.1 (Appendix 10, pp. 216-217) shows the more detailed data from which Table 4.3 is derived. Table A10.1 shows that the major themes in Table 4.3 were identified from 36 topics. The themes are arranged according to how often they were discussed, commencing with the most frequently mentioned. The themes concerned with Human resource management issues (number 6) and Teams (number 7) consist of related factors, which have been grouped together.

Table 4.3 Themes and topics resulting from the content analysis

Theme	Absolute frequency	Percent of total	Frequency across groups ^a
1 Management emphasis on sales (focus on selling and KPIs, profit orientation)	69	12.3	10
2 Performance monitoring and feedback (QA processes, targets and feedback)	65	11.6	10
3 Efficiency demands of call centre work (time pressures, quality/productivity conflict, insufficient breaks)	65	11.6	10
4 Call centre structures and support (processes, communication, technical/product support, resources)	60	10.7	10
5 Employee-job fit (customer service orientation, ability to cope with stress, positive, flexible attitude)	51	9.1	10
6 Human resource management issues			
Recognition, rewards, incentives	49	8.8	10
Rosters (consecutive days off, shift times)	34	6.1	8
Training	21	3.8	9
7 Teams			
Team leader (technical, emotional support)	44	7.9	10
Team members (social, technical, emotional support)	31	5.5	8
8 Service encounter stress (customer interactions, QA imposed scripts, lack of control)	40	7.1	10
9 Managerial attitudes (approach, accessibility, modelling service quality)	31	5.5	9
Total	560	100.0	

Note. KPI=Key performance indicator; QA=Quality assurance.

^a Number of groups that discussed the theme.

The nine themes shown in Table 4.3 were analysed to determine their positive and negative effects on the quality of service delivered to customers. Table 4.4 presents a summary of the effects. The table was derived by reviewing the discussions that contributed to the themes and identifying the major implications of the factors for customer service.

Table 4.4 Summary of effects of factors on service quality delivery

Factor	Positive effects	Negative effects
1. Management emphasis on sales	Sales were interpreted by some as customer 'solutions', which contribute to SQ	Sales perceived as a higher priority than SQ To make sales, employees had to compromise service quality
2. Performance monitoring and feedback	QA provides feedback and specific goals Customer call-backs motivating (but under utilised)	QA process seen as too restrictive for individual service needs Feedback considered discouraging because of the focus on what is 'not' achieved
3. Efficiency demands	No positive effects were noted	Cause employee stress and weaken their ability to manage calls Productivity takes precedence over SQ Time pressures mean calls are closed early and SQ initiatives are decreased
4. Call centre structures and support	Technical support procedures clear and helpful	Processes are sometimes slow and inflexible No systems for customer input Inadequate systems for employee communication
5. Employee-job fit	Employees love giving good service, like their work	Employee stress, inability to think clearly Withdrawal from customers
6. Human resource management	Training helps employees (but could be increased)	Imbalance between work demands and rewards considered de-motivating Inadequate rosters can cause negative attitudes to customer care
7. Teams	Primary source of social interaction and practical support Team leaders seen as encouraging, motivating	A lot of effectiveness depends on employee relationships with team leaders
8. Service encounter stress	Positive encounters are motivating (though invisible to management)	Some encounters very de-motivating Employees need more breaks, flexibility and counselling to assist them to cope
9. Managerial attitudes	Certain individuals provide helpful support to frontline staff	Very little modelling of SQ behaviours Employees not given any control Employees resent inadequate time for preparation each day

Note. SQ=service quality; QA=quality assurance

The data in Table 4.4 are used to provide a structure for the more detailed reporting in the remainder of the results section. In particular, factors that hinder service quality (mainly negative effects) are reported first, followed by factors that facilitate it (mainly positive effects). Then, factors that have both positive and negative effects are reported. In summary, the first section elaborates on management's emphasis on sales (Factor 1), the efficiency demands of frontline work (Factor 3) and service encounter stress (Factor 8). The second section reports further on call centre structures (Factor 4) and teams (Factor 7). Finally, factors that help employees to deliver service quality in some instances, and hinder them in others, are reported. These factors include performance monitoring and feedback (Factor 2), employee-job fit (Factor 5), human resource management (Factor 6) and managerial attitudes (Factor 9).

Factors that hinder service quality

This section explains how the factors, management's emphasis on sales, efficiency demands, and service encounter stress; hinder the delivery of service quality.

Management emphasis on sales

Management's emphasis on sales, as a factor that affects the employee's ability to provide high quality service, was mentioned by every group, and more than any other single topic. Employees are required to respond to the customer's telephone call for service and simultaneously offer alternative, higher value, telecommunications products. Participants indicated a belief that management's emphasis on sales and profits is more important to the organisation than the delivery of service quality:

"But at the end of the day if my sales figures weren't up to scratch the management here wouldn't, I believe, give two hoots about how happy the customers were with the way I treated them and helped them. My figures aren't there, and that's what matters." (Group 9)

Key Performance Indicators

In discussing management's priorities, focus group participants frequently mentioned the importance of Key Performance Indicators (KPIs), one of which is individual sales targets. Participants said that they have to give sales targets priority over service quality to avoid being reprimanded. For example:

"Quite often if the pressure's on because your sales are down, quite often it can interfere with the sort of customer care that you can give... because you've got to try

and push, help the customer out the best you can... but on the other hand you've got no sales, and then they get on you because you spent too much time with the customers helping them out and not making sales." (Group 3)

Some groups saw the focus on sales as opportunistic and "mutually exclusive from service quality" (Group 9). For example:

"High quality is someone who takes the time to listen... It's listening and then giving them what they want. Not selling them stuff that is not good for them!!" (Group 6)

Overall, the focus on sales was seen to have a higher priority than service quality and forced employees to compromise service to achieve sales targets.

Efficiency demands of call centre work

The efficiency demands imposed by the managers in the call centre of Study 3 were seen to work against the delivery of service quality. Efficiency demands were expressed most often in terms of time pressures associated with workload, and the nexus created between productivity demands and service quality delivery. The KPIs mentioned in the last section not only measure sales but are concerned with 'talk time', 'wrap time' (after call work) and 'adherence' ('not ready' time and breaks). Employees commented that time pressures associated with workload and KPIs contribute to their feelings of stress, burnout and exhaustion, and make them less able to deal with customer interactions.

"...a lot of times you think, oh, I wish I could have just a 5 minute breather after that call just to re-centre myself again, to prepare myself for the next call. But you can't do that because you're only allowed a certain number of seconds before the next call comes in... the stress builds up, and builds up, and by the end of the day you're wired." (Group 9)

Consequently, more flexibility in terms of breaks was identified as a factor that would facilitate employee coping skills and assist them to manage both efficiency and customer demands.

One of the outcomes of the stress associated with efficiency demands is a decrease in the service to customers:

"...you think 'oh God, my talk time is going to be so high I've got to get this customer off the phone as soon as I can because I had a really long call before'. You've got to sort of think like that and it really stresses you out." (Group 2)

Productivity targets and service quality

Apart from personal stress, participants suggested that emphasising productivity targets can, and does, prevent them from providing service quality. This generally involves prematurely closing the call (see above quote) or not offering other service elements. For example:

"..you've got to meet this, you've got to meet that. But I know that I could probably give the customers that little bit extra but I don't because of all the different areas you've got to meet, like you can't be on a call for such and such time, you can't be in wrap, you can't ring customers back." (Group 9)

Further, when faced with conflict between service quality and productivity, the groups generally agreed that they would adhere to productivity targets because of their visibility and significance to management. For example:

"If there is a circumstance where giving good service is going to blow times out of the water, if I want to fix it for the customer and I know how to fix it, I go into wrap time and then later I explain to my Team Leader. He will say 'cool, that's fine, but I have to know'. We can give high quality service but we have to make sure that we're not shot down." (Group 1)

Similarly:

"Yeah customer service is really important, but as she said, we've got to focus on ourselves as well because we have to. We lose our job otherwise." (Group 7)

In summary, in the efficiency demands of call centre work appeared to have negative effects on service quality delivery to customers. This was essentially because the demands cause employee stress and decrease their ability to manage their work, employees feel compelled to give productivity targets precedence over customer service, and time pressures mean that customer service initiatives are stifled.

Service encounter stress

The third factor that had predominantly negative effects on the ability of employees to deliver service quality has been labelled service encounter stress in the current project. Service

encounter stress was identified by all focus groups and arises from the difficulty in repeatedly managing customer interactions. Employees discussed the emotional demands of the job in dealing with customers who are angry or upset, or who are rude and threatening. They agreed on the negative effect such encounters have on their customer orientation. For example:

"...two people today said they were going to kill me, and I mean after that I just don't feel like being nice to anybody." (Group 5)

Expressed in a number of ways, participants made the point that, "if you want to do the job properly, you have to maintain a pretty positive emotional equilibrium. And that's pretty hard to do if you're having a bad day" (Group 4). Hence, considerable discussion focused on what organisational factors help them to maintain a calm and positive approach, so that they can manage customer interactions. The groups highlighted their needs to have managers recognise the taxing nature of the work and to provide avenues to assist them. For example:

"But I think, you shouldn't have to go up to them and say, well, look, I need time out. They should actually say to you, like, if you've had a difficult call, there should be someone in the centre you can actually go and sit down and talk with. Not, sort of say, oh, go and have 5 minutes." (Group 5)

Hence, the inflexibility with respect to breaks emerged as a hindering factor that increases service encounter stress. Having the opportunity to de-brief was identified as a potential factor that would bring positive employee and customer outcomes.

Other aspects of service encounters that inhibited employees in delivering service quality, included their lack of control over the process and the scripts imposed by the quality assurance (QA) regime. Participants were agreed that the QA process could not be applied to all customers. They indicated that they need to adapt it because "some like to play a bit and some like to be very serious" (Group 3). As one participant explained:

"It should be, this is the customer, this is the problem, OK, next customer, OK different issue, we'll handle it a different way. We'll use the verbatim a different way. We'll use our opening and closing a different way, depending if you get an irate customer, which we get quite a few of, or a customer that's just ringing up just for a billing enquiry or whatever the problem is." (Group 4)

Overall, focus group participants reported stress associated with encounters that subsequently affected service delivery. They stated that their ability to manage service encounters and provide high levels of service quality was impeded by having little flexibility in dealing with customers, no scope to manage their own time, and no formal opportunity to discuss their feelings and responses to customers.

Factors that help employees deliver service quality

The findings in relation to factors that essentially help employees to provide high quality service are now reported. Two major themes are discussed. These themes are call centre support structures (Factor 4) and the specific team structures (Factor 7).

Call centre structures and support

Call centre structures and support encompassed the resources, structures, systems and processes in the centre. Employees generally commented on the usefulness and importance of the structures and support systems to enable them to respond to customer enquiries accurately and quickly. However, elements working against high quality service included the inability of employees to gain rapid access to technical and product support, and insufficient time to speak longer with experts, in order to gain greater understanding.

When processes were discussed, many focus group participants mentioned that customer inputs are not used to improve service delivery. They attributed this lost opportunity to inadequate parameters and mechanisms for customer feedback. No apparent systems exist for reporting customer ideas, complaints and positive responses to the service. Two participants commented:

"In relation to records of complaints, there is no specific area to pass them to; we don't have time to record them; they're [management] not interested anyway."

"Customers sometimes have really good ideas but there is nowhere to send them to – well, there probably is, but we're not made aware of it." (Group 2)

In summary, the structures and processes in the call centre were seen to facilitate service quality, where they exist, and provided they are not too slow. However, employees noted that scope exists for enhancing the present systems by providing mechanisms for customer feedback and two-way communication with frontline staff.

Teams

No group or individual dissented about the role and importance of teams in facilitating the delivery of service quality to customers. Both team leaders and team members were mentioned by every group as a means of technical, emotional and social support. The team provides the operational framework for the call centre but, more importantly, it provides the basis for social and emotional support that employees need to manage their frontline work.

The team structure is critical because it addresses two issues of particular importance in call centres: employee isolation and access to immediate support. With respect to isolation, employees work individually, on telephones, and have to take their own initiative to get help. Unless the effects of a call are extreme, such as a service consultant bursting into tears, employees do not get team leader or team member attention. One group commented on needing support but not getting it because what happens during calls is not seen or heard by others:

"In an office situation – I worked for customer services before – if an irate customer come in, everybody knew about it, and when that customer left you got the support from everybody else who was in that store." (Group 5)

As well as emotional support to assist employees in managing customers, teams provide practical help and social interaction, and foster positive outcomes for both team members and customers:

"It [team feeling] is really helpful because it gives you that camaraderie, it gives you that good feeling that if you're having a problem that you can go to other team members and they're not going to scorn you or turn their back." (Group 3)

Team leaders have an assigned role in supporting their team members to achieve highly on efficiency targets and quality assurance measures. All focus groups talked about the importance of the team leader in providing the technical and emotional support for them to be able to service customers effectively. When describing their team leaders, participants used terms such as 'motivating', 'helpful', 'supportive' and 'understanding'. Their relationship with their team leader was reported as the most important factor that facilitates their work with customers. Further, team leaders provide the only opportunity employees have to discuss customer problems and to develop ways of dealing with them. Overall, membership of a team,

and their relationships with Team Leaders were seen as critical factors in employees gaining the technical and emotional support they need to provide high levels of customer service.

Factors that help and hinder service quality delivery

Four of the nine major factors shown in Tables 4.3 and 4.4 could not be classified as predominantly helping or hindering employees to deliver service quality. These factors, now reported, had elements which facilitated employees in their endeavours with customers and elements which worked against them. The factors are performance monitoring and feedback, employee-job fit, human resource management and managerial attitudes.

Performance monitoring and feedback

Quality management

When discussing factors that affect the quality of service that customers receive, every focus group identified the influence of quality assurance (QA) processes and the monitoring of their performance. Overall, the QA processes were seen positively in that they give employees information on process elements, such as the 'standard' opening and closing, and feedback on specific aspects of their communication skills. However, QA was seen to reduce service quality because it is very regimented and restrictive, and does not give any indication or judgment of customer satisfaction. The following dialogue from Group 1 summarises some of the key points about QA:

"QA really helps you to be helpful to customers."

"But with QA the way it is, [you need] to be a recording, an absolute recording."

"A robot."

"The margins on QA are so small, you're either 100 percent or you're nothing."

"Because they like to measure numbers... there's no intangibles in there, only what can be measured." (Group 1)

Similarly, participants felt that the details of QA can cause a loss of customer focus. For example:

"You can make the customer want to praise you but if you didn't say thank you for calling (Company XYZ) and you said yep and yeh then they don't care. They don't care that the customer's happy. (Group 10)"

Participants felt that QA could be used to assist them to improve their service delivery if they were able to listen to the service encounters, rather than receiving their feedback by email, and (occasionally) personal follow-up by a Team Leader or QA Officer. Employees commented that they cannot remember particular calls (and they have no idea when the QA monitoring is occurring) so ratings of their performance on a piece of paper become relatively meaningless. The effects of the scripts required by QA are further considered under service encounter stress.

Other performance monitoring and feedback processes were considered to work against service quality because participants believed that managers are mainly interested in achieving efficiency targets. Consequently, managers tend to emphasise negative aspects of employee performance, which employees find discouraging. For example:

"..it just makes you feel like you're not up to their standards, and really the only reason I'm here is, I judge myself on the customer service that I give, if they don't have a rating for that, that's fine, I rate myself." (Group 9)

Customer feedback

Individuals from five of the focus groups suggested that positive feedback from customer 'call-backs' is important because "it's really satisfying" (Group 1) and "makes you feel good" (Group 10). However, other individuals in the groups were not aware of processes whereby customers are called back, and had never had any indirect customer feedback about the quality of service that they were providing. One group suggested that 'file notes' (currently only used for negative reasons) should be instigated for positive achievements. The other group discussed situations in which a customer has wanted to give positive feedback on them but there is no easy means of doing so. The customer has to ask for a team leader:

"You [the customer] can actually ask to speak to a team leader but I know damn well if you say '[Name] you did such a great job I want to speak to your team leader and tell them', I won't do it. I'm not getting up and walking over there and saying OK there's this guy who wants to tell you how good I am." (Group 10)

Overall, the factor performance monitoring and feedback produced mixed results with respect to the delivery of service quality. The QA processes were considered necessary and helpful but too restrictive for individual service needs and lacking a procedure to provide positive feedback and encouragement to employees. Where it had occurred, the receipt of positive

customer feedback was considered highly conducive to further delivery of high levels of service quality. Finally, employees felt that internal feedback on KPIs hindered service quality because of their apparent focus on an employee's inability to achieve.

Employee-job fit

The next factor producing contradictory outcomes was employee-job fit, which was mentioned by all focus groups. Participants agreed that to get good service delivery, the 'right' people need to be hired for call centre work. The right people were described as those who are "courteous, polite people – people who are sort of trying to be helpful by nature" (Group 5) and "self-assured, confident people who can handle it and don't take anything personally" (Group 6). Participants agreed that call centre employees need to be easy going, able to cope with stress, and adaptable. If this is not the case, employees said that they cannot think clearly and are not able to manage the work. One member summed it up as follows:

"We're looking for flexible people. Flexible emotionally, flexible intellectually, and flexible with their time. So, someone who's generally flexible and who's able to go with the flow, and, you know, adapt!" (Group 4)

Employee-job fit was also seen to be important for service quality in terms of skills that frontline staff need to possess. The skills nominated included a 'natural sales orientation', the ability to perform several tasks simultaneously, to solve problems, and to develop solutions and act positively, even when feeling very negative and flat. One participant emphasised the need to multi-task:

"You've got to be able to read a screen, look at other parts on the computer, make sure you're talking to the customer, listening to what they're saying.. And some people just can't do that." (Group 3)

In summary, focus group participants commented that if employee-job fit is good, they love their work because they can deliver good service and help customers. In contrast, that if employee-job fit is poor, withdrawal from customers occurs and service levels decline markedly.

Human resource management issues

Human resource management issues concerning recognition and rewards, rosters and perceived job security were all discussed as elements that can have a negative impact on the

delivery of service. In contrast, training was considered very positively. These elements are now considered in turn.

Recognition and rewards

Employees in every focus group mentioned the need for recognition and rewards for their performance, as a stimulus for accepting work pressures and on-going performance. They expressed dissatisfaction with their salaries compared to other call centres and previous work. Most importantly for Study 3, employees were quite clear about the effects of perceived inequities on their customers. They suggested that their pay was insufficient as an incentive to produce sustained effort in dealing with customers. For example:

"Basically just on that, you must have your workforce happy otherwise if we're not happy, then we're not going to make it sound like we are." (Group 5)

Rosters

Participants noted that rosters affect the service quality delivered to customers. Many had experienced problems with achieving two consecutive days off, which they stated is necessary to regain the "emotional equilibrium lost during call centre work" (Group 4). They felt that, as a consequence, they did not provide their usual level of service. Similarly, some participants commented on their lack of weekends. The effect on service quality was summed up by one of them:

"Having to come in every Saturday and Sunday; I mean, by the end I was getting fed up. I didn't want to speak to the customers." (Group 5)

Job security

Five of the focus groups referred to anxiety about job security when discussing the emphasis on sales, the efficiency demands of their work and having to make a choice between service quality and productivity. Fear of negative consequences appeared to be the basis of employees' decisions about their work, and as noted in the discussion of efficiency demands, the highly visible nature of efficiency-based KPIs means that they are given precedence.

Training

Training was found to affect employees' ability to deliver excellent quality. Most employees were agreed that current training emphasises product knowledge, which they considered important. However, they indicated that their ability to serve customers would be enhanced by

more training. Specific areas included analytical and process skills for problem solving, managing customer interactions, and sustaining a positive attitude under stress. Participants agreed that they need more opportunity to practice their skills, especially when dealing with customers, and more opportunity to observe and learn from their colleagues. For example:

"Oh, I did a dealing with a difficult customer session here, it was probably 6 months ago and it was great, that helped so much."

"Yeah, they just went through scenarios and how to compose yourself and stuff like that, so yeah, it really, really helped a lot." (Group 7)

In summary, the findings suggest that human resource management issues have the potential to either enhance or hinder service quality delivery, essentially because of the effects on employee attitudes and knowledge. Study 3 highlights the negative role of rewards, rosters and perceived job security in the call centre of the study. However, training was found to have positive effects on frontline employees' abilities to meet customer needs.

Managerial attitudes

The final factor that affected delivery of service quality was concerned with managerial attitudes. Comments made by employees tended to be extreme. Many were negative and some, which tended to be related to specific individuals, were very positive. Negative comments were generally concerned with the approach adopted by management, their accessibility to frontline staff and how high quality service behaviours are not modelled. For example:

"Every time we deal with management, we should be treated as though we're a customer of that management... they always tell us to treat them [customers] with respect, value what they have to say." (Group 4)

Other comments related to the frustration associated with time constraints. Some employees felt that the lack of value placed on customer feedback was reflected in the lack of emphasis on managers taking the time to gather employee feedback about customer interactions. Most groups expressed resentment about management not being prepared to give them the preparatory time they need to service customers well. The next quote illustrates the consequences in some cases:

"We have to use our own time to read emails and daily musters, do our e-learns. We are meant to do it between calls but that's not possible. I am not going to do it in my own time [so I don't do it]!" (Group 1)

In conclusion, the results present some clear findings for the call centre of Study 3. Factors related to the sales emphasis and efficiency demands of management, and service encounter stress, were found to essentially hinder employees in their efforts to serve customers well. In contrast, factors concerned with call centre support structures and processes, and teams, predominantly helped employees. Some factors, which included performance monitoring, employee-job fit, human resource management and managerial attitudes produced contradictory outcomes for service quality. The next section interprets these findings and considers their implications for theory and practice.

DISCUSSION

The aim of Study 3 was to identify organisational factors, in a call centre, that affect the delivery of service quality. Nine factors were identified and have been reported in terms of whether they help or hinder employees to provide high levels of service to customers. This section considers the findings in terms of previous theory, highlights apparent discrepancies with past studies and outlines their contribution to the literature. Finally, the limitations of the study are discussed and areas for future research identified. The chapter concludes with the practical applications arising from the study.

Comparison of findings to previous theory

During the introduction to this chapter, several literatures that have contributed to service quality theory were briefly discussed. Because of the unique nature of services provided by telephone encounters from call centres, it was argued that previous theory may not be applicable. The findings from Study 3 support most key aspects of service quality theory and findings from previous call centre studies that have involved service quality. However, the current results provide a different emphasis and suggest that an integration of factors from prior work is necessary when assessing service quality in call centres. Table 4.5 provides an overview of the match between the findings and previous theory. The details and their implications are discussed in subsequent sections.

Table 4.5 Comparison of findings with previous service quality theories

Relevant theory	Comments
Service quality gaps (factors that contribute to employee delivery of service quality)	Teamwork, employee-job fit, role ambiguity, role conflict, supervisory control systems and perceived control were identified, consistent with Zeithaml et al.'s (1988) Gap 3. Technology-job fit did not emerge. Gap 2 also existed in that service quality was considered to be less important to management than sales and efficiency targets.
Service climate studies (service climate leading to customer-perceived service quality)	Schneider et al.'s (1998) foundation issues (HRM and supervisory behaviours) and the emphasis on HRM in Borucki & Burke's (1999) and Rogg et al.'s (2001) studies were reinforced.
Service profit chain theory (internal and external quality)	The overall premise of internal service quality (structures, job design, HRM) contributing to employees' ability to deliver external service quality (to customers) was supported (Heskett et al., 1997; Schlesinger & Heskett, 1991).
Conflicts between service quality and productivity in call centre studies	The conflict identified and tested in previous studies was confirmed (Batt, 1999; Knights & McCabe, 1998; Singh, 2000). The relationship between role conflict and service quality, mediated by job satisfaction (de Ruyter et al., 2001) and burnout (Singh, 2000) also appeared to be present.

Note. HRM=Human resource management

Table 4.5 shows that service quality gaps theory was essentially supported by Study 3 but that several factors have a different meaning. Six of the seven original elements of Gap 3 proposed by (Zeithaml et al., 1988) were identified as follows. Employee-job fit (Factor 5 in Table 4.3, p. 118) and teamwork (Factor 7) emerged directly but, in Study 3, teamwork applied only in a horizontal sense within teams and did not include upper management or other teams. Role ambiguity existed in that customer service is an espoused major objective of the call centre but management's emphasis on sales (Factor 1) emerged as the organisational factor having most effect on service delivery. Similarly, role conflict was present (Factor 3) but its major source was management priorities with respect to productivity and quality, not conflict caused by customer expectations. Zeithaml et al. (1988) explained supervisory control systems in terms of employees being evaluated on behaviours rather than outputs. In the present study, the emphasis on outputs was identified in both Factor 2 (performance monitoring) and Factor 3 (efficiency demands). Finally, a lack of perceived control was present as part of service encounter stress (Factor 8). Technology-job fit was not identified in Study 3.

Study 3 was also consistent with service quality gaps theory in that a lack of management commitment to service quality, a Gap 2 element, appeared to be evident. When Gap 2 is present, service quality specifications are not well developed (Zeithaml et al., 1988). Specifications existed in Study 3, but they were strictly quantitative and employees questioned their validity. Further, employees felt that, despite QA processes and a focus on finding customer 'solutions', a commitment to service quality was subsumed by sales and efficiency targets.

The second major area of theory relevant to the study is service climate. Service climate studies in which employee-perceived service climate leads directly to customer-perceived service quality or related measures were partially supported. In particular, Schneider et al.'s (1998) foundation issues that facilitate work (resources, HRM and supervisory behaviours) were evident. Resources were fundamental to Factor 4 (call centre structures and support), several HRM issues were identified as directly affecting employees abilities to serve customers (Factor 6) and the HRM function of employee recruitment and selection underpins Factor 5, employee-job fit. Supervisory behaviours were considered important as shown in Factor 7 (Teams) and Factor 2 (performance monitoring). Schneider et al.'s (1998) emphasis on interdepartment service and customer feedback was not identified. Similarly, the emphasis on HRM in Borucki & Burke's (1999) and Rogg et al.'s (2001) studies was reinforced.

The third major area of theory shown in Table 4.5 is the service profit chain. This theory is relevant to Study 3 because it emphasises the role of internal service quality (such as workplace and job design) which contributes to employee attitudes and behaviours and, subsequently, service quality and value as perceived by customers. Study 3 is consistent with the overall premises of the service profit chain in that employees noted that the way they feel is transmitted to customers, and that internal service quality affected their feelings and behaviours (Heskett et al., 1997; Schlesinger & Heskett, 1991). Study 3 identified specific elements of internal service quality (structures and support, HRM) that applied in the call centre (Factors 4 and 6 in Table 4.3, p. 118). These findings were consistent with parts of previous studies (Gilbert & Parhigari, 2000; Lewis & Gabrielson, 1998). However, many factors important in other internal service quality studies were not identified, for example, managing customer expectations (Caruana & Pitt, 1997).

The final area of theory shown in Table 4.5 concerns the potential conflict between employee productivity and the delivery of service quality to customers. Researchers of call centres agree that employees face this conflict (de Ruyter et al., 2001; Knights & McCabe,

1998) and studies have found that employees sacrifice quality to maintain productivity (Brown & Maxwell, 2002; Singh, 2000) and sales (Batt, 1999). Study 3 supported previous findings.

Having compared Study 3 with previous empirical findings, the results are now integrated and interpreted and their specific contribution to the literature is outlined.

Integrating and interpreting the factors that affect service quality

The results section of this chapter reported nine themes (in Table 4.3, p. 118) in terms of whether they essentially help or hinder service quality delivery. This section considers the factors again but focuses on the reasons behind the effects. Four major areas are discussed: frontline employees' roles, service encounters, call centre management, and employees' abilities to manage call centre work.

Frontline employees' roles

The three factors most frequently mentioned by focus group participants in Study 3 were management's emphasis on sales, elements of performance monitoring and feedback and the efficiency demands of call centre work. These factors are primarily concerned with frontline employees' roles. In past studies, elements of the three factors mentioned above have been captured by role stress. In call centre studies, role stress has been measured using scales for role conflict and role ambiguity (de Ruyter et al., 2001; Singh, 2000). In the current study, the management focus on sales appears comparable to Singh's (2000) role ambiguity because of employees' perceptions of themselves as customer service workers and their debate about sales as a form of customer service 'solutions'.

Frontline employees' workdays in the call centre of Study 3 are driven by efficiency targets. Employees are expected to take at least 80 calls every shift, to meet ever increasing sales targets, and to adhere strictly to precise timeframes. The major implication of this focus for the current study was that employees frequently articulated the conflict between productivity and service quality. They stated that productivity generally takes precedence because it is more tangible and visible, measured in several ways every day, and tied to job security. Thus, the efficiency demands of call centre work appear to encompass role conflict (the clash of operational efficiency with customer demands) as used by both de Ruyter et al. (2001) and Singh (2000).

In summary, Factors 1 and 3 (Table 4.3, p. 118) incorporate role ambiguity and role conflict from previous studies, but Study 3 suggests that frontline roles and, in particular, the role stress they produce in call centres, require at least two more variables to describe them.

These variables are role demands and performance monitoring. Consistent with previous studies, Study 3 identified very precise role demands in the call centre. Factor 3, efficiency demands, is concerned with specific workload demands, including time pressures and multi-tasking, and inherent in Factor 1 was the demand to achieve sales targets. Factor 2 addresses the performance monitoring and feedback mechanisms associated with the role demands, which were monitored and measured electronically. Authors have found that electronic monitoring causes role stress and can have negative effects on quality because of the quantifiable nature of productivity (Aiello & Kolb, 1995; Brown & Maxwell, 2002). This effect appeared to be confirmed.

Overall, the current study indicates that measures concerned with frontline employees' roles should be broadened to four dimensions for call centre studies. That is, as well as the role ambiguity (management emphases) and role conflict (quality versus productivity) of past studies, performance monitoring (KPIs, monitoring and feedback processes) and the specific role demands (especially efficiency demands) of call centre work should be included in future measures concerned with employees' abilities to deliver service quality to customers.

Service encounters

Studies have shown that role demands in call centre work leads to stress and emotional exhaustion (e.g., Deery et al., 2002; Wallace et al., 2000). However, call centre stress is complex and experienced differently by frontline staff (Armistead et al. 2002). Study 3 found that the stress experienced by frontline staff in the call centre is the result of both role demands and customer encounters. Frontline employees are required to receive and manage large volumes of customer calls. In doing so, they must meet strict quality assurance guidelines and are expected to maintain consistently high levels of customer service. In the study, focus group participants noted that managing customers can be very emotionally draining, and is often made more difficult because of the inflexibility of the quality assurance processes to which they must adhere. Employees reported a contradiction whereby the organisation uses the same processes and rules for customers as though all encounters are similar. During encounters, employees find that customers are very different and can take a very personal (often confronting) approach with them, which can diminish the service they are likely to deliver.

Previous service quality studies in call centres have not included service encounter stress in models, although they have identified control issues, and tested for effects due to task control (Singh, 2000) and empowerment autonomy (de Ruyter et al., 2001). Other studies

have found that worker control leads to service quality (Yagil & Gal, 2002; Zeithaml et al., 1988). Overall, participants in focus groups emphasised stress from managing customer interactions including the emotional demands of their work, and their lack of control and autonomy. Hence, the findings from Study 3 indicate that aspects of service encounter stress need to be included in future models of service quality for call centres. Service encounter stress is related to role stress but specifically addresses customer interactions, issues arising from QA processes and perceived control. Perceived control encompasses the sense of control that employees have over their jobs and their flexibility in dealing with customers. As such, it is consistent with the definitions of both Zeithaml et al. (1988) and Singh (2000).

Call centre management

Having established the importance of role demands and service encounters to the quality of service delivery, the next major area concerns call centre management. The four factors, call centre structures and support, human resource management, teams, and managerial attitudes represent the main components of management. Employees in Study 3 frequently noted the necessity of these factors to support the delivery of service quality to customers. The factors closely resemble Schneider et al.'s (1998) 'foundation issues' and encompass Burke, Borucki and Hurley's (1992) 'concern for employees'. Schneider et al. noted that these facilitative conditions are necessary, but not sufficient, to generate a positive customer service climate. Other necessary conditions include customer orientation, customer feedback and specific managerial attitudes (Borucki & Burke, 1999; Schneider et al., 1998). Such aspects of service were not identified in Study 3, consistent with the fact that participants in the study felt that their organisation was not customer-oriented. Given that the call centre in Study 3 was set up as a pure service operation, it is surprising that managers have not institutionalised systems, such as for customer feedback, that facilitate a positive service climate.

In summary, the factors involving call centre management were found to be essential to foster service work and simultaneously meet employees' personal and work needs, so that they can deliver high levels of service to customers.

Employees' abilities to manage call centre work

Apart from the factors discussed in the two sections above, Study 3 found that employees' apparent suitability for a frontline position in a call centre (employee-job fit, Factor 5 in Table 4.3, p. 118) affected their ability to deliver service quality. As noted previously, this finding is consistent with Zeithaml et al.'s (1988) original model. However, Study 3 suggests that employee-job fit needs to incorporate a number of dimensions that constitute "the ability of

the employee to perform the job" (Zeithaml et al., 1988, p. 414). As well as knowledge and skills, Study 3 indicates that employees require particular characteristics, such as an inherent customer service orientation, the ability to cope with stress, the adaptability to switch quickly between different customer problems, and the flexibility to multi-task and remain positive. Other call centre researchers have noted the importance of employee characteristics to service performance, for example, emotional resilience (Armistead et al., 2002; Wallace et al., 2000) but previous studies of service quality delivery do not seem to have measured or tested their role.

Summary of the study's contribution to the literature

The aim of Study 3 was to identify organisational factors, in a call centre, that affect the delivery of service quality. Nine major factors were identified (Table 4.3, p. 118). The first three of these factors, management emphasis on sales, performance monitoring and feedback, and efficiency demands, incorporate the role ambiguity and role conflict of previous studies. However, the findings suggest that specific role demands, and performance monitoring and feedback processes, also affect service quality delivery in call centres. Similarly, service encounter stress is identified and is concerned with customer interactions (managing encounters and emotional labour), QA processes (use of scripts and monitoring) and perceived control (flexibility and autonomy).

As well as the factors directly concerned with frontline employees' work, factors that facilitate work and foster positive employee attitudes were identified. These factors were grouped as 'call centre management' and included call centre structures and support, human resource policies and practices, teams and team leaders, and managerial attitudes. These factors have been evident in service climate and service profit chain studies, in which they have been recognised as precursors to service quality delivery. The findings from Study 3 suggest that such factors should be integrated with service delivery factors to provide a more complete model for service quality delivery in call centres.

Finally, Study 3 found that employee-job fit may take on greater importance than in other contexts. This occurs because participants consistently referred to the characteristics of people who are 'suited' to call centre work, and who can manage its unique circumstances. Frontline employees considered that selecting staff with appropriate attitudes was the basis of 'customer orientation' and fundamental to the delivery of service quality to customers.

Limitations of Study 3

Study 3 had several major limitations, arising from its qualitative methodology, and the methods used for data collection and analysis. These are now considered in turn.

Study 3 is based on a case study of one telecommunications call centre, in which employees are expected to make sales as well as providing customer service. Thus, it is highly context specific and does not claim to be representative of the wider call centre population. Instead, Study 3 offers initial theoretical insights, with respect to delivering service quality in call centres from the perspective of frontline employees. In accordance with such qualitative research, the study does not purport to provide generalisable, statistical findings, which are likely to be transferable to other contexts (Yin, 1989). Rather, it presents findings for further development and testing.

The second major limitation of Study 3 arises from the methods used to collect and analyse data. Focus group participants were recruited by the organisation and the researcher had no control over selection. Hence, recommendations for focus group constituents were not able to be assured. In particular, theoretical sampling in order to minimise identifiable forms of bias, arising from factors such as age, gender or previous call centre experience, was not possible (Lee, 1999). Similarly, groups did not always consist of participants who were strangers to one another and hence they may have shared tacit assumptions, which can lead to difficulties in interpretation (Lee, 1999). Some groups, however, did consist of participants who had not previously met, and participants in all groups were invited to explain their comments in detail.

Other limitations resulting from methods include the subjectivity of the data and the role of the researcher. The evidence collected during the focus groups was not objective, but based on employees' opinions about their workplace. Such data may have been biased because of employee-related factors, unknown to the researcher. Further, data may have been distorted by the group dynamics in focus groups. Although not obvious to the facilitator, some individuals may have adopted a more dominant role because of unknown relationships, and others may have been reluctant to disclose their opinions (Stewart & Shamdasani, 1990). The role of the facilitator in a focus group is critical in directing the discussion and facilitating or inhibiting certain comments (Lee, 1999). In Study 3, the researcher facilitated the focus groups, without assistance, and therefore potentially important contributions may have been inadvertently discontinued. Specific questions and probes were used to guide the discussions

but, because group interactions were encouraged, sometimes the discussion flowed in unexpected directions.

Every endeavour was made to ensure rigour in the analytical processes of Study 3, using recommendations from Spiegelman et al. (1953) and Miles and Huberman (1994). The data coding was performed by two researchers who defined and, where necessary, redefined topics to ensure that they were distinct from one another. Inter-rater reliability was calculated and improved to 90 percent or more, in order to establish reliability in the coding procedure and reduce errors in interpretation of the qualitative data (Miles & Huberman, 1994). However, it is conceivable that other researchers may have used different codes and thereby reduced the data to sets with different labels. Hence, the focus group results require validation, such as content analysis of additional focus group data, or with other methods and measures such as survey research (Stewart & Shamdasani, 1990).

Future research

The limitations of Study 3 lead directly to potential areas for future research. In particular, the findings from the focus groups need to be confirmed and tested in other types of call centres and in other industries. However, specific aspects of the findings also present potential areas for further studies of service quality and related constructs. These areas include role demands, service encounters, employee-job fit and aspects of teams. Specific areas are now considered.

Study 3 calls for emphasis on role demands and role stress when factors affecting the delivery of service quality in call centres are measured. The findings indicate that role demands incorporate aspects of service, which are not captured by the constructs of role ambiguity and role conflict (e.g., as in studies by de Ruyter et al., 2001; and Singh, 2000). These aspects include employee stress caused by a sales emphasis, workload pressures; and the approaches to, and effects of, performance monitoring and feedback.

In association with role demands, Study 3 suggests that there is an area of stress, not emphasised in previous service quality studies, that arises specifically from service encounters with customers. In discussing emotional labour, authors have identified the effects of sustained customer contact, and requirements to display only certain feelings (Hochschild, 1979). Recently, Houlihan (2002) suggested that the emotional labour and discretionary work effort demanded of customer service representatives is disguised by the production type models of call centres. However, services researchers have been slow to incorporate such

variables in wider models. Findings from Study 3 indicate that future models of service delivery in call centres should include specific aspects of service encounter stress.

In relation to service encounter stress, the inclusion of the variable concerned with the extent of employee control is of particular interest. Low levels of worker discretion were found to act counter to customer orientation and service delivery, and to cause employee stress. Findings from previous call centre studies suggest that investigating and incorporating task control (Singh, 2000) and empowerment autonomy (de Ruyter et al., 2001) may contribute to understanding stress. However, the studies by de Ruyter et al. (2001) and Singh (2000) used role stress scales from other sources, and the scales had not been developed nor tested in call centres. Future work should address the proposed broader nature of service encounters by extending and refining previous scales, and by testing the relationships between the dimensions of role demands, role stress and service encounter stress with other variables.

Study 3 identifies some specific areas, indirectly related to service quality delivery, that seem worthy of future investigation. For example, future call centre studies may wish to pursue the antecedents and effects of employees' feelings of identity and isolation, and control by electronic surveillance. Frontline employees noted that these features contribute to their discomfort with the work environment. Other potential areas for investigation include the problems and issues associated with restricted levels of social interaction in call centres, which minimises group learning and problem solving. Additionally, in the current study, questions arose about whether sales and customer service are complimentary or contradictory, and what a sales focus means for service quality. Finally, the changed role and significance of teams and team leaders in call centres presents areas for investigation, now considered in more detail.

In Study 3, there was consensus that team support was a major factor in facilitating service quality to customers. Participants commented on the importance of the practical, emotional and social support, arising from teams, in assisting them to manage call centre work. Future research could explore the importance of specific elements which can be used to enhance team processes and consequently support service quality for customers. For example, the role of citizenship behaviours (Singh, 2000) and group collaboration in setting and achieving targets (Batt, 1999) could be tested. Study 3 also reinforces the call for research into the relationship between team variables and role stress, in call centres, made by de Ruyter et al. (2001) and not yet answered. Finally, Study 3 indicated that team leaders fill a special supervisory role in call centres in that, similar to the findings from cases by Armistead et al.

(2002), team leaders coach, motivate and support their frontline staff and take responsibility for service quality and efficiency levels. Hence, a relationship would be expected between their leadership and employee stress levels but no relationship between either leadership structure or leadership consideration was found in de Ruyter et al.'s (2001) call centre study. Hence, a research priority emerges to explicate the role of team leaders in theory about service delivery in call centres, so that measurement systems and development priorities can be established to reflect that role.

Finally, Study 3 investigated organisational factors contributing to service quality, not employee attitudes. However, in analysing employees' responses to certain factors, it appears that employee attitudes may mediate some of the relationships between the organisational factors and service quality. For example, employees stated that management's emphasis on sales, and performance monitoring techniques and feedback, affected their feelings of satisfaction, which affected their ability to provide service to customers. Consequently, there is scope for much research that incorporates both organisational factors concerned with delivering service quality, as in the current project, and their relationships with employee outcomes. For example, with burnout as in the study by Singh (2000), or with attitudes such as job satisfaction and employees commitment, as in the study by de Ruyter et al. (2001).

Practical applications

Study 3 provides useful information for call centre managers. Practical implications of the findings are made in this section by considering call centre structures and processes, employee monitoring and measurement, and human resource management.

In relation to structures and processes, first the study highlights the importance of team members and team leaders in addressing employees' practical and social needs. Employees suggested that the benefits of the team structure could be enhanced by regular team meetings. Such meetings would provide a forum for discussing service delivery issues, for employee input and feedback about their work, and for participation in collaborative problem solving. The second implication with respect to structures relates to relief time from telephone encounters. As well as ensuring that technical support structures are accessible and rapid, managers need to acknowledge the intensity of frontline work and provide employees with structures that facilitate formal personal support. Focus group participants repeatedly emphasised their need for the flexibility to take short breaks when they feel such breaks are essential to retain their emotional equilibrium. Finally, mechanisms for improving customer

feedback could be instigated. In particular, structures to gather and disseminate customers' responses to service delivery and their suggestions for service improvements are suggested. Employees noted that they find positive customer feedback very motivating but there are no processes to facilitate it. Similarly, employees expressed frustration at the lack of two-way communication systems whereby they are unable to contribute to options for service delivery to customers.

The next applications of the findings concern efficiency targets and the associated high levels of monitoring. Employees stated that current KPIs do not reflect service. Hence, perhaps less emphasis should be placed on absolute numbers and more on achieving a balance between all desirable outcomes, namely sales targets, productivity measures, and service quality measures. Employees in Study 3 said that the emphasis on KPIs causes them stress, which reduces the likelihood of them being friendly and welcoming to customers. Further, role stress has been linked to employee satisfaction in call centres (de Ruyter et al., 2001) and the employee satisfaction to customer satisfaction link is a basic premise of the service profit chain (Heskett et al., 1997). Overall, Study 3 suggests that managers may wish to give priority to reviewing measurement systems and priorities to reduce their perceived preoccupation with KPIs, to account for customer service and satisfaction, and to provide employees with more perceived control over their work.

The quality assurance (QA) processes were seen positively but with considerable scope for improvement. Firstly, the QA system needs to be more flexible. Employees noted that its current inflexibility adds stress to customer interactions and restricts employee initiative. Secondly, employees suggested that the QA processes be extended to include an employee self assessment component, an indication of the breadth (number of services provided) and depth (difficult situations versus routine enquiries) of customer services provided, and a customer satisfaction component. Finally, employees said that delayed feedback from QA monitoring was meaningless when they could not listen to the service encounter because they could not remember the call. Hence side-by-side monitoring or the use of audio tapes is preferable. Fewer QA assessments might be done but they are likely to be more effective in enhancing employee performance and quality outcomes.

Other practical applications arising from the study relate to the role of human resource management. Appropriate human resource management can facilitate high levels of customer service in several ways. First, recruitment and selection processes are important in ensuring employee-job fit. Second, systems need to be developed to provide employees with

recognition and rewards for achievements, especially in dealing with difficult customers. Participants in Study 3 stated that the only rewards were for sales, not service. Further, employees in Study 3 felt that external parity with respect to remuneration would help them to manage the demands of their work, and remain customer focussed, because they would feel that they were being paid to do so. Other human resource management concerns involved rosters and training. Employees said that they need two day breaks at regular intervals to assist them to recover from the potential burnout arising from emotional labour. As well as product knowledge, training needs to include analytical skills such as information processing and problem-solving, and skills for managing customers. Training should incorporate a variety of techniques because employees noted that analytical and customer skills are harder to acquire than product knowledge, and are not available via online delivery.

Finally, the reality of call centre work is that employees work in isolation, have to manage customer interactions constantly, and their day is driven by targets which are monitored electronically. Each of these features contributes to employee stress and there was consensus amongst participants in Study 3 that stress decreases service quality for customers. Hence, policy and practice that reduces employee stress is likely to result in a better working environment for employees and better quality outcomes for customers.

Conclusion to Study 3

The purpose of Study 3 was to investigate employees' views on the organisational factors that affect their ability to deliver service quality to customers. To achieve this aim, data from ten focus groups of frontline employees ($n = 58$) from a telecommunications call centre were subjected to content analysis. Nine major organisational factors were identified. The factors can be broadly classified into four areas. The first group, which essentially hindered the delivery of service quality is concerned with the demands and pressures of frontline employee roles and incorporates management's emphasis on sales, performance monitoring and feedback, and the efficiency demands of call centres. The second area, the effects of which also predominantly reduced service quality, includes aspects of service encounter stress, involving the management of customer interactions, QA processes and perceived control. The third group, which could help or hinder service delivery, encompasses facilitating conditions in the call centre namely, HRM practices, teams, call centre structures and support, and managerial attitudes. The fourth area, employee-job fit was found to be important in that it was considered to be instrumental in whether employees love their work and enjoy serving customers, or whether they find the work very difficult and tend to withdraw from customers.

Study 3 adds to previous theory in that it suggests that various factors from prior work need to be integrated when the delivery of service quality in call centres is considered. In particular, aspects of service quality gaps theory (Zeithaml et al., 1988) and service climate theory (Borucki & Burke, 1999; Schneider et al., 1988) appear to affect service delivery in the special environment of call centres. Additionally, other factors not previously emphasised, need to be specifically addressed in future models. These factors include whether management emphasises sales or efficiency, rather than service quality, approaches to performance monitoring and feedback, effects due to role demands, quality assurance regimes and employees' experiences of service encounter stress.

Study 3 has presented the frontline employee perspective on the factors that affect the service quality that customers receive from a call centre. Gaining frontline employees' views was important because customers' responses in Studies 1 and 2 had established first, that the service quality delivered by call centres is strategically important for organisations because it is related to customers' commitment and loyalty to providing organisations. Second, links between customer-perceived customer orientation and both service quality expectations and perceptions suggested that a variety of factors may influence service quality delivery. Study 3 has shown that previous service quality theory, and elements of service climate, of which customer orientation is one part, do appear to be important to service quality in call centres, and should be considered in facilitating its delivery.

The next chapter concludes the current project. It summarises and interprets the findings from the three studies in an integrated manner.

CHAPTER 5

CONCLUSION

A great contradiction seems to exist in call centre work. Many call centres are set up specifically to receive in-bound customer calls and to provide service, which may also include sales. However, call centres appear to be managed in a way that does not assist employees to deliver high quality service to customers. Previous studies in call centres have found that managers focus on efficiency targets, for example, average time per call (de Ruyter & Wetzels, 2000) and that less emphasis is given to customer-oriented priorities such as the quality of service delivery (Brown & Maxwell, 2002; Knights & McCabe, 1998; Wallace et al., 2000). Such findings suggest that it may be difficult for frontline staff to be customer oriented, and that customers would come to expect and experience low levels of service quality. Therefore, the central objective of this project was to investigate both customers' responses to the delivery of service quality from call centres and employees' views on the factors that facilitate it.

This chapter summarises the findings of the project and outlines how the project extends prior knowledge of service quality. The limitations of the project are then used to identify questions for future research. Finally, the practical implications for managers at senior, middle and supervisory levels are highlighted.

Findings of the project

The project aimed to test propositions about customer expectations and perceptions of service quality, and to explore organisational factors that affect its delivery. In doing so, it addressed three key research questions, which formed the basis of three separate studies. The research questions were:

1. What are customers' expectations of service quality from call centres, and are those expectations related to their perceptions of customer orientation?
2. What are the relationships between the perceived service quality of call centres and customers' commitment and service loyalty to the providing organisations?
3. What organisational factors, as perceived by frontline employees, affect the delivery of service quality in call centres?

The three research questions guiding this project arose from considerations about customers' expectations and perceptions of service quality from call centres. Figure 1.1 (p. 12) presented an overview of the studies used to answer the questions. Figure 5.1 (below) provides a summary of the overall findings for the customer samples, end consumers of insurance services (Studies 1A and 1B) and business customers of online banking (Studies 2A and 2B). Figure 5.2 (p. 148) summarises the findings from Study 3, which involved frontline employees in a telecommunications call centre.

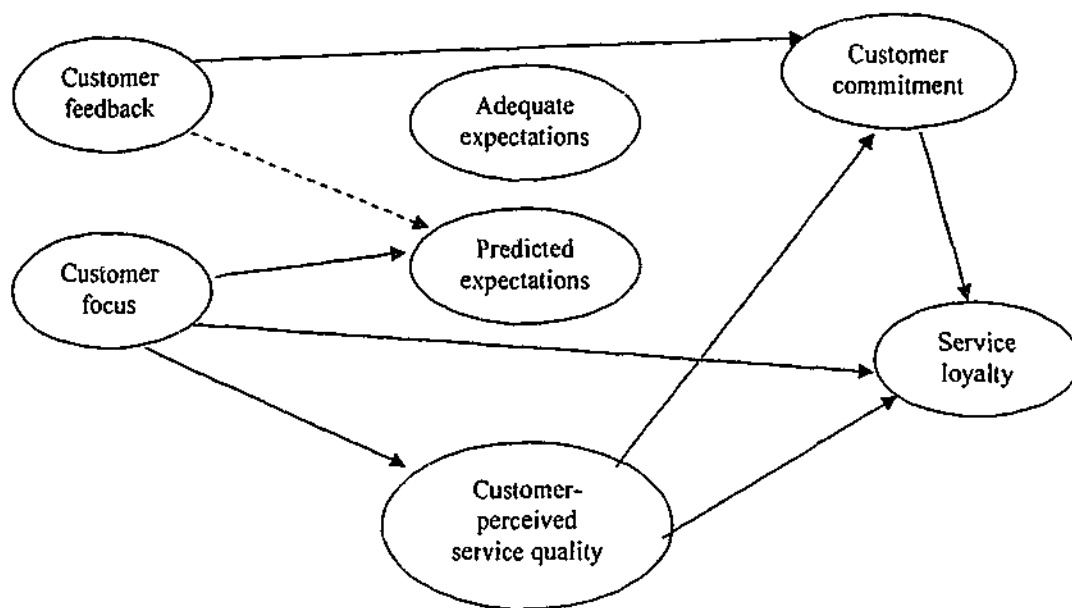


Figure 5.1 Summary of findings from the project (customer samples)

(Note. All paths have positive relationships. The broken line indicates finding for the consumer sample, but not the business sample)

The central dimension of both Figure 1.1 and Figure 5.1 is customers' expectations and perceptions of service quality. Figure 5.1 (upper middle part) shows that two different types of customer expectations (adequate and predicted) are discriminated in the studies. Adequate expectations are attributed consistently high absolute scores for the two samples of call centre customers. Predicted expectations are not related to adequate expectations, contrary to what was expected from the expectations theory proposed by Zeithaml et al. (1993). Customers' perceptions of the customer orientation of the call centres comprised two factors, customer focus and customer feedback (upper left part of Figure 5.1). Customer focus is related to predicted expectations of quality for both the consumer and business samples. That is,

customers' views on whether the call centre managers are committed to understanding their needs and keeping them satisfied is linked to their forecasts about the level of service they will receive. However, customer feedback is related to predicted expectations only for the consumer sample. That is, customers' views on the call centre's approach to monitoring their satisfaction and encouraging their feedback is linked to their forecasts about the level of service they will receive, for the consumers of insurance but not for the customers of online banking.

Customers' perceptions of the service quality of the call centres (bottom part of Figure 5.1) is linked to their service loyalty to the providing organisations (the insurance company and the bank). Further, the studies discriminate service loyalty (customers' behavioural intentions) from customer commitment (their feelings about the organisation), and find that perceived service quality is also related to customers' commitment (top right part of Figure 5.1).

This study appears to be the first to incorporate customers' perceptions of customer orientation into a model with perceived service quality, service loyalty and customer commitment. The study found different links for the two customer orientation factors, customer focus and customer feedback. Customer feedback is related to customer commitment (top part of Figure 5.1). In contrast, customer focus is not related to customer commitment, but is related to perceived service quality and service loyalty (bottom right part of Figure 5.1). Thus, customers' perceptions of customer orientation appear to have different links with their attitudes to the service providers. Further, the project found that the link between customer focus and service loyalty is partially transmitted by the paths to perceived service quality and then to service loyalty. Consequently, for these samples, the service quality of the call centres is not only important because of its relationships with customer commitment and service loyalty to the providing companies, but also because it incorporates customers' assessments of their service orientation.

Having established links between customers' responses to the service quality of call centres and their behavioural intentions, the next study adopted an operational focus with frontline employees who are responsible for delivering the service. Figure 5.2 presents a summary of the factors that frontline employees, in a telecommunications call centre, perceive to affect the delivery of service quality to customers. The previous studies show that customers expect service that gives a quick resolution to questions, is provided by consultants who have the knowledge and skills to assist customers to define their problems, and who can do so with empathy and assurance. Major findings from the frontline employees are that they

are hindered by management's emphasis on sales as a customer service 'solution', the efficiency demands of their work, and the stress associated with managing customer service encounters.

Employee-perceived factors affecting service quality delivery		
<i>Factors that hinder</i>	<i>Factors that hinder and help</i>	<i>Factors that help</i>
Management's emphasis on sales	Performance monitoring and feedback	Call centre support structures
Efficiency demands	Employee job-fit	Team leaders
Encounter stress	Human resource practices	Team members
	Managerial attitudes	

Figure 5.2 Summary of findings from the project (employee sample)

Figure 5.2 shows four factors that both hinder and help employees in delivering service quality (middle column). These factors, or aspects of them, hinder in some circumstances and help in others. For example, performance monitoring and feedback provide specific goals and can be motivating for employees but the processes can be too restrictive to allow employees to meet customers' service needs. Similarly, if the 'fit' of employees with call centre jobs is good, they report satisfaction and enjoyment in provide service to customers. However, the converse also exists. Different human resource management practices have varied effects. For example, employees believe that inadequate rosters affect their ability to manage customers, whereas training enhances their skills. Positive customer outcomes result from call centre structures, such as access to staff for product information and technology support, and the use of teams. Finally, teams and team leaders appear to play a pivotal role in attending to the technical and emotional needs of employees, so that employees can meet the needs and quality expectations of customers.

Contributions to knowledge

In addressing the three major research questions (p. 145), the project makes several new contributions beyond previous research. First, it shows that customer-perceived service quality of call centres is related to customers' service loyalty to providing organisations. Second, it distinguishes between customer commitment and service loyalty, and also shows

that perceived service quality is directly linked to customer commitment. Third, the project integrates customer-perceived customer orientation with service quality by testing relationships between the perceived customer orientation factors and service quality expectations and perceptions. Finally, the project explores service quality delivery, from a frontline employee perspective, to identify the factors that help and hinder employees in their endeavours to deliver the service expected by customers in the production-line environment of call centres. These new contributions are now discussed in more detail.

The link between perceived service quality and service loyalty

As stated above, the project confirms a positive link between customers' perceptions of the service quality of a call centre and their service loyalty to the providing organisations. The current project demonstrated the link for end consumers of insurance and business customers of online banking. To the author's knowledge, these studies are the first to demonstrate this link for non-core service provision in call centres. In a similar study, de Ruyter and Wetzels (2000) showed that the listening behaviour of service consultants, as assessed by customers, was related to customers' intentions to use the call centre again. The current project tests for a relationship with the organisations providing the overall services, not just the call centres. That is, it extends the link to customers' likely purchase and communication intentions (their service loyalty) with respect to the insurance company and the online banking service. The finding therefore emphasises the important role that customer service in call centres can play for organisations. In testing the link between perceived service quality and service loyalty, the project has responded to the call for research by Bloemer et al. (1999) that specifically links service loyalty with other customer attitudes, and by de Ruyter and Wetzels (2000) for similar research in call centres.

A positive relationship between perceived service quality and customer commitment is also evident for the samples in the project and is discussed during the next section.

Distinguishing between customer commitment and service loyalty

The project contributes a measure for customer commitment, which was developed from the major measure of organisational commitment in the Organisational Behaviour literature (Mowday et al., 1979) and from customer relationship items from the Services literature (White & Schneider, 2000). Customer commitment (feelings of attachment towards the organisation) is discriminated from service loyalty (customers' intended behaviours), as shown by principal components analysis and confirmatory factor analysis.

Understanding customers' feelings as well as their intended behaviours is important because in service situations it is feasible for customers to be (temporarily) loyal to a company without feeling committed. Bendapudi and Berry (1997) explained that such situations can occur when customers are loyal because they are in constrained relationships, rather than being dedicated to a service provider. Customers in service contracts, for example, insurance or telecommunications, are in this category. When customer commitment and service loyalty are distinguished, separate relationships involving them can be proposed and tested. Two such relationships are concerned with whether perceived customer orientation and perceived service quality are linked to customer commitment and service loyalty. The current project contributes to knowledge by having tested both of these. Relationships with perceived service quality are discussed next and relationships involving perceived customer orientation in the following section.

Figure 5.1 (p. 146) shows that customers' perceptions of service quality are related to both their commitment and service loyalty to the service providers. This finding challenges the assumption that customer commitment may precede service loyalty, in the context of call centres and service providers. Pritchard et al. (1999) demonstrated that customer commitment is antecedent to service loyalty with airline and hotel customers ($N=681$). Therefore, the project contributes to the emerging knowledge on customer commitment by indicating that future models should not assume that customer commitment will transmit the link of perceived service quality to service loyalty. Rather, it appears necessary to consider both direct and indirect effects of perceived service quality on customer commitment and service loyalty.

Integrating customer-perceived customer orientation with service quality

A gap exists in the services literature in that few studies appear to test relationships involving customers' perceptions of customer orientation and service quality, despite scholars noting that customer orientation is important to ensure customers develop positive views of service encounters (Brady & Cronin, 2001) and service organisations (Kandampully, 1998). Thus the present project contributes to prior knowledge, in that it investigates links between customers' perceptions of customer orientation of call centres and both their expectations and perceptions of service quality.

Two customer orientation factors are discriminated and they provide different insights into the likely role of perceived customer orientation for the two samples. Customer focus includes a commitment to customers, creating value for them and having a customer

satisfaction objective. The other factor, customer feedback, is concerned with whether the organisation monitors customer satisfaction and encourages feedback on the quality of its service. The project shows how customer orientation might work for managers in service organisations, an area that, as Brady and Cronin (2001) noted, has been previously ignored. More specifically, the project illustrates the different links that the two customer orientation factors have with service quality expectations, service quality perceptions, customer commitment and service loyalty, as shown in Figure 5.1 (p. 146). These links are now considered in turn.

The project found that neither customer focus nor customer feedback is related to customers' views on the minimum levels of service that they consider to be adequate. That is, customers' views on whether the call centre is committed to meeting their needs are not linked to their minimum expectations of service quality. In contrast, the two customer orientation factors were found to be related to customers' predictions about service quality (predicted expectations), but with one major difference. Customer focus is linked to predictions of service quality for both the insurance consumers and the customers of online banking. However, customer feedback only shows the link to predictions for the consumer sample and the association is weaker. That is, messages received by customers about the organisation's emphasis on meeting their needs (customer focus) seem to have a stronger link to predictions of service quality than the organisation's activities in gathering their feedback. This means that simply asking customers to evaluate the quality of service does not change what they predict about call centre service.

The links involving the two customer orientation factors with perceived service quality and service loyalty contribute new findings. First, customers' assessments of the customer focus of the call centre is directly related to both their perceptions of service quality of the call centre, and their service loyalty to the service company (bottom half of Figure 5.1). Further, some of the link between customer focus and service loyalty is mediated by perceived service quality. That is, customers' perceptions of service quality are enhanced by call centres demonstrating an emphasis on understanding customers' needs and creating value for them (customer focus), and both are linked to service loyalty. In contrast to its positive relationship with service loyalty, customer focus does not demonstrate a relationship with customer commitment. Consequently, it appears that customers' views on the customer focus of the call centre are linked to their intentions to remain a customer, but not to their feelings of identification and involvement with the organisation. In service contexts, the distinction is

important because, in time, customers may exit existing relationships if they are not committed to the service provider.

Figure 5.1 (top part) shows that customer feedback may help to explain customer commitment. This is the first study to demonstrate how soliciting customer feedback may be important, not for the information it provides, but because it is related to customers' feelings of identification and involvement with the organisation (customer commitment). That is, the link between customer feedback and customer commitment indicates that the organisation's activities in monitoring customer satisfaction and encouraging feedback on the quality of their service may contribute to customers' positive feelings about the company. Further, the lack of association between customer feedback and service loyalty questions the applicability of previous empirical work to call centre services. More specifically, Slater and Narver (1994) showed that a market orientation, which includes gathering and disseminating customer feedback, contributed to customer loyalty. This was not found to be the case in the current project.

Finally, the relationships involving the two customer orientation factors add to previous knowledge in that they show separate direct links to customer commitment and service loyalty. This finding suggests that customers' likely retention may be influenced by their perceptions of customer orientation. Thus, the findings indicate that perceived service quality may not have the dominant role, as the interface between organisations and customers, which has been demonstrated in past studies (e.g., as the major driver of customer value in service profit chain studies reported by Heskett et al., 1997). In particular, an organisation's activities in gathering customer feedback may provide a path to customer commitment, and the organisation's attention to providing a customer focus, may lead to an attitude of service loyalty, although the latter path is partially mediated by perceived service quality. The findings about the customer orientation factors show one means by which the market (customer) orientation, defined by (Slater & Narver, 1994) and a positive service climate, which includes customer orientation as defined by (Schneider et al., 1998), may produce results for organisations.

The discussion of the project's contribution to knowledge now adopts an organisational perspective and considers the findings shown in Figure 5.2 (p. 148).

Delivering service quality to customers

Having established that the service quality of call centres is linked to customer commitment and service loyalty to providing organisations, the project then identified the employee-perceived factors that help or hinder its delivery in a telecommunications call centre. The most frequently mentioned factor was management's emphasis on sales. Employees perceived sales to have a higher priority than service quality and therefore hindered its delivery. This finding is consistent with previous studies (e.g. Zeithaml et al.'s (1988) service quality specification gap) which have found that a management commitment to service quality precedes its delivery. However, the study indicates that interpreting 'sales' as customer 'solutions' or 'service' adds particular tensions for frontline employees. Some employees believe that sales and service are mutually exclusive, and to make sales quality is often compromised. Thus, management's emphasis on sales in the service environment of the call centre adds another type of role conflict for staff.

Role conflict in call centres has been interpreted in terms of conflict between service quality and productivity (e.g., by Singh, 2000; de Ruyter et al., 2001). In the current project, quality/productivity conflict is evident as part of general efficiency demands imposed on employees, one of the next two most frequently mentioned factors affecting the delivery of service quality. Employees in the telecommunications call centre feel that efficiency demands hinder service quality. Singh's (2000) study showed that employees give productivity precedence over service quality, because productivity measures are more 'visible' to managers. This study contributes two additional insights into how efficiency demands work against service quality. First, call centre efficiency demands increase employees' stress levels and weaken their ability to manage customers. The situation is exacerbated as employees demonstrate a capability and willingness to meet ever-increasing productivity targets. Second, time pressures mean calls are closed early and service quality initiatives are stifled.

The present project found role conflict in that employees experience conflict between service quality and efficiency goals, as stated above, and role ambiguity in that employees felt compelled to gain sales, although their roles are to provide customer service. However, the current findings suggest that employee role stress in call centres needs to include more than the role conflict and role ambiguity of past studies (for example, de Ruyter et al., 2001; Singh, 2000). Other stressors are performance monitoring and feedback processes, and service encounter stress, resulting from managing customer interactions and the burden of emotional labour. Zeithaml et al. (1988) recognised performance monitoring and feedback as an important component of supervisory control systems in their service delivery gap but the

current study appears to be the first that reports employees' views on how quality assurance procedures actually influence service delivery during customer encounters. For example, frontline employees stated that the quality assurance process is too limiting because every customer encounter is different and it is frequently difficult to follow tight scripts. Consequently, employees modify their means of service delivery to suit the quality assurance regimes, rather than to meet customer needs. Thus, a new finding from the study is that, in contexts such as call centres, quality assurance may work against service quality.

In addition to their likely effect on service delivery, quality assurance scripts emerged as a new element in relation to service encounter stress, for employees in the telecommunications call centre. Other elements, which have been noted in previous studies (e.g., Singh, 2000) include customer interactions and employees' lack of control. A related factor, employee-job fit, which was evident in the service quality gaps model of Zeithaml et al. (1988), takes on greater importance in call centres. Participants in the research consistently referred to the characteristics of people who are 'suited' to call centre work, with one of their major criteria for suitability being the ability to handle the workplace stressors.

The combination of meeting key performance indicators, adhering to quality assurance scripts, managing customers, and providing emotional labour suggest that stress needs to be included for service delivery models in call centres. One previous study ($n=495$) in a Swedish computer company, by Edvardsson et al. (1997), showed an inverse relationship between employee stress and internal service quality. However, to this authors' knowledge, no other studies have demonstrated the need to include stress when considering the factors leading to external quality for customers.

The current project found that certain factors that have contributed to service quality in past theories are identified and considered critical in call centres. The factors include human resource policies and practices (e.g., rewards, training, recruitment and selection), emphasised in service climate theory by Schneider et al., (1998) and Borucki and Burke (1999). Similarly, structures and processes to support frontline personnel (e.g., technical assistance, help desks for product knowledge, and communication systems), and managerial attitudes, as outlined by Zeithaml et al. (1988) were identified. Finally, the project found that teams affect service quality delivery. However, the importance of teams differs from previous services research, where their role has been predominantly in terms of employees and managers working together towards a common goal (e.g., as outlined by Zeithaml et al., 1988). This study suggests that teams affect the ability of employees to deliver service to customers because team members provide emotional and technical support to one another, usually in conflict

with key performance indicators. Also, as Armistead et al. (2002) noted, team leaders take responsibility for the morale and motivation of agents. The current project suggests that these non-traditional, unmeasured aspects of the team leader's work affect employees and, consequently, the service quality delivered to customers.

Limitations of the project and future research

Detailed limitations and suggestions for future research have been provided in each of the three studies constituting the project. Therefore, this section summarises the limitations and highlights key aspects. In doing so, future research questions emerge and possible extensions of the project are suggested.

The first area of limitations concerns the research design and data collection methods. The two customer studies were cross-sectional field studies in insurance and online banking. Mitchell (1985) noted that cross-sectional designs raise questions about sampling, validity of measures, and analyses and inferences. These issues result in a major limitation of lack of interpretability of the findings. In particular, low response rates were obtained from mail surveys (15% and 17%), and data were self-reported and subject to common method variance. The expectations measures, which used exactly the same items, were especially susceptible to common method variance. In contrast to the studies involving the two customer samples, the third study used a qualitative method involving frontline employees in a call centre. Creswell (1994) stated that when the researcher wants to focus on the context that may shape the understanding of a phenomenon, a qualitative approach is appropriate. This situation existed for delivering service quality in the specific context of call centres. The study used focus groups in one telecommunications call centre, in which employees were expected to make sales as part of customer service. Thus, the study was highly context specific. More research is necessary to verify the findings from the three studies constituting the project, in other call centres, and in other industries. However, the project has strengths in that it used two customer samples, from different types of call centres in different industries, to test theory based hypotheses and found the same results for both samples.

Previous theory on relationships between different types of service quality expectations, proposed by Zeithaml et al. (1993), is not confirmed in the present project. It is possible that this result was due to common method variance or the cross-sectional approach. A longitudinal design which tests predictive relationships, rather than single snapshot links, may have led to different findings. Further, the measures for expectations used a scale adapted from the one previous study of service quality expectations in call centres (Burgers et al.,

2000). While the construct validity of the expectations scales were established via factor analysis and reliability tests, further work on the expectations measures is necessary to address questions that arise about the role of customer expectations in call centres, and whether the zone of tolerance is meaningful in that context. For example, the present study found a lack of association between predicted and adequate expectations. A longitudinal design is necessary to investigate whether there is a causal relationship between predicted and adequate expectations. If this is not the case, there are interesting implications for call centre managers.

Limitations exist in relation to the method of analysis using structural equation modelling. The major variables of current interest were included in the studies and relationships were identified between customer feedback and customer focus, with perceived service quality, customer commitment and service loyalty. The two structural models (Studies 2A and 2B) explained 49 percent and 39 percent of the variance in customer commitment. Thus, future work may wish to identify other factors that contribute to customer commitment. Identifying and testing other factors is important because customer commitment has a different meaning to service loyalty, and the two constructs demonstrate different relationships with the perceived customer orientation factors, and with perceived service quality.

In the project, perceived customer orientation consists of two factors, which were developed from existing literature. Specifically, customer focus arises from the traditional view of customer orientation, as perceived by employees (Schneider et al., 1998) whereas the customer feedback factor aligns with one of the three dimensions of market orientation (Narver & Slater, 1990). As noted by Brady and Cronin (2001), only a small number of studies have considered customer orientation from the customer's perspective, and it is possible that customer-perceived customer orientation includes other dimensions, not yet identified. Figure 5.1 (p. 146) shows the different relationships that each of the two customer orientation factors demonstrated with other variables in the present study, for example, perceived service quality. Hence, addressing this limitation, and testing other relationships presents important future activity.

The findings with respect to employees' views on the factors that help and hinder them in their efforts to deliver service quality to customers in the telecommunications call centre also indicate areas for future research. First, employees' views in other types of call centres could be explored to establish whether the findings are consistent and comprehensive. Second, the most frequently mentioned factors in the current project, management's emphasis

on sales, performance monitoring, and efficiency demands of call centre work, suggest that understanding service delivery in call centres may require both a reconfiguring and extension of service quality theory, as proposed by Zeithaml et al. (1988). Additionally, employees stated that the three most frequently mentioned factors contribute to the stress of their work. When combined with other factors, namely employee-job fit and service encounter stress arising mainly from customer interactions, there appears to be scope for much research to consider the relative importance of the factors for customer outcomes, and for managing employees in call centres. For example, the extent of employee control in relation to quality assurance processes emerges as a particularly interesting area. Participants in the current study indicated that a lack of control causes stress during service encounters, and works against customer orientation and service quality. A previous call centre study, by Singh (2000) found that task control assisted employees to manage stress. Consequently, further studies into the use of quality assurance in service encounters, the various interpretations of task control, and their implications for service delivery and customers seem warranted.

To conclude, the limitations of the study highlight the lack of cause and effect testing, and the limited generalisability of the findings. Consequently, further research is necessary to verify the results and examine causal effects. However, the discussion suggests future questions which might incorporate other variables, or include insights that emerged from the findings. Two projects appear particularly interesting. First, call centre researchers may wish to investigate aspects of call centre work explained in relation to the importance of teams. These aspects include employees' feelings of identity and isolation, the role and outcomes of social interaction in call centres and the special significance of team leaders. Second, the meaning of service quality may require rethinking when customer service is used to simultaneously generate sales. Current literature does not appear to report the customer perspective on such an approach or the perspective of the frontline employee, who has to manage such work.

Whereas this section has focused on the limitations of the project and potential research arising from them, the project also demonstrates particular strengths. As mentioned previously, two customer samples, from two different call centres, and representing end consumers and business customers, were used to test quantitative results. Additionally, a third sample, from another type of call centre, was used to gather employees' views in a qualitative design. Analytical rigour was adhered to throughout the project. For example, the construct validity of quantitative measures was determined by confirmatory factor analyses, and competing models, including a one factor model, were tested. Where the possibility of

multicollinearity arose, as indicated by intercorrelations exceeding 0.70 (Tabachnick & Fidell, 2001), the unity test of Anderson and Gerbing (1988) was performed. Multivariate models, with direct and indirect sequences, were tested using structural equation modelling, which simultaneously estimates and removes measurement error, leaving only the common variance between factors. Finally, rigour in content coding qualitative data was achieved by using independent coders and attaining inter-rater reliability scores of at least 90 percent.

Practical implications

This final section considers the practical implications of the results as a whole. To provide clarity for managers, the practical implications are discussed at three levels: strategic (senior managers), middle (operations and human resources), and frontline (team leaders and supervisors).

Strategic implications of call centres as a means of customer service

As previously stated, findings from the customer studies in the project indicate that customers' perceptions of the service quality of call centres is related to both their commitment (feelings) and service loyalty (intentions) to providing organisations. Further, customer commitment and service loyalty are closely associated with one another. These links suggest that the delivery of service in the call centre of an organisation is likely to affect customer retention. Consequently, senior managers may wish to give attention to factors that influence customer commitment and loyalty outcomes. These are now considered in turn.

Managers seeking a long-term relationship commitment from their customers, via call centre services, could consider a strategy that involves customer feedback. In the current project, customer feedback demonstrates a direct relationship to customer commitment. Customer feedback includes organisational activity related to monitoring customer satisfaction, attending to after-sales service, encouraging informal feedback and seeking evaluations of the quality of work. Organisations that collect data from customers, disseminate it and respond to it, are likely to be perceived as being interested in customer feedback, and to gain a strategic advantage via customer commitment. However, to do so requires structures and mechanisms to enhance communication from customers. Such structures were not evident in the current project and led to expressions of frustration from both customers and employees. Giving employees the time to show an interest in customer views, and the skills and facilities to process them, would send positive messages to both customers and employees.

If managers are interested in developing service loyalty, the customer orientation factor, customer focus, presents a useful starting point. Customer focus demonstrates a direct relationship with service loyalty, that is, it is linked to customers' intentions to engage in positive communication about the organisation and to continue doing business there. However, customer focus means maintaining a high level of commitment to customers, understanding their needs, creating value for them, and having customer satisfaction as a major objective. Achieving these goals, from a customer perspective, may be difficult. Hence, it is useful to understand that perceived service quality transmits some of the effects of customer focus to service loyalty, and may be easier to influence in customers' minds. Customers' service quality expectations include minimal queuing times, achieving an outcome in one call, and being attended to by a knowledgeable and courteous service consultant. The project indicates that customers have very high expectations, and likely a very narrow zone of tolerance, but the items constituting their expectations are precise, largely measurable and able to be managed. Consequently, strategists may wish to emphasise them as a means of gaining service loyalty.

Implications for middle level managers

Having summarised the strategic implications of the project, which concentrated on customer attitudes, attention is now directed to key aspects of managing the workplace and its employees so that the desired customer attitudes are fostered. The discussion is divided into practical implications for firstly, operations managers, and secondly, human resource managers.

The employee study of the project indicates that operations managers in call centres face unique challenges. Call centre workplaces appear to be widely driven by a production-like emphasis on efficiency, and technology-based control to the detriment of service quality. Findings from the current project imply that operations managers who adopt a broader, more flexible approach may benefit because employees will be able to deliver more customer-oriented behaviours. A particular recommendation includes less preoccupation with key performance indicators such as sales targets and detailed performance monitoring, especially time-based adherence measures. Employees in the telecommunications company of the present project stated that such measures cause undue anxiety and resentment, and they ignore them when they feel the need, despite the managerial emphasis on targets.

The second set of implications for operations managers also arose as part of performance monitoring and is concerned with quality assurance regimes. While generally

well received, employees note that quality assurance processes would be improved if they included measures of customer satisfaction, and the complexity and scope of the service provided. Otherwise they are perceived by employees as unjust and counter to service quality. Quality assurance, of necessity, sets detailed specifications to be adhered to. However, customer interactions during service encounters vary widely and imposing inflexible scripts and routines diminishes employees' abilities to manage them. Employee self-assessment, as part of quality assurance, is another option that would acknowledge that service operations are different to production. Further, it passes some responsibility for monitoring quality to employees themselves, a hallmark of quality management in production.

To address the factor concerned with efficiency demands, operations managers may wish to consider providing relief time from telephone encounters for frontline staff. 'Production' does not occur at a constant pace in service encounters, and the intensity of frontline work makes it difficult for employees to sustain high quality for customers. Hence, policies that provide employees with the flexibility to take short breaks, when they feel such breaks are essential to retain their customer-oriented behaviours, are likely to benefit both employees and customers. Also, such policies may assist to reduce employees' feelings of isolation and their lack of social interaction at work. As for breaks, employees in the telecommunications call centre participate in 'illegal' social interaction, a practice that does not contribute to maximising the volume of calls managed.

Similar to other call centre studies (e.g., Batt, 1999; Knights & McCabe, 1998; Singh, 2000), this project indicates that employees give precedence to tangible and visible productivity measures over intangible and invisible customer service objectives. They do so by reducing the quality of interactions, in terms of the time and attention they give customers in order to increase the number of calls handled. In view of the importance of customer focus and customer feedback to service loyalty and customer commitment, operations managers may wish to review the operations priorities that produce such a situation. Finally, the project highlights the important role played by teams and team leaders. However, prior to discussing the implications for team leaders, implications for human resource managers are now outlined.

To repeatedly deliver high quality service to customers, employees in call centres need to manage the work environment and the customer. The current project reinforces previous studies in that employees commented on their high stress levels, caused essentially by efficiency demands of the work, service encounters with customers, and personal inability to meet the requirements of their roles. Each of these areas present challenges for human

resource practitioners. The first challenge is to recruit staff who are suited to call centre work. Identifying the appropriate people is unlikely to be straight forward. However, recruitment activity that seeks evidence of attributes such as an inherent customer service orientation, an ability to work under pressure, and a positive and flexible approach seems to be appropriate. Issues of training and development also emerge. In particular, perceived service quality is assessed in terms of service consultants' skills in defining and solving problems, explaining the process to customers, and treating them with empathy, even when they are angry. These skills reflect knowledge, attitudes and higher order analytical and process skills. Employees need training in product knowledge and many will need development activities to assist them in managing customers.

Frontline employees agree that stress decreases service quality. Hence, human resource policy and practice that reduces employee stress is likely to result in better working conditions for employees and better quality outcomes for customers. Apart from the factors mentioned above, specific practices identified in the current study include appropriate rewards, recognition and incentives; attention to rosters (days off, rotating shifts and planned leave), and considering means of instituting greater variety into the work roles in call centres.

Implications for supervisors and team leaders

The practical implications for team leaders and supervisors concern the fact that they manage the point of delivery of service to customers. Employees in their teams work in isolation on telephones. This means that employees have little opportunity for social interaction with their colleagues, their problems in dealing with customers are concealed, and they do not learn from role models on a day to day basis. Hence, the importance of teams and team leaders is increased when compared to other service situations.

Team leaders need to find ways to identify and address employees' issues, and reduce their feelings of isolation. This is important because problems are not visible to others and employees indicate that they rarely seek help because of time pressures and not wanting to appear inadequate. Additionally, they do not share experiences and learn from one another. In the project, frontline staff commented that regular team meetings would benefit them formally, in problem-solving and learning, and informally, for social interaction. It appears that group cohesion is not achieved by decorations or by competition, but may be enhanced by more engagement with one another, such as mentoring and the opportunity to provide formal support. Such activities would serve the purpose of reducing the monotony of the work.

Another practical implication that emerges is the lack of opportunity for employees to have breaks and debriefs and, consequently, their inability to manage role stress. Instigating better communication systems with employees may assist in identifying problems in the early stages and decrease their unmet needs. Finally, employees are motivated by positive feedback but feel that intense performance monitoring targets negative elements. As well as internal measures, structures and processes to facilitate positive customer feedback would help to balance some of their negative customer experiences.

Conclusion to the project

Call centres are not a new phenomenon but, as Anton (2000) noted, their use has increased dramatically in recent times. Frenkel et al. (1999) suggested that the increase is believed to be due to the strategic emphasis that organisations now place on customer service and the opportunity to provide that service in a cost-effective manner. Related research activity has moved in tandem with the growth in call centres. However, the research has tended to focus on the work environment (e.g., Houlihan, 2002), worker responses to it (e.g., Deery et al., 2002), and work relations with managers (e.g., Fernie & Metcalf, 1999). Despite the competitive importance of customer service, as de Ruyter et al. (2001) pointed out, very little customer research on call centres exists. Additionally, no studies appear to have sought employees' views on meeting customer service goals. The current project has endeavoured to respond to this research deficit. Its central theme has been to gather customer and employee views on service quality in call centres, and use them to test and extend knowledge on service quality expectations (Zeithaml et al., 1993), perceptions (de Ruyter & Wetzels, 2000) and delivery (Parasuraman et al., 1988). The project has involved two customer studies, from call centres in insurance services and online banking, and one employee study from a telecommunications provider. The customer studies used a quantitative survey-based design while the employee data were gathered using a qualitative method involving focus groups.

A key finding from the project is that customers' perceptions of the service quality of call centres is related to their commitment and loyalty to the providing organisations. That is, high levels of after-sales service may contribute to customer retention. Other findings are that customers have very high minimum expectations of service quality from call centres. Further, their expectations are predominantly concerned with prompt service, getting their problems resolved, and being attended to by polite and knowledgeable service consultants. Two dimensions of customer orientation, customer focus and customer feedback, were identified. For the insurance consumers and customers of online banking in the current project, customer

feedback is related only to customer commitment, whereas customer focus is related to perceived service quality and service loyalty. Finally, employee data emphasise the unique work environment of call centres and highlight factors which create barriers for employees wishing to deliver high levels of service quality to customers. Major barriers include management's emphasis on sales, elements of performance monitoring, efficiency demands and service encounter stress.

The project has practical implications for call centre managers at each level in the organisation's hierarchy. At a strategic level, the findings illustrate the likely role of call centres in retaining customers, and the potential means to enhance retention by ensuring customer orientation and perceived service quality. Operations managers are concerned with using resources to meet customer expectations about service quality. The project directs their attention to employee support structures and processes, productivity targets that conflict with service quality, quality assurance techniques, and communication systems. The role of human resource managers is heightened in call centres by the importance of certain human resource activities. The activities include recruitment of staff who are suited to frontline work, providing appropriate rewards and recognition, developing employees, and managing rosters that enable them to maintain adequate levels of vitality and enthusiasm. The greatest challenges, identified in the project may be for supervisors, who are at the interface of the organisation with its customers. They are required to meet customer needs and expectations for service quality, while providing the technical, social and emotional support needs of their teams. Team structures, enhanced employee and customer communication, and group problem-solving and learning are suggested to assist them to do so.

The delivery of service quality in call centres is complex and different to its delivery in other situations. Therefore, its study is interesting and potentially beneficial to customers, employees and organisations. The current project makes a small contribution to the emerging theory and, more importantly, suggests avenues for the pursuit of further research.

APPENDIX 1

Covering letter and customer survey

Monash University letterhead

Date

Project Title: Service quality in call centres

Customer survey

My name is Alison Dean. I am a senior lecturer in the Department of Management at Monash University, and I am doing research towards a PhD under the supervision of Professor Phyllis Tharenou, also in the Department of Management at Monash University. The XYZ company has kindly agreed to cooperate in the conduct of this research.

The aim of the research is to explore the relationship between service quality and features of call centre operations at XYZ. I am particularly interested in your expectations and perceptions of service quality, your feelings about the service levels and customer orientation of XYZ, and your on-going commitment as a customer.

The XYZ company has randomly selected names from recent callers to their customer call centre and then prepared mailing labels which they have provided to me for this research. Your name was selected in this way. It has not been added to a database or electronic mailing list. The surveys are only numbered to facilitate my record of returns. If the response is very low, I may seek the assistance of XYZ in sending out follow-up letters to the numbers corresponding to non-respondents. Whether this occurs or not, your participation is voluntary and completely confidential.

I would be grateful if you could complete the attached survey and return it to me in the reply paid envelope. The survey may take you up to twenty minutes to fill out. You do not need to answer any question that concerns you, and you may discontinue the survey at any point.

If you have any queries, please contact me on telephone 03 9902 6706, or fax 03 9902 7154.

Should you have any complaint concerning the manner in which this research (project number 2000/497) is conducted, please do not hesitate to contact The Standing Committee on Ethics in Research on Humans at the following address:

The Secretary
The Standing Committee on Ethics in Research on Humans
Monash University
Wellington Road
Clayton Victoria 3168
Telephone (03) 9905 2052 Fax (03) 9905 1420

Thank you.

Alison M Dean

Monash University, Department of Management

Service quality in call centres

Instructions

This survey seeks your expectations about service levels, and your feelings about the service quality provided by the call centre at the XYZ. It is mainly concerned with your views about ringing up and speaking to a service consultant. It does *not include calls that are fully automated* and which only involve pushing buttons on the phone.

The survey has a number of important parts. Please complete all parts. For parts A to D, circle the number that best reflects your feelings. There are no right or wrong answers, we are just seeking your opinion.

Part A - Your feelings about service levels provided by XYZ and its call centre

(*VARIABLE: PERCEIVED CUSTOMER ORIENTATION*)

	<i>Customer orientation and feedback The call centre at the XYZ...</i>	<i>Strongly disagree</i>						<i>Strongly agree</i>
1	.. maintains a high level of commitment to me, as a customer.	1	2	3	4	5	6	7
2	.. constantly creates value for me.	1	2	3	4	5	6	7
3	.. understands my needs.	1	2	3	4	5	6	7
4	.. has the main objective of keeping me satisfied.	1	2	3	4	5	6	7
5	.. regularly monitors my satisfaction level.	1	2	3	4	5	6	7
6	.. pays close attention to after-sales service.	1	2	3	4	5	6	7
7	.. does a good job keeping me informed of changes which affect me.	1	2	3	4	5	6	7
8	.. encourages informal feedback regarding its services.	1	2	3	4	5	6	7
9	.. asks me to evaluate the quality of its work and service.	1	2	3	4	5	6	7

Part B - Your expectations about service levels

In this part we are interested in your expectations of service in relation to the call centre operated by the XYZ. Firstly, we are seeking your predictions about service quality levels and secondly, we would like to know your feelings about the minimum level of service quality that is acceptable to you.

(VARIABLE: PREDICTED (FORECAST) EXPECTATIONS)

In the table below, please circle the number to indicate the level of service you predict, that is, the level of service you think you will get in your future dealings with XYZ call centre. Please note that this level may be different to the service level that you would like to get.

	<i>In relation to (the aspect below) ...the level of service I PREDICT I will get is...</i>	<div> <i>Very low</i> quality <div>1 2 3 4 5 6 7</div> <i>Very high</i> quality </div>						
1	Getting a problem solved or a request answered in one call	1	2	3	4	5	6	7
2	Having to wait in a queue for service	1	2	3	4	5	6	7
3	Feeling that the service consultant will take enough time (and therefore not rush me)	1	2	3	4	5	6	7
4	The service consultant assisting me to define my problem or question more specifically	1	2	3	4	5	6	7
5	The service consultant being able to solve different questions or problems	1	2	3	4	5	6	7
6	The service consultant remaining calm and friendly if I am angry	1	2	3	4	5	6	7
7	The service consultant providing explanations about steps in the service process (or reasons for problems)	1	2	3	4	5	6	7
8	The service consultant assuring me about the confidentiality of my information (or how it will be used)	1	2	3	4	5	6	7
9	The service consultant treating me with empathy (treating my problems as important)	1	2	3	4	5	6	7
10	The service consultant having the authority to solve problems	1	2	3	4	5	6	7

(VARIABLE: ADEQUATE (MINIMUM) EXPECTATIONS)

The next table repeats the 10 statements. Here we want to know the **lowest level of service quality** that you consider to be adequate. Please circle the appropriate number.

	<i>In relation to (the aspect below) ...the minimum level of service that I consider to be ADEQUATE is..</i>	<i>Very low quality</i>				<i>Very high quality</i>		
1	Getting a problem solved or a request answered in one call	1	2	3	4	5	6	7
2	Having to wait in a queue for service	1	2	3	4	5	6	7
3	Feeling that the service consultant will take enough time (and therefore not rush me)	1	2	3	4	5	6	7
4	The service consultant assisting me to define my problem or question more specifically	1	2	3	4	5	6	7
5	The service consultant being able to solve different questions or problems	1	2	3	4	5	6	7
6	The service consultant remaining calm and friendly if I am angry	1	2	3	4	5	6	7
7	The service consultant providing explanations about steps in the service process (or reasons for problems)	1	2	3	4	5	6	7
8	The service consultant assuring me about the confidentiality of my information (or how it will be used)	1	2	3	4	5	6	7
9	The service consultant treating me with empathy (and treating my problems as important)	1	2	3	4	5	6	7
10	The service consultant having the authority to solve problems	1	2	3	4	5	6	7

Part C -Your feelings about the quality of service delivered by the XYZ call centre

Please complete this part in relation to your recent experiences with the XYZ call centre.

(VARIABLE: PERCEIVED SERVICE QUALITY)

	My assessment of the service quality of the XYZ call centre in relation to...	Very low quality				Very high quality		
1	Getting my problem solved or request answered	1	2	3	4	5	6	7
2	The time I had to spend waiting in a queue for service	1	2	3	4	5	6	7
3	The service consultant taking enough time and not rushing me	1	2	3	4	5	6	7
4	The service consultant assisting me to define my problem or question more specifically	1	2	3	4	5	6	7
5	The service consultant being able to solve different questions or problems	1	2	3	4	5	6	7
6	The service consultant remaining calm and friendly when I was angry (if applicable)	1	2	3	4	5	6	7
7	The service consultant providing explanations about steps in the service process (or reasons for problems)	1	2	3	4	5	6	7
8	The service consultant assuring me about the confidentiality of my information (or how it would be used) (if applicable)	1	2	3	4	5	6	7
9	The service consultant treating me with empathy (treating my problem as important)	1	2	3	4	5	6	7
10	The service consultant having the authority to solve my problem	1	2	3	4	5	6	7

Part D - Your feelings of loyalty and commitment to the XYZ organization

(VARIABLE: SERVICE LOYALTY)

	Your likely future behaviour in the future	<i>Strongly disagree</i>					<i>Strongly agree</i>	
1	I am likely to say positive things about XYZ to other people.	1	2	3	4	5	6	7
2	I would recommend XYZ to someone who seeks my advice.	1	2	3	4	5	6	7
3	I would encourage friends and relatives to do business with XYZ.	1	2	3	4	5	6	7
4	I consider XYZ my first choice to buy the appropriate services.	1	2	3	4	5	6	7
5	I am likely to do more business with XYZ in the next few years.	1	2	3	4	5	6	7

(VARIABLE: CUSTOMER COMMITMENT)

	Your commitment to XYZ	<i>Strongly disagree</i>					<i>Strongly agree</i>	
1	I talk up this company to my friends as a great organisation to do business with.	1	2	3	4	5	6	7
2	I find that my values and this company's values are very similar.	1	2	3	4	5	6	7
3	I am proud to tell others that I do business with this company.	1	2	3	4	5	6	7
4	I am extremely glad that I chose this company over others I was considering at the time I joined.	1	2	3	4	5	6	7
5	I really care about the fate of this company.	1	2	3	4	5	6	7
6	I feel a great deal of loyalty to this company.	1	2	3	4	5	6	7
7	I am willing to put in effort to help this company be successful.	1	2	3	4	5	6	7
8	I feel a sense of belonging to this company.	1	2	3	4	5	6	7
9	My relationship with XYZ is very important to me.	1	2	3	4	5	6	7
10	My relationship with XYZ is something I intend to maintain indefinitely.	1	2	3	4	5	6	7

Part E - Information about you

(CONTROL VARIABLES)

1	<input type="checkbox"/> Male <input type="checkbox"/> Female
2	Age <input type="checkbox"/> 18 to 24 <input type="checkbox"/> 25 to 34 <input type="checkbox"/> 35 to 44 <input type="checkbox"/> 45 to 54 <input type="checkbox"/> 55 to 64 <input type="checkbox"/> 65 and over
3	Number of years you have been a customer of the XYZ <input type="checkbox"/> less than 1 year <input type="checkbox"/> 1 to 2 years <input type="checkbox"/> 3 to 5 years <input type="checkbox"/> more than 5 years
4	Do you prefer to speak to a male or female service consultant? <input type="checkbox"/> male <input type="checkbox"/> female <input type="checkbox"/> no preference

(CONTROL VARIABLES AT COMMENCEMENT OF PART C)

Reason(s) for making call(s):	
<input type="checkbox"/> seeking information	<input type="checkbox"/> complaint requiring explanation <input type="checkbox"/> complaint requiring action
<input type="checkbox"/> other, please specify _____	
When you made your last call to the XYZ call centre:	
<input type="checkbox"/> during the last 3 days	<input type="checkbox"/> during the last week <input type="checkbox"/> during the previous 2-4 weeks
<input type="checkbox"/> more than 4 weeks ago	

Part F - Other comments

1 What do you expect in relation to quality in call centres?

- _____
- _____
- _____
- _____

2 What positive features have you found in using XYZ call centre?

-
-
-
-

3 What service quality problems, if any, have you encountered?

-
-
-
-

4 Please add any other comments you would like to make.

THANK YOU VERY MUCH FOR COMPLETING THIS SURVEY

APPENDIX 2

Mail survey response rates

Response rate comparisons with the main expectations studies discussed in developing the theory for Studies 1 and 2 was not possible because they did not employ mail surveys. In fact, researchers have avoided this method. Burgers et al. (2000, p. 150) stated "A mail survey would have been very time- and cost-inefficient and risky, because of the lack of control over the response rate." Instead, Burgers et al. focussed on gathering a sufficiently large sample from personal interviews in shopping malls to justify using statistical procedures. In Study 1A, mail intercept was not an option because the study sought customers of a particular organisation. Other researchers performing expectations studies have also distributed surveys by adopting a personal interview approach (Diaz-Martin et al., 2000; Dion et al., 1998; Kalamas et al., 2002). However, the most common approach has been to use students either in experimental designs (Boulding et al., 1993; Hamer et al., 1999) or as a means of getting surveys completed (Johnson & Mathews, 1997; Liljander & Strandvik, 1993; Walker & Baker, 2000).

The major problem with a low response rate is that it is the accepted proxy for nonresponse error (Dillman, 1991). Nonresponse is considered to be a serious issue for designs involving mail surveys because of the implications for both the quantity and quality of data obtained (Armstrong & Overton, 1977; Diamantopoulos & Schlegelmilch, 1996).

To reduce nonresponse error, Dillman (1991), Armstrong & Overton (1977) and Diamantopoulos & Schlegelmilch (1996) outlined similar strategies. These strategies suggest making allowance for nonresponse by estimating bias or by sampling non-respondents, and trying to minimise it by careful design and execution of surveys. In relation to mail survey design, Dillman recommends an approach that evokes a positive response from potential recipients. He suggests attending to a number of factors, which include the appearance, ease of completion, return and interest in the questionnaire, and use of official stationery and sponsorship. Such factors reflect the findings from industrial respondents (Diamantopoulos & Schlegelmilch, 1996; Hagget & Mitchell, 1994; Jobber & O'Reilly, 1998) used as the sample in Study 1B. In the current study, the above design recommendations were adopted to the extent possible within the constraints imposed by the participating organisation (no more than one contact method) and the university (no use of incentives).

In summary, the literature on mail surveys appears to focus predominantly on various means of increasing response rates (e.g., Crompton & Tian-Cole, 2001; Goyder, 1982; Jobber & O'Reilly, 1998) rather than on setting benchmarks for returns, or estimating nonresponse bias and its implications. Exceptions include Baruch (1999) and Armstrong and Overton (1977). Baruch (1999) discussed benchmarks for organisational studies while Armstrong and Overton (1977) showed that using extrapolations can assist in determining the magnitude of nonresponse bias. The implications of nonresponse for interpreting mail survey data has preoccupied researchers for many decades (see, for example, Donald, 1960; Heberlein & Baumgartner, 1978) and there are still calls for further studies (Haggett & Mitchell, 1994; Kosek, 1998). The issues outlined with respect to Studies 1A and 1B continue to reflect this need.

Diamantopoulos and Schlegelmilch (1996) used 22 literature reviews on response rates that were published in the previous 20 years. They organized the issues addressed, and associated findings, into eight categories which they used as the framework for their research. The categories and Diamantopoulos & Schlegelmilch's subsequent recommendations included sponsorship, use of a cover letter, paying attention to the content, length and format of the questionnaire; providing assurances of confidentiality and anonymity; using more than one contact method; providing a return envelope; and incentives. As in Study 1A, all of these recommendations were adopted except for using more than one contact method (not permitted by the participating organisation) and use of incentives (not permitted by the university).

Other reviewers of mail surveys in business settings have investigated the benefits of various activities and produced similar recommendations to Diamantopoulos and Schlegelmilch (1996). For example, Haggett and Mitchell (1994) reviewed the effects of industrial prenotification, while Jobber and O'Reilly (1998) provided a methodological update on industrial mail surveys. However, Haggett and Mitchell (1994) concluded that the literature was lacking in guidance for the mail researcher and Jobber and O'Reilly (1998) commented on the relatively poor foundation (six studies) on which current knowledge about mail surveys is based. Thus, Study 1B is subject to the same limitations arising from the low mail response rate, as in Study 1A.

Comparison of findings for early and late respondents

Armstrong and Overton (1977) discuss extrapolation as one method for estimating nonresponse bias. Extrapolation is based on the belief that subjects who respond less readily are more like nonrespondents, where 'less readily' is interpreted as answering later (time trends) or requiring

reminders to answer the survey (successive waves). To assess the likelihood of nonresponse bias in Studies 1 and 2, the time trend method was used. Respondents were divided into two groups according to the length of time elapsed since the survey was distributed. 'Early' respondents returned the completed survey within two weeks, whereas 'late' respondents took longer than two weeks and up to six weeks. *T*-tests for the differences between means on the major variables and the items were then used to check for bias. Controls were also checked. Table A2.1 shows the results for the mean values of the major variables and controls used in Study 1. No significant differences were detected for variables and the only difference for the controls was for the time lapsed since the last call in Study 1A (Table A2.1). Table A2.2 shows the results for the extra variables used in Study 2 where no significant differences were found.

Table A2.1 Differences between means for early and late respondents (Study 1)

	Study 1A		Study 1B	
	<i>t</i> -test	Sig.	<i>t</i> -test	Sig.
Customer focus	-.44	.66	.66	.51
Customer feedback	-1.16	.25	-.86	.39
Predicted expectations	-.36	.72	-.31	.76
Adequate expectations	.31	.76	-.28	.78
Gender	-.15	.88	.55	.59
Age	-.41	.68	-.54	.59
Time lapse since last call	2.06	.04	.88	.38

Table A2.2 Differences between means for early and late respondents (extra variables used in Study 2)

	Study 2A		Study 2B	
	<i>t</i> -test	Sig.	<i>t</i> -test	Sig.
Perceived service quality	.76	.45	.41	.68
Service loyalty	-.70	.48	.82	.41
Customer commitment	-1.06	.29	.35	.73

APPENDIX 3

Content analysis of the open-ended questions on service quality expectations

To check the content validity of the expectations scales in Studies 1A and 1B and to provide an approximate guide to their relative importance, respondents were asked the open-ended question, "What do you expect in relation to quality in call centres?" In Study 1A, two-thirds of respondents (192; 67%) took the opportunity to express their views. In Study 1B, just over half (183; 56%) provided written comments. The procedure used in analysing the comments, and the major findings are outlined below.

Procedure

The data obtained from Study 1A was content coded, independently by two raters, using the procedure outlined by Tesch (1990). The major steps were to: read through all the responses, identify the topics that were talked about, give the topics names or codes, return to the data to see whether the codes incorporate the comments, and establish a description for each topic (theme). The two raters each identified a number of themes, discussed their themes and descriptions, and eventually agreed on seven key themes, shown in Table A3.1.

Once the data had been reduced to themes, the frequency of occurrence of each theme was determined. This involved looking at each case again and marking which themes had been mentioned. The process provided a frequency count as shown in Table A3.2. The data obtained in response to the same question for Study 1B was counted for frequency of the themes identified in Study 1A. Once this was completed, other comments, which did not 'fit' the themes, were analysed resulting in the addition of one further category (Minimal button pressing) to Table A3.2. No other themes representing more than 2% of comments emerged.

Table A3.1 Themes for service quality expectations from qualitative data (Study 1A)

Theme	Definition
1. Responsiveness of service	The willingness and ability of the call centre to deliver prompt service, including prompt answering of initial call, and quick resolution of issue/question
2. Consultants' attitudes	Consultants are polite, helpful, patient and empathetic
3. Consultants' knowledge	Consultants are knowledgeable enough so callers do not need to be transferred and have authority to resolve issues in one call
4. Consultants' communication skills	The ability of operators to communicate clearly and effectively
5. Reliability of service	The ability of the call centre to achieve desired outcomes by delivering quick, accurate, informative, reliable answers to queries
6. Personalised attention	The ability of the call centre to provide personalized attention to callers, through calls being answered by consultant rather than a machine, and through minimizing transfers to other consultants
7. Background irritations	Relates to the music and taped messages used as background fillers during on-hold periods

Table A3.2 Frequency of themes in Studies 1A and 1B

Theme	Study 1A		Study 1B	
	Freq ^a	Percent ^b	Freq ^a	Percent ^b
1. Responsiveness	111	38	149	46
2. Consultant attitudes	79	27	91	28
3. Knowledgeable consultants	55	19	72	22
4. Consultant communication skills	28	10	0	0
5. Reliability of service	26	9	38	12
6. Personalised attention	25	9	21	7
7. Background irritations	6	2	0	0
8. Minimal button pressing	0	0	15	5

^a Number of times mentioned in written comments: out of total of 192 (Study 1A) and 183 (Study 1B)

^b Based on total number of respondents to the survey ($n=289$, Study 1A; $n=325$, Study 1B)

To illustrate each theme, quotes drawn directly from the data are shown in Table A3.3.

Table A3.3 Quotes to illustrate each theme

Theme number	Quote
1	"Expect my call to be answered quickly and don't expect to be on hold for more than 3 minutes"
2	"Patience, empathy, a willingness to want to help." "Friendliness and empathy. Reassurance. Patience"
3	"Someone able to deal with my call instead of being put through to lots of different people to solve problems" "I don't like the service consultant having to keep consulting her supervisor for every answer" "Operators who have excellent knowledge of products/systems."
4	"The ability of operators to communicate clearly and effectively." "Polite staff who are easily able to be understood – clarity of language."
5	"Quick, accurate, informative and reliable answers. Interest in me as a long standing customer." "I supplied the same info to the call centre and the local service centre and got two different quotes!!"
6	"Not listening to a computer telling me to push 1 for this or 2 for that. They really upset me. I prefer talking to a real person".
7	"No 'while you are waiting' music or taped messages" "I do <u>NOT</u> like music playing at me while waiting"

APPENDIX 4

Development of customer commitment for Study 2

Employee commitment studies appear to have either a behavioural (Becker, 1960) or attitudinal (Porter et al., 1974) emphasis or both (Allen & Meyer, 1990). Behavioural commitment, which includes continuance commitment, was evident in the early literature in terms of exit costs or 'side-bets' (Becker, 1960). In services marketing literature, continuance commitment emphasises switching costs, or the difficulty in replacing a business partner, and has been called 'high sacrifice' (Harrison-Walker, 2001) or calculative commitment (Wetzels et al., 2000). Employee commitment with an attitudinal emphasis has been defined as an affective, psychological attachment (Mowday et al., 1979; Porter et al., 1974) and measured frequently using the Organizational Commitment Questionnaire (OCQ) developed by the same authors (Griffeth et al., 2000). Authors have argued that affective commitment differs from both continuance and normative (expected) commitment (Allen & Meyer, 1990).

Table A4.1 provides a summary of recent empirical studies employing customer commitment. It highlights the relatively small number of reported studies and illustrates the dependence on definitions and measures of customer commitment that arise from employee studies. More specifically, all studies in the table except Pritchard et al. (1999) and Wetzels et al. (2000) reported using scale items from organisational literature. Further, Pritchard et al. (1999) were developing a measure that drew on aspects of employee commitment literature, such as identification, and Wetzels et al. (2000) did not report details of their measure.

Given the extensive use of employee commitment in defining customer commitment to date, Study 2 also drew on this literature. Porter et al. (1974, p. 604) defined organizational commitment as the "relative strength of an individual's identification with and involvement in a particular organization". They suggested that such commitment can be characterised by at least three factors: belief in and acceptance of the organization's goals and values, willingness to exert effort on behalf of the organisation, and a desire to maintain membership of the organization. Study 2 defines customer commitment in the same manner as organizational (employee) commitment. It is conceived as a positive attitude and is consistent with 'affective commitment' as it is used in services literature (see, for example, Wetzels et al., 2000). That is:

Customer commitment is the strength of a customer's identification with and involvement in a particular organization (Developed from Porter et al., 1974, p. 604).

Table A4.1 Summary of empirical studies employing customer commitment

Author(s)	Sample	Results	Customer commitment measure
Bettencourt (1997)	Grocery retail shoppers (N=230)	Customer commitment positively related to loyalty and participation (provision of feedback to store)	Three items, based on the Porter et al. (1974) OCQ scale: commitment to store, intention to continue shopping, and willingness to expend effort
Fullerton (2003)	Undergraduate students (N=96)	Affective commitment positively related to customers' advocacy and loyalty intentions, and effect greater than for continuance commitment	Affective and continuance commitment adapted from Allen and Meyer's (1990) organizational scales
Garbarino and Johnson (1999)	Theatre company customers (N=401)	Consistent subscribers: theatre experiences predict commitment which predicts future intentions but for occasional subscribers the effects are mediated through satisfaction	Used employee commitment literature to cover identification (pride in belonging), psychological attachment (sense of belonging), concern for the welfare of the organisation, and loyalty
Gundlach et al. (1995)	Simulation of manufacturers / distributors	The magnitude of commitment inputs is related to long-term commitment intentions in the same time period	Three elements: investment / calculative, psychological attachment, and a temporal dimension
Harrison-Walker (2001)	Veterinary services and hair salons (N=471)	Affective commitment positively related to WOM behaviour for both samples but service quality only related to WOM for veterinary services	Adapted measures from employee commitment literature, using affective (Porter et al., 1974) and high sacrifice (Becker, 1960) conceptualisations
Kelley and Davis (1994)	Health club members (N=296)	Positive relationships between perceived service quality and customer commitment, and then service recovery expectations	Adapted Porter et al. (1974) 15-item scale. Three sample items: recommendations, return intentions, proud to be a member
Morgan and Hunt (1994)	Auto tyre retailers (business to business) (N=204)	Firm's commitment to a supplier is a mediating variable between antecedents (costs / benefits / values) and relationship outcomes	Eight items from Meyer and Allen (1984), Mowday et al. (1979) emphasising the importance of the relationship (willingness to invest effort) and desire to maintain it.
Pritchard et al. (1999)	Airline and hotel customers (N=681)	Tendency to resist changing preference a key precursor to loyalty, largely explained by the customer's willingness to identify with a brand	Used a scale development procedure incorporating resistance to change, informational, identification and volitional processes.
Wetzels et al. (2000)	Office systems (business-to-business) (N=491)	Affective and calculative commitment and trust all lead to loyalty intentions, biggest effect for affective commitment	Sources of scales not provided.
White and Schneider (2000)	Financial services, insurance, and auto repair (N=2007)	Differences in service dimension scores related to three different degrees of customer commitment (client, supporter, advocate)	Items from Morgan and Hunt (1994) and OCQ (Mowday et al., 1974). Also used a 'ladder of commitment', a hierarchy from non-automatic purchaser to automatic purchaser to advocate.
Zins (2001)	Commercial airline (N=755)	Corporate image, service quality and customer satisfaction explain customer loyalty. (Affective and calculative commitment used conceptually to interpret structural differences.)	Loyalty measure from Dick and Basu's (1994) 2x2 model of attitudes versus behaviours, <i>theory</i> of affective and calculative commitment used to explain phenomena.

Note. OCQ = Organizational Commitment Questionnaire; WOM = Word-of-mouth.

The relationship component in customer commitment has arisen because customer commitment is a common dependent variable in customer relationship literature and, in particular, in buyer-seller relationship studies (Hocutt, 1998). In these studies the construct is 'relationship commitment' and was defined by Morgan and Hunt (1994) in terms of the committed party "believing that the relationship is worth working on so that it endures indefinitely" (p. 23). In their consumer study, White and Schneider (1998) also included items on commitment of customers to a relationship, and the above definition does not preclude such items. Hence, in operationalising customer commitment, Study 2 draws on the Organizational Commitment Questionnaire (OCQ) (Mowday et al., 1979) and also includes relationship items from White and Schneider (1998).

Customer commitment and service loyalty have been defined as distinct constructs. In particular, customer commitment is a psychological attachment (involvement and identification with the service provider) while service loyalty is a positive attitude that includes intended behaviours (communication actions and continuance intentions). Service loyalty has emerged from a relatively simple measure of repeat patronage (actual loyalty) to a complex, multi-dimensional measure (de Ruyter et al., 1998; Dick & Basu, 1994; Javalgi & Moberg, 1997; Oliver, 1999; Zeithaml et al., 1996). In contrast, both early and current definitions of customer commitment have indicated its complex and multi-dimensional nature (Allen & Meyer, 1990; Porter et al., 1974; Pritchard et al., 1999). This complexity has resulted in conceptual overlap and subtle differences in interpretation. For example, commitment indicates a motivation to maintain a relationship, compared to loyalty, which generally measures intention to maintain it (Wetzels et al., 2000). Similarly, Moorman et al. (1992) defined commitment as an enduring desire to maintain a valued relationship, that is, having elements of value and desire to continue. Table A4.1 demonstrates that many commitment studies included a 'loyalty' component where loyalty was interpreted in terms of behaviours (communications, repeat patronage) or intended behaviours.

Figure A4.1 illustrates the major areas of overlap.

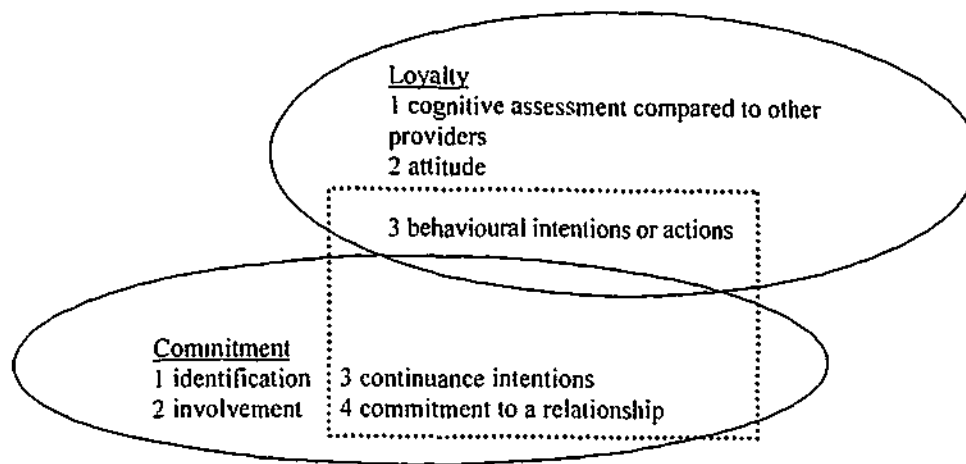


Figure A4.1 Conceptual overlap between commitment and loyalty

In Study 2, customer commitment is about feelings; it is an attachment, reflected by attitudes of pride, caring and being part of a relationship. In this way, it is different to service loyalty which has a behavioural focus and involves decisions about future patronage and the likelihood of engaging in positive communication about the organisation (Caruana, 2002). The distinction between customer commitment and service loyalty is important to Study 2 because of the supplementary nature of call centre services. In particular, situations exist where customers may demonstrate different degrees of commitment and loyalty. For example, a customer who is committed (psychologically attached) to a service provider is likely to be loyal, ultimately demonstrating repeat patronage. However, customers may be loyal in that they intend to use a service provider for reasons other than identification and involvement, such as the (poor) quality of alternatives, the costs of switching or other situational exigencies (Dick and Basu, 1994; Fullerton, 2003; Hocutt, 1998).

Bendapudi and Berry (1997) investigated the reasons that customers stay in relationships with service providers and found two major categories: constraint and dedication. If customers are constrained to stay in their relationship with a provider, they may not be committed and may even express negative word-of-mouth feelings but not intend to switch to another provider (Fullerton, 2003). This may be the case with respect to call centre services, which are supplementary to other core services (Gronroos, 2000). Alternatively, if, for example, customers

are not constrained by their investment in the relationship they may remain customers by choice, and express both positive loyalty and commitment. Hence, customer commitment and service loyalty, as defined in Study 2, provide different information.

Measures for service loyalty and customer commitment

The service loyalty scale reflects the definition of service loyalty used in the study, focusing on customers' attitudes and likely behaviours: positive communication, recommending the service provider to others, and intending to remain a customer. In their studies, Bloemer et al. (1999) and de Ruyter and Bloemer (1999) used the full 'behavioural intentions battery' of Zeithaml et al. (1996) which also included items relating to complaining behaviour and price sensitivity. These items were not included in the present study. Complaining behaviour was excluded because, in their study of four different service industries, Bloemer et al. (1999) found that it was not significantly linked to any of the service quality dimensions. Further, Study 2 has defined service loyalty in terms of customers having a positive attitude and intending to remain customers and, therefore, to ensure content validity, the service loyalty scale used in Study 2 retained this focus and excluded complaining behaviour. The scale is consistent with other service loyalty studies which have concentrated only on customer preference and preparedness to recommend the provider in assessing service loyalty (Butcher et al., 2001; Caruana, 2002; Zins, 2001). Similarly, items relating to pricing and value have been conceived and measured separately from service loyalty (Butcher et al., 2001) and are outside the scope of the present study.

APPENDIX 5

Study 2: Detailed method of analysis for structural equation modeling

Use and interpretation of structural equation modeling in Studies 2A and 2B

This section outlines the statistical procedures used in Study 2, why they were used, the steps in the process, and the specific criteria that guided decisions. As stated in the Method of Analysis (p. 71), exploratory factor analysis was used in conjunction with structural equation modeling.

The main steps were as follows:

1. A preliminary structural model was developed, based on theory (Figure 3.1).
2. Principal components analysis and reliability scores were used to initially refine the scales for measuring the constructs shown in Figure 3.1.
3. Confirmatory factor analysis was used to further refine the measures of the constructs, and to establish the fit of the measurement model.
4. The structural model was estimated jointly with the measurement model, commencing with Figure 3.1. Potential improvements to the fit of the structural model were evaluated by testing nested models. Competing models that tested for direct effects and mediation, as explained in Table 3.9, were included.

The first part of the method of analysis introduces structural equation modeling (SEM) and provides a rationale for the two-stage strategy that was adopted in the study. This is followed by a brief discussion of validity and reliability. The remainder of the method of analysis deals with Steps 2, 3 and 4 shown above. Scale development and evaluation are discussed first, in particular, exploratory and confirmatory factor analyses (Steps 2 and 3). Next, the procedure and criteria for testing and modifying the structural model is provided (Step 4). The reporting of results in Chapter 3 is based on the steps in the strategy and reflects the order of the discussion used in the method of analysis.

Step 1: Developing a preliminary structural model

Hair et al. (1988, p. 583) define structural equation modeling as a

“Multivariate technique combining aspects of multiple regression (examining dependence relationships) and factor analysis (representing unmeasured concepts).

factors-with multiple variables) to estimate a series of interrelated dependence relationships simultaneously.”

The above definition emphasises a fundamental characteristic of SEM: it uses previously hypothesised dependence relationships. That is, it is based on an overall model, which emerges from theory and is illustrated by paths in a diagram. SEM can estimate and evaluate the model, and facilitate modifications to it (Tabachnick & Fidell, 2001). In fact, Tabachnick and Fidell (2001, p. 656) state that “When the phenomena of interest are complex and multidimensional, SEM is the only analysis that allows complete and simultaneous tests of all the relationships”. SEM is particularly useful when one dependent variable becomes an independent variable in subsequent dependence relationships (Hair et al., 1998). This is the case for perceived service quality in Study 2.

The definition also suggests that SEM analyses two conceptually distinct models: a measurement model (confirmatory factor analysis) and a full latent structural model (Anderson & Gerbing, 1988). The measurement model specifies the relations of the measured (observed or manifest) variables to their underlying latent constructs, with the constructs allowed to intercorrelate freely (Anderson & Gerbing, 1988). Latent constructs (or factors) cannot be measured directly but are represented by the observed variables (Hair et al., 1998) which should no longer be intercorrelated once the factors are partialled out (Jöreskog & Sörbom, 1993). The structural model is constituted from the theoretical relationships between the latent constructs, and can determine their relative explanatory power for theory testing (Jöreskog and Sörbom, 1993). This testing is possible because the measurement error has been estimated and removed, leaving only common variance (Tabachnick & Fidell, 2001).

SEM allows complete and simultaneous tests of all the relationships but, in practice, authors often recommend that the simultaneous testing should be the second phase in an analysis (e.g., Anderson & Gerbing, 1988; Kelloway, 1996; Medsker et al., 1994). That is, they suggest a two-stage approach in which the measurement model is separately estimated and respecified prior to the simultaneous estimation of the measurement and structural submodels. Jöreskog and Sörbom (1993) also advocated this procedure. They stated that the testing of theory may be meaningless unless it is first established that the measurement model holds, and it should be tested before the structural relationships are estimated. Further, Medsker et al. (1994) suggested that first improving the measurement model should result in better estimates of structural parameters and higher overall goodness-of-fit. Study 2 therefore adopted this two-

stage approach to SEM. Throughout the analysis, relevant measurement concepts included validity and reliability (Jöreskog and Sörbom, 1993), which are considered next.

Validity

The concept of validity was introduced in Study 1, with a discussion of content and construct validity. The same principles are used and extended in Study 2. In particular, validity is the ability of a *construct's indicators* to measure accurately the concept under study (Hair et al., 1998, p. 584) (*italics in original*). The first step was to seek content validity, which is evident when the items in a measure capture the domain and contain no extraneous content (Hinkin, 1995). In aiming for content validity, several approaches were employed. These approaches included developing measures from theory, drawing on previously tested measures for the constructs, where available, and using principal components analysis to identify related items.

Construct validity is concerned with convergent and discriminant validity. Convergent validity is evident when observed variables load onto specified factors, while discriminant validity means that the variables load only on those factors (Anderson & Gerbing, 1988). Confirmatory factor analysis was used to demonstrate unidimensionality of constructs and thereby to provide a confirmatory assessment of both convergent validity and discriminant validity (Anderson & Gerbing, 1988).

Within the procedures, two further steps were taken to ensure discriminant validity. First, during the initial refinement of the scales several measures were factor analysed together to identify cross-loading items in the exploratory factor analysis, and large errors in the confirmatory factor analysis (Hinkin, 1995; Jöreskog and Sörbom, 1993). Second, when the observed variables had been respecified, the overall fit of different factor models was compared to confirm discriminant validity amongst the latent variables (Hair et al., 1998).

Reliability

The internal consistency of scales is another means of providing evidence of construct validity (Hinkin, 1995). In preliminary analyses, the internal consistency of scales was determined by running reliability analyses. The overall 'standardized item alpha' for the scale was inspected, and as in Study 1, standards for interpretation were adopted from Nunnally and Bernstein (1994). That is, a minimum coefficient alpha of .70 was considered necessary for construct validation, with .80 and above indicating adequate levels of internal consistency. Where appropriate, scales were improved by inspecting item-to-total correlations and alpha-if-item deleted values.

With reference to confirmatory factor analyses and structural equation modeling, reliability is the "degree to which a set of latent constructs' indicators are consistent in their measurements" (Hair et al., 1998, p. 583). In the steps involving SEM, three types of reliability information were interpreted: the individual item reliability, the composite reliability of scales, and the average variance extracted (Bagozzi & Yi, 1988; Medsker et al., 1994). Individual item reliabilities are equal to the true score variance divided by the total variance. They are indicated by the R^2 values for the observed variables but according to Bagozzi and Yi (1988, p. 80), "it is not possible to suggest even loose rules-of-thumb as to adequate sizes". In contrast, Hair et al. (1998, p. 612) state that individual reliabilities "should exceed .5, which roughly corresponds to a standardized loading of .7". Therefore, in Study 2, an individual reliability of .5 was considered acceptable.

The composite reliability of each construct assesses the internal consistency of the indicators and is analagous to coefficient alpha (Medsker et al., 1994). It was calculated by using the formula:

$$\text{Composite reliability} = \frac{(\sum \text{standardized loading})^2}{(\sum \text{standardized loading})^2 + \sum \varepsilon_j}$$

where ε_j is the measurement error for each indicator, and the measurement error equals one minus the reliability, which is the square of the standardized loading (Hair et al., 1998, p.612). In accordance with the suggestions of Bagozzi and Yi (1988, p. 80), a composite reliability of .6 was considered acceptable.

The average variance is similar to the composite reliability and was calculated as follows:

$$\text{Variance extracted} = \frac{\sum (\text{standardized loading}^2)}{\sum (\text{standardized loading}^2) + \sum \varepsilon_j}$$

Values greater than .5 were considered adequate for the average variance extracted (Bagozzi & Yi, 1988, p. 80; Hair et al., 1998, p. 612).

Another concern with respect to reliability is the stability of measures over time. Where a test-retest approach is not possible to measure stability, a recommended best practice alternative is to administer the measure to an additional sample (Hinkin, 1995). That is, cross validation by testing the predictive effectiveness of a model on a separate independent sample drawn from the same population as the first. In Study 2A, administering to an additional sample was impossible

but the same procedures were used on the measures and reported with a separate population in Study 2B, enabling validity generalization (Bagozzi & Yi, 1988). Validity generalization differs from cross validation in that it occurs when samples from different populations are used (Bagozzi & Yi, 1988).

Step 2: Scale refinement

The most commonly used analytic technique for data reduction and refining constructs is factor analysis (Hinkin, 1995). Factor analysis includes exploratory techniques, such as principal components analysis (PCA), and confirmatory factor analysis (CFA) (Tabachnick & Fidell, 2001). Study 2 used both techniques. PCA was used to identify related items, and facilitate the removal of cross-loading and poorly loading items. CFA was used to further refine the factors, and to demonstrate the quality of the factor structure by statistically testing the significance of the overall model and assessing the goodness-of-fit of rival models (Hinkin, 1995).

Study 1 outlined the method and criteria for decisions in exploratory factor analysis. The same procedures were used in Study 2. That is, principal components analysis, rather than factor analysis, was conducted (Nunnally and Bernstein, 1994) and two or more measures were analysed together to demonstrate discriminant validity (Hinkin, 1995). To determine the number of factors, more than one method was used, namely eigenvalues greater than 1 and the discontinuity in the scree plot (Tinsley & Tinsley, 1987). To allow for correlation between components, oblique rotation was adopted (Ford et al., 1986). Factor loadings greater than .32 (10% overlapping variance) were interpreted (Tabachnick & Fidell, 2001) and items were dropped if they correlated with more than one factor to .3 or greater (Nunnally & Bernstein, 1994).

Once the initial scales were obtained from PCA, reliability measures were checked as outlined previously. The scales were then used as the starting point for assigning observed variables to the latent constructs used in Step 3.

Step 3: Testing the measurement model by CFA

In Step 3, three phases of analysis occurred. Firstly, CFA was used to initially test the unidimensionality of the scales and to refine them (Gerbing & Anderson, 1988). Next, 'item parceling' was employed to reduce the number of observed variables that were subsequently used for analyses (Hall et al., 1999; Landis et al., 2000). Thirdly, a further CFA was performed to test the fit of the measurement model. This section first explains the rationale behind these phases. Next, details of the decisions made prior to data entry, and with respect to the

preliminary examination of output are discussed. This is followed by definitions of the measures of overall fit, and the standards for their interpretation. Finally, the procedure used for exploring lack of fit is outlined.

The first step in confirming that the observed variables truly represented the relevant construct was to test for unidimensionality. It requires that the indicators are reliable and valid measures of only the specified construct (Gerbing & Anderson, 1988). That is, that each set of indicators has only one underlying trait or concept in common (Hair et al., 1998). Gerbing and Anderson (1988) noted that exploratory analysis, such as principal components, does not provide an explicit test of unidimensionality because each factor is a weighted sum of loadings. In contrast, in a CFA, each factor is antecedent to a mutually exclusive subset of the indicators. CFA therefore facilitates 'trimming' of measurement models to remove items that load on more than one construct, resulting in greater interpretability (Anderson & Gerbing, 1988). Hence, Study 2 used a preliminary CFA on the scales, prior to substantially testing the measurement model.

Once unidimensional scales were obtained, the next issues concerned the total number of indicators to be used in the measurement model and, in particular, the number of indicators per latent factor. These issues are now discussed in turn, following a brief introduction to some of the terms and concepts used in CFA.

SEM involves the estimation of unknown parameters (factor loadings or path coefficients) based on observed covariances, and using matrix algebra (Kelloway, 1996). Freeing or fixing elements of the matrices specifies a model. Freeing means estimating a parameter, fixing sets it at zero (no correlation or path) (Tabachnick & Fidell, 2001). The number of estimated parameters is fundamental to the 'identification' of the model, which deals with whether a unique solution for the model (or its component parameters) can be obtained (Kelloway, 1996). The other consideration in identification of the model is the number of indicators per latent construct. The more indicators, the more highly identified the models will be and the less likely that researchers will encounter problems in estimating model solutions. Consequently, researchers sometimes use many indicators to allow freeing of more parameters, and to ensure 'over-identification' and a unique solution (Kelloway, 1996). However, researchers have also been concerned with the total number of observed variables that should be estimated, and they recommend inclusion of no more than 20 indicators altogether (Bentler & Chou, 1987; Harris & Schaubroeck, 1990). To meet this recommendation, the number of indicators had to be reduced. The reasoning used in doing so is explained next.

The total number of indicators in the measurement model is the sum of the number of indicators for each construct. Most authors recommend two to four indicators per latent factor, with three being the most commonly cited (Bentler & Chou, 1987; Harris & Schaubroeck, 1990; Kelloway, 1996; Medsker et al., 1994). It is possible that the use of three indicators has arisen from the 'three-measure' rule, in which any construct with three or more indicators will always be identified (Hair et al., 1998). Some scholars have preferred multiple indicator measurement models because they allow the most unambiguous assigning of meaning to the estimated constructs (Anderson and Gerbing, 1988). Others suggest that single item scores or averaged composites are acceptable (Kelloway, 1996). However, single item scores have limitations (Anderson and Gerbing, 1988; Harris and Schaubroeck, 1990) and they rarely meet the distributional assumptions of the estimation technique (Kelloway, 1996). Consequently, relatively recent discussion suggests using a set of composites or 'item-parcels' to represent each latent construct (Hall et al., 1999; Kishton & Widaman, 1994; Landis et al., 2000). An item parcel is:

"...a simple sum of several items assessing the same construct. Several parcels are developed from the items constituting a scale; no item is assigned to more than one parcel and all scale items are used in constructing the parcels." (Kishton & Widaman, 1994, p. 757)

Landis et al. (2000) compared six composite formation methods in SEM and found that the use of composites, in general, resulted in improved overall model fit when compared to treating all items as individual indicators, and was not only warranted, but justifiable. Thus, in Study 2, two composites were established for the multi-item scales for each latent variable. The issue then became which procedure to adopt for item parceling. Different approaches are evident in the literature but there is little guidance on which to base a choice (Kelloway, 1996; Kishton & Widaman, 1994; Hall et al., 1999; Landis et al., 2000). In their study, Landis et al. (2000) analysed the results for single factor, correlational, random, content, exploratory factor analysis, and empirically equivalent composites. Overall, they found very similar fit for most approaches and concluded that the random method may be the most appealing alternative because it is easy to implement. Composites were therefore formed by using the procedure of Landis et al. (2000), that is, by randomly assigning items and averaging them to form two composites for each scale. Throughout their discussion, Landis et al. (2000) emphasised that items in their study were drawn from unidimensional scales, which had been subjected to the model trimming procedure

of Anderson and Gerbing (1988) and therefore the choice of composite formation strategy was not expected to substantially influence model fit. The same situation applied in Study 2.

Overall, in Step 3 of the method of analysis, the purpose of testing the measurement model was to see how well the indicators (composites formed from observed variables) served as a measurement instrument for each latent variable (Jöreskog & Sörbom, 1993), and to establish construct validity. The discussion now changes from arguing the approaches that were adopted to focusing on practical issues associated with conducting the analyses and interpreting the output.

Preparation for analysis

The CFA was performed using LISREL 8.40 (Jöreskog and Sörbom, 1999). LISREL is sensitive to sample size, normality, and independence (Tabachnick & Fidell, 2001). A sample size of 200 is generally considered adequate for small to medium models (Harris & Schaubroeck, 1990; Hinkin, 1995; Tabachnick & Fidell, 2001). Studies 2A ($n=289$) and 2B ($n=325$) met this requirement. A further consideration is the ratio of cases to estimated parameters. Researchers recommend a minimum of 5:1 with at least 10:1 being desirable (Bentler & Chou, 1987; Hair et al., 1998). After item parceling, the maximum number of estimated parameters in each of Studies 2A and 2B was 30, which provided satisfactory ratios of 10:1 and 11:1 respectively. Normality was checked by screening for outliers and testing for skewness and kurtosis of observed variables. While values close to zero are desirable, the distributions were considered sufficiently normal to use in SEM if the skewness and kurtosis did not exceed 1.96 ($p<.05$) (Hair et al., 1998, p. 73). Independence of items was checked by inspection of intercorrelations during the preliminary examination of output, discussed later in this section.

Decisions prior to data entry

Prior to data entry, a number of decisions were made about the procedures and guidelines to be used during the analysis. These decisions concerned the type of matrix, the method of parameter estimation, and the number of constructs to be tested together. These are considered in turn.

The focus of SEM is not on individual observations but on the pattern of relationships across respondents. Input for the program is a correlation or variance-covariance matrix of all indicators used in the model. Researchers need to choose the matrix type, a key issue because the choice of matrix affects the interpretation of results (Harris & Schaubroeck, 1990). In particular, the correlation matrix is a standardized variance-covariance matrix, which produces coefficients in standardized units, ranging from -1.0 to $+1.0$. Such coefficients do not explain the total

variance of a construct, but are appropriate when the objective of the research is to compare the magnitude of different parameters and understand the pattern of relationships between constructs (Hair et al, 1988). In contrast, the covariance matrix can be used for a true test of theory because it provides valid comparisons between different populations or samples, by explaining the total variance of constructs, and it satisfies the assumptions of SEM methodology. However, the covariance matrix assumes continuous data and uses Pearson's product moment correlations to generate the matrix (Hair et al, 1988).

In Study 2 data were collected by using Likert scales which, strictly interpreted, are ordinal variables (z). However, the variables may be regarded as crude measures of underlying continuous variables (z^*) which are assumed to have a standard normal distribution (Jöreskog and Sörbom, 1993, p. 44). In such cases, Jöreskog and Sörbom (1993) recommend the use of polychoric correlation coefficients, rather than ordinary product-moment correlations. Thus, Study 2 initially used the polychoric method.

The next decision involved the method of parameter estimation. Jöreskog and Sörbom (1993, p. 45-6) argue that the Weighted Least Squares (WLS) method should be used with polychoric correlations. To use WLS, LISREL requires an asymptotic covariance matrix. Consequently, in the first instance in Study 2, a polychoric matrix was used, the asymptotic weight matrix was built using the program PRELIS, and WLS was applied. However, the procedure would not generate a result. It was assumed that this failure was due to the fact that the asymptotic covariance matrix and WLS require very large samples to produce stable estimates (Browne, 1984; Jöreskog & Sörbom, 1993).

To facilitate the CFA and SEM procedures, the decision was then made to use the covariance matrix and maximum likelihood estimation (ML). As noted above, the covariance matrix uses Pearson's product-moment correlations, assuming continuous data and normal distributions (Hair et al., 1998). These two features were not considered to be impassable barriers for the following reasons. First, item parcels were constructed prior to testing the final CFA and for the structural component of the analysis. The item parcels used average values based on at least three observed variables and were therefore considered to represent continuous data. Second, ML is efficient and unbiased when the assumption of multivariate normality is met (Hair et al., 1998) and robust against moderate violation of multivariate normality (Harris & Schaubroeck, 1990; Jöreskog and Sörbom, 1993). Skewness and kurtosis measures for both the refined, unidimensional scales and the item parcels were reported and did not exceed the rule-of-thumb of 1.96 ($p < .05$) suggested by Hair et al. (1993, p. 73). Finally, Anderson and Gerbing,

(1988) noted that, compared to other estimation methods, ML is strong for theory testing and development. In particular, ML provides parameter estimates that best explain the observed covariances while excluding random error variance and measure-specific variance components (Jöreskog and Sörbom, 1993).

A final decision prior to data entry concerned the number of constructs to be tested together in the CFA. Jöreskog and Sörbom (1993, p. 113) state that "It may be useful to do this [test the measurement model] for each construct separately, then for the constructs taken two at a time, and then for all constructs simultaneously." In Study 2, perceived service quality was tested separately and the measures for the other constructs were initially tested together in pairs, in a CFA, to demonstrate discriminant validity (Hinkin, 1995). That is, customer focus and customer feedback, then customer commitment and service loyalty were tested. This step facilitated the process of respecification of the elements in the measurement model by providing data on intercorrelations and errors (Gerbing & Anderson, 1988). Items that represented different, though correlated factors could be deleted from further analyses (if across factors), or composites formed (if within factors), providing scales with much higher external validity (Gerbing & Anderson, 1988). Once the measures were initially confirmed in this way, all five constructs were then tested simultaneously in a CFA and, using the recommendation of Hinkin (1995), different factor models were compared to establish the model with the best overall fit. The factor models included the null model (all items loading on one factor), different combinations of the latent variables, and a five-factor model in which all latent variables loaded separately. Table 3.2 provides a summary of the models tested.

Preliminary examination of output (establishing unidimensionality)

The correlation matrix was first inspected to check whether any of the intercorrelations exceeded .9 (Hair et al., 1998, p. 613). If this had occurred, one of the items would have been deleted. Other preliminary considerations concerned the factor loadings, error variances and R^2 values. Actions were based on the recommendations of Bagozzi and Yi (1988) and included checking for factor loadings that were too small ($< .5$) or too large ($> .95$), error variances that were negative or very close to zero, and very large standard errors. Anderson and Gerbing's (1988, p.416) rule of thumb for convergent validity was adopted. That is, correlations were required to be more than twice the standard error. The significance of factor loadings was also checked by using t -values, which had to exceed 1.96 ($p < .05$) (Hair et al., 1998). Finally, the R^2 multiple correlation for each relationship was examined. A small R^2 indicates a weak linear relationship with 'small' interpreted as being less than .50 (Jöreskog & Sörbom, 1993). Gerbing and

Anderson (1988) stated that problems indicate specification errors or item redundancy, and generally require deletion of indicators. Other options are to relate problem indicators to different factors, or multiple factors, or to use correlated measurement errors. However, to retain unidimensionality, relating specific items to one factor is desirable. Hence, this aim and the corresponding actions were given priority in refining scales (Anderson & Gerbing, 1988).

When unidimensionality of the measures had been established, composite measures for each latent construct were formed using the random method of item parceling, outlined previously (Landis et al., 2000). The CFA was then re-estimated to establish the fit of the proposed measurement model and to compare it to other factor models.

Measures of overall fit

The output from LISREL provided measures of overall fit of the model to the data, which enabled comparisons to the null model and to models with different numbers of factors. Essentially, with any given model, the empirical covariance matrix is tested for its consistency or closeness to the estimated population covariance matrix and measures of closeness are provided by chi squared (χ^2) values and fit indices (Tabachnik & Fidell, 2001). This subsection introduces the various criteria for assessing the fit of the model, and justifies the standards that were used in interpreting them.

The chi-square (χ^2) value is the most common measure of fit (Medsker et al., 1994). Chi-square is a test of the null hypothesis that the model is plausible in the population. If chi-square is significant, the null hypothesis is rejected and the model is not plausible in the population (Fassinger, 1987). However, since chi-square is $(N - 1)$ times the minimum value of the fit function, it is sensitive to sample size. More specifically, it tends to be large in large samples, even if the model does not hold (Jöreskog & Sörbom, 1993). Hurley et al. (1997, p. 678) stated that "conventional wisdom is to ignore the chi-square test and examine other fit indices" but chi-square is still useful because it can be used to compare competing models (Fassinger, 1987). In Studies 2A and 2B, where $n=289$ and $n=325$ respectively, chi-square may suggest rejection of a model that holds approximately in the population due to sample sizes. Consequently, in Study 2, chi-square was only used for comparing different models.

A related measure is the normed chi-square, which is the chi-square divided by the degrees of freedom (df). Degrees of freedom are unconstrained elements in the data matrix (Hair et al., 1998). They are a function of the number of latent variables and estimated coefficients and, in SEM, df are not affected by sample size (Hair et al., 1998). One rule of thumb for a good-

fitting model is that the normed chi-square be less than two, that is, $\chi^2/df < 2$ (Tabachnick & Fidell, 2001, p. 698). However, the inclusion of χ^2 means that this measure is again subject to sample size.

In contrast to chi-square, fit indices minimise the effects of sample size (Tabachnick & Fidell, 2001). There are many fit indices from which to choose but there is not consensus on what the appropriate indices are and, further, evaluation of fit indices is somewhat subjective (Hinkin, 1995; Hurley et al., 1997). However, many authors agree that a number of different measures should be used (e.g., Anderson & Gerbing, 1988; Hair et al., 1998; Harris & Schaubroeck, 1990; Hurley et al., 1997; Kelloway, 1996; Medsker et al., 1994). The question then becomes which measures to use. Some authors provide general guidelines while others name specific indices. For example, Hair et al. (1998) organised goodness-of-fit indices into three categories: absolute fit measures, incremental fit measures and parsimonious fit measures, and recommended including at least one index from each of the three categories. Similarly, Kelloway (1996) suggested reporting indices that reflect different conceptions of model fit. Moving to more prescriptive suggestions, Hu and Bentler (1999) recommended the standardized root mean square residual (RMSR) and a composite fit index. Harris and Schaubroeck (1990) suggested using the Normed Fit Index (NFI), the Parsimonious Normed Fit Index (PNFI) and one or more other indices such as the Tucker-Lewis Index (TLI). Finally, Hinkin (1995) was quite specific in suggesting that adjusted goodness-of-fit indices, the TLI, the Bentler-Bonett Index (NFI) and root mean square residuals (RMSR) should be reported. Study 2 therefore adopted a range of indices that met all these recommendations. That is, indices were chosen based on proportion of variance explained (GFI, AGFI), comparative fit (NFI, NNFI, CFI), parsimony of fit (PNFI) and lack of fit, or error-based measures (RMSR, RMSEA). These indices are now considered in more detail.

An absolute fit index assesses how well an a priori model reproduces the sample data (Hu & Bentler, 1999, p. 2). Examples include the Goodness-of-Fit Index (GFI) and the Adjusted Goodness-of-Fit Index (AGFI). The GFI compares the squared residuals from the estimated model to the measured covariances (Medsker et al., 1994). The AGFI adjusts the GFI by incorporating degrees of freedom for the proposed and null models (Hair et al., 1998) where degrees of freedom are "the numbers of nonredundant correlations or covariances in the input matrix minus the number of estimated coefficients" (Hair et al., 1988, p. 579). The GFI and AGFI both range from 0 (poor fit) to 1 (good fit) (Hair et al., 1998).

The Root Mean Square Residual (RMSR) and Root Mean Square Error of Approximation (RMSEA) are also measures of absolute fit (Hu & Bentler, 1999). The RMSR is based on residuals, an average of the difference between observed and estimated input matrices. When a correlation matrix is used, the RMSR represents the average residual correlation (Hair et al., 1998). Like RMSR, the RMSEA is based on the discrepancy between matrices but it represents the discrepancy per degree of freedom for the population, not just the sample (Hair et al., 1998).

In contrast to absolute fit indices, incremental fit indices measure the improvement in fit by comparing a target model with a more restricted baseline model. The most commonly used baseline model is a null model in which all the observed variables are uncorrelated (Hu & Bentler, 1999). Examples of incremental fit indices include the Normed Fit Index (NFI), Non-Normed Fit Index (NNFI) and Comparative Fit Index (CFI). Both the NFI and NNFI are derived from the Tucker-Lewis Index (TLI) which was first proposed as a means of evaluating exploratory factor analysis (Medsker et al., 1994). The NFI compares the proposed model to the null model and ranges from 0 (no fit at all) to 1 (perfect fit) (Hair et al., 1998). The NFI is often used to indicate the relative change in fit between two or more theoretical models (Medsker et al., 1994). The NNFI combines a measure of parsimony into a comparative index between the proposed and null models, again resulting in values between 0 and 1 (Hair et al., 1998). As for the NFI, the NNFI is useful for demonstrating the change in fit between any two nested models (Medsker et al., 1994).

Two other indices are reported. The comparative fit index (CFI) is analogous to the NFI but overcomes limitations associated with the population parameter and sample size effects (Medsker et al., 1994). Finally, the parsimonious normed fit index (PNFI) modifies the NFI by taking into account the number of degrees of freedom used to achieve a level of fit. Parsimony (a higher degree of fit per degree of freedom) is desirable and the principal use of the PNFI is for comparing different models (Hair et al., 1998).

In relation to the adequate levels of fit indices, Hinkin (1995, p. 976), in his review of practice, stated that "Fit indices above .85 were reported as generally acceptable in the current sample." Other researchers suggest values for most fit indices should be above .9 (Hair et al., 1998; Medsker et al., 1994) with some scholars nominating .95 for specific indices (Hu & Bentler, 1999). Hence, although guidelines exist, there are no absolute criteria for assessing fit. Consequently, benchmarks from statistical sources and management theory were adopted as standards. The indices and the guidelines used for interpreting them are shown in Table 3.1.

While authors appear to rely heavily upon fit indices, best practice is to assess the fit of a model relative to other model(s) and to emphasise the change in fit (Hair et al., 1998; Hinkin, 1995; Jöreskog and Sörbom, 1993; Kelloway, 1996). Such practice arises from the principle of scientific inference, that is, data do not positively confirm a model, but only fail to disconfirm it (Fassinger, 1987; Kelloway, 1996). Hence, different models were compared during both the CFA (Step 3) and testing of the overall structural model (Step 4).

Exploring the reasons for lack of fit

The LISREL output provided values for residuals and modification indices, which enabled an assessment of unexplained variance and possible reasons for lack of fit (Jöreskog and Sörbom, 1999). As stated previously, residuals in SEM are an average of the difference between covariances on observed and estimated input matrices (Medsker et al., 1994). LISREL provides values for 'Fitted Residuals' and 'Standardized Residuals', including statistics and a stem leaf plot, which can be inspected for symmetry (Tabachnick & Fidell, 2001). Residuals should be small and centred around zero (Tabachnick & Fidell, 2001). Normalized (standardized) residuals greater than 2 indicate that significant amounts of variance remain unexplained may point to a specification error (Bagozzi & Yi, 1988; Medsker et al., 1994). However, Bagozzi and Yi (1988, p. 81) state that, because of LISREL procedures, residuals are sometimes not very informative. Hence residuals greater than 2 were used as indicators of error, in conjunction with modification indices, discussed next.

There is a modification index (MI) for each fixed parameter in the model (every path omitted from the path diagram). Jöreskog and Sörbom (1993, p. 26) define the modification index as "an estimate or prediction of the decrease in chi-square that will be obtained if that particular path is introduced in the model" and they state that "modification indices greater than 7.88 ($p < .05$) are considered large". Therefore, where MIs exceeded 8, consideration was given to freeing the corresponding parameter (or adding the corresponding path) to improve the model. However, this action was taken very cautiously for two reasons. Firstly, modification indices have been found to be unreliable indicators of specification errors (Medsker et al., 1994). Secondly, authors are adamant that models should not be modified unless there are theoretical and/or methodological reasons (Bagozzi & Yi, 1988; Fassinger, 1987; Hurley et al., 1997; Kelloway, 1996). In fact, Jöreskog and Sörbom (1993, p. 113) state:

"It is a widespread misuse of SEM to include correlated error terms in the model for the sole purpose of obtaining a better fit to the data. Every correlation between error terms must be justified and interpreted substantively."

Step 4: Testing and modifying the structural model

The overall aim of the final step in the method of analysis was to use SEM to simultaneously test the relationships shown in Figure 3.1 and modify the model, if theoretically justifiable. The process of modifying models in SEM appears well accepted but causes some debate about the distinction between exploratory and confirmatory model development (Hair et al., 1998; Hurley et al., 1997). The difference is that an exploratory approach is based on statistics, while the confirmatory process is theoretically driven and incorporates model respecification based on both the fit of the data and meaningful interpretation of parameters (Hair et al., 1998; Jöreskog & Sörbom, 1999). In Study 2, care was taken to ensure that possible modifications to the model were based on substantive reasoning and defensible theoretically, and not simply capitalising on chance to improve the fit of the empirical data (Fassinger, 1987; Hurley et al., 1997).

Nested models were used as a means of choosing between alternative models and thus, to establish the best representation of the data (Jöreskog and Sörbom, 1993). In a nested model, the numbers of constructs and indicators remain constant (the null model is the same), but the number of estimated relationships changes (Hair et al., 1998). To perform the comparisons, Jöreskog & Sörbom (1999, p. 119) suggested ordering nested models in terms of decreasing numbers of parameters (increasing degrees of freedom). That is, testing sequentially by moving from M_1 to M_k where M_1 is the most flexible and M_k is the most restrictive model. This means systematically fixing paths at zero or, in a visual sense, omitting them from the model. Tabachnick and Fidell (2001) noted that the order in which parameters are estimated can affect the significance of the remaining parameters. Hence, considerable thought, grounded in theory, must be given to the process. In a strict sequential testing of nested models, each model is a special case of the preceding model. That is, M_i is obtained by placing restrictions on the parameters of M_{i-1} and, to facilitate interpretation, parameters are deleted one at a time in the hierarchical process (Tabachnick and Fidell, 2001). When a model is rejected, the previous one is taken as the "best" model (Jöreskog & Sörbom, 1999). In Study 2, models nested under the saturated model were tested but did not follow a strictly nested sequence because some equivalent models were included (e.g., to test the two customer orientation factors separately) and, where better fit was not achieved, paths were retained and models were compared to the best previous model.

In relation to determining the best model, changes in fit were emphasised. Tabachnick and Fidell (2001, p. 703) list three ways of model modification: chi-square difference tests, Lagrange multiplier tests and Wald tests. However, they note that, while all three tests are

asymptotically equivalent under the null hypothesis, the latter two are based on statistical, rather than substantive criteria. In Study 2, the purpose of SEM was to test hypotheses developed from theory, therefore the chi-square difference test was adopted but caution was used in modifying the original model, especially important as a cross-validation sample from the same population was not available (Tabachnick & Fidell, 2001). The criterion for rejecting a nested model was that the chi-square difference be significant because a non-significant value suggests that the overall fits of the two models are comparable (Kline, 1998). Moving from the most restrictive model (all variables uncorrelated) to more flexible models, this meant that successive chi-square values needed to drop significantly to indicate meaningful improvements (Kline, 1988).

As well as the chi-square difference test, changes in several goodness-of-fit indices were considered in comparing models. This was necessary because the chi-square difference test is subject to the same dependence on sample size as the chi-square test (Kelloway, 1996) and researchers recommend a multiple decision procedure (see, for example, Anderson & Gerbing, 1988; Hair et al., 1998; Jöreskog & Sörbom, 1993). In particular, as for the CFA, indices based on incremental fit (NFI, NNFI and CFI), parsimony of fit (PNFI) and errors (RMSEA, SRMR) were used. Absolute fit indices (AGI, AGFI) were not used because they are not recommended for evaluating model fit (Hu & Bentler, 1999). Again, as for the CFAs, "the question of what constitutes an acceptable increment in fit is still open to debate" (Bagozzi & Yi, 1988, p. 78). Widaman (1985) suggested that changes in NFI and NNFI of less than .01 were unimportant and this rule of thumb was adopted. For the other indices, acceptable values (CFI, SRMR, RMSEA) or appropriate directional changes (PNFI) were sought, according to the criteria outlined for the CFAs (summarised in Table 3.1).

As well as testing models in a proposed series of hierarchical alternatives, models that tested for mediation of effects by perceived service quality were included. Table 3.9 (p. 82) provides details. The criteria for mediation outlined by Baron and Kenny (1986) were applied. In SEM, the criteria require the model representing full mediation to be a better fit with the data than either the model representing direct effects (unmediated) or the model representing both direct and indirect effects (partial mediation). Study 2 compared the three possible models to test the hypotheses concerned with mediation of other relationships by perceived service quality.

In general, in testing models by SEM, a final consideration is the possibility of equivalent models. That is, models that have the same predicted correlations or covariances but with a different configuration of paths among the same variables (Kline, 1998). Kelloway (1996, p. 149) notes that "acceptance of a given model does not imply that the model is 'true'" and

researchers "are frequently advised to specify and test alternative models". Consequently, several substantively meaningful equivalent versions of the final path model should be generated and tested. Because the number of degrees of freedom does not change, the chi-square difference test is not appropriate and, therefore, the other means of comparing models are used with emphasis on whether the same index changes with respect to different models (Kelloway, 1996). In Study 2, the saturated model was adopted as the best fitting even though several paths were not significant. Models that excluded the non-significant paths were more parsimonious but did not demonstrate improved fit statistics. Hence, for Study 2, further equivalent models did not exist.

As well as changes due to different models, other output was considered. Firstly, the total coefficient of determination (R^2) was examined to get an indication of the variation accounted for by the overall model (Medsker et al., 1994). Secondly, parameter estimates (regression coefficients) were examined for their comparative size and consistency with previous studies and, *t*-values were used to assess the significance of individual parameters (Bagozzi & Yi, 1988). The critical value adopted for the *t*-statistic was 1.96 (two-tailed test at $p < .05$) (Tabachnick and Fidell, 2001, p. 687). Lastly, the correlation matrix for the latent construct was examined to check that no values exceeded .90. Because correlations were well below .90, unstable parameter estimates due to multicollinearity were unlikely (Hair et al., 1998, p. 613).

Significance levels in the final structural models were determined by using the values shown on the LISREL output for the *z*-statistic and critical ratios: if $z > 1.96$, $p < .05$, if $z > 2.58$, $p < .01$ and if $z > 3.29$, $p < .001$ (Kline, 1998).

In summary, the method of analysis for Study 2 was concerned with the steps to test a structural model, which had been developed from theory. Testing the structural model involved a two-stage process, adopted to disentangle the influence of measurement and structural specifications (Kelloway, 1996). In the first stage, CFA of latent factors was performed using observed variables that were identified and refined by principal components analysis, internal consistency considerations and item parceling. In the second stage, the structural model was tested and modified based on the fit of nested models. Throughout the analyses, measurement properties including validity and reliability were assessed and reported. As stated previously, Table 3.1 (p. 72) provides a summary of the standards used for interpreting output at each stage of the analysis.

APPENDIX 6

Study 2: Results of principal components analyses

Preliminary PCA of service loyalty and customer commitment (Study 2A)

Service loyalty and customer commitment were analysed separately, prior to the overall PCA, because of both their conceptual closeness (see Figure A4.1) and because Study 2 used the Organizational Commitment Questionnaire (OCQ), which was developed for employees, to measure *customer* commitment. Hence, it was necessary to identify the items that defined each construct (Guadagnoli & Velicer, 1988). When the measures were subjected to a PCA, two factors arose, explaining 80.3% of the variance (see Table A6.1).

Table A6.1 Principal components analysis of items in the service loyalty and customer commitment scales (consumer sample)

Items	Factor 1 Service loyalty	Factor 2 Customer commitment
<u>Service loyalty</u>		
1. I am likely to say positive things about XYZ to other people.	.98	-.08
2. I would recommend XYZ to someone who seeks my advice.	.99	-.06
3. I would encourage friends and relatives to do business with XYZ.	.95	.00
4. I consider XYZ my first choice to buy the appropriate services.	.86	.04
5. I am likely to do more business with XYZ in the next few years.	.88	-.04
<u>Customer commitment</u>		
1. I talk up this company to my friends as a great organisation to do business with.	.58	.36
2. I find that my values and this company's values are very similar.	.48	.49
3. I am proud to tell others that I do business with this company.	.58	.41
4. I am extremely glad that I chose this company over others I was considering at the time I joined.	.61	.34
5. I really care about the fate of this company.	-.04	.92
6. I feel a great deal of loyalty to this company.	.15	.82
7. I am willing to put in effort to help this company be successful.	.03	.88
8. I feel a sense of belonging to this company.	.16	.76
9. My relationship with XYZ is very important to me.	-.16	.99
10. My relationship with XYZ is something I intend to maintain indefinitely.	.34	.54
Eigenvalues	10.63	1.42
Variance	70.84	9.45
<u>Intercorrelations</u>		
Factor 1		
Factor 2	.67	

Items 1 - 4 and 10 from the customer commitment scale loaded on both loyalty and commitment, with weightings ranging from 0.34 to 0.61. Because they did not meet the criteria of Nunnally

and Bernstein (1994), these five cross-loading items (Items 6-9 and 15 in Table A6.1) were dropped. This resulted in a revised customer commitment scale consisting of five items (numbers 5 – 9), which loaded almost exclusively on the factor, and met the recommendations of Guadagnoli and Velicer (1988) for interpretability. The revised 5-item customer commitment scale is consistent with its definition in that it measures an attitude that reflects respondents' feelings of involvement with the service provider. Also, similar to its definition, the service loyalty scale contains items that reflect intended behaviours. The revised scales were then used in the full PCA, reported next.

Principal components analysis of all measures in Study 2A

Having initially refined the customer commitment and service loyalty scales, the next step was to establish the overall factor structure of all scales in a "between-measure" exploratory factor analysis, and thereby demonstrate convergent and discriminant validity (Anderson & Gerbing, 1988; Hinkin, 1995). However, prior to doing so, two items (relating to questions about the service consultant becoming angry, and explaining the steps in the process) were dropped from the perceived service quality scale because of substantial missing data (131 cases or 45%, and 97 cases or 34%, respectively) (de Vaus, 1990). This step resulted in an 8-item scale. The items in all the scales used for Study 2A were then subjected to a PCA together. The scales included: perceived customer orientation (9 items), perceived service quality (8 items), service loyalty (5 items) and customer commitment (5 items). Table A6.2 shows the detailed results.

Five factors emerged from the constructs, explaining 78.5% of the variance. Almost all of the items comprising the five factors shown in Table A6.2 loaded exclusively on separate factors, as expected, producing distinct scales and providing tentative support for the distinctness of the constructs. However Item 2 (related to queuing) in the perceived service quality scales was dropped from subsequent analyses because it did not meet Nunnally and Bernstein's (1994) requirement that it load almost exclusively on one factor and not correlate more than .30 on any other. Consequently, the perceived service quality scale was reduced to seven items. This deletion changed the reliability of the perceived service quality scale from .95 to .96.

Table A6.2 shows that perceived customer orientation produced two factors, as in Study 1A, with reliabilities of .92 (customer focus) and .88 (customer feedback). Finally, service loyalty and customer commitment also loaded as expected from the first PCA (Table A6.1), and demonstrated reliabilities (alpha values) of .96 and .94 respectively.

Table A6.2 Principal components analysis of items in all scales used in Study 2A (consumer sample)

Items	Fact 1 PSQ	Fact 2 Cust cm't	Fact 3 Cust Feedback	Fact 4 Service loyalty	Fact 5 Cust focus
<u>Customer orientation.</u> The XYZ organisation..					
1. Maintains a high level of commitment to me	.06	.08	.12	-.21	-.62
2. Constantly creates value for me	.13	.17	.11	-.05	-.71
3. Understands my needs	-.01	.05	.18	-.12	-.75
4. Has the main objective of keeping me satisfied	.07	.08	.14	-.17	-.75
5. Regularly monitors my satisfaction level	.08	.02	.65	-.07	-.25
6. Pays close attention to after-sales service	.10	.01	.67	.00	-.22
7. Does a good job keeping me informed of changes	.10	-.03	.55	-.10	-.02
8. Encourages informal feedback regarding its services	.01	.05	.84	-.04	.12
9. Asks me to evaluate the quality of its work and service	-.09	.06	.90	.04	.01
<u>Perceived service quality.</u> My assessment of the service quality of the call centre in relation to..					
1. Getting my problem solved or request answered	.78	-.05	.05	-.15	-.11
2. The time I had to spend waiting in a queue for service	.46	.07	.09	-.39	.17
3. The service consultant taking enough time and not rushing me	.70	.02	-.07	-.26	.00
4. The service consultant assisting me to define my problem or question more specifically	.89	.05	.02	.04	-.05
5. The service consultant being able to solve different problems	.90	.03	.00	.00	-.11
7. The service consultant explaining steps in the process (or reasons for problems)	.86	.13	.08	.09	-.07
9. The service consultant treating me with empathy	.79	.09	.02	-.12	.08
10. The service consultant having the authority to solve my problem	.78	.01	.04	-.02	-.07
<u>Service loyalty.</u>					
1. I am likely to say positive things about XYZ to other people.	.06	.00	.06	-.89	-.04
2. I would recommend XYZ to someone who seeks my advice.	.04	.03	.06	-.93	-.03
3. I would encourage friends and relatives to do business with XYZ.	.03	.11	.03	-.91	-.04
4. I consider XYZ my first choice to buy the appropriate services.	.07	-.13	.00	-.82	-.12
5. I am likely to do more business with XYZ in the next few years.	.08	.06	.00	-.72	-.05
<u>Customer commitment.</u>					
5. I really care about the fate of this company.	-.01	.91	-.11	-.04	-.03
6. I feel a great deal of loyalty to this company.	.00	.81	-.04	-.16	-.05
7. I am willing to put in effort to help this company be successful.	.04	.85	.67	-.02	-.01
8. I feel a sense of belonging to this company.	.00	.71	.18	.02	.04
9. My relationship with XYZ is very important to me.	.02	.96	.03	.08	.00
Eigenvalues	14.56	2.16	1.86	1.12	1.01
Variance	56.01	8.32	7.16	4.32	3.71

Intercorrelations

Factor 1 - Perceived service quality				
Factor 2 - Customer commitment	.47			
Factor 3 - Customer orientation (Customer feedback)	.42	.42		
Factor 4 - Service loyalty	-.67	-.59	-.44	
Factor 5 - Customer orientation (Customer focus)	-.54	-.42	-.48	.54

Note. Cust cm't = Customer commitment; Cust f'back = customer feedback; PSQ = Perceived service quality; Cust focus = Customer focus.

Relatively high intercorrelations are evident between variables in Table A6.2, with the highest between perceived service quality and service loyalty (.67), customer commitment and service loyalty (.59), and perceived service quality with customer focus (.54). These intercorrelations highlighted the need to establish unidimensionality and to confirm discriminant validity.

Confirmatory factor analyses (CFAs) were employed to facilitate these outcomes. Prior to reporting the results of the CFAs, the results of the principal components analyses for Study 2B, the business sample, are now reported.

As for Study 2A, two principal components analyses (PCAs) were used as an initial basis for scale refinement and the results were interpreted using the criteria outlined in the method of analysis (Table 3.1, p. 75). First, service loyalty and customer commitment were analysed together. Secondly, all variables were entered into a PCA in order to demonstrate construct validity (Hinkin, 1995).

Preliminary PCA of service loyalty and customer commitment (Study 2B)

Table A6.3 provides the results of the first PCA. Three factors arose, explaining 82.4% of the variance. Factors 1 and 3 demonstrated an identical factor pattern to service loyalty and customer commitment in Study 2A (Table A6.1). These two factors were therefore retained as measures of the constructs. They demonstrated reliabilities (Cronbach's alpha values) of .94 (service loyalty) and .93 (customer commitment). The other items in the commitment scale, loaded on factor 2 and were not used in the current study.

Table A6.3 Principal components analysis of items in the service loyalty and customer commitment scales (business sample)

Items	Factor 1 Service loyalty	Factor 2 Items from OCQ	Factor 3 Customer commitment
<u>Customer loyalty</u>			
1. I am likely to say positive things about XYZ to other people.	<u>.97</u>	.01	.06
2. I would recommend XYZ to someone who seeks my advice.	<u>.98</u>	.01	.05
3. I would encourage friends and relatives to do business with XYZ.	<u>.93</u>	.01	-.01
4. I consider XYZ my first choice to buy the appropriate services.	<u>.84</u>	.02	-.09
5. I am likely to do more business with XYZ in the next few years.	<u>.80</u>	-.03	-.13
<u>Customer commitment</u>			
1. I talk up this company to my friends as a great organisation to do business with.	.07	<u>.93</u>	.09
2. I find that my values and this company's values are very similar.	.01	<u>.90</u>	-.02
3. I am proud to tell others that I do business with this company.	.00	<u>.95</u>	.03
4. I am extremely glad that I chose this company over others I was considering at the time I joined.	.01	<u>.90</u>	-.00
5. I really care about the fate of this company.	-.01	-.01	<u>-.90</u>
6. I feel a great deal of loyalty to this company.	.11	-.01	<u>-.87</u>
7. I am willing to put in effort to help this company be successful.	-.05	-.01	<u>-.97</u>
8. I feel a sense of belonging to this company.	-.01	.01	<u>-.92</u>
9. My relationship with XYZ is very important to me.	-.12	.11	<u>-.63</u>
10. My relationship with XYZ is something I intend to maintain indefinitely.	-.08	<u>.81</u>	-.13
Eigenvalues	8.97	2.25	1.14
Variance	59.81	14.99	7.59
Intercorrelations			
Factor 1			
Factor 2	.48		
Factor 3	-.69	-.53	

Note. OCQ = Organizational Commitment Questionnaire.

Principal components analysis of all measures in Study 2B

Next, a PCA of all the items used in the measures for Study 2B was performed. As in Study 2A, this step was conducted in order to demonstrate convergent and discriminant validity with respect to the main constructs (Anderson & Gerbing, 1988). Prior to the PCA, and consistent with Study 2A, two items (numbers 6 and 8) from the service quality scale were deleted because of unacceptable amounts of missing data (74 cases or 23%, and 55 cases or 17%). The measures that were entered therefore included: customer orientation (9 items), perceived service quality (8 items), service loyalty (5 items) and customer commitment (5 items). Four factors with eigenvalues greater than one emerged, explaining 73.4% of the variance. However, the fifth factor had an eigenvalue of .98 and then there was a break, with the eigenvalue of the next factor being .73. Hence, the analysis was run again, forcing a solution with five factors. Table A6.4 shows the final results and 77.9% of the variance was explained.

Table A6.4 Principal components analysis of items in all scales used in Study 2B (business sample)

Items	Fact 1 Service loyalty	Fact 2 PSQ	Fact 3 Cust f'back	Fact 4 Cust focus	Fact 5 Cust f'back
<u>Customer orientation. The XYZ organisation..</u>					
1. Maintains a high level of commitment to me	.01	-.08	-.12	<u>-.89</u>	.04
2. Constantly creates value for me	.05	.04	.10	<u>-.82</u>	.08
3. Understands my needs	-.07	-.06	.02	<u>-.85</u>	-.03
4. Has the main objective of keeping me satisfied	.04	.00	-.01	<u>-.89</u>	.02
5. Regularly monitors my satisfaction level	.02	-.03	<u>.88</u>	-.07	-.01
6. Pays close attention to after-sales service	.01	-.01	<u>.82</u>	-.09	.02
7. Does a good job keeping me informed of changes	.20	.03	<u>.33</u>	<u>-.43</u>	-.06
8. Encourages informal feedback regarding its services	.04	-.04	<u>.86</u>	-.00	.05
9. Asks me to evaluate the quality of its work and service	-.02	.00	<u>.93</u>	.12	.07
<u>Perceived service quality. My assessment of the service quality of the call centre in relation to..</u>					
1. Getting my problem solved or request answered	.07	<u>-.86</u>	.01	-.03	-.11
2. The time I had to spend waiting in a queue for service	-.08	<u>-.62</u>	-.24	-.01	.14
3. The service consultant taking enough time and not rushing me	-.01	<u>-.87</u>	.02	-.05	-.04
4. The service consultant assisting me to define my problem or question more specifically	-.04	<u>-.90</u>	-.02	-.03	.01
5. The service consultant being able to solve different problems	.12	<u>-.83</u>	.01	.00	-.03
7. The service consultant explaining steps in the process (or reasons for problems)	-.02	<u>-.77</u>	.10	-.07	.02
9. The service consultant treating me with empathy	.04	<u>-.83</u>	.01	.03	.06
10. The service consultant having the authority to solve my problem	.16	<u>-.83</u>	.02	.07	-.03
<u>Service loyalty.</u>					
1. I am likely to say positive things about XYZ to other people.	<u>.83</u>	-.11	.01	-.11	-.03
2. I would recommend XYZ to someone who seeks my advice.	<u>.85</u>	-.12	.02	-.07	-.02
3. I would encourage friends and relatives to do business with XYZ.	<u>.87</u>	-.07	.06	-.03	.02
4. I consider XYZ my first choice to buy the appropriate services.	<u>.85</u>	.00	.01	-.01	.12
5. I am likely to do more business with XYZ in the next few years.	<u>.80</u>	.02	-.03	.01	.15
<u>Customer commitment.</u>					
5. I really care about the fate of this company.	-.01	-.07	-.05	-.07	<u>.87</u>
6. I feel a great deal of loyalty to this company.	.13	-.06	.12	.00	<u>.77</u>
7. I am willing to put in effort to help this company be successful.	-.04	-.08	.06	-.05	<u>.88</u>
8. I feel a sense of belonging to this company.	.03	-.03	.15	-.02	<u>.81</u>
9. My relationship with XYZ is very important to me.	<u>.31</u>	.14	-.04	.00	<u>.63</u>
Eigenvalues	12.85	3.24	2.39	1.59	.98
Variance	47.59	11.99	8.85	5.88	3.64

Intercorrelations

Factor 1 - Service loyalty

Factor 2 - Perceived service quality

-.50

Factor 3 - Customer orientation (Customer feedback)

.35

-.29

Factor 4 - Customer orientation (Customer focus)

-.47

.51

-.43

Factor 5 - Customer commitment

.62

-.32

.40

-.33

Note. Cust cm't = Customer commitment; Cust f'back = customer feedback; PSQ = Perceived service quality; Cust focus = Customer focus.

Table A6.4 shows that the five variables loaded quite cleanly on the constructs, and essentially discriminated from one another. Similarly to Study 2A, customer orientation produced two separate components, entitled customer feedback and customer focus. One item in customer orientation (number 7) cross loaded and was deleted from subsequent analyses (Nunnally & Bernstein, 1994). In contrast to Study 2A, item 2 in the perceived service quality scale loaded with the other items in the scale, and was retained. Table A6.4 shows that the three highest intercorrelations were the same as for Study 2A, although in a different order. In Study 2B, they were between service loyalty and customer commitment (.62), perceived service quality and customer focus (.51) and service loyalty with perceived service quality (.50).

Confirmatory factor analysis (CFA) was employed next to establish the unidimensionality of the scales. It does so by identifying items with large error variances and indicating where improvements can be made. The preliminary CFAs are reported next.

APPENDIX 7

Study 2: Results of initial confirmatory factor analyses

CFA of the two customer orientation factors (Study 2A)

When the four items comprising the customer focus scale and the five items comprising the customer feedback scale were subjected to a confirmatory factor analysis, the initial output reflected unsatisfactory fit (for example, RMSEA=.14). Inspection of the factor loadings and errors showed that item 7 (customer feedback scale) did not meet the criterion of Anderson and Gerbing (1988) (the loading must be more than double the error) and it was therefore deleted. The residuals and modification indices indicated that items 8 and 9 in the customer feedback scale were quite highly correlated and so the two items were allowed to correlate. Having made these changes, the CFA was re-run. Table A7.1 provides the results and the measures-of-fit indicate acceptable construct validity, as outlined by the criteria in Table 3.1.

Table A7.1 CFA of the customer focus and customer feedback scales (consumer sample)

Scale items	Factor loading	t-value
<u>Customer focus.</u> The XYZ organisation..		
1. Maintains a high level of commitment to me	.88	18.48
2. Constantly creates value for me	.81	16.28
3. Understands my needs	.88	18.73
4. Has the main objective of keeping me satisfied	.87	18.13
<u>Customer feedback.</u> The XYZ organisation..		
5. Regularly monitors my satisfaction level	.88	18.25
6. Pays close attention to after-sales service	.91	19.35
8. Encourages informal feedback regarding its services	.65	11.96
9. Asks me to evaluate the quality of its work and service	.71	13.31
Goodness of fit indicators		
χ^2 (df)	22.32 (18)	
GFI / AGFI	.98 / .96	
NFI / NNFI	.99 / 1.00	
PNFI / CFI	.64 / .99	
RMSEA / SRMR	.03 / .03	

Note. χ^2 =chi-squared; df=degrees of freedom; GFI=Goodness-of-Fit Index; AGFI=Adjusted Goodness-of-Fit Index; NFI=Normed Fit Index; NNFI=Non-Normed Fit Index; PNFI=Parsimony Normed Fit Index; CFI=Comparative Fit Index; RMSEA=Root Mean Square Error of Approximation; SRMR=Standardized Root Mean Square Residual.

CFA of perceived service quality (Study 2A)

The PCA of all measures (Table A6.2) indicated that perceived service quality discriminated from the other variables. However, to test the properties of the measure it was subjected to a congeneric CFA. The 7-item measure was entered, based on the scale shown in Table A6.2, but with deletion of item 2, which cross-loaded. Table A7.2 provides the results.

Table A7.2 Final CFA of the perceived service quality scale (consumer sample)

Scale items	Factor loading	t-value
<u>Perceived service quality.</u> My assessment of the service quality of the call centre in relation to..		
1. Getting my problem solved or request answered	.87	18.25
3. The service consultant taking enough time and not rushing me	.85	17.51
4. The service consultant assisting me to define my problem or question more specifically	.88	18.73
5. The service consultant being able to solve different problems	.90	19.42
7. The service consultant explaining steps in the process (or reasons for problems)	.88	18.35
9. The service consultant treating me with empathy	.88	18.38
10. The service consultant having the authority to solve my problem	.82	16.57
Goodness of fit indicators		
χ^2 (df)	70.69 (14)	
GFI / AGFI	.93 / .86	
NFI / NNFI	.98 / .97	
PNFI / CFI	.65 / .98	
RMSEA / SRMR	.13 / .03	

Note. χ^2 =chi-squared; df=degrees of freedom; GFI=Goodness-of-Fit Index; AGFI=Adjusted Goodness-of-Fit Index; NFI=Normed Fit Index; NNFI=Non-Normed Fit Index; PNFI=Parsimony Normed Fit Index; CFI=Comparative Fit Index; RMSEA=Root Mean Square Error of Approximation; SRMR=Standardized Root Mean Square Residual.

The CFA produced acceptable fit statistics, except for the AGFI of .86 and RMSEA of .13 (AGFI is not greater than .90, and RMSEA is not less than .08). Inspection of the modification indices (MI), which exceeded the cut-off value of 8 suggested by Jöreskog and Sörbom (1993), suggested that allowing some items to correlate may improve the fit. For example, the MI for Item 1 to Item 10 was 13.84, Item 1 to Item 9 was 12.62, and Item 7 to Item 9 was 11.97. However, when the CFA was re-run with these adjustments, no improvements in fit statistics were achieved. Therefore, given that the strategy of analysis for SEM involved two steps, the scale was accepted to be included in further testing of the whole measurement model, and then the structural model.

CFA of service loyalty and customer commitment (Study 2A)

As noted earlier in this chapter, service loyalty and customer commitment are conceptually close (Figure A4.1, p. 181). Hence, service loyalty and the revised five-item commitment scale were used together in a CFA. Two of the resultant modification indices indicated that the fit would be improved if error covariances were added within the service loyalty measure, between items 1 and 2 ($MI=31.54$) and items 4 and 5 ($MI=14.92$). These items were allowed to covary in a re-run of the CFA. Table A7.3 provides the results.

Table A7.3 CFA of the service loyalty and customer commitment scales (consumer sample)

Scale items	Factor loading	t-value
<u>Service loyalty</u>		
1. I am likely to say positive things about XYZ to other people.	.91	20.04
2. I would recommend XYZ to someone who seeks my advice.	.96	22.12
3. I would encourage friends and relatives to do business with XYZ.	.99	23.25
4. I consider XYZ my first choice to buy the appropriate services.	.84	17.77
5. I am likely to do more business with XYZ in the next few years.	.76	15.34
<u>Customer commitment</u>		
5. I really care about the fate of this company.	.88	18.72
6. I feel a great deal of loyalty to this company.	.93	20.81
7. I am willing to put in effort to help this company be successful.	.89	19.15
8. I feel a sense of belonging to this company.	.83	17.26
9. My relationship with XYZ is very important to me.	.86	18.29
χ^2 (df)	80.51 (32)	
GFI / AGFI	.95 / .91	
NFI / NNFI	.98 / .99	
PNFI / CFI	.70 / .99	
RMSEA / SRMR	.07 / .04	

Note. χ^2 =chi-squared; df=degrees of freedom; GFI=Goodness-of-Fit Index; AGFI=Adjusted Goodness-of-Fit Index; NFI=Normed Fit Index; NNFI=Non-Normed Fit Index; PNFI=Parsimony Normed Fit Index; CFI=Comparative Fit Index; RMSEA=Root Mean Square Error of Approximation; SRMR=Standardized Root Mean Square Residual.

Next, the CFAs for Study 2B are reported, in the same order as for Study 2A. That is, the CFA for customer focus and customer feedback is reported first, followed by the congeneric model for perceived service quality, then the results for service loyalty and customer commitment.

CFA of the two customer orientation factors (Study 2B)

When the four items comprising each of the customer focus and customer feedback scales (Table A7.3) were first subjected to a confirmatory factor analysis, the goodness-of-fit indices did not meet the criteria shown in Table 3.1 for the AGFI and RMSEA. Inspection of the residuals and modification indices suggested that the final two items in the customer feedback scale (items 8 and 9) should be allowed to co-vary. With this change, the CFA was re-run and the measures-of-fit indicated acceptable construct validity as discussed in the method of analysis. Table A7.4 provides the results.

Table A7.4 Final CFA of the customer focus and customer feedback scales (business sample)

Scale items	Factor loading	t-value
1. <u>Customer focus</u> . The XYZ organisation..		
2. Maintains a high level of commitment to me	.84	18.53
3. Constantly creates value for me	.80	16.88
4. Understands my needs	.90	20.65
5. Has the main objective of keeping me satisfied	.90	20.41
<u>Customer feedback</u> . The XYZ organisation..		
5. Regularly monitors my satisfaction level	.96	20.31
6. Pays close attention to after-sales service	.89	18.16
8. Encourages informal feedback regarding its services	.80	19.65
9. Asks me to evaluate the quality of its work and service	.78	18.57
Goodness of fit indicators		
χ^2 (df)	42.09 (17)	
GFI / AGFI	.95 / .90	
NFI / NNFI	.98 / .97	
PNFI / CFI	.66 / .98	
RMSEA / SRMR	.09 / .05	

Note. χ^2 =chi-square; df=degrees of freedom; GFI=Goodness-of-Fit Index; AGFI=Adjusted Goodness-of-Fit Index; NFI=Normed Fit Index; NNFI=Non-Normed Fit Index; PNFI=Parsimony Normed Fit Index; CFI=Comparative Fit Index; RMSEA=Root Mean Square Error of Approximation; SRMR=Standardized Root Mean Square Residual.

CFA of perceived service quality (Study 2B)

A CFA was performed for the perceived service quality scale, based on the measure based on the final eight items resulting from the PCA shown in Table A6.4 (p. 211). Using the rules of thumb for modification indices (> 8) and residuals (> 2), the only improvements were suggested by allowing two pairs of error terms to correlate. This was performed for Items 7 and 9 (MI = 10.48) and Items 4 and 10 (MI = 10.18). However, the change did not produce improved fit statistics so the original CFA was retained. Table A7.5 shows the results.

Table A7.5 Final CFA of the perceived service quality scale (business sample)

Scale items	Factor loading	t-value
<u>Perceived service quality</u> . My assessment of the service quality of the call centre in relation to..		
1. Getting my problem solved or request answered	.85	18.83
2. The time I had to spend waiting in a queue for service	.54	10.32
3. The service consultant taking enough time and not rushing me	.85	18.91
4. The service consultant assisting me to define my problem or question more specifically	.88	19.50
5. The service consultant being able to solve different problems	.89	20.21
7. The service consultant explaining steps in the process (or reasons for problems)	.81	17.55
9. The service consultant treating me with empathy	.84	18.32
10. The service consultant having the authority to solve my problem	.87	19.52
Goodness of fit indicators		
χ^2 (df)	53.05 (14)	
GFI / AGFI	.96 / .91	
NFI / NNFI	.98 / .98	
PNFI / CFI	.65 / .99	
RMSEA / SRMR	.09 / .03	

Note. χ^2 =chi-square; df=degrees of freedom; GFI=Goodness-of-Fit Index; AGFI=Adjusted Goodness-of-Fit Index; NFI=Normed Fit Index; NNFI=Non-Normed Fit Index; PNFI=Parsimony Normed Fit Index; CFI=Comparative Fit Index; RMSEA=Root Mean Square Error of Approximation; SRMR=Standardized Root Mean Square Residual.

CFA of service loyalty and customer commitment (Study 2B)

The five-item service loyalty measure and the revised five-item commitment scale (Table A9.3) were used together in a CFA. As expected from the single factor in the PCA, the fit statistics for a two factor model were not adequate (GFI=.88; AGFI=.81; RMSEA=.13). Residuals and modification indices (MI) for several items in the service loyalty scale suggested that their errors should be allowed to covary. For example, the largest MI (120.78) was between item 1 and item 2, with high values also existing for item 4 to item 5 (42.77) and item 2 to item 4 (32.43). Error covariances were allowed for these items and the CFA re-run. However, the fit statistics did not indicate significant improvements. Inspection of the second iteration highlighted several problems with item 4 in the service loyalty scale. Consequently, it was deleted. The third iteration, with item 1 and item 2 still allowed to correlate, produced adequate loadings, t-values and fit statistics as shown in Table A7.6, and a correlation of .74 between the two latent factors.

Table A7.6 CFA of the service loyalty and customer commitment scales (business sample)

Scale items	Factor loading	t-value
<u>Service loyalty</u>		
6. I am likely to say positive things about XYZ to other people.	.88	21.68
7. I would recommend XYZ to someone who seeks my advice.	.93	22.90
8. I would encourage friends and relatives to do business with XYZ.	.95	22.16
5. I am likely to do more business with XYZ in the next few years.	.82	17.86
<u>Customer commitment</u>		
10. I really care about the fate of this company.	.85	19.08
11. I feel a great deal of loyalty to this company.	.95	22.76
12. I am willing to put in effort to help this company be successful.	.91	20.98
13. I feel a sense of belonging to this company.	.90	20.86
14. My relationship with XYZ is very important to me.	.70	14.39
χ^2 (df)	56.16 (25)	
GFI / AGFI	.96 / .93	
NFI / NNFI	.99 / .99	
PNFI / CFI	.69 / .99	
RMSEA / SRMR	.06 / .04	

Note. χ^2 =chi-square; df=degrees of freedom; GFI=Goodness-of-Fit Index; AGFI=Adjusted Goodness-of-Fit Index; NFI=Normed Fit Index; NNFI=Non-Normed Fit Index; PNFI=Parsimony Normed Fit Index; CFI=Comparative Fit Index; RMSEA=Root Mean Square Error of Approximation; SRMR=Standardized Root Mean Square Residual.

APPENDIX 8

Study 2: Comparison of fit indices for tests of structural models

Table A8.1 Comparison of fit indices for structural models (Study 2A)

Model	χ^2	df	GFI	AGFI	NFI	NNFI	PNFI	CFI	RMSEA	SRMR
1	37.13	25	.97	.94	.99	.99	.55	.99	.04	.02
2a	90.25***	26	.94	.88	.98	.98	.57	.99	.09	.04
2b	37.61	26	.97	.95	.99	.99	.57	.99	.04	.02
3	52.71**	27	.96	.93	.99	.99	.59	.99	.06	.03
4	61.46***	27	.96	.91	.99	.99	.59	.99	.07	.03
5	72.03***	27	.95	.90	.98	.98	.59	.99	.08	.04
6a	54.23**	27	.96	.92	.99	.99	.57	.99	.06	.03
6b	37.26	27	.97	.95	.99	.99	.60	.99	.04	.02
7a	52.53**	27	.96	.93	.98	.99	.59	.99	.06	.03
7b	Not applicable									
8a	38.68	28	.97	.95	.99	.99	.62	1.00	.04	.02
8b	71.00***	29	.95	.91	.98	.99	.63	.99	.07	.07
9a	Not applicable									
9b	Not applicable									
10	867.94***	35	.55	.30	.81	.77	.63	.82	.33	.48

Note. CC = customer commitment; CF = customer focus; SL = service loyalty; PSQ = perceived service quality; CB = customer feedback; Pred SQ = predicted service quality; χ^2 = chi-square; df = degrees of freedom; χ^2_{diff} = chi-square difference; GFI = Goodness-of-Fit Index; AGFI = Adjusted Goodness-of-Fit Index; NFI = Normed Fit Index; NNFI = Non-Normed Fit Index; PNFI = Parsimony Normed Fit Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

*p<.05. **p<.01. ***p<.001.

Table A8.2 Comparison of fit indices for structural models (Study 2B)

Model	χ^2	df	GFI	AGFI	NFI	NNFI	PNFI	CFI	RMSEA	SRMR
1	74.58***	25	.96	.90	.98	.98	.55	.99	.08	.03
2a	141.55***	26	.92	.83	.97	.95	.56	.97	.12	.10
2b	76.01***	26	.96	.91	.98	.98	.57	.99	.08	.03
3	100.03***	27	.94	.88	.98	.97	.59	.98	.09	.04
4	87.45***	27	.95	.90	.98	.97	.59	.98	.08	.05
5	158.18***	27	.91	.81	.96	.94	.57	.96	.13	.09
6a	91.03***	27	.95	.89	.98	.97	.59	.98	.09	.03
6b	80.11***	27	.95	.90	.98	.98	.59	.99	.08	.03
7a	98.70***	26	.94	.88	.98	.97	.56	.98	.09	.04
7b	Not applicable									
8a	77.66***	27	.96	.91	.98	.98	.59	.99	.08	.03
8b	108.54***	27	.92	.85	.97	.96	.58	.97	.10	.08
9a	86.52***	26	.95	.89	.98	.97	.57	.99	.08	.04
9b	Not applicable									
10	734.44***	35	.64	.43	.82	.77	.64	.82	.28	.40

Note. CC = customer commitment; CF = customer focus; SL = service loyalty; PSQ = perceived service quality; CB = customer feedback; Pred SQ = predicted service quality; χ^2 = chi-square; df = degrees of freedom; χ^2_{diff} = chi-square difference; GFI = Goodness-of-Fit Index; AGFI = Adjusted Goodness-of-Fit Index; NFI = Normed Fit Index; NNFI = Non-Normed Fit Index; PNFI = Parsimony Normed Fit Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual. Appendix 11
 p < .05. **p < .01. ***p < .001.

APPENDIX 9

Study 3: Consent Form

Project Title: Call Centres: The Work Environment and Service Quality

I agree to take part in the above Monash University research project. I have had the project explained to me, and I have read the Explanatory Statement, which I will keep for my own records.

I understand that agreeing to take part means that I am willing to:

- participate in the focus group discussion, and
- allow the discussion to be audiotaped.

I understand that any information I provide is confidential. This means that information that could lead to the identification of an individual will not be disclosed in any reports or papers on the research project, and nor will it be communicated to any other party.

Name

Signature

Date

APPENDIX 10

Study 3: Topics discussed in focus groups

Table A10.1 Themes and topics resulting from the content analysis

Theme	Focus group										
	1	2	3	4	5	6	7	8	9	10	
Topics	Number of times discussed										Total
1 Management focus on sales											
Emphasis on sales	1	3	3	8	3	6	4	1	4	4	37
Emphasis on KPIs	0	1	3	4	2	6	2	3	5	2	28
Customer/profit orientation	0	0	2	0	1	0	1	0	0	0	4
2 Performance monitoring and feedback											
QA processes	3	4	4	6	1	2	5	5	1	3	34
Monitoring of targets/feedback	2	4	1	1	1	3	2	8	3	1	25
Focus on 'negatives'	0	1	0	0	1	0	2	1	1	0	6
3 Efficiency demands of call centre work											
Workload (time pressures)	1	1	1	0	7	6	0	4	5	2	27
Quality/productivity conflict	1	2	4	1	2	2	2	2	1	3	20
Lack of breaks/rest times	0	2	1	2	2	4	2	2	1	2	18
4 Human resource management issues											
Recognition for performance	1	1	1	4	3	6	2	2	1	3	24
Rewards and bonuses	1	2	0	3	1	4	2	2	0	0	15
Incentives to perform / salary	0	4	0	2	0	2	1	1	0	0	10
Rosters (days off, leave availability)	1	2	1	4	4	3	3	0	1	1	20
Rosters (shift times)	0	0	3	2	2	0	3	2	0	2	14
Training	2	3	0	2	1	5	4	2	1	1	21

continued...

5 Teams

Team leader technical support	2	2	3	2	6	2	1	2	1	3	24
Team leader emotional support	1	3	3	1	3	3	1	2	1	2	20
Social interaction (team members)	1	0	2	0	2	0	1	3	2	1	12
Technical help (team members)	2	0	1	0	0	4	0	2	0	1	10
Team meetings/communication	0	0	3	3	1	0	2	0	0	0	9

6 Call centre structures and support

Structures (clarity, speed, flexibility)	0	1	3	2	4	4	1	2	3	3	23
Communication systems/use	1	0	0	5	3	2	2	2	0	2	17
Technical/product support	1	3	5	0	0	2	0	0	0	0	11
Resources (stationery, desks)	0	1	1	1	1	2	3	0	0	0	9

7 Employee-job fit

Inherent customer service orientation	1	2	1	1	3	0	1	2	2	0	13
Ability to cope with stress	1	2	2	1	0	2	0	3	1	1	13
Positive attitude to work	0	1	0	3	2	2	1	1	1	0	11
Adaptable and flexible	1	0	1	2	1	1	1	2	1	0	10
Ability to multi-task	0	0	2	0	0	1	0	1	0	0	4

8 Service encounter stress

Managing customer interactions	1	3	3	2	2	3	2	1	1	4	22
Scripts imposed by QA	2	0	0	0	4	1	1	0	0	2	8
Emotional demands of work	1	0	1	0	2	1	0	0	0	1	6
Lack of control	0	0	0	0	3	0	0	0	1	0	4

9 Managerial attitudes

General attitude to employees	0	1	1	2	2	4	2	1	1	2	16
Accessibility to employees	0	0	2	1	2	0	0	3	1	0	9
Modelling quality behaviours	0	1	0	2	0	1	0	0	0	2	6
Making call centre work 'fun'	1	0	1	0	0	2	0	1	0	1	6

Note. KPI=Key performance indicator; QA=Quality assurance.

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