Linking perceived service quality and service loyalty: a multi-dimensional perspective

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Keywords Service quality, Service loyalty, Customer service, Service industries, Consumer behaviour

Abstract In recent research on service quality it has been argued that the relationship between perceived service quality and service loyalty is an issue which requires conceptual and empirical elaboration through replication and extension of current knowledge. Focuses on the refinement of a scale for measuring service loyalty dimensions and the relationships between dimensions of service quality and these service loyalty dimensions. The results of an empirical study of a large sample of customers from four different service industries suggest that four dimensions of service loyalty can be identified: purchase intentions, word-of-mouth communication; price sensitivity; and complaining behaviour. Further analysis yields an intricate pattern of service quality-service loyalty relationships at the level of the individual dimensions with notable differences across industries.

Introduction

The literature on services marketing has advanced to a level of considerable sophistication and researchers are ready to take on the fundamental questions concerning an in-depth understanding of the concept of service quality (Grönroos, 1993; Patterson and Johnson, 1993; Anderson and Fornell, 1994; Rust and Oliver, 1994; Taylor and Baker, 1994). In defining the key constructs in the discipline, conceptual advances and nuances have been achieved, though differences of opinion remain. For instance, concerning the role of expectations in the formation of evaluative judgements and the sequential order of the constructs of service satisfaction and service quality (Cronin and Taylor, 1992; Zeithaml et al., 1996). One area that has remained relatively underdeveloped, however, is the relationship between evaluations of service quality and loyalty of service customers (Gremler and Brown, 1996), despite the fact that loyalty is essential for service business survival (Reichheld, 1993).

While loyalty is often included in service quality models as an outcome variable (Cronin and Taylor, 1992; Boulding et al., 1993), there are a number of factors that limit an in-depth understanding of customer loyalty in services and prevent the generalisability of research findings. First, it has remained unclear whether or not there is a direct relationship between service quality and loyalty. Zeithaml et al. (1996) report such a relationship, whereas Cronin and Taylor (1992) failed to find one. Secondly, the operationalisation of the
construct of service loyalty has often remained limited, ignoring the full range
of conceivable loyalty (re)actions that may follow the evaluation of a service
(Zeithaml et al., 1996). Cronin and Taylor (1992), for instance, focused solely
on repurchase intentions (measuring this construct as a single item), while
Boulding et al. (1993) operationalised repurchase intentions and willingness
to recommend (as two single items in one study and six items in a follow-up
study). As Zeithaml et al. (1996) argue, dimensions of loyalty, such as, for
instance, willingness to pay more and loyalty under increased pricing, have
often been left out in previous research. Similarly, customer evaluations
following a negative service experience have received only limited attention
in scales designed to measure customer loyalty intentions and behaviour
(Singh, 1991). Furthermore, loyalty has frequently been formulated in positive terms. However, variables and linkages predicting positive outcomes
may well be asymmetrically related to those that predict customer disloyalty
(Zeithaml et al., 1996). Finally, there appear to be no studies that have
addressed the link between the individual dimensions of service quality and
service loyalty.

Therefore, it would be of both theoretical and managerial interest to see
how service quality and service loyalty are related at the level of individual
dimensions, rather than the perspective of their overall assessments
(Zeithaml et al., 1996). Similar to service loyalty, service quality has also been
acknowledged as a multi-dimensional construct (Gummesson, 1991;
Grönroos, 1993; Lapierre, 1996; Lehtinen et al., 1996). Linking both constructs
at their dimensional level increases the diagnostics of explaining service
loyalty. For instance, it could be evaluated which service quality dimension
has the strongest impact on loyalty under increased pricing. Moreover, as
industry-specific characteristics present in many service industries limit
generalisations, perspectives should be tested across various industries as
suggested by leading services researchers (Lovelock, 1983; Fornell, 1992;
Berry and Parasuraman, 1993; Zeithaml et al., 1993). This multi-dimensional
point of view across different service settings has not previously been taken
in the literature. Therefore, it is adopted here and is specified into the
following two research questions:

(1) Which service loyalty dimensions can be discerned?

(2) How are the service loyalty dimensions related to the dimensions of
perceived service quality across different types of service industries?

This article is structured as follows. First, we will offer a brief synthesis of the
extant literature on key conceptual and methodological issues concerning
service quality and service loyalty dimensions and the relationship between
these. We subsequently discuss the results of a study designed to provide
empirical evidence on the relationship between service quality and service
loyalty at the level of individual dimensions across different service industries.
We conclude with a discussion of a number of research and managerial
implications of our results.
Review of the literature

Service quality

Service quality is often conceptualised as the comparison of service expectations with actual performance perceptions (Zeithaml et al., 1990). On an operational level, research in service quality has been dominated by the SERVQUAL instrument, based on the so-called gap model. The central idea in this model is that service quality is a function of the difference scores or gaps between expectations and perceptions (P – E). It has been proposed that service quality is a multidimensional concept (cf. Parasuraman et al., 1985). Five key dimensions of service quality have been identified. Reliability is defined as the ability to deliver the promised service dependably and accurately. It is about keeping promises – promises about delivery, pricing, complaint handling, etc. Responsiveness can be described as the willingness to help customers and provide prompt service. This dimension stresses service personnel’s attitude to be attentive to customer requests, questions and complaints. Assurance is the service quality dimension that focuses on the ability to inspire trust and confidence. Empathy is the service aspect that stresses the treatment of customers as individuals. Finally, tangibles is the service dimension that focuses on the elements that represent the service physically. While the SERVQUAL instrument has been widely used, it has also been widely criticised. For instance, the validity and reliability of the difference between expectations and performance has been questioned and several authors have suggested that perception scores alone offer a better indication of service quality (Cronin and Taylor, 1992; Teas, 1993; Strandvik and Liljander, 1994). Furthermore, application of the SERVQUAL approach is by definition limited to existing services since experience and performance must both be taken into account. Hence, the quality of service innovations can hardly be measured. Also, additive relationships between service dimensions are implied by the model, while this may not be a realistic assumption (Cronin and Taylor, 1992; Teas, 1993). Finally, Grönroos (1993) has emphasised the importance of developing an adaptation of the instrument that takes into account the role of expectations from a dynamic perspective. In the service quality literature, several of these critiques have been explicitly addressed (Zeithaml et al., 1996). An important advantage of the SERVQUAL instrument is that it has been proven valid and reliable across a large range of service contexts, such as a dental school patient clinic, a tyre shop (Carman, 1990), discount and department stores (Finn and Lamb, 1991; Teas, 1993), hospitals (Babakus and Mangold, 1992) and higher education (Boulding et al., 1993). Although it has been demonstrated that for some services the SERVQUAL instrument needs considerable adaptation (Dabholkar et al., 1996), it still seems the best alternative for cross-sectional research and industry benchmarking (Fitzsimmons and Fitzsimmons, 1994). A considerable number of authors have argued that service quality is an important determinant of service loyalty but its exact relationship has remained unclear (Gremler and Brown, 1996).
Service loyalty

Research into customer loyalty has focused primarily on product-related or brand loyalty, whereas loyalty to service organisations has remained underexplored (Gremler and Brown, 1996). Frequently, a high positive correlation between the constructs of satisfaction and product loyalty is reported. With regards to service loyalty, perceived service quality is often viewed as a key antecedent (Dick and Basu, 1994). However, there are a number of reasons why findings in the field of product loyalty cannot be generalised to service loyalty (Keaveney, 1995; Gremler and Brown, 1996). Service loyalty is more dependent on the development of interpersonal relationships as opposed to loyalty with tangible products (Macintosh and Lockshin, 1998), for person-to-person interactions form an essential element in the marketing of services (Czepiel and Gilmore, 1987; Surprenant and Solomon, 1987; Crosby et al., 1990; Czepiel, 1990). Furthermore, the influence of perceived risk is greater in the case of services, as customer loyalty may act as a barrier to customer switching behaviour (Zeithaml, 1981; Klemperer, 1987; Guiltinan, 1989). Indeed, it has been demonstrated that loyalty is more prevalent among service customers than among customers of tangible products (Snyder, 1986). In the services context, intangible attributes such as reliability and confidence may play a major role in building or maintaining loyalty (Dick and Basu, 1994).

As most research originated from the field of packaged consumer goods (Jacoby and Chestnut, 1978), a strong emphasis has been on behavioural measures. In a services context, loyalty is frequently defined as observed behaviour (Liljander and Strandvik, 1995). Ultimately it is actual behaviour that drives a service organisation’s performance. However, behavioural measures, such as repeat purchasing and purchasing sequence, have been criticised for a lack of a conceptual basis and for having a narrow, i.e. outcome-focused view of what is in fact a dynamic process (Day, 1969). For instance, a low degree of repeat purchasing of a particular service may very well be the result of situational factors such as non-availability, variety seeking and lack of provider preference. However, with regards to actual behavior, recent research in loyalty behavior has shown that loyalty is fairly consistent over time (DeKimpe et al., 1998). Therefore, the behavioural approach to loyalty may not yield a comprehensive insight into the underlying reasons for loyalty, instead it is a consumer’s disposition in terms of preferences or intentions that plays an important role in determining loyalty (Jain et al., 1987; Bloemer and Kasper, 1995). Furthermore, repeat purchasing behaviour may not even be based on a preferential disposition but on various bonds that act as switching barriers to consumers (Storbacka et al., 1994; Liljander and Strandvik, 1995). During the past decades, therefore, customer loyalty has also been approached as an attitudinal construct (Biong, 1993; Hallowell, 1996). This is reflected, for instance, in the willingness to recommend a service provider to other consumers (Selnes, 1993).

Finally, in addition to the behavioural and attitudinal approach to customer loyalty, it has been argued that there is also a cognitive side to customer loyalty
(Lee and Zeiss, 1980). In this sense, customer loyalty is frequently operationalised as the product or service that first comes to mind when making a purchase decision (Newman and Werbel, 1973; Bellenger et al., 1976; Dwyer et al., 1987); the product or service that is a customer’s first choice among alternatives (Ostrowski et al., 1993) or price tolerance (Anderson, 1996; Fornell et al., 1996). Therefore, operationalisation of service loyalty would have to consider behavioural, attitudinal and cognitive aspects in the development of a composite index. These elements are present in the behavioural intentions battery that was developed by Zeithaml et al. (1996) with regards to services loyalty, which will be discussed in the following section.

Service quality and service loyalty
Little empirical research has focused explicitly on the relationship between service quality perceptions and customer loyalty. With regards to behavioural intentions in a services setting, Zeithaml et al. (1996) proposed a comprehensive, multi-dimensional framework of customer behavioural intentions in services. This framework was initially comprised of the following four main dimensions:

1. word-of-mouth communications;
2. purchase intention;
3. price sensitivity; and
4. complaining behaviour.

These dimensions are rendered in Table I.

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<th>Word-of-mouth communications</th>
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<tr>
<td>1. Say positive things about XYZ to other people</td>
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<td>2. Recommend XYZ to someone who seeks your advice</td>
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<td>3. Encourage friends and relatives to do business with XYZ</td>
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<th>Purchase intentions</th>
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<td>4. Consider XYZ your first choice to buy … services</td>
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<td>5. Do more business with XYZ in the next few years</td>
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<td>6. Do less business with XYZ in the next few years</td>
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<th>Price sensitivity</th>
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<tr>
<td>7. Take some of your business to a competitor that offers more attractive prices</td>
</tr>
<tr>
<td>8. Continue to do business to a competitor that offers more attractive prices</td>
</tr>
<tr>
<td>9. Pay a higher price than competitors charge for the benefits you currently receive from XYZ</td>
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<th>Complaining behaviour</th>
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<tr>
<td>10. Switch to a competitor if you experience a problem with XYZ's service</td>
</tr>
<tr>
<td>11. Complain to other consumers if you experience a problem with XYZ's service</td>
</tr>
<tr>
<td>12. Complain to external agencies, such as the Better Business Bureau, if you experience a problem with XYZ's service</td>
</tr>
<tr>
<td>13. Complain to XYZ's employees if you experience a problem with XYZ's service</td>
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**Source:** Zeithaml et al. (1996)
On the basis of factor analysis on the 13-item scale, five dimensions were identified by Zeithaml et al. (1996):

1. loyalty to company;
2. propensity to switch;
3. willingness to pay more;
4. external response to problem; and
5. internal response to problem.

Conceptually, however, the five factor solution does not appear to provide an unambiguous and consistent factor pattern. In the first place, the so-called loyalty dimension is in essence comprised of both word-of-mouth as well as customer preference, represented by three scale items each. Furthermore, various expressions of customer complaining behaviour or response to a dissatisfactory service encounter are distributed over two factors (“external response to problem” and “internal response to problem”). External response to a problem also contains an item that relates to customer disloyalty. Likewise, inter-dimensional overlap applies to pricing-related loyalty intentions which are placed under two factors as well (“propensity to switch” and “willingness to pay more”). Empirically, a number of problems present themselves also. The results of a reliability analysis reveal that particularly the two-item factors have coefficient alpha’s falling below 0.6, possibly due to the limited number of items. Moreover, the correlations between (overall) service quality and the factor “internal response to problem” for the four service settings, turn out to be non-significant. We feel that it can be argued that customer preference and positive word-of-mouth or recommendation are two distinct dimensions of customer loyalty in services. Furthermore, loyalty regardless of pricing or price tolerance can be viewed as a third dimension of customer loyalty in relation to customer perceived service quality. Also, the use of a single item measure (“external response to problem”) should be avoided as suggested by Churchill (1979). Finally, a distinction can be made between a general evaluation of service quality and the evaluation of a specific negative service encounter (Bitner and Hubbert, 1994). Therefore, we feel that these points of conceptual and empirical criticism warrant a replication of the behavioural intentions battery as proposed by Zeithaml et al. (1996). Before we will address this issue in an empirical study, we will briefly review the literature on the loyalty dimensions and their relationship to perceived service quality (as an aggregate concept).

The relationship between overall service quality and individual service loyalty dimensions has also been examined empirically by Boulding et al. (1993) and Cronin and Taylor (1992). Cronin and Taylor (1992) focused solely on repurchase intentions, whereas Boulding et al. (1993) focused on both repurchase intentions and willingness to recommend. In the study by Cronin and Taylor (1992) service quality did not appear to have a significant (positive) effect on intentions to purchase again, while Boulding et al. (1993) found positive relationships between service quality and repurchase intentions and
willingness to recommend. Loyalty under varying pricing conditions, i.e. willingness to pay a premium price and to remain loyal even when prices go up, has not received much attention in the service quality literature. Only Zeithaml et al. (1990) reported a positive relationship between service quality and the two aforementioned loyalty dimensions. Finally, with regards to the response to a negative service experience, it has been suggested that the majority of customers simply remain inactive and do not undertake any action (Day, 1984). Furthermore, it has been argued that actually responding to dissatisfaction (e.g. by switching, complaining directly to the company or complaining to a third party) is negatively related to the level of perceived service quality (Singh, 1991; Kelley et al., 1993). In addition, personal (e.g. attribution (Folkes, 1994)) and situational variables determine to a large extent behavioural intentions in response to dissatisfaction. Special attention should be given to the study of Zeithaml et al. (1996). These authors offer a conceptual framework of the impact of service quality on particular behaviours that signal whether customers remain with or defect from a company. The results of a multi-company study show different relationships between (overall) service quality and service loyalty dimensions. For the four companies included in the study, service quality is positively related to (within the zone of tolerance – above and below the zone of tolerance, the majority of relationships become insignificant) loyalty and the willingness to pay more, while service quality is negatively related to switching behaviour and the external response to a problem.

So far, we have discussed the relationship between service quality as an aggregate construct and the various types of behavioural intentions. Some evidence exists on the relative importance of the five well-established individual SERVQUAL dimensions. Parasuraman et al. (1988) and Zeithaml et al. (1990) argue that reliability is considered as the most important dimension in regards to customer loyalty, regardless of the service setting. Alternatively, it is argued that the tangibles dimension is considered the least critical service quality aspect by service customers. However, the explicit connections between the service quality dimensions and dimensions of service loyalty have been completely ignored in the services marketing literature so far. Since no literature on the relationship between the dimension of service loyalty and the dimensions of service quality is available, it nevertheless may prove to be useful to develop research questions on the multi-dimensional connection to gain an in-depth insight into this issue.

Research questions
While there is ample empirical verification for the five dimensions of service quality as proposed by Parasuraman et al. (1990), questions have remained as to the precise dimensionality of the service loyalty concept as presented by Zeithaml et al. (1996) recently. This is clearly a topic that merits replication and possibly extension (Hubbard and Armstrong, 1994). Therefore, we formulated the following research question: “Which service loyalty dimensions can be discerned?”
A significant gap exists in the services marketing literature in explaining the relationship between service quality dimensions and service loyalty dimensions. The relationship at the level of the individual dimensions has remained virtually unexplored. Even though there are some suggestions that the reliability dimension is the most important service quality aspect, evidence is lacking as far as the generalisability of this argument across different types of service industries is concerned. Intuitively, one would expect differences with regards to the relative importance of the individual SERVQUAL dimensions. For instance, empathy and assurance may be considered more important in health care than in entertainment services. However, since the link between service quality and loyalty dimensions has not been systematically investigated across different service settings, we formulated the following second research question: “How are the service loyalty dimensions related to the dimensions of perceived service quality across different types of service industries?”

In the next section we will report the results of an empirical study designed to answer these research questions.

**An empirical study**

*Research setting*

Customers from four service industries in Belgium were interviewed on the basis of a structured questionnaire with respect to their perception of the quality of the service offered by the firm and their behavioural intentions regarding service loyalty. Our sample included services associated with the marketing of goods, such as supermarkets and fast food restaurants or “customer services” as well as “pure” services, such as entertainment (amusement parks) and health care services (outpatient clinics) (Grönroos, 1983). Data was gathered by means of personal interviews with service customers in several Belgian cities during a two-week period in the summer of 1995. Interviewers were instructed to screen respondents as to whether or not they had used the particular service within the last two months to ensure an up-to-date evaluation of service quality and service loyalty intentions. In total, 708 respondents participated in our study. The response of each service industry was: “entertainment” 203, “fast food” 200, “supermarkets” 118 and “health care services” 187. For the entertainment, fast food and health care industries two competitive service providers were surveyed. In addition, we surveyed customers from one supermarket.

In order to interpret and cross-validate the findings of our quantitative study, a small-scale qualitative, follow-up study was conducted. Sixteen in-depth interviews (four respondents for each service setting) were held with regular customers of the service providers in our sample. In the interviews, which lasted approximately half an hour, we were able to zoom in on the relationships between the service quality and service loyalty dimensions. The information gathered from the interviews was used to facilitate the interpretation of the results of our survey (see discussion section).
Questionnaire design

Service loyalty intentions were measured with the Zeithaml et al. (1996) behavioural intention battery (see Table I). Each of the 13 items was accompanied by a nine-point scale ranging from 1 (= not at all likely) to 9 (= extremely likely). The items were translated into Dutch via a procedure of double-back translation as the study was conducted in the Flemish part of Belgium (Brislin, 1980). Moreover, the wording of the items was adapted to each service setting (see Appendix). Perceived service quality was measured on the basis of the 22-item SERVPERF instrument with a nine-point scale ranging from 1 (= completely disagree) to 9 (= completely agree) (Parasuraman, 1995). Small adaptations to the service setting were made for this part of the questionnaire also (see Appendix).

Results

Descriptive analysis

Mean scores as well as standard deviations for the SERVQUAL and service loyalty dimensions per service industry are shown in Table II. From Table II it can be observed that a fairly consistent pattern exists across the four service industries.

In Table III the intercorrelations between the quality and loyalty dimensions are depicted. Essentially, we find relatively high correlations between the service quality dimensions, ranging from 0.59 to 0.83. The intercorrelations between the loyalty items are somewhat lower, especially the lack of correlation between complaining behaviour and the other loyalty dimensions is notable.

Measurement properties

The factor structure of both the service quality and customer loyalty items was explored using confirmatory factor analysis (Bagozzi, 1994; Bollen, 1989). First
of all, we tested whether or not the factor structure (i.e. model form) proposed by the SERVQUAL-instrument is comparable across industries. We carried out a multi-sample analysis for the four industries included in our study (Bollen, 1989; Jöreskog and Sörbom, 1989). As the \( \chi^2 \)-value is not independent of sample size (Marsh and Hocevar, 1985; Bollen, 1989; Jöreskog and Sörbom, 1989), a wide variety of fit indexes have been developed that are supposedly independent of sample size (Marsh et al., 1988; Hu and Bentler, 1995; Marsh et al., 1996). Among these the Tucker-Lewis Index (TLI) (Tucker and Lewis, 1973; Bentler and Bonett, 1980) and the Comparative Fit Index seem to be relatively unaffected by sample size (Marsh et al., 1988, 1996). Among these the Tucker-Lewis Index (TLI) (Tucker and Lewis, 1973; Bentler and Bonett, 1980) and the Comparative Fit Index seem to be relatively unaffected by sample size (Marsh et al., 1988, 1996).

As suggested by Marsh and Hocevar (1985), we will not rely solely on the \( \chi^2 \)-value to test for a similar model form across industries. In fact, we find that \( \chi^2 \)-value (\( \chi^2 \) (796) = 1,482.62, \( p < 0.001 \)) is significant which indicates that the model form may not be similar across industries. However, given its sensitivity to sample size TLI and CFI are our criteria of choice. On the basis of both TLI and CFI we find an adequate fit (TLI = 0.92; CFI = 0.93). Our findings are supported by the limited number of Modification Indices exceeding the recommended cut-off value of 5 (Marsh and Hocevar, 1985). In addition, we assess the fit of the factor structure proposed by the SERVQUAL-instrument for each of the industries. Our results show an adequate fit for all four industries with TLI ranging from 0.90 to 0.94 and CFI ranging from 0.91 to 0.95.

A similar procedure was carried out for the service loyalty items. Similarly, we found the \( \chi^2 \)-value (\( \chi^2 \) (236) = 398.85, \( p < 0.001 \)) to be significant. However, both TLI and CFI showed to be indicative of an adequate fit to the data (TLI = 0.95 and CFI = 0.96). Furthermore, only a small proportion of the Modification

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<tbody>
<tr>
<td>1. Reliability</td>
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<td>2. Responsiveness</td>
<td>0.80***</td>
<td>1.00</td>
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<td>3. Assurance</td>
<td>0.72***</td>
<td>0.78***</td>
<td>1.00</td>
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<td>4. Empathy</td>
<td>0.73***</td>
<td>0.77***</td>
<td>0.83***</td>
<td>1.00</td>
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<td>5. Tangibles</td>
<td>0.59***</td>
<td>0.59***</td>
<td>0.61***</td>
<td>0.64***</td>
<td>1.00</td>
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<td>6. Word-of-mouth</td>
<td>0.57***</td>
<td>0.55***</td>
<td>0.57***</td>
<td>0.61***</td>
<td>0.56***</td>
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<tr>
<td>7. Purchase</td>
<td>0.54***</td>
<td>0.54***</td>
<td>0.55***</td>
<td>0.56***</td>
<td>0.52***</td>
<td>0.71***</td>
<td>1.00</td>
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<td>8. Price sensitivity</td>
<td>0.42***</td>
<td>0.43***</td>
<td>0.47***</td>
<td>0.50***</td>
<td>0.39***</td>
<td>0.50***</td>
<td>0.49***</td>
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<td>9. Complaining behaviour</td>
<td>-0.03</td>
<td>-0.05</td>
<td>-0.03</td>
<td>-0.05</td>
<td>-0.03</td>
<td>0.01</td>
<td>-0.02</td>
<td>-0.06</td>
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<tr>
<th></th>
<th>Mean</th>
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<td>5.31</td>
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**Notes:**  
* \( p < 0.05 \)  
** \( p < 0.01 \)  
*** \( p < 0.001 \)
Indices proved to exceed the value of 5. We also carried out four separate analyses for the four industries. Our results show an adequate fit in terms of TLI (TLI ranges from 0.90 to 0.92) and CFI (CFI ranges from 0.91 to 0.93). Thus, we conclude that the four factor model is similar across the four service industries that were incorporated in our study.

Subsequently, confirmatory factor analysis was carried out for both service quality and service loyalty on the basis of the entire sample. The results of the confirmatory factor analysis for the SERVQUAL items are shown in Table IV.

As was already discussed above, due to the large sample size the $\chi^2$ statistic is not an appropriate measure of goodness-of-fit. As both the TLI and CFI are relatively unaffected by sample size we will mainly rely on these measures to evaluate model fit. Additionally, we will present some alternative measures, such as the Goodness-of-Fit Index (GFI), the Adjusted Goodness-of-Fit Index (AGFI), the Root Mean Square Residual (RMSR) (Jöreskog and Sörbom, 1989), and the Normed Fit Index (NFI) (Bagozzi, 1981; Bentler and Bonnett, 1980). On the basis of these measures it can be concluded that the data adequately fit the hypothesised five-factor conceptualisation for the items of the SERVQUAL instrument, as proposed by Parasuraman et al. (1990). The GFI, the AGFI, the TLI, the CFI and the NFI are all close to or even exceed the recommended level of 0.9. Furthermore, the RMSR is within the range deemed acceptable. Given the large sample size the Root Mean Square Error of Approximation (RMSEA) might provide even a better indication of goodness-of-fit (Steiger, 1990). The value of the RMSEA equals 0.075 and is below the recommend cut-off value of 0.08. Examination of the Q-plot indicates that the distribution of the residuals is approximately normal. As can be observed, all standardised factor loadings are greater than 0.4 and significant at $\alpha = 0.05$. The reliabilities of the individual dimensions ranged from 0.77 to 0.89, which exceeds the recommended level of 0.7. The variance extracted for the measures exceeds the recommended level of 0.5 except for tangibles (v.e. = 0.46).

Next, confirmatory factor analysis was carried out for the service loyalty items. The results of this factor analysis are presented in Table V. Inspecting Table V we find an adequate fit to the data on the basis of the GFI, the AGFI, the TLI, CFI and the NFI. All measures exceed the recommended level of 0.9. The RMSR is within the range deemed acceptable. The RMSEA slightly exceeds the recommended cut-off value of 0.08 (RMSEA = 0.083). Examination of the Q-plot indicates that the distribution of the residuals is approximately normal. As can be shown in Table V, all standardised factor loadings are greater than 0.35 and significant at $\alpha = 0.05$. The reliabilities of the individual dimensions ranged from 0.60 to 0.91. The variance extracted for the measures exceeds the recommended level of 0.5, except for dissatisfaction response (v.e. = 0.36). Thus, in response to research question 1, we can conclude that service loyalty is a multi-dimensional construct consisting of the following four dimensions: “word-of-mouth”, “purchase intention”, “price sensitivity” and “complaining behaviour”. This factor structure is similar to the a priori proposed four dimensional structure of service loyalty as reported by Zeithaml...
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et al. (1996). Based on the aforementioned theoretical and empirical arguments against the five factor solution as well as our empirical findings, we propose to treat service loyalty as a four-dimensional construct.

Model estimation and modification

In order to answer research question 2, which focuses on the relationship between the quality dimensions and the aforementioned service loyalty dimensions, structural equation modelling with observed variables was conducted using maximum likelihood estimation in LISREL 7. First, we used multi-sample analysis to test whether the four service industries shared the same model form (Bollen, 1989; Jöreskog and Sörbom, 1989). Models have the
same form if the model for each industry has the same parameter matrices and the same location of free, fixed and constrained parameters. We first estimated the parameters in the entertainment sample and imposed this model form on the other industries. This analysis showed that the model form was not similar for all four service industries ($\chi^2 (84) = 639.76, p < 0.001; \text{TLI} = 0.34; \text{CFI} = 0.44$). Consequently, separate model forms were assumed for further analyses.

Four separate analyses were carried out for each service industry. Four variance-covariance matrices were calculated using LISREL’s companion program PRELIS and used as input for the path analyses. As the nature of our research is exploratory given the lack of theoretical foundation we employed structural equation modelling in an exploratory mode. We estimated both a “saturated” model ($M_{01}$) and a “trimmed” model ($M_{02}$) for each service industry. In the “saturated” model ($M_{01}$) we assumed that all quality dimensions affect all behavioural intentions and consequently all paths were set free. We arrived at the “trimmed” model ($M_{02}$) by omitting the non-significant paths and using the univariate Lagrangian Multiplier (LM) test (in LISREL terminology this test is referred to as modification index) as an exploratory tool to find paths that might

<table>
<thead>
<tr>
<th>Item</th>
<th>Word-of-mouth</th>
<th>Purchase intention</th>
<th>Price sensitivity</th>
<th>Complaining behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.75 (22.45)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0.93 (31.45)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.94 (32.08)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>0.83 (25.06)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>0.81 (24.38)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>0.61 (16.82)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td>0.37 (9.30)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td>0.91 (26.64)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td>0.82 (23.65)</td>
<td></td>
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<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td>0.37 (7.76)</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td>0.66 (12.55)</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>0.56 (11.28)</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td>0.44 (9.12)</td>
</tr>
</tbody>
</table>

Reliability | 0.91 | 0.81 | 0.76 | 0.60 |
V.E. | 0.77 | 0.59 | 0.55 | 0.36 |

$\chi^2$ | 350.10 ($p < 0.001$) |
df | 59 |
GFI | 0.93 |
AGFI | 0.90 |
RMSR | 0.07 |
CFI | 0.96 |
TLI | 0.91 |
NFI | 0.92 |

Table V. Results of confirmatory factor analysis for service loyalty items

Notes: Standardised loadings in cells and corresponding $t$-values in parentheses

* Null model assumes no underlying factors
improve the model fit when set free (Bollen, 1989; Jöreskog and Sörbom, 1989). However, using univariate LM tests in this fashion has several limitations (MacCallum 1986; Bollen, 1989). Although we acknowledge the restrictions of the univariate LM test, in our study we used the test in an exploratory fashion. Therefore, the results of our study need to be cross-validated using additional data (Cliff, 1983; Bollen, 1989). The results of these analyses are summarised in Table VI.

The “saturated” model (M₀₁), which incorporates all possible relations, did not fit the data very well for all service industries. As can be observed from Table VI, the ML χ²-statistics (Entertainment $\chi^2(6) = 94.43; p < 0.001$; Fast food $\chi^2(6) = 70.90; p < 0.001$; Supermarkets $\chi^2(6) = 32.36; p < 0.001$; Health care $\chi^2(6) = 38.86; p < 0.001$) are indicative of models not fitting the data very well. Furthermore, the values of the GFI, the AGFI, the RMSR, the NFI, the CFI and the TLI further support our findings that the data might not fit the proposed models.

The trimmed model (M₀₂) yields a better fit to the data in terms of ML χ²-statistic (Entertainment $\chi^2(18) = 21.28; p = 0.27$; Fast food $\chi^2(18) = 17.50; p = 0.49$; Retailing $\chi^2(22) = 16.16; p = 0.81$; Health care $\chi^2(17) = 10.31; p = 0.89$). Furthermore, the other fit indices (GFI, AGFI, RMSR, NFI, CFI, TLI) also affirm a good fit of the model to the data. The model yields standardised path coefficients as presented in Table VII and Figure 1.

Additionally, we tested whether the service providers within the three industries with more than one provider shared the same model form. Our findings support the notion that model form is equivalent within these three industries (Entertainment: $\chi^2(42) = 87.52 (p < 0.001)$, TLI = 0.91, CFI = 0.89; Fast food: $\chi^2(42) = 63.50 (p = 0.018)$, TLI = 0.92, CFI = 0.90; Health care: $\chi^2(46) = 69.89 (p = 0.013)$, TLI = 0.92, CFI = 0.90).

Discussion
As can be observed from Table VII, word-of-mouth is positively affected by responsiveness ($\gamma_{12} = 0.44$), and tangibles ($\gamma_{15} = 0.36$) for entertainment

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>$\chi^2$</th>
<th>$p$</th>
<th>RMSR</th>
<th>GFI</th>
<th>AGFI</th>
<th>NFI</th>
<th>CFI</th>
<th>TLI</th>
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</thead>
<tbody>
<tr>
<td>Entertainment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>M₀₁</td>
<td>6</td>
<td>94.43</td>
<td>&lt;0.001</td>
<td>0.27</td>
<td>0.91</td>
<td>0.28</td>
<td>0.74</td>
<td>0.78</td>
<td>0.01</td>
</tr>
<tr>
<td>M₀₂</td>
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<td>0.94</td>
<td>0.94</td>
<td>0.99</td>
<td>0.99</td>
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<tr>
<td>Fast food</td>
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<tr>
<td>M₀₁</td>
<td>6</td>
<td>70.90</td>
<td>&lt;0.001</td>
<td>0.22</td>
<td>0.92</td>
<td>0.42</td>
<td>0.78</td>
<td>0.82</td>
<td>0.06</td>
</tr>
<tr>
<td>M₀₂</td>
<td>18</td>
<td>17.50</td>
<td>0.49</td>
<td>0.13</td>
<td>0.98</td>
<td>0.95</td>
<td>0.95</td>
<td>0.98</td>
<td>0.97</td>
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<td>Supermarkets</td>
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<td></td>
<td></td>
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<tr>
<td>M₀₁</td>
<td>6</td>
<td>32.36</td>
<td>&lt;0.001</td>
<td>0.20</td>
<td>0.94</td>
<td>0.54</td>
<td>0.76</td>
<td>0.82</td>
<td>0.01</td>
</tr>
<tr>
<td>M₀₂</td>
<td>22</td>
<td>16.16</td>
<td>0.81</td>
<td>0.19</td>
<td>0.97</td>
<td>0.94</td>
<td>0.88</td>
<td>0.99</td>
<td>0.98</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>M₀₁</td>
<td>6</td>
<td>38.86</td>
<td>&lt;0.001</td>
<td>0.21</td>
<td>0.95</td>
<td>0.65</td>
<td>0.79</td>
<td>0.83</td>
<td>0.12</td>
</tr>
<tr>
<td>M₀₂</td>
<td>17</td>
<td>10.31</td>
<td>0.89</td>
<td>0.14</td>
<td>0.99</td>
<td>0.97</td>
<td>0.95</td>
<td>0.99</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Table VI. Results of path analysis by service industry
services (i.e. amusement parks). Purchase intentions are primarily determined
in a positive manner by reliability (γ21 = 0.44), responsiveness (γ22 = 0.39) and
tangibles (γ25 = 0.32). Apparently, prompt service (for instance, no waiting
lines) is a key factor in determining customer preference and recommendation
to others. During the interviews two respondents explicitly mentioned that it is
very difficult to keep a group of exited children standing in line for a long time.
In addition, it is no surprise that tangible service attributes which in fact form
the core element of the entertainment service experience (for instance, visually
appealing attractions) are a key determinant of both word-of-mouth and
purchase intentions. As far as the latter is concerned, it appears that reliability
is crucial in determining whether or not customers will return to the
amusement park. In the interviews one respondent mentioned the example of a
roller coaster as an attraction for which safety is crucial. It may be that
considerations about the core service (i.e. a fun experience) are decisive in
determining a customer’s own behaviour as compared to the willingness to
recommend the service to others.

A different picture emerges for the fast food service industry. Word-of-
mouth is positively affected by assurance (γ13 = 0.22) and empathy (γ14 = 0.45).
Similarly, purchase intentions are determined by assurance (γ23 = 0.39) and
empathy (γ24 = 0.29). Furthermore, the key factor for price sensitivity is

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Table VII.
Path coefficients of the revised model (M02) by service industry

<table>
<thead>
<tr>
<th></th>
<th>Loyalty dimension</th>
<th>Quality dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reliability</td>
<td>Responsiveness</td>
</tr>
<tr>
<td><strong>Entertainment</strong></td>
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<td></td>
</tr>
<tr>
<td>Word-of-mouth</td>
<td></td>
<td>0.44a (6.19)b</td>
</tr>
<tr>
<td>Purchase intention</td>
<td>0.44 (6.28)</td>
<td>0.39 (5.33)</td>
</tr>
<tr>
<td>Price sensitivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complaining behaviour</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fast food</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Word-of-mouth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase intention</td>
<td></td>
<td>0.39 (3.54)</td>
</tr>
<tr>
<td>Price sensitivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complaining behaviour</td>
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<td></td>
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<tr>
<td><strong>Supermarket</strong></td>
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</tr>
<tr>
<td>Word-of-mouth</td>
<td>0.62 (6.90)</td>
<td></td>
</tr>
<tr>
<td>Purchase intention</td>
<td>0.61 (6.78)</td>
<td></td>
</tr>
<tr>
<td>Price sensitivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complaining behaviour</td>
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<tr>
<td><strong>Health care</strong></td>
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</tr>
<tr>
<td>Word-of-mouth</td>
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<td></td>
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<tr>
<td>Purchase intention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price sensitivity</td>
<td></td>
<td>0.29 (3.47)</td>
</tr>
<tr>
<td>Complaining behaviour</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- a Standardised path coefficient
- b Corresponding t-value in parentheses
empathy ($\gamma_{34} = 0.54$). It can be witnessed that service quality elements emphasising the “personal touch” play a significant role in determining service loyalty. This could be explained as follows. In this type of service industry there is a high and industry-wide emphasis on product (tangible aspects) as well as service (reliability and responsiveness) standardisation (Fitzsimmons and Fitzsimmons, 1994). With respect to these aspects there is little opportunity for differentiation. From the interviews with fast food customers it consistently becomes clear that they feel that most of the restaurants do not differ very
much on the issues pertaining to the service quality dimensions of reliability, responsiveness and tangibles. They seem to have quite clear and explicit expectations regarding such service attributes as the menu, waiting time and waiting lines, clean toilet facilities and extended opening hours. For instance, one respondent remarked that she knows exactly how long the maximum wait before service is because the “penalty” for long waiting lines for the service provider is a refund of money. Another respondent mentioned the fact that it is almost always indicated when toilet facilities were last cleaned and checked by a quality control person. With regards to assurance and empathy, the majority of the respondents mentioned that courtesy and personal attention (“they always make me feel welcome at . . .”), “some of the people that work at . . . even know that I like extra ketchup”) were important for them regarding their intention to come back to the restaurant next time. Apparently, the dimensions of reliability, responsiveness and tangibles are perceived to be “dissatisfiers”, i.e. customer’s quality perceptions or satisfaction will not increase when performance is in accordance with or above expectations. Rather, dissatisfaction will be the result when performance is below expectations. On the other hand, assurance and empathy are regarded as satisfiers. These aspects can really increase perceived service quality. Fast food providers use the personal approach (assurance and empathy) as a major element in their service positioning strategy. For customers this personal touch may make the difference.

The third type of industry that we focused on in our research was supermarkets. As can be observed from Table VII, reliability is a decisive factor in determining both word-of-mouth and purchase intentions. In fact, the path coefficients are indicative of relatively strong relationships between aforementioned dimensions ($\gamma_{11} = 0.62$ and $\gamma_{21} = 0.61$). Furthermore, it can be noticed that price sensitivity is positively influenced by empathy ($\gamma_{43} = 0.21$). One respondent remarked in the interviews “I’d rather pay a little bit extra if the products and employees are better”. The relative importance of the reliability dimension can be explained as follows. Among the four service industries, this is the industry with the relatively highest service encounter density. It can be characterised as “relationship-intensive” (Keaveney, 1995). Therefore, most consumers are relatively dependent on this type of service and it seems important that supermarkets deliver on promises regarding its core services, i.e. promises about delivery (“inventory management”), service provision (“opening hours”) and problem resolution (money back guarantees) (Zeithaml and Bitner, 1996).

For the health care service setting we found that empathy is an important determinant of both purchase intention ($\gamma_{24} = 0.24$) and word-of-mouth ($\gamma_{14} = 0.31$). Moreover, it was found that assurance exhibits a positive influence on price sensitivity ($\gamma_{33} = 0.29$). Similarly to the fast food setting, empathy plays a major role in determining service loyalty in terms of recommendation and preference. Empathy can be described as the caring and individualised attention in a service encounter. Especially in medical service encounters which
are frequently characterised by a large degree of anxiety, patients desire to be acknowledged as people, they want to be listened to and treated with patience (De Ruyter and Scholl, 1994). In the interviews two respondents indicated that they feel that sometimes patients are no more than a number. More and more, private medical institutions are viewed as alternative service providers to consumers of health care services. As a result, loyalty in terms of price sensitivity is becoming increasingly important. From our results it appears that assurance is a significant factor in determining price sensitivity. Hence, perceived knowledge, skills, credentials and reputation determine whether consumers will remain loyal under increased pricing.

Finally, it can also be observed from Table VII that no significant path coefficients were found between the service quality dimensions and customer complaining behaviour for all four industries. Apparently, complaining is determined by other antecedents, such as the subjective probability that complaining will be successful, the attitude towards the act of complaining and the perceived cost of complaining (Day, 1984; Nantel, 1985; Sorensen et al., 1989).

Conclusion
Our study examined the relationship between service quality and service loyalty from a multidimensional perspective and from the perspective of different types of service industries. In response to research question 1, our analysis points to the existence of four distinct dimensions of service loyalty: word-of-mouth, purchase intention, price sensitivity and complaining behaviour. The factor structure was consistent across the four different types of service industries. Interestingly, this corresponds with the a priori categorisation of customer loyalty items reported by Zeithaml et al. (1996) which is, as we argued earlier, both conceptually and empirically most appealing. If anything, the results of our study underline the importance of replication studies in the field of (services) marketing (Hubbard and Armstrong, 1994).

The second research question we attempted to answer concerned the relationship between the dimensions of perceived service quality and service loyalty. Although Zeithaml et al. (1996) report a strong association between overall service quality and service loyalty across multiple companies, our findings clearly shade the quality-loyalty relationship. Our analysis of four different service type industries yielded an intricate pattern of quality-loyalty relationships at the level of the individual dimensions. A cross industry perspective yields a different picture per industry. For instance, while word-of-mouth is predominantly determined by responsiveness and tangibles in the entertainment industry, word-of-mouth in the fast food industry is mainly influenced by assurance and empathy. This underlines the importance of both a multidimensional and a cross-industry approach to service loyalty. Our findings have a number of research and managerial implications.

Research implications
Our research should be seen as a preliminary attempt at addressing an issue that has important implications for services marketing theory and practice.
Any preliminary attempt will involve a number of limitations. However, acknowledgement of these limitations also suggests new directions for future studies. In the first place, conceptual models as well as scales for measuring service quality and loyalty need further development and refinement. Differences in the nature of service setting might require additional dimensions of service quality (Dabholkar et al., 1996). With regards to the complaining behaviour part of the loyalty scale, the incidental nature of service problems may require incident-based measurement (such as the Critical Incident Technique) rather than service attitude-based measurement instruments. Further research should also incorporate multiple measures of the relevant constructs in order to increase the number of items that are used for the individual service loyalty dimensions. For instance, word-of-mouth should also be formulated in negative terms. Moreover, our study focused on service loyalty intentions only and these intentions are an incomplete proxy for actual behaviour (Keaveney, 1995). They should be supplemented by behavioural measures in order to develop a composite index of service loyalty (Dick and Basu, 1994). Therefore, further research should also take actual (re)actions of consumers to perceived service quality into account. An area that definitely also merits further investigation is the impact of loyalty on other organisational performance measures, such as profitability (Storbacka et al., 1994). Next, the empirical relationships between service quality and loyalty reported in this paper are tentative in the sense that they are based on cross-sectional data collected at one moment in time. Longitudinal research that focuses on the dynamics of the two constructs over time is needed to define the exact causal nature of the link between the two constructs. Furthermore, the use of multiple time frames allows for an investigation of the reinforcement effect of behavioural intentions on future service quality perceptions as well as other outcome variables that determine the strength of customer-organisation relationships such as commitment, trust and customer value. Finally, for the purpose of cross-validation, additional exploration of the service quality-loyalty relationship needs to be extended beyond the settings reported here to markets in which switching barriers are perceived to be high such as state monopolies like railroad and postal services. Further conceptual and empirical research addressing aforementioned topics may yield a more in-depth insight into the nature of service loyalty through a deductive approach.

Managerial implications
Our findings have several managerial implications as well. The results enable managers of service firms to nuance the intuitive relationship between service quality and service loyalty and have a richer diagnostic value because both service quality and loyalty are measured at a detailed and specific level. In addition, information on the service quality-customer loyalty link may provide actionable benchmarks that individual firms may use to guide their service policies aimed at securing customer loyalty. Furthermore, our results have specific indications for the different types of service industries’ research.
and budget allocations and personnel management decisions relating to the improvement of service loyalty on the basis of service quality. In the entertainment industry customer patronage behaviour is predominantly influenced by reliability, responsiveness and tangible service attributes, while word-of-mouth is determined to a large extent by responsiveness and tangibles. This means hiring and training personnel who contribute to the conveyance of a fun experience, using useful strategies to manage demand and supply and acknowledge the psychology of waiting lines and investing in new attractions. In the fast food business, patronage and recommendation are dependent on the personalised service through empathy and assurance. Moreover, price sensitivity is strongly related to empathy as well. The managerial challenge here is to train employees to give individualised attention to each customer and not treat them by the dozen, despite the fact that the service is subject to high degrees of standardisation. With regards to supermarkets, word-of-mouth as well as purchase intentions are strongly determined by reliability. In addition, price sensitivity is influenced positively by empathy. Supermarket managers may attempt to increase the perceived reliability of their store by explicitly establishing a link between the store and preferred brands and services (i.e. extended opening hours), appealing store policies that guarantee service quality through return policies and/or warranties and transparent pricing policies. Furthermore, evoking a favourable attitude through personalised services may contribute to customer price tolerance. Finally, both recommendation and repatronage in the health care setting are determined by empathy and price tolerance is determined by assurance.

Finally, company- and industry-level assessment of the service quality-customer loyalty link provides useful information to shareholders on the viability of performance in the future. Indices based on service loyalty may supplement measures of financial performance and market share with crucial information on the future health of a firm or industry. Especially, when tracked over time, changes in service loyalty signal changes in the value of customer assets. The identification of service loyalty as a multi-dimensional construct may help corporate decision makers in an accurate assessment of service loyalty.

References


### Appendix

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<th>Construct</th>
<th>Sample item (fast food restaurants)</th>
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<tr>
<td>Service quality</td>
<td>... provides services at the promised time</td>
</tr>
<tr>
<td></td>
<td>At ... employees provide prompt service to customers</td>
</tr>
<tr>
<td></td>
<td>Employees at ... are always courteous to customers</td>
</tr>
<tr>
<td></td>
<td>At ... employees give customers individual attention</td>
</tr>
<tr>
<td></td>
<td>At ... employees are well dressed and appear neat</td>
</tr>
<tr>
<td>Service loyalty</td>
<td>I say positive things about this restaurant to other people</td>
</tr>
<tr>
<td></td>
<td>I consider ... my first choice among fast food restaurants</td>
</tr>
<tr>
<td></td>
<td>I would continue to visit this restaurant even if its prices increased somewhat</td>
</tr>
<tr>
<td></td>
<td>I would complain to other customers if I experienced a problem with</td>
</tr>
<tr>
<td></td>
<td>...’s services</td>
</tr>
</tbody>
</table>

**Table AI.**

Sample items