The customer satisfaction-customer loyalty relationship

Reassessing customer and relational characteristics moderating effects

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Abstract

Purpose – This study aims to examine the moderating effects of gender, income, age, customer involvement and length of the relationship on the customer satisfaction (CS)-customer loyalty (CL) relationship in a contractual service context. CL is assessed using customer repurchase intention (RI) and repurchase behavior (RB).

Design/methodology/approach – Using a postal mail survey, the authors measure the CS, RI involvement and socio-demographic characteristics of customers who use a credit card. RB is measured by the number of transactions and the corresponding amount spent by clients, based on data provided by the company. The proposed hypotheses are tested using random sampling and hierarchical regressions.

Findings – The significant moderators are different depending on the CL measure used. When RI is utilized, the gender and age of the client have a positive effect on the CS-CL relationship. However, when RB is assessed using the number of transactions made by the credit card's owner, the length of the relationship becomes the significant moderator.

Research limitations/implications – The study is limited to a single firm, from one industry sector, but provides future researchers a multitude of replication opportunities.

Practical implications – Demographic and relational variables are important in explaining the CS-CL relationship. Customer relationship strategies have positive results. RB is preferred to RI when evaluating and explaining CL.

Originality/value – The assessment of customer and relational characteristics as moderating variables in the CS-CL relationship, and comparing different measures of CL in a contractual service adds value to this research.

Keywords Customer satisfaction, Customer loyalty, Repurchase intention, Repurchase behaviour, Moderators, Services, Customer characteristics, Demographics, Credit cards

Paper type Research paper

1. Introduction

Customer loyalty is a top priority for firms in light of the fact that repeat purchase of products and services is critical to organizational success, and firm profitability (Hallowell, 1996; Oliver, 1997; Silvestro and Cross, 2000). For this reason, it is extremely important to understand the antecedents of customer loyalty (CL). There is strong empirical evidence to suggest that customer satisfaction (CS) is an antecedent of CL (Mittal and Kamakura, 2001; Alegre and Cladera, 2009) and that there is a positive link between these two constructs (Anderson and Mittal, 2000; Streukens and Ruyter, 2004;

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Alegre and Cladera, 2009). Many studies have also demonstrated the effect of CS on firm profitability (e.g. Rust *et al.*, 1995; Gomez *et al.*, 2003), and on customer retention and firm profitability (e.g. Heskett *et al.*, 1994; Anderson and Mittal, 2000), hence the strong commitment of managers to keeping their customers satisfied.

However, some research has offered contradictory results with regard to the CS-CL link, such as the studies by Jones and Sasser (1995) and Verhoef (2003), who found no effect of CS on CL. Several authors attribute the observed inconsistencies and weak values to a variety of factors. Conclusions on this relationship can differ significantly depending on the use of different CL measures. With repurchase intention (RI) a positive CS-RI relationship exists (Yi and La, 2004). This is not the case, however, for the CS-repurchase behavior (RB) relationship (Verhoef, 2003). The type of service analyzed, whether it is ongoing or a more transaction-based service, has an influence on customer's decision to maintain a service relationship, and their significance (Lemon *et al.*, 2002). Many studies that consider the linear nature of this link find no significant effects (Verhoef, 2003), but non-linear models have proven to adequately represent this relationship (Mittal and Kamakura, 2001; Fullerton and Taylor, 2002; Agustin and Singh, 2005). These examples reveal some of the complexity of the CS-CL link.

Certain studies have attempted to take a deeper look at this relationship by considering the extent to which other variables might have a moderating effect on the CS-CL relationship (Homburg and Giering, 2001; Mittal and Kamakura, 2001; Verhoef *et al.*, 2002; Mägi, 2003; Seiders *et al.*, 2005).

The objective of this research is to analyze the CS-CL relationship in an ongoing/contractual service context (credit card users), considering: the effects of several moderating variables, and different measures of CL. We studied five moderating variables. Four customer characteristics: gender, income, age and involvement on the part of the customer; and one relational variable, which is the length of the relationship. CL was measured by repurchase intention (RI) and re-purchase behavior (RB) – the number of transactions and the corresponding amount spent. Under these circumstances, we contribute to the evaluation of the moderating effects in this relationship considering different measures of CL. This assessment provides a better explanation of the complex CS-CL relationship.

The study contributes to the literature in several ways. First, it enhances awareness of the type of variables that may moderate the CS-CL relationship for a contractual service – in this case, for credit card holders. Second, the study advances our understanding of the CS-CL relationship, analyzing both the moderating effects and the use of CL through self-reported and objective measures. This knowledge is important for managers in pursuing CL objectives, and rather than merely achieving CS to attain CL, firms should also ponder other variables that may influence the CS-CL relationship. However, in assessing the CS-CL relationship, managers should be cautious when choosing CL measures.

The paper is structured as follows: after the introduction, we present the literature review, focusing on CS, CL, the CS-CL relationship and the moderating variables, which shape the research hypotheses. The methodology and the research results are described, and the managerial implications are discussed. We end the paper with the assessment of limitations and future research suggestions.

2. Literature review and hypotheses definition

Business profitability and growth is a major concern for firms. To this end, retaining customers and creating a loyal customer base is critical (Anderson and Mittal, 2000; Gupta and Zeithaml, 2006). This is why managers need to understand the CL precursors, and why CS has been considered one of its important antecedents (Ngobo, 1999; Mittal and Kamakura, 2001; Yi and La, 2004; Olsen, 2007; Alegre and Cladera, 2009; Trasorras *et al.*, 2009). Therefore, understanding and characterizing the CS-CL relationship is extremely important.

2.1 Customer satisfaction

CS may be defined as "... the consumer's fulfillment response. It is a judgment that a product or service feature, or the product or the service itself, provided (or is providing) a pleasurable level of consumption-related fulfillment, including levels of under or over fulfillment" (Oliver, 1997, p. 13).

We consider CS as a global evaluation, which implies the assessment of the product or service as a whole made by the client (Seiders *et al.*, 2005; Olsen, 2007). In fact, when CS is analyzed in relation to other constructs (e.g. antecedents or consequences) overall evaluation should take preference (Mittal *et al.*, 1998; Colgate and Danaher, 2000; Fullerton and Taylor, 2002; Olsen *et al.*, 2005; Seiders *et al.*, 2005; Keiningham *et al.*, 2007; Olsen, 2007).

2.2 Customer loyalty

CL has been the subject of innumerable studies over several decades. According to Bowen and Chen (2001), it is possible to distinguish in the literature between three CL approaches:

(1) attitudinal;

(2) behavioral; and

(3) composed.

The attitudinal approach "... uses measures of attitude to reflect the inherent psychological and emotional bond of loyalty "(Bowen and Chen, 2001, p. 214). These measures take into account the feelings of loyalty, fidelity and commitment, which cannot be captured in behavioral measures. Attitudinal measures have the advantage of understanding the development of loyalty and how it changes, and they are easier to obtain than behavioral measures (Mittal and Kamakura, 2001; Gupta and Zeithaml, 2006). An example of this type of measure is the RI that, despite being an attitudinal measure, is used as a proxy of future customer buying behavior (Mittal *et al.*, 1998; Streukens and Ruyter, 2004). In the second approach, the frequency of purchase (Chao, 2008), the sequence of purchase or the likelihood of repurchase (Lichtlé and Plichon, 2008) are some measures of buying behavior used to assess CL; a consistent purchasing behavior is seen as an indicator of CL (Mittal and Kamakura, 2001; Seiders *et al.*, 2005; Chao, 2008). The third approach combines both the behavioral and attitudinal dimensions (Dick and Basu, 1994; Pritchard *et al.*, 1999; Fullerton, 2005; Trasorras *et al.*, 2009).

Despite a general lack of consensus on the definition of CL, there is now greater acceptance that CL implies repeat purchase behavior and also a positive attitude toward the firm/brand (Dick and Basu, 1994; Oliver, 1999; Chaudhuri and Holbrook, 2001). In our study, we use attitudinal (RI) and behavioral measures (RB) of CL.

Although RI has been widely used as a proxy of RB, some authors have found that RI is not a good predictor of RB. García and Caro (2009) suggest that although 80-95 percent of customers manifest RI, only 60 percent were retained. This conclusion corroborates other results (Chandon *et al.*, 2005). Seiders *et al.* (2005) also note that RI does not describe the complex variations that are offered by the objective RB measures. To this end, it is important to employ different measures of CL, as occurs in this research.

In this study, CL is defined (Dick and Basu, 1994) as a consistent repeat purchase or use resulting from the psychological attachment to the brand and situational factors, such as marketing efforts that can cause behavioral changes.

Customer loyalty is a strategic objective for managers (Cooil *et al.*, 2007) and is considered an intangible strategic asset that will enhance organizational performance (Onyeaso and Johnson, 2006). Therefore, investigating its determinants has drawn continuous attention from researchers. Service quality (Onyeaso and Johnson, 2006; Chao, 2008), server/customer orientation (Colwell *et al.*, 2009) and brand commitment (Kim *et al.*, 2008) have been studied as CL determinants. Nevertheless, CS has been one of the most studied antecedents of CL (e.g. Seiders *et al.*, 2005; Cooil *et al.*, 2007; García and Caro, 2009).

Thus, we formulate the following hypothesis:

H0. Customer satisfaction is an antecedent of: (a) repurchase intention; (b) the number of transactions; and (c) the amount spent.

2.3 Relationship between customer satisfaction and customer loyalty

The importance of the CS-CL relationship has created a sizable body of research literature (e.g. Mittal and Kamakura, 2001; Yi and La, 2004; Olsen, 2007; Alegre and Cladera, 2009).

There are three major groups of studies on the CS-CL relationship:

(1) studies on mediation;

(2) studies on nonlinearity; and

(3) studies on moderation effects.

The first group examines the presence of a direct relationship between the two constructs or whether an indirect relationship exists, i.e. whether any or some characteristics mediate the relationship. Some authors have found an indirect relationship between CS and CL; expectations (Yi and La, 2004), trust (Bloemer and Odekerken-Schröder, 2002; Agustin and Singh, 2005) and commitment (Bloemer and Odekerken-Schröder, 2002; Fullerton, 2005) are examples of significant mediating variables. The second group investigates the existence of more complex relationships (nonlinear) between CS and CL. This hypothesis is adequate when changes in the independent variables do not cause proportionally similar changes in the dependent variable. Unlike the result obtained by Streukens and Ruyter (2004), there is empirical evidence of a nonlinear CS-CL relationship (Ngobo, 1999; Mittal and Kamakura, 2001; Fullerton and Taylor, 2002; Agustin and Singh, 2005).

The third group examines the existence of external factors influencing the CS-CL relationship: the moderators. These are variables that change the direction or strength of the relationship between the predictor and the dependent variable (Baron and Kenny, 1986; Frazier *et al.*, 2004); in our research, they are CS and CL respectively. Baron and Kenny (1986) report that moderators are introduced when there is an unexpectedly weak relationship between the predictor and the dependent variable. There are different types of moderators, such as consumer characteristics (gender and age, for example), relational variables (length of the relationship), and situational or market variables (such as competitive intensity or attractiveness of choice alternatives) (Homburg and Giering, 2001; Mittal and Kamakura, 2001; Seiders *et al.*, 2005). Our research relates to this last group: the study of the moderating effects on the CS-CL relationship. We focus on the consumer characteristics of age, gender, income, and involvement, and on the relational variable length of the relationship as moderating variables.

To test for moderation, Baron and Kenny (1986) and Frazier *et al.* (2004) propose the use of regressions. Regressions are most widely employed in studies on moderation effects (Bloemer and Kasper, 1995; Jones *et al.*, 2000; Mittal and Kamakura, 2001; Verhoef *et al.*, 2002; Mägi, 2003; Seiders *et al.*, 2005; Chao, 2008) because they are not affected by: the differences that may exist in the variances of the independent variables, or the changes in measurement error of the dependent variable, as it happens in a correlational analysis (Baron and Kenny, 1986). Structural equation modeling (SEM) is an alternative to test interactions involving moderators that are both categorical and continuous. However, SEM is more suitable when it comes to categorical variables (multi-group analysis) than with continuous variables (Frazier *et al.*, 2004). When the moderating variables are continuous, it is preferable to use regressions. In order to employ multi-group analysis, it is necessary to create artificial groups through "cut points", which lead to information loss and reduction of the power to detect interaction effects (Aiken and West, 1991). Since we have categorical and continuous moderator variables, and regressions are the most commonly used, we opted for this approach.

2.4 Moderating variables: customer characteristics

2.4.1 Gender. Several studies find that men and women have different buying behaviors (Fournier, 1998; Mittal and Kamakura, 2001). Women are more involved in purchasing activities (Slama and Tashchian, 1985) because they create a relationship with brands (Fournier, 1998). Women are also more tolerant than men in the repurchase process since they put up fewer psychological barriers (Mittal and Kamakura, 2001). The fewer barriers put in place by consumers, the higher their level of tolerance, which in turn creates greater likelihood of retention. These authors also reported that the CS-RB link is stronger for men than women. Furthermore, Homburg and Giering (2001) noted that female satisfaction with the sales process had a stronger impact on RB.

Thus, we formulate the following hypothesis:

H1. The gender of the customer moderates the relationship between CS and (a) repurchase intentions; (b) the number of transactions; and (c) the amount spent.

2.4.2 Income. Income has a major impact on consumer decisions (Zeithaml, 1985). Consumers with a higher income have fewer restrictions, making them less loyal to a brand than customers with a lower income (Zeithaml, 1985). Homburg and Giering (2001) conclude that the CS-RB relationship is stronger for those with lower income than for those with higher earnings. Individuals with higher income generally have higher levels of education (Walsh and Mitchell, 2005) and, due to their cognitive abilities, feel more comfortable with new information (Spence and Brucks, 1997). Cooil *et al.* (2007) find that income is a negative moderator; a change in satisfaction has less impact on a change in expenditure as the level of income increases. Evanschitzky and Wunderlich (2006), and Walsh *et al.* (2008) also note that income was a moderator of the CS-CL relationship.

Thus, we formulate the following hypothesis:

H2. The income of the customer moderates the relationship between CS and (a) repurchase intentions; (b) the number of transactions; and (c) the amount spent.

2.4.3 Age. There is empirical evidence that older and younger consumers have different RB (Homburg and Giering, 2001; Mittal and Kamakura, 2001; Lambert-Paudraud *et al.*, 2005; Evanschitzky and Wunderlich, 2006). In their study of the four stages of loyalty (Oliver, 1999), Evanschitzky and Wunderlich (2006) state that age is an important moderator. Lambert-Paudraud *et al.* (2005) conclude that older consumers consider fewer brands and often choose brands that are long established. Gilly and Zeithaml (1985) report that the ability to process information, declines with age. In this sense, the reactions of older consumers to changes in satisfaction might also be modified (Homburg and Giering, 2001). Mittal and Kamakura (2001) find that shifts in CS have less of an affect on the retention of older clients. Older consumers evaluate their experience with the product at the time of the purchase decision and, thus, are more loyal to a particular brand than younger consumers (Homburg and Giering, 2001; Lambert-Paudraud *et al.*, 2005). Homburg and Giering (2001) note that younger consumer satisfaction has a stronger impact on their RB.

Thus, we formulate the following hypothesis:

H3. The age of the client moderates the relationship between CS and (a) repurchase intentions; (b) the number of transactions; and (c) the amount spent.

2.4.4 Involvement. Involvement is the importance that the consumer gives to their purchase, based on the needs, interests and values inherent to the consumer (Mittal, 1995). Gainer (1993) concludes that there is a relationship between involvement and frequent buying behavior. Wakefield and Baker (1998) find that customers who were most involved in their purchases reported higher levels of RI. Seiders *et al.* (2005) deduce that involved consumers buy more and spend more; the more involved consumers spend more when their satisfaction is higher. Tuu and Olsen (2010) state that involvement positively moderates the CS-RB relationship.

Thus, we formulate the following hypothesis:

H4. Customer involvement moderates the relationship between CS and (a) repurchase intentions; (b) the number of transactions; and (c) the amount spent.

2.5 Moderating variables: relational characteristic

The length of the customer relationship has a positive effect on customer retention (Bolton, 1998). Customers with positive experiences over time are apt to forgive more and less likely to leave the brand (Anderson and Sullivan, 1993). Verhoef *et al.* (2002) find that the length of the relationship has a moderating effect on the link between satisfaction and the number of services purchased. Verhoef (2003) also notes this moderating effect on customer retention. Seiders *et al.* (2005) conclude that the habit has a great influence on repurchase behavior. Moreover, the length of the relationship has a positive and direct effect on the number of visits and expenditure at the time of repurchase. In turn, Cooil *et al.* (2007) state that this variable is a negative moderator in the relationship; they find that the impact of a satisfaction change in expenditure decreases when the length of the relationship increases.

Thus, we formulate the following hypothesis:

H5. The length of the relationship moderates the relationship between CS and (a) repurchase intentions; (b) the number of transactions; and (c) the amount spent.

The research model showing the moderating effects on the CS-CL relationship is depicted in Figure 1.

3. Methodology

3.1 Data collection and survey instrument

The target population encompassed the active private clients of a Portuguese credit card company, in possession of their cards for more than a year with at least one transaction per year. Data were collected through a postal mail survey. A pre-tested structured questionnaire was sent to a random sample of 8,499 clients. The response rate was 15 percent (1,274 returned questionnaires), which is common when no incentives are offered (e.g. Neal *et al.*, 1999). After preliminary analysis, 1,210 valid responses were obtained.

Based on the questionnaire, we measure CS, RI, and the moderating variables: gender, income, age and involvement. To reduce possible halo effects, items for evaluating RI and involvement were dispersed throughout the questionnaire (Wirtz, 2000). We use seven- and nine-point scales to measure RI, involvement and CS as data bias is more problematic in five-point scales, than in ten-point scales (Wittink and Bayer, 1994). In addition, there is a positive impact in measurement reliability when extended scales are used (Churchill and Peter, 1984), and these scales can be considered approximately continuous (Bagozzi and Baumgartner, 1994).

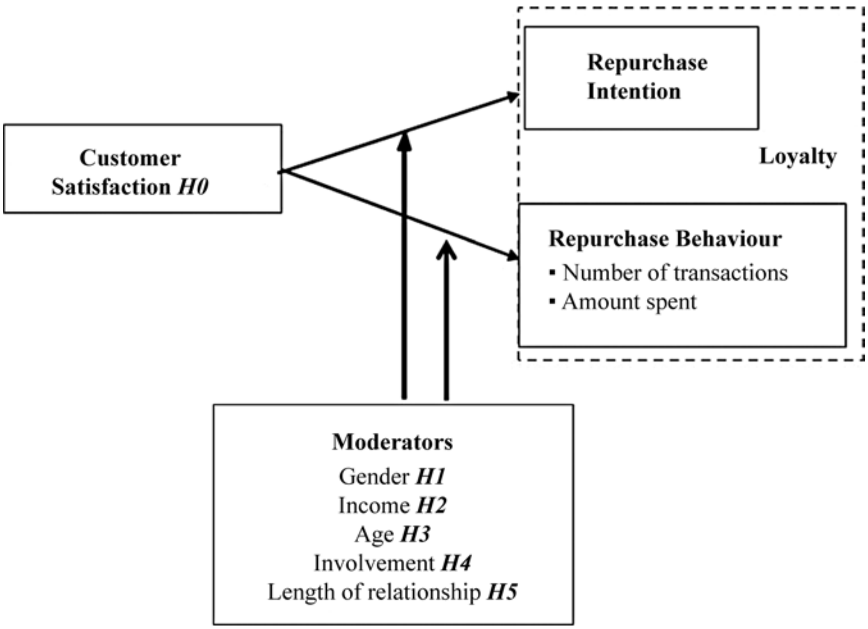


Figure 1.
Research model

The holding company of the credit card provided the information about the number of transactions, the corresponding amount spent by the clients and the length of their relationships.

The sample consisted mainly of men – 64.2 percent. Of the respondents, 82.1 percent are above 35-years-old, and 57.4 percent have higher education qualifications. About 50.1 percent of the respondents have an individual net monthly income of more than €1,500.

3.2 Measures

To measure CS, we opted to use a single item (Anderson and Sullivan, 1993; Mittal *et al.*, 1998; Colgate and Danaher, 2000; Arbore and Busacca, 2009). Overall, satisfaction is measured on a nine-point scale where 1 stands for "Completely Dissatisfied" and 9 for "Completely Satisfied". The question was "Overall, how satisfied are you with the credit card "X"?"

CL is assessed in three different ways:

(1) by RI;

(2) by number of transactions; and

(3) by amount spent.

RI is measured using three items, and a seven-point scale ranging from "Strongly Disagree" (1) to "Strongly Agree" (7), adapted from other studies: the intention to continue to use the credit card for a long time (Morgan and Hunt, 1994; Garbarino and Jonhson, 1999; Li and Petrick, 2010); the high probability of continuing to use the credit card (Cronin *et al.*, 2000; Yi and La, 2004), and planning to maintain the relationship (Macintosh and Lockshin, 1997). We average the three items to create an index for RI. Measurement reliability is very good, as Cronbach's alpha coefficient was 0.921 (DeVellis, 1991). The holder of the credit card provided the information on the number of transactions and the corresponding amount spent.

The moderating variables gender, income and age are dummy variables, therefore, gender has the value "1" for a male respondent and "0" for female. Income has a value of "1" for individuals with a net monthly income of up to 1,500 €, and "0" if income is higher than 1,500€. For age, the dummy variable has the value "1" when the consumer is between 18 and 35 years-of-age, and "0" for a person older than 35. Involvement is assessed using an index based on the arithmetic mean of three items adapted from other authors: the client carefully chooses the credit card (Bloemer and Kasper, 1995; Mittal, 1995; Olsen, 2007); it is very important to choose the appropriate credit card (Mittal, 1995); and the client cares about the result of the credit card choice (Bloemer and Kasper, 1995; Mittal, 1995; Olsen, 2007). The three items were measured by a seven-point semantic differential scale ranging from "Strongly Disagree" (1) to "Strongly Agree" (7). Measurement reliability is very good: Cronbach's alpha coefficient was 0.819 (DeVellis, 1991). The moderating variable "length of the relationship with the credit card company" was provided by the credit card issuer. This variable reflects the number of years that the consumer has held the credit card, and has had a relationship with the company.

4. Results

We present three different models to test the presence of moderating effects on the CS-CL relationship:

(1) M1 where RI is the dependent variable;
(2) M2 where the dependent variable is the number of transactions made; and
(3) M3 where the amount spent is the dependent variable.

Following the steps suggested by Frazier *et al.* (2004), we used dummies to represent categorical variables, and standardized the continuous variables to have a better understanding of the predictive and moderating effects. This was also for ease in representing the significant effects graphically (Aiken and West, 1991; Cohen *et al.*, 2003). In addition, we created the interaction variables between CS and the moderating variables. In accordance with Frazier *et al.* (2004), we standardized the CS variable and three categories were created:

(1) low satisfaction, representing the individuals with more than one standard deviation below the sample mean;
(2) medium satisfaction, indicating the set of customers with up to one standard deviation around the sample mean; and
(3) high satisfaction, denoting the group of respondents with more than one standard deviation above the mean, as proposed by Cohen *et al.* (2003).

To estimate the moderating effects, we used hierarchical regressions (Frazier *et al.*, 2004).

Customer satisfaction is an antecedent of RI (*H0 (a)* is confirmed), but it is not a significant predictor of RB (*H0 (b)* and *H0 (c)* are rejected) as shown in Table I – M1, M2 and M3.

Based on Table I, Model M1, we observe significant gender and age moderating effects. The CS-RI relationship is stronger for men and for older clients (the moderating effect coefficient for gender is positive, but negative for age). We represent the significant moderating effects of gender in Figure 2 and of age in Figure 3.

In Figure 2, we note that for medium or low satisfaction, men have lower RI than women when using their credit card. However, this situation is reversed for a high satisfaction level: men intend to reuse the credit card more than women. Therefore, *H1 (a)* is supported, which is consistent with the findings of Mittal and Kamakura (2001), who state evidence of moderation of the gender variable. If we analyze Figure 3, a similar pattern emerges: older clients more commonly intend to reuse the credit card than younger credit card holders when their satisfaction is medium or high; for low satisfaction levels, the younger generation shows the greatest RI. Thus, *H3 (a)* is supported in accordance with Homburg and Giering (2001) and Mittal and Kamakura (2001), who noted significant interaction between CS and age. All other hypotheses on moderating effects are not supported for the CS-RI relationship. This is also the case of other studies that do not find significant moderating effects of income (Seiders *et al.*, 2005), involvement (Homburg and Giering, 2001) and length of the relationship (Rust *et al.*, 1995) on RI.

In Table I, we can also observe the results from the Models M2 and M3 that include the objective buying behavior as a dependent variable. Model M2 considers the number of transactions as the dependent variable. We can see that the only significant moderating effect is the length of the relationship: the relationship between CS and number of transactions is stronger for those clients who have more long-lasting relationships. This conclusion is based on the positive regression coefficient. To graphically represent this

Table I.
Regression coefficients on RI and RB (No. of transactions and amount spent)

	Independent variables	M1: Repurchase intentions Coefficient	M1: t-statistic	M1: p-value	M2: No. of transactions Coefficient	M2: t-statistic	M2: p-value	M3: Amount spent Coefficient	M3: t-statistic	M3: p-value
	Constant	6.097	104.561	0.000	60.886	15.251	0.000	3908.079	11.902	0.000
H0	Customer satisfaction (CS)	0.348***	6.123	0.000	5.737	1.470	0.142	95.688	0.604	0.546
	Gender (M = 1, F = 0)	−0.062	−1.085	0.278	−0.935	−0.238	0.812	116.394	0.359	0.720
	Income (< = 1,500€ = 1, > 1,500€ = 0)	0.107*	1.886	0.060	−6.979*	−1.795	0.073	−560.485*	−1.738	0.083
	Age (18 − 35 years = 1, >35 years = 0)	−0.023	−0.304	0.761	−6.695	−1.304	0.193	−209.431	−0.503	0.615
	Involvement	0.375***	13.380	0.000	−0.430	−0.224	0.823	−141.827	−0.905	0.366
	Length of the relationship	0.026	0.933	0.351	1.269	0.661	0.509	295.752*	1.870	0.062
H1	CS × Gender	0.139**	2.402	0.017	−4.518	−1.137	0.256	–	–	–
H2	CS × Income	0.005	0.084	0.933	−3.585	−0.878	0.380	–	–	–
H3	CS × Age	−0.160**	−2.143	0.032	−3.299	−0.644	0.519	–	–	–
H4	CS × Involvement	−0.038	−1.627	0.104	0.906	0.562	0.574	–	–	–
H5	CS × Length of the relationship	−0.019	−0.734	0.463	4.912***	2.817	0.005	–	–	–
	F-test	57.501***			1.986**			2.110*		
	R^2	0.380***			0.100**			0.100*		
	Number of observations	1,029			1,043			1,043		

Note: *p-value < 0.1; **p-value < 0.05; ***p-value < 0.01

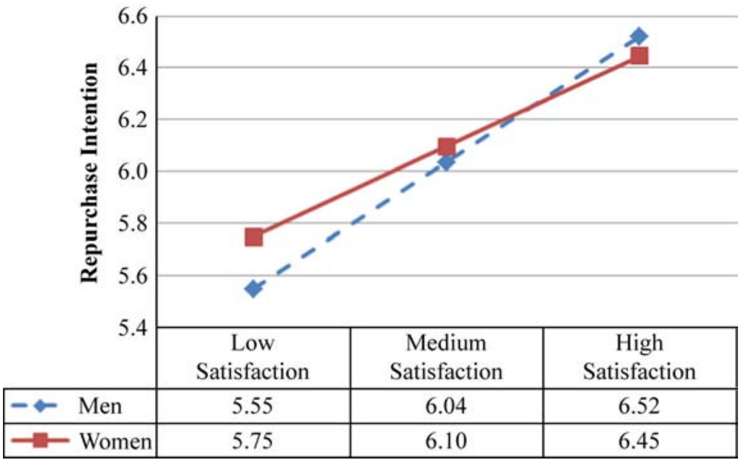


Figure 2.
CS–RI relationship: gender-moderating effect

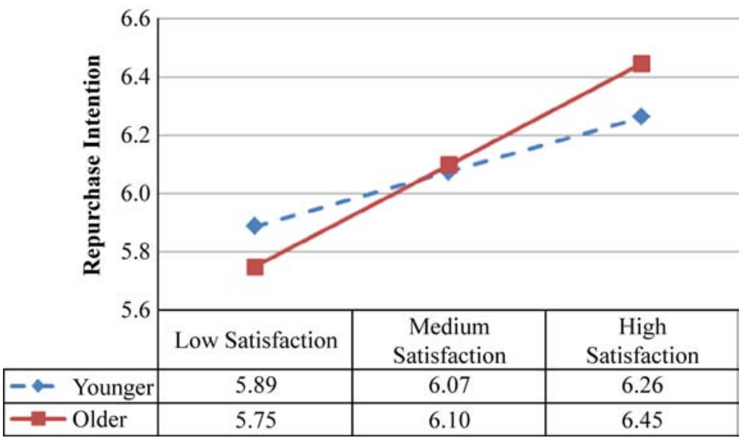
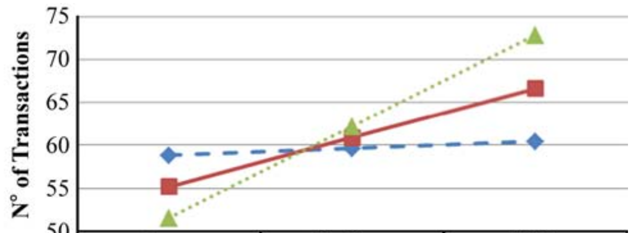


Figure 3.
CS–RI relationship: age-moderating effect

moderating effect, the length of the relationship was categorized as low, medium or high, following the same procedure applied to categorize the CS variable. In Figure 4, we visualize the moderating effect of the length of the relationship.

For less durable relationships, the line is nearly horizontal: changes in CS do not significantly affect the number of transactions for these clients. However, for longer relationships, changes in the number of transactions are substantial depending on the CS level. Therefore, clients with medium- or high-satisfaction levels use the credit card more often than those with a low-satisfaction level. However, analyzing the clients that indicate low satisfaction, we note that those with a longer relationship with the company use their credit card less often. Thus, *H5 (b)* is supported, and is in line with the results of Verhoef *et al.* (2002); Verhoef (2003); and Cooil *et al.* (2007): the length of the relationship is a moderating variable in the CS-RB relationship. All other hypotheses on moderating effects are rejected for the CS-RB (*n* of transactions) relationship (Model M2). With regard to Model M3, where the amount spent is the



	Low Satisfaction	Medium Satisfaction	High Satisfaction
Low Length of the Relationship	58.79	59.62	60.44
Medium Length of the Relationship	55.15	60.89	66.62
High Length of the Relationship	51.51	62.16	72.80

Figure 4.
CS–No. of transactions relationship: length of the relationship moderating effect

dependent variable, we found that there are no statistically-significant moderating effects. Therefore, none of the hypotheses could be confirmed.

Corroborating the hypotheses not supported in Models M2 and M3, where RB was measured by the number of transactions and amount spent (dependent variables), other studies also suggest that there are no moderating effects of gender (Homburg and Giering, 2001; Evanschitzky and Wunderlich, 2006), age (Mägi, 2003; Cooil *et al.*, 2007), length of the relationship (Seiders *et al.*, 2005) and involvement (Seiders *et al.*, 2005; Olsen, 2007). We have not found support in the literature for the non-significant moderating effect of the income variable, as shown in Models M2 and M3.

Although we have not hypothesized the direct effects of the variables under study as antecedents of RI and RB, we can draw some conclusions. There is a significant direct relationship between income and involvement, and RI (Table I – Model 1). However, when RB is the dependent variable, we noticed only a significant direct relationship between income and RB – number of transactions (Table I – Model M2), and a significant direct relationship between income and length of the relationship, and RB – amount spent (Table I – Model M3). Therefore, there are different direct effects when different CL measures are considered. Income is the only common direct effect on RI and RB.

All estimated models are significant, however, the explanatory power ($R^2 = 38$ percent) of model M1 is far superior to that of Models M2 ($R^2 = 2$ percent) and M3 ($R^2 = 1$ percent). According to Podsakoff *et al.* (2003), this may be due to the fact that, in Model M1, the respondent provides information on both the predictor and the dependent variable "repurchase intentions", creating biased effect by using the same source of data collection. In Models M2 and M3, despite the F-tests being significant, the low explanatory power indicates that other variables are missing and thus the models are not able to explain the actual repurchase behavior of credit card users.

5. Discussion and implications

The results show how complex the CS-CL relationship is; demographic and relational characteristics are important moderators, but its significance depends on the CL measure used. Gender and age become significant moderators only when CL is assessed by RI; men and older clients that are more satisfied indicate greater intention of using a credit card. Length of the relationship reveals its moderating effect when CL is evaluated by RB – number of transactions. However, the length of the relationship also has a direct and positive effect on the amount spent by the client (RB). These results suggest that firms that implement customer relationship strategies have benefits: via longer relationships, more satisfied clients use their credit cards more frequently, and, as the relationship grows, the amount spent by the client increases.

When analyzing the direct effects of CS on CL, the conclusions are contradictory and diverse. First, CS has a positive direct effect on CL, measured by RI. However, CS has no effect on CL when assessed by RB measures. Contrary CS-CL relationship results can be explained in different ways: RI is not a good predictor of RB – care must be taken in using RI to evaluate RB and objective RB measures should be employed; the CS-RB relationship may be better characterized by dynamic or nonlinear models; mediating variables, which can reflect the client's affective or psychological attachment, may have to be included in this relationship analysis; and the nature of the service also conditions the results, given its diverse nature. Although the effect of RI on RB was not evaluated in this study, we suggest that managers develop strategies to convert client RI into client RB, considering other study results. In addition, income has a direct and divergent effect on the RI and RB of the clients: income increase leads to growing RI; however, income increase reduces RB, the number of transactions and the amount spent by clients. In fact, customers with higher revenues have fewer restrictions and thus may be less loyal to a brand, as has been reported. Finally, involvement only has a direct and positive effect on RI: the common method bias may inflate the relations between these two variables, measured at the same time and by the same method.

There is evidence of the usefulness of demographic variables to explain consumer behavior. This is important for managers, as these data are easier to collect and to deal with in marketing practice. Based on the results of this research, managers have a more detailed understanding of the CS-CL relationship and of the loyalty profile of their customers. With this knowledge, companies can target their efforts to develop better CL strategies and enhance retail performance.

6. Conclusions

CS has a positive impact on RI, but has no direct effect on the RB objective (Verhoef *et al.*, 2002; Seiders *et al.*, 2005; Olsen, 2007). Thus, firms should consider factors other than CS and other models to explain CL. The direct effects of the characteristics studied here are different, depending on consumer self-reported or objective measures of RB; only income presents a direct and significant, though divergent, effect in all models. When RI is the dependent variable, the gender and age of the client emerge as moderating variables. Considering the number of transactions as the dependent variable, the length of the relationship appears as a moderating variable (Verhoef *et al.*, 2002). However, for the dependent variable amount spent, a significant moderator is not apparent. Therefore, the client's characteristics are the most important moderating variables in the case of RI, whereas the length of the relationship is the only significant one for RB (number of transactions).

The explanatory power of the models that include RI is superior to those that consider actual RB to measure CL, showing how difficult it is to predict the behavior of an individual. Several authors also fail to obtain better results when studying RB as the dependent variable (Mittal and Kamakura, 2001; Verhoef *et al.*, 2002; Seiders *et al.*, 2005). Therefore, in analyzing the CS-CL relationship, the method for assessing CL is highly relevant, as different CL measures lead to different conclusions.

7. Limitations and suggestions for future research

The study relates specifically to one brand, in one sector: a Portuguese credit card company. Although we use a large, random sample, other brands and other types of services should be analyzed before generalizations are made. To strengthen the CS-CL relationship, other customer and relational characteristics, as well as situational or market moderating variables, should be investigated. Alternative models can be examined to evaluate the mediating role of RI on the CS-RB relationship, and also to incorporate other mediators (e.g. commitment). In moderation analysis, when regressions are applied and the moderator and/or the predictor are measured on a continuous scale, there is less power to discover the real interaction effects. Better results can be obtained depending on the codification scheme of the variables; effects codification and contrast codification (Frazier *et al.*, 2004) could be used. Last, the explanatory power of models that use RB as a dependent variable raises some concerns related to bias caused by the omission of important variables from the relationships. Therefore, including lag variables may increase the probability of finding systematic and non-observable variations from respondents (Seiders *et al.*, 2005).

References

Agustin, C. and Singh, J. (2005), "Curvilinear effects of consumer loyalty determinants in relational exchanges", *Journal of Marketing Research*, Vol. 42 No. 1, pp. 96-108.

Aiken, L. and West, S. (1991), *Multiple Regression: Testing and Interpreting Interactive Effects*, Sage Publications, Newbury Park, CA.

Alegre, J. and Cladera, M. (2009), "Analysing the effect of satisfaction and previous visits on tourist intentions to return", *European Journal of Marketing*, Vol. 43 Nos 5/6, pp. 670-85.

Anderson, E. and Sullivan, M. (1993), "The antecedents and consequences of customer satisfaction for firms", *Marketing Science*, Vol. 12 No. 2, pp. 125-43.

Anderson, E.W. and Mittal, V. (2000), "Strengthening the satisfaction-profit chain", *Journal of Service Research*, Vol. 3 No. 2, pp. 107-20.

Arbore, A. and Busacca, B. (2009), "Customer satisfaction and dissatisfaction in retail banking: exploring the asymmetric impact of attribute performances", *Journal of Retailing and Consumer Services*, Vol. 16, pp. 271-80.

Bagozzi, R.P. and Baumgartner, H. (1994), "The evaluation of structural equation models and hypothesis testing", in Bagozzi, R.P. (Ed.), *Principles of Marketing Research*, Blackwell, Cambridge, MA, pp. 386-422.

Baron, R. and Kenny, D. (1986), "Moderator-mediator variables distinction in social psychological research: conceptual, strategic, and statistical considerations", *Journal of Personality and Social Psychology*, Vol. 51 No. 6, pp. 1173-82.

Bloemer, J. and Kasper, H. (1995), "The complex relationship between consumer satisfaction and brand loyalty", *Journal of Economic Psychology*, Vol. 16, pp. 311-29.

Bloemer, J. and Odekerken-Schröder, G. (2002), "Store satisfaction and store loyalty explained by customer- and store-related factors", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, Vol. 15, pp. 68-80.

Bolton, R. (1998), "A dynamic model of the customer's relationship with a continuous service provider: the role of satisfaction", *Marketing Science*, Vol. 27 No. 1, pp. 45-65.

Bowen, J. and Chen, S. (2001), "The relationship between customer loyalty and customer satisfaction", *International Journal of Contemporary Hospitality Management*, Vol. 13 Nos 4/5, pp. 213-7.

Chandon, P., Morwitz, V. and Reinartz, W. (2005), "Do intentions really predict behavior? Self-generated validity effects in survey research", *Journal of Marketing*, Vol. 69 No. 2, pp. 1-14.

Chao, P. (2008), "Exploring the nature of the relationships between service quality and customer loyalty: an attribute-level analysis", *The Service Industries Journal*, Vol. 28 No. 1, pp. 95-116.

Chaudhuri, A. and Holbrook, M. (2001), "The chain of effects from brand trust and brand affect to brand performance: the role of brand loyalty", *Journal of Marketing*, Vol. 65, April, pp. 81-93.

Churchill, G. and Peter, J. (1984), "Research designs effects on the reliability of rating scales: a meta-analysis", *Journal of Marketing Research*, 21 November, pp. 360-75.

Cohen, J., Cohen, P., West, S. and Aiken, L. (2003), *Applied Multiple Regression/Correlation Analysis for the Behavioural Sciences*, 3rd ed., Lawrence Erlbaum Associates, Mahwah, NJ.

Colgate, M. and Danaher, P. (2000), "Implementing a customer relationship strategy: the asymmetric impact of poor versus excellent execution", *Journal of the Academy of Marketing Science*, Vol. 28 No. 3, pp. 375-87.

Colwell, S., Hogarth-Scott, S., Jiang, D. and Joshi, A. (2009), "Effects of organizational and serviceperson orientation on customer loyalty", *Management Decision*, Vol. 47 No. 10, pp. 1489-513.

Cooil, B., Keiningham, T., Aksoy, L. and Hsu, M. (2007), "A longitudinal analysis of customer satisfaction and share of wallet: investigating the moderating effect of customer characteristics", *Journal of Marketing*, Vol. 71, January, pp. 67-83.

Cronin, J., Brady, M. and Hult, G. (2000), "Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments", *Journal of Retailing*, Vol. 76 No. 2, pp. 193-218.

DeVellis, R.F. (1991), *Scale Development*, Sage Publications, Thousand Oaks, CA.

Dick, A. and Basu, K. (1994), "Customer loyalty: toward an integrated conceptual framework", *Journal of the Academy of Marketing Science*, Vol. 22 No. 2, pp. 99-113.

Evanschitzky, H. and Wunderlich, M. (2006), "An examination of moderator effects in the four-stage loyalty model", *Journal of Service Research*, Vol. 8 No. 4, pp. 330-45.

Fournier, S. (1998), "Consumers and their brands: developing relationship theory in consumer research", *Journal of Consumer Research*, Vol. 24, March, pp. 343-73.

Frazier, P., Tix, A. and Barron, K. (2004), "Testing moderator and mediator effects in counseling psychology research", *Journal of Counseling Psychology*, Vol. 51 No. 1, pp. 115-34.

Fullerton, G. (2005), "The impact of brand commitment on loyalty to retail service brands", *Canadian Journal of Administrative Sciences*, Vol. 22 No. 2, pp. 97-110.

Fullerton, G. and Taylor, S. (2002), "Mediating, interactive, and non-linear effects in service quality and satisfaction with services research", *Canadian Journal of Administrative Sciences*, Vol. 19 No. 2, pp. 124-36.

Gainer, B. (1993), "An empirical investigation of involvement with a gendered product", *Psychology & Marketing*, Vol. 10 No. 4, pp. 265-83.

Garbarino, E. and Johnson, M. (1999), "The different roles of satisfaction, trust, and commitment in customer relationships", *Journal of Marketing*, Vol. 63 No. 2, pp. 70-87.

García, J. and Caro, L. (2009), "Understanding customer loyalty through systems dynamics", *Management Decision*, Vol. 47 No. 1, pp. 151-72.

Gilly, M. and Zeithaml, V. (1985), "The elderly consumer and adoption of technologies", *Journal of Consumer Research*, Vol. 12, December, pp. 353-7.

Gomez, M.I., McLaughlin, E.W. and Wittink, D.R. (2003), "Do changes in customer satisfaction lead to changes in sales performance in food retailing?", Working Paper MS-14, Yale School of Management, Yale University, New Haven, CT.

Gupta, S. and Zeithaml, V. (2006), "Customer metrics and their impact on financial performance", *Marketing Science*, Vol. 25 No. 6, pp. 718-39.

Hallowell, R. (1996), "The relationships of customer satisfaction, customer loyalty, and profitability: an empirical study", *International Journal of Service Industry Management*, Vol. 7 No. 4, pp. 27-42.

Heskett, J.L., Jones, T.O., Loveman, G.W., Sasser, W.E. and Schlesinger, L.A. (1994), "Putting the service-profit chain to work", *Harvard Business Review*, March/April, pp. 164-74.

Homburg, C. and Giering, A. (2001), "Personal characteristics as moderators of the relationship between customer satisfaction and loyalty – an empirical analysis", *Psychology & Marketing*, Vol. 18 No. 1, pp. 43-66.

Jones, M., Mothersbaugh, D. and Beatty, S. (2000), "Switching barriers and repurchase intentions in services", *Journal of Retailing*, Vol. 76 No. 2, pp. 259-74.

Jones, T.O. and Sasser, W.E. Jr (1995), "Why satisfied customers defect", *Harvard Business Review*, Vol. 73, pp. 88-99.

Keiningham, T., Cooil, B., Aksoy, L., Andreassen, T. and Weiner, J. (2007), "The value of different customer satisfaction and loyalty metrics in predicting customer retention, recommendation, and share-of-wallet", *Managing Service Quality*, Vol. 17 No. 4, pp. 361-84.

Kim, J., Morris, J. and Swait, J. (2008), "Antecedents of true brand loyalty", *Journal of Advertising*, Vol. 37 No. 2, pp. 99-117.

Lambert-Pandraud, R., Laurent, G. and Lapersonne, E. (2005), "Repeat purchasing of new automobiles by older consumers: empirical evidence and interpretations", *Journal of Marketing*, Vol. 69, April, pp. 97-113.

Lemon, K., White, T. and Winer, R. (2002), "Dynamic customer relationship management: incorporating future considerations into the service decision", *Journal of Marketing*, Vol. 66, January, pp. 1-14.

Li, X. and Petrick, J. (2010), "Revisiting the commitment-loyalty distinction in a cruising context", *Journal of Leisure Research*, Vol. 42 No. 1, pp. 67-90.

Lichtlé, M. and Plichon, V. (2008), "Understanding better consumer loyalty", *Recherche et Applications en Marketing*, Vol. 23 No. 4, pp. 121-40.

Macintosh, G. and Lockshin, L. (1997), "Retail relationships and store loyalty: a multi-level perspective", *International Journal of Research in Marketing*, Vol. 14, pp. 487-97.

Mägi, A. (2003), "Share of wallet in retailing: the effects of customer satisfaction, loyalty cards and shopper characteristics", *Journal of Retailing*, Vol. 79, pp. 97-106.

Mittal, B. (1995), "A comparative analysis of four scales of consumer involvement", *Psychology & Marketing*, Vol. 12 No. 7, pp. 663-82.

Mittal, V. and Kamakura, W. (2001), "Satisfaction, repurchase intent, and repurchase behavior: investigating the moderating effect of customer characteristics", *Journal of Marketing Research*, Vol. 38, February, pp. 131-42.

Mittal, V., Ross, W. and Baldasare, P. (1998), "The asymmetric impact of negative and positive attribute-level performance on overall satisfaction and repurchase intentions", *Journal of Marketing*, Vol. 62, January, pp. 33-47.

Morgan, R. and Hunt, S. (1994), "The commitment-trust theory of relationship marketing", *Journal of Marketing*, Vol. 58 No. 3, pp. 20-38.

Neal, J.D., Sirgy, M.J. and Uysal, M. (1999), "The role of satisfaction with leisure travel/tourism services and experience in satisfaction with leisure life and overall life", *Journal of Business Research*, Vol. 44, pp. 153-63.

Ngobo, P. (1999), "Decreasing returns in customer loyalty: does it really matter to delight the customers?", *Advances in Consumer Research*, Vol. 26, pp. 469-76.

Oliver, R. and Satisfaction:, A. (1997), *Oliver: A Behavioural Perspective on The Consumer*, McGraw-Hill, New York, NY.

Oliver, R.L. (1999), "Whence consumer loyalty?", *Journal of Marketing*, Vol. 63, Special Issue, pp. 33-44.

Olsen, S. (2007), "Repurchase loyalty: the role of involvement and satisfaction", *Psychology & Marketing*, Vol. 24 No. 4, pp. 315-41.

Olsen, S., Wilcox, J. and Olsson, U. (2005), "Consequences of ambivalence on satisfaction and loyalty", *Psychology & Marketing*, Vol. 22 No. 3, pp. 247-69.

Onyeaso, G. and Johnson, W. (2006), "Using cointegration methods to estimate the interconnectedness of intangible strategic assets", *Management Decision*, Vol. 44 No. 9, pp. 1231-45.

Podsakoff, P., MacKenzie, S., Lee, J. and Podsakoff, N. (2003), "Common method biases in behavioural research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.

Pritchard, M., Havitz, M. and Howard, D. (1999), "Analyzing the commitment-loyalty link in service contexts", *Journal of the Academy of Marketing Science*, Vol. 27 No. 3, pp. 333-48.

Rust, R.T., Zahorik, A.J. and Keiningham, T.L. (1995), "Return on quality (ROQ): making service quality financially accountable", *Journal of Marketing*, Vol. 59, April, pp. 58-70.

Seiders, K., Voss, G., Grewal, D. and Godfrey, A. (2005), "Do satisfied customers buy more? Examining moderating influences in a retailing context", *Journal of Marketing*, Vol. 69, October, pp. 26-43.

Silvestro, R. and Cross, S. (2000), "Applying the service profit chain in a retail environment: challenging the satisfaction mirror", *International Journal of Service Industry Management*, Vol. 11 No. 3, pp. 244-68.

Slama, M. and Tashchian, A. (1985), "Selected socioeconomic and demographic characteristics associated with purchasing involvement", *Journal of Marketing*, Vol. 49, pp. 72-82.

Spence, M. and Brucks, M. (1997), "The moderating effects of problem characteristics on experts' and novices' judgements", *Journal of Marketing Research*, Vol. 34 No. 2, pp. 233-47.

Streukens, S. and Ruyter, K. (2004), "Reconsidering nonlinearity and asymmetry in customer satisfaction and loyalty models: an empirical study in three retail service settings", *Marketing Letters*, Vol. 15 Nos 2/3, pp. 99-111.

Trasorras, R., Weinstein, A. and Abratt, R. (2009), "Value, satisfaction, loyalty and retention in professional services", *Marketing Intelligence & Planning*, Vol. 27 No. 5, pp. 615-32.

Tuu, H. and Olsen, S. (2010), "Ambivalence and involvement in the satisfaction-repurchase loyalty relationship", *Australasian Marketing Journal*, Vol. 18 No. 3, pp. 151-8.

Verhoef, P. (2003), "Understanding the effect of customer relationship management efforts on customer retention and customer share development", *Journal of Marketing*, Vol. 67, October, pp. 30-45.

Verhoef, P., Franses, P. and Hoekstra, J. (2002), "The effect of relational constructs of customer referrals and number of services purchased from a multiservice provider: does age of relationship matter?", *Journal of Academy of Marketing Science*, Vol. 30 No. 3, pp. 202-16.

Wakefield, K. and Baker, J. (1998), "Excitement at the mall: determinants and effects on shopping response", *Journal of Retailing*, Vol. 74 No. 4, pp. 515-39.

Walsh, G. and Mitchell, V. (2005), "Demographic characteristics of consumers who find it difficult to decide", *Marketing Intelligence & Planning*, Vol. 23 No. 3, pp. 281-95.

Walsh, G., Evanschitzky, H. and Wunderlich, M. (2008), "Identification and analysis of moderator variables: investigating the customer satisfaction-loyalty link", *European Journal of Marketing*, Vol. 42 Nos 9/10, pp. 977-1004.

Wirtz, J. (2000), "An examination of the presence, magnitude and impact of halo on consumer satisfaction measures", *Journal of Retailing and Consumer Services*, Vol. 7, pp. 89-99.

Wittink, D. and Bayer, L. (1994), "The measurement imperative", *Marketing Research*, Vol. 6 No. 4, pp. 14-22.

Yi, Y. and La, S. (2004), "What influences the relationship between customer satisfaction and repurchase intention? Investigating the effects of adjusted expectations and customer loyalty", *Psychology & Marketing*, Vol. 21 No. 5, pp. 351-73.

Zeithaml, V. (1985), "The new demographics and market fragmentation", *Journal of Marketing*, Vol. 49, pp. 64-75.

Further reading

Conklin, M., Powaga, K. and Lipovetsky, S. (2004), "Customer satisfaction analysis: identification of key drivers", *European Journal of Operational Research*, Vol. 154, pp. 819-27.

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