

Customer attitudes of stayers and defectors in B2B services: Are they really different?

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ABSTRACT

Identifying attitudinal differences between stayers and defectors is important in establishing a deeper understanding of customer satisfaction and loyalty research. Both managers and academics often use global customer attitudes, such as customer satisfaction and behavioral intentions, as determinants of customer loyalty. The implicit assumption is that customer satisfaction and/or behavioral intentions are valid, and accurate, predictors of actual loyalty behaviors. This study compares customer attitudes of stayers and defectors in B2B services using respondents (primary decision makers) from a Fortune 100 company. The results show that the commonly used customer metrics of service quality, satisfaction, and behavioral intentions have some differences between stayers and defectors. However, these metrics are shown to be relatively weak differentiators of actual customer defection. The stayers and defectors are much more similar, than different, on most metrics. The most notable difference is price perceptions, where defectors appear to be more price sensitive than stayers. These findings have significant implications for the design and use of customer-focused research by managers.

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1. Introduction

Creating and maintaining customer loyalty has become a strategic imperative for service firms in recent years. Many practitioners and researchers have investigated a range of different customer attitudes that influence both loyalty intentions and behaviors. The customer attitudes have included: customer satisfaction; customer value; price perceptions; quality of relationship; and service quality (Anderson & Mittal, 2000; Capraro, Broniarczyk, & Srivastava, 2003; Cooil, Keiningham, Aksoy, & Hsu, 2007; Lam, Shankar, Erramilli, & Murthy, 2004). The investment of research time is because it is hoped that maintaining high levels of customer satisfaction and loyalty, leads to improved financial performance and competitive advantage (Heskett, Sasser, & Schlesinger, 1997; Rust, Zeithaml, & Lemon, 2000; Woodruff, 1997).

Many studies have found strong links between customer attitudes and customer loyalty behavior. For example, it has commonly been found that higher levels of customer satisfaction lead to higher levels of behavioral intentions, which in turn lead to stronger customer loyalty behavior which can be measured through: repeat purchases, increased share of wallet, positive word of mouth recommendations, and reduced customer acquisition cost (Cooil et al., 2007; Ganesh,

Arnold, & Reynolds, 2000; Reichheld, 1993). In fact, customer satisfaction has been empirically shown to be the predominant attitudinal metric used to detect and manage customers' likelihood to stay or defect (Capraro et al., 2003) with a large body of research providing support (Anderson & Sullivan, 1993; Bolton, 1998; Fornell, 1992; Ganesan, 1994; Mittal & Kamakura, 2001). The general consensus is that higher customer satisfaction leads to higher levels of repurchase intent, customer advocacy, and customer retention (Anderson & Sullivan, 1993; Bolton & Drew, 1991; Lam et al., 2004).

There are, however, a number of gaps in the research literature. One of the major weaknesses in satisfaction-loyalty studies is that loyalty has traditionally been conceptualized in terms of 'repurchase intentions' rather than 'actual loyalty behavior'. In effect, there is an assumption that 'repurchase-intentions' are a surrogate for actual 'repurchase-behavior'. However, very little research has actually validated that repurchase intentions (and other customer attitudes) are accurate predictors of actual customer loyalty or defection (Bolton, 1998; Bolton & Lemon, 1999; Bolton, Lemon, & Verhoef, 2008; Mittal & Kamakura, 2001).

Another gap in the literature is that most of these studies have been conducted at the macro level of analysis, using aggregate data from large databases such as the American Customer Satisfaction Index (e.g. Anderson, Fornell, & Lehmann, 1994; Anderson, Fornell, & Mazvancheryl, 2004; Fornell, Mithas, Morgeson, & Krishnan, 2006). Similarly, many studies have been conducted at the industry-level of analysis (e.g. Bansal, Taylor, & St. James, 2005; Keiningham, Cooil, Aksoy, Andreassen, & Weiner, 2007; Lam et al., 2004). While these types of studies make significant contributions and are excellent for

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theory development, senior executives typically want to see the benefits at the firm level, specifically for their own company or division (Bernhardt, Donthu, & Kennett, 2000).

Another concern with much of the existing literature is that most studies have focused on B2C markets. Understanding attitudes in a B2B context is also important because of the complexity of the ongoing relationship between the service provider and the business customer (Roberts & Merrilees, 2007). Williams, Khan, and Naumann (2010) assert that B2B services involve multiple individuals in both the service provider and the customer organization working closely with one another. Unfortunately, there is a lack of empirical research literature into customer attitudes in B2B markets (Lam et al., 2004). A challenge is therefore to better understand attitudinal behaviors in a B2B context.

The study presented here examines the key attitudes commonly measured in customer satisfaction research, and examines these attitudes in the context of actual loyalty behavior. Specifically, we compare the attitudinal differences between two groups of B2B customers from the same firm: those who renewed their service contracts and those who did not. We accessed attitudinal data for a large sample of customers from within a Fortune 100 firm, and then tracked these same customers over the contract renewal period to see whether they stayed with the firm or defected. We compared the key customer attitudinal dimensions of service performance; price perceptions; customer satisfaction; and future behavioral intentions of customers who stayed and those who defected. We expected that these metrics would be significantly different between the two groups, if, as the literature suggests, customer attitudes are valid differentiators of stayers and defectors.

2. Theoretical background

2.1. Customer satisfaction and loyalty

Customer satisfaction is an important construct in loyalty research. There is strong evidence of an overall positive main effect of the relationship between customer satisfaction, as an antecedent, on loyalty intentions and customer behaviors (Bolton, 1998; Mittal & Kamakura, 2001; Oliver, 1999; Rust et al., 2000; Sirdeshmukh, Singh, & Sabol, 2002). Essentially, higher satisfaction levels should lead to higher levels of loyalty intentions and behaviors (Anderson et al., 1994; Reichheld & Teal, 1996). This is reinforced by Heskett et al. (1997) who suggested that loyalty increases once ratings go beyond a certain satisfaction threshold as “delighted” customers are more likely to be loyal than merely “satisfied” customers (Oliver, Rust, & Varki, 1997).

Mittal and Lassar (1998) examined the relationship between satisfaction and loyalty intentions, as measured by the predisposition to switch among consumers. Of customers who were extremely or somewhat dissatisfied, the majority would consider switching. Similarly, even customers who were extremely satisfied, a large number would still consider switching. Mittal and Lassar (1998) concluded that high satisfaction does not ensure loyalty. Similarly, Ganesh et al. (2000) suggested that a service provider's customer base consisted of three types of customers; 1) those who were satisfied with a previous service provider, 2) those who were dissatisfied with a previous service provider, and 3) those who were first time adopters of a service. They found that consumers who had switched previously were less loyal than the first time adopters, regardless of their satisfaction level. Specifically, customers who were satisfied with a previous service provider's performance, but switched anyway were less loyal to their current supplier. First time adopters had the highest loyalty levels. In a replication of the Ganesh et al. (2000) study, Sood and Kathuria (2004) found similar results.

The implications of these results are that some switchers were dissatisfied with a previous provider's performance, and some switchers were satisfied. These two groups have differences in

satisfaction and loyalty intentions that carry forward into their current provider relationship. In short, it seems that customer satisfaction is not always a good predictor of behavioral intentions and actual loyalty behaviors. Several studies have found that many defectors had high prior customer satisfaction and behavioral intentions, thus questioning the satisfaction-loyalty linkage (Bennett & Rundle-Thiele, 2004; Chandrashekar, Rotte, Tax, & Grewal, 2007; Reichheld & Teal, 1996). While these studies focused on consumer markets, the same situation could exist in B2B services. These two viewpoints, for and against the satisfaction-loyalty linkage, are not in direct conflict with one another as it would initially appear. In fact, both viewpoints are, at the least, partially correct. For many customers, there is a strong and positive relationship between their satisfaction level and their loyalty intentions and/or behavior. This accounts for some of the statistically significant relationships between satisfaction and loyalty in the large body of customer satisfaction research. However, for some customers (defectors), the relationship between satisfaction metrics and loyalty behaviors is weak or non-existent. Against this conceptual background, we expected stayers to have higher satisfaction levels than defectors.

H1. The customer satisfaction levels of stayers will be higher than customer satisfaction levels of defectors.

2.2. Behavioral intentions and loyalty

Behavioral intentions have been the subject of various conceptualizations and extensive research. In particular, the link between customer satisfaction and behavioral intentions has been researched by marketers for many years (Fornell, Johnston, Anderson, Cha, & Bryant, 1996; Heskett et al., 1997; Zeithaml, Berry, & Parasuraman, 1996). Other researchers have found a strong positive direct effect between customer satisfaction and actual loyalty behavior (Bolton, 1998; Bolton & Lemon, 1999; Mittal & Kamakura, 2001). In these and other studies, customer satisfaction has been found to be an antecedent that has a strong, positive relationship with behavioral intentions.

Several studies have tended to assume that the customer attitude of ‘behavioral intentions’ is a good predictor of actual customer loyalty. Such studies have used behavioral intentions as the main dependent variable with other customer attitudes, such as satisfaction and service quality, serving as key antecedents. For example, Fornell et al. (1996) and Zeithaml et al. (1996) found a strong positive relationship between satisfaction and repurchase intentions. Others used satisfaction and behavioral intentions as independent variables when trying to explain actual loyalty behaviors (Bolton, 1998; Bolton & Lemon, 1999; Mittal & Kamakura, 2001). These researchers have found that customer satisfaction is strongly related to behavioral intentions when both are measured in the same cross-sectional survey (Mittal, Kumar, & Tsiros, 1999). The main implication of such studies is that customer attitudes that are closely linked to ‘intentions’ are considered a proxy for actual ‘loyalty’ behaviors. Unfortunately very few studies have measured whether the ‘behavioral intentions’ customer attitude translates into actual customer loyalty behaviors.

While some have conceptualized behavioral intentions as a single item question measuring the customer's likelihood to continue with the provider/customer relationship, most have suggested that the behavioral construct should consist of a ‘likelihood-to-continue’ question (a behavioral indicator) and a willingness-to-recommend question (an affective indicator) since both are good indicators of subsequent loyalty behavior (Dick & Basu, 1994; Johnson, Herrmann, & Huber, 2006; Reichheld, 2003; Sirdeshmukh et al., 2002). Many of these studies have used an aggregation of items to form a composite measure of behavioral intentions.

The literature also suggests that customers who stay because of high levels of satisfaction with the previous service provider are

generally characterized by the nature and level of their experience, commitment, and dependence (Ganesh et al., 2000). On the other hand, customers who defect for reasons other than dissatisfaction also possess prior experience, but the nature of their experience tends to differ from that of stayers. Ganesh et al. (2000) further, characterized stayers as customers exhibiting passive loyalty behaviors. This is consistent with the expectancy-disconfirmation theory that customers evaluate their satisfaction judgments with the product by comparing previously held expectations with perceived service (product) performance (Oliver, 1980, 1999). Based on extant theory, we thus expected satisfaction and behavioral intentions to be positively related. However, we expected stayers to have higher levels of behavioral intentions than defectors.

H2. The behavioral intentions levels of stayers will be higher than behavioral intentions levels of defectors.

2.3. Service performance and loyalty

It is well documented that various dimensions of service performance are important antecedents of customer satisfaction and behavioral intentions (Babakus & Boller, 1992; Cronin & Taylor, 1992; Zeithaml et al., 1996). However, there is a wide-range of conceptualizations of “service” in the literature (Pugh, 2001). While there is a consensus that service quality-performance is multidimensional, there is disagreement about which dimensions these are, resulting in confusion and complexity surrounding the construct.

Most service performance dimensions may have been drawn from the commonly used models of Servqual or Servperf (responsiveness, reliability, empathy, tangibles, and assurance) as reported in earlier studies (Cronin & Taylor, 1992; Parasuraman, Zeithaml, & Berry, 1994). Other studies have included a technical quality dimension, and a functional quality dimension (Grönroos, 1984; Mittal & Lassar, 1998). More recently, Brady and Cronin (2001) have included the dimensions of interaction quality (attitude, behavior, and expertise); environment quality (ambience, design, and social factors) and outcome quality (waiting time, tangibles, and valence). Many of these studies have focused on B2C service performance (Rauyruen & Miller, 2007), which also raises questions about their transferability to B2B services.

In B2B services, some have suggested that there are three major dimensions of service performance: structural quality, process quality, and outcome quality (e.g. Homburg & Garbe, 1999). Because of the technical nature of many B2B services, process quality may be the most important dimension in B2B relationships (Homburg & Rudolph, 2001). Zolkiewski, Lewis, Yuan, and Yuan (2007) expanded on this concept and suggested that there are four major service quality dimensions in B2B services: the core product/service mix, the attitudes and behaviors of service personnel, the physical environment, and the specific service encounter. They suggested that service quality is highly contextual, varying from situation to situation. Similarly, there is a strong emphasis on the personal interaction in B2B services between the service provider and the customer (Vargo & Lusch, 2004; Woo & Ennew, 2005), so we focused on the personal touchpoints of service performance in this study.

There are many possible touch points of personal interaction in B2B service delivery. The performances of technicians, account representatives, and call-center personnel have been identified as important dimensions of personal interaction in service delivery in previous research (Homburg & Rudolph, 2001; Jackson & Cooper, 1988; Patterson & Spreng, 1997; Rafaeli, Ziklik, & Doucet, 2008; Rauyruen & Miller, 2007; Schellhase, Hardock, & Ohlwein, 2000). Similarly, Svensson (2002) viewed service delivery as a dyadic interaction between the service provider and the customer. Thus, primary emphasis was placed on the touch points of personal interaction as determinants of service quality. As noted earlier in

the paper, dimensions of service performance are key drivers of satisfaction, we therefore expect these customer attitudes to be more favorable among stayers than among defectors. Therefore:

H3. The customer perceptions of service performance will be higher among stayers than those of defectors.

2.4. Price perceptions and loyalty

B2B customers are considered rational decision makers when evaluating value propositions, as they evaluate the expected product and service benefits against proposed prices when assessing expected value (Gale, 1994; Zeithaml, 1988). In B2B markets, customers are more sensitive to value, due to the complex products, greater bonds between parties, and larger size of accounts (Bendapudi & Leone, 2002; Coviello & Brodie, 2001). As price perceptions increase, customer satisfaction and behavioral intentions should decrease, even though there is very little research that has formally investigated this relationship (Bijmolt, Van Heerde, & Pieters, 2005; Dawes, 2009). One study has suggested that loyal customers are less price-sensitive (Reichheld & Teal, 1996). This would seem to suggest that price perceptions of stayers would be lower than price perceptions of defectors, as this would indicate more favorable attitudes toward price.

Johnson et al. (2006) found that value perceptions, of which price is a key component, were a more important predictor of behavioral intentions early in a supplier–customer relationship, but became less important over time. Cronin, Brady, and Hult (2000) considered price as an important influence on customer satisfaction, because of the necessary presence of a ‘value’ ingredient during customer’s evaluation of the purchase situation. Others have found that price perceptions to be negatively related to both customer satisfaction and behavioral intentions (Gill & Ramaseshan, 2007; Katsikeas & Leonidas, 1996; Lye & Hamilton, 2000; Noone & Mount, 2007).

Bolton and Lemon (1999) and Mattila and O’Neill (2003) suggested that price has a significant impact on overall customer satisfaction. However, regardless of how satisfied a customer is with the service provider, this may not be enough to override the direct influence that price has over behavioral intentions (Noone & Mount, 2007). Homburg, Hoyer, and Koschate (2005) studied the impact of price increases on behavioral intentions and found that satisfaction prior to a price increase mediates the effect of the magnitude of a price increase on behavioral intentions. It appears, therefore that price perceptions, in conjunction with other drivers are important factors to induce behavioral intentions (Martín-Consuegra, Molina, & Esteban, 2007).

Although the effects of price on customer satisfaction and behavioral intentions have been investigated in some previous studies, relationship between the variables is neither uni-directional nor conclusive (Bei & Chiao, 2001; Herrmann, Xia, Monroe, & Huber, 2007). However, consistent with our earlier assumptions, and extant theory, we expected defectors to have more negative price perceptions than stayers, when price is judged against the industry competitors, (Herrmann et al., 2007; Oliver & Swan, 1989; Zeithaml & Bitner, 1996). As such, the following hypothesis is advanced:

H4. The customer perceptions of price relative to industry competitors will be more negative (higher on scale) among defectors than stayers.

2.5. Inter-relationships between customer attitudes and loyalty behavior

Our first four hypotheses suggested that stayers should have more favorable attitudes than defectors. Next, we developed a conceptual model drawing upon the extant literature that presents expected inter-relationships among the constructs, to subsequently assess

whether the interrelationships between these constructs vary across the two groups. The expected paths and direction of relationships among the constructs are presented in Fig. 1. If customer attitudes on service performance, and customer satisfaction, are valid differentiators of stayers and defectors, we would expect to see differences in the path coefficients in the conceptual models of each group.

The earlier literature review indicated that there are several possible touch points of personal interaction in B2B service performance and delivery. The performance of technicians, account representatives, and call-center personnel were identified as important dimensions of personal interaction in service delivery performance (Homburg & Rudolph, 2001; Jackson & Cooper, 1988; Patterson & Spreng, 1997; Rafaeli et al., 2008; Schellhase et al., 2000) especially in a B2B situation. Intuitively, we would have expected that the impact of service performance (account rep, call center, and technicians) on satisfaction, would be stronger for stayers than for defectors. The reasoning behind this is that these three dimensions facilitate service delivery performance and are expected to reduce or even eliminate overall service failure across B2B contexts. However, there is no empirical support for our intuition that we can draw on, to determine whether the paths would be stronger or weaker between the two groups.

To our knowledge this is the first study to attempt to gain a deeper understanding of the attitudinal differences between the two groups using simultaneous modeling. We would however, expect the relative path coefficients to be different for the key variables when contrasted with the stayers group, relative to the defectors group. We do not know whether they will be stronger or weaker in each group. We based this assumption on the conceptual understanding that customer attitudes are key predictors of actual behavior, so if attitudes (and their interrelationships) are different they should enable a prediction of behavior (staying or defecting). In simple terms, we expected that some of the inter-relationship would be different between the two groups as the customer attitudes, were expected to influence the subsequent defection or retention of the customer with the firm. Therefore, our next hypothesis is:

H5. There will be significant differences between stayers and defectors, in the relative path coefficients between service performance, price perceptions, customer satisfaction and behavioral intentions.

3. Methodology

3.1. Research context and sample

The study was conducted in B2B services, more specifically facility management services in the US. The facility management services industry is made up of 6 very large firms that control 50–60% of the market share in the industry with the remainder of the market share

controlled by around 60 smaller service providers. These large firms manufacture and sell their own heating, ventilation, air conditioning, and security systems, and offer on-going service and maintenance contracts for this equipment. In addition, due to the very large capital investment, the firms in the industry compete for each others' on-going service contracts irrespective of the original brand of the equipment.

For the purpose of the study, data was collected from customers of a business unit of one of the six large firms, a Fortune 100 firm based in the US that provided B2B services. This business unit had approximately 30,000 service contracts at any given time generated about three billion dollars annually (approximately 65% of company total). The annual service contracts in this business unit typically ranged between \$10,000 and \$100,000, so the relationship between supplier and customer was substantial.

Every customer had an annual service contract for each facility being maintained. Hence, some individuals were responsible for multiple contracts. All customers who had a contract expiring exactly six months in the future went into the sample frame each month. Because we were attempting to contact every customer over the course of a year, we were technically attempting a census. The only "filtering" was to remove those respondents who had completed a survey in the past six months in order to avoid over-surveying. Each person in the sample frame was attempted up to five times by telephone in a two week window each month.

The typical respondent was a "key decision maker" identified at the initiation of the contract. At the time of surveying, over 80% of respondents viewed themselves as the primary decision maker in vendor selection or had major influence. The respondents came from medium and large businesses across a range of industries including education, healthcare, government, and various private organizations such as manufacturing and service businesses. Because the firm had a minimum threshold dollar amount for service contracts, there were no smaller firms in the customer base. The composition of the sample frame was about the same each month.

The firm had an on-going customer research program. All customers who had a service contract expiring in six months (the mid-point of their annual contract) went into the monthly sample frame. The surveys were conducted on the telephone with a key contact, typically the facilities manager, and took around 10 min to complete. The response rate of people contacted to completed surveys was around 60–65% which was considered acceptable (Babbie, 2007), and was probably due to customers agreeing to provide regular feedback when the initial maintenance contract was signed. Unfortunately we were not able to control the sample for any non-response bias, but with the high cooperation (response) rate this is unlikely to be a problem.

Stayers were defined as on-going customers who had completed a prior customer satisfaction survey but subsequently renewed their service contract. The stayers group consisted of 948 customer respondents. The second group, identified as defectors, was defined as those customers who had completed a prior customer satisfaction survey within the same time-frame as the stayers, but subsequently did not renew their service contract. To determine this group, the firm provided a list of 286 customers who had not renewed their service contracts during a period encompassing the same time frame as the stayers sample. Of the 286 defectors, there were 81 duplicate names, leaving an effective sample of 205. Of these 205, 75 (36.5%) had completed a prior customer satisfaction survey during the same time frame. These 75 defectors were independent of the stayers group, so there were no repeated measures issues.

We note the unequal sizes of our samples used in this study. One may argue that the unequal sizes resulted from the nature of the study population. According to Tabachnick and Fidell (1996), differences in sample sizes may indicate different attributes associated with various types of respondents (see e.g., Ganesh et al., 2000). However, Tabachnick and Fidell (1996) further argued that researchers should avoid equalizing samples artificially as it leads to distorting the

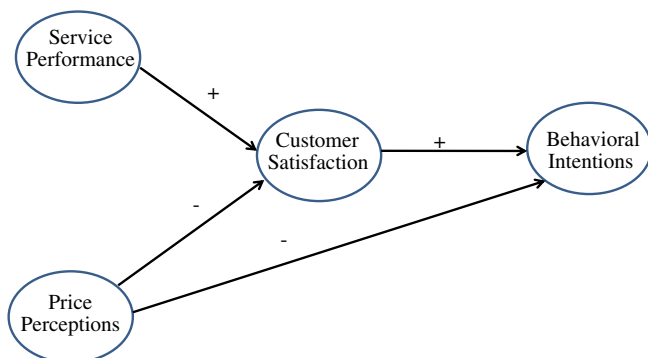


Fig. 1. Conceptual model of expected relationships.

differences and losing generalizability. Given the nature of our study whereby sample sizes are very different, we avoided any attempts to equalize the samples and used recommended analytical techniques such as partial least squares (PLS) to mitigate any potential distortion effects (Bagozzi & Yi, 1994).

3.2. Questionnaire and measures

The questionnaire was designed as part of the firm's on-going customer feedback program and was tailored towards the B2B context of the study (Barry, Dion, & Johnson, 2008; Tokman, Davis, & Lemon, 2007; Zolkiewski et al., 2007). Firstly we conducted in-depth interviews with customers about their key drivers of satisfaction to accurately capture the “voice of the customer” in this B2B context. The depth interviews helped us to identify the “key drivers” of satisfaction for these B2B customers in the US. The questionnaires were then circulated to a customer satisfaction steering committee within the firm, consisting of mid-level and higher executives, for review and revision.

Specific questions were aligned with internal processes and process metrics to allow customer feedback to drive the firm's Six Sigma process improvement initiative. The questionnaires were then pretested and revised before use. After several iterations, the questionnaire was finalized. The questionnaire included global customer attitudinal measures, and more company-specific questions about technicians, account reps, call center and price. A review of the questions by the research team suggested that they were closely linked to other academic and commercial research studies done previously, despite being adapted slightly to meet the specific feedback requirements of the firm. The items, constructs, and response scales are presented in Appendix A.

Where possible, we attempted to use multiple items to represent each of the constructs. However, after the first draft of the questionnaire was reviewed, the firm was concerned about the large number of questions and the respective length of time required to collect each survey. As such, we were asked to limit the number of questions collected as much as possible, thus restricting the number of items per construct. While this raises some questions of construct validity, we felt comfortable that the high response rates, large datasets, and relatively easy questioning, meant that this limitation was mitigated to some degree.

Our customer satisfaction construct consisted of a composite of two indicators, one question for “overall satisfaction” and one question for “met expectations” as practiced in other research studies (Andreassen & Lindestad, 1998; Lam et al., 2004). The behavioral intentions construct also consisted of a composite of “likelihood to renew” and “willingness to recommend”. Previous research has used multiple-item scales to measure behavioral intentions (Bloemer, de Ruyter, & Wetzels, 1999; Liu, Furrer, & Sudharshan, 2001). In these and similar studies behavioral (or repurchase) intentions is used as a surrogate for actual loyalty behavior. In our study, the two-item scale was considered suitable for measuring behavioral intentions in the light of its specific B2B context, and is consistent with previous research doing similar measurement (van Birgelen, de Jong, & de Ruyter, 2006; Yu & Dean, 2001). Service performance was measured as a second-order factor comprising three first order factors—account rep performance, technician performance and call center performance. Account reps performance and technician performance consisted of six items each, and call center performance was measured with three items. Finally, price perceptions were measured with three items.

3.3. Analytical techniques

We utilized partial least squares (PLS Graph version 3.00), a component based path modeling technique (Chin, 1998), to test the

hypotheses and assess differences between both groups. PLS was considered to be an appropriate methodology for a number of reasons. First, PLS is particularly well suited to operationalizing satisfaction and behavioral intentions models in an applied setting (Johnson & Gustafsson, 2000). Recently, PLS has been used in several B2B service studies supporting its use in this context (Cooil, Aksoy, Keiningham, & Maryott, 2009; Whittaker, Ledden, & Kalafatis, 2007). Second, PLS can deal with small sample sizes (as is the case with the defectors sample) because the iterative algorithm behind PLS estimates parameters in only small subsets of a model during any given iteration (Whittaker et al., 2007; Wold, 1985). Third, PLS can be used for both confirmatory and exploratory applications, since unlike LISREL, it does not try to go beyond the data (Wold, 1982). Consequently, in this research study, PLS makes it easier to explore the differences between defectors and stayers. PLS enables a simultaneous analysis of whether the hypothesized relationships at the theoretical level are empirically confirmed (Chin, 1998). Fourth, PLS results have been shown to be robust against multicollinearity (Cassel, Hackl, & Westlund, 2000). Our preliminary analysis of service performance, customer satisfaction and behavioral intentions inherently involves some possible multicollinearity issues as displayed in Table 2. PLS techniques can mitigate this problem in the data and limit the potential bias in the estimation results.

The measurement model was estimated using a repeated indicators approach, also known as the hierarchical components model, suggested by Wold (1985) and Chin, Marcolin, and Newsted (2003). Following the approach of Reinartz, Krafft, and Hoyer (2004) and Venaik, Midgley, and Devinney (2005), the second-order factor service performance was directly measured by observed variables for all the first order factors. The test of the measurement model for both groups included the estimation of internal consistency and convergent and discriminant validity. Convergent validity was examined item loadings on their associated factors (Hair, Anderson, Tatham, & Black, 2006). Discriminant validity was assessed by comparing the average variance shared between the constructs and their measures to the variances shared between the constructs themselves (Fornell & Larcker, 1981). Finally, in order to evaluate the structural model, the R^2 values for the endogenous constructs and the size, t statistics, and significance level of the structural path coefficients were computed using the bootstrap re-sampling procedure. Bootstrapping with 1000 bootstrap samples and sample sizes that are equal to the original sample sizes is fundamental for the significance of path coefficients (Efron & Tibshirani, 1993).

The differences between defectors and stayers were analyzed using path coefficients' comparison. Testing differences in path coefficients across groups requires that the latent variables are created in the same way for all groups (Carte & Russell, 2003). Since, in this study, we were using PLS and not a covariance-based modeling, it was not possible to analyze measurement model invariance by a comparison of fit statistics. Instead we addressed the measurement model invariance and variability between the two groups (difference in sample size) by using the bootstrapping technique in PLS, which involved re-sampling the dataset 1000 times (Efron & Tibshirani, 1993). Once done, we compared the path coefficients between the two groups by using a parametric procedure from Chin (2009), as originally described by Keil et al. (2000). This procedure is shown below and shows a t -distribution with $m + n - 2$ degrees of freedom (Fig. 2).

4. Results

4.1. Assessments of validity and reliability

Prior to testing the hypotheses, we assessed whether the same measurement model held for each sample by analyzing the measurement model invariance between defectors and stayers. Using the

$$t = \frac{Path_{sample\ 1} - Path_{sample\ 2}}{\sqrt{\left[\frac{(m-1)^2}{(m+n-2)} * S.E.^2_{sample\ 1} + \frac{(n-1)^2}{(m+n-2)} * S.E.^2_{sample\ 2} \right]} * \left[\sqrt{\frac{1}{m} + \frac{1}{n}} \right]}$$

Fig. 2. Formula for path coefficient comparisons. Path = path coefficient; SE = standard error; m = sample 1 size and n = sample 2 size. It determines a t-value with m + n – 2 degrees of freedom dependent on the standard error of the estimated path coefficients from bootstrapping as well as the sample size (Chin, 2009).

bootstrapping technique and the Fisher's z transformation, item loadings (as shown in Table 1) did not differ significantly across both samples. All individual item loadings were above 0.70 (Chin, 1998) and highly significant using the bootstrap results of PLS. All loadings and path coefficients between the first order constructs and second order construct were also inspected and were above the 0.70 threshold. Standardized factor scores (latent variable scores in this case as they come to represent the construct service performance in the structural model) were saved during this stage of the analysis.

We also found indications that the factor pattern was similar across the two groups. That is, our four-factor model fits the data well for both groups. Tenenhaus, Vinzi, Chatelin, and Lauro (2005) report a Goodness-of-Fit (GoF) measure for PLS based on taking the square root of the product of the variance extracted with all constructs with multiple indicators and the average R² value of the endogenous constructs. We calculated a GoF measure of between 0 and 1 where according to Cohen's (1988) categorizations and using 0.50 as a cut-off value for communality (Fornell & Larcker, 1981), the GoF criteria for small, medium and large effect sizes are 0.10, 0.25, and 0.36

respectively. The GoF measures were 0.73 for the defectors group and 0.60 for the stayers group. Moreover, values for blockwise average communalities greater than 0.6 are reasonable (ours is 0.74 for the defectors group and 0.79 for the stayers group). Overall, these results indicated very good fit suggesting that our model has good explanatory power in both groups and there was measurement model stability for the two groups.

All reliability measures for both samples were above the recommended level of 0.70 (see Table 1), thus indicating adequate internal consistency (Fornell & Bookstein, 1982; Nunnally, 1978). The average variance extracted scores (AVE) were also above the minimum threshold of 0.5 (Chin, 1998; Fornell & Larcker, 1981) and ranged from 0.64 to 0.91 in the defectors sample and from 0.61 to 0.83 in the stayers sample. Table 2 shows that the AVE of each construct was greater than any shared variance thus indicating discriminant validity in the constructs for both samples.

The predictive power of the structural model evaluation was verified by means of the Stone–Geisser test (Geisser, 1975; Stone, 1974), where cross-validated redundancy (Q²) must be higher than 0 in order to consider that the model, as it refers to each specific endogenous construct, has predictive power. Q-square is a measure of how well the observed values are reproduced by the model and its parameter estimates. Q-squares greater than zero imply that the model has predictive relevance, whereas Q-squares less than zero suggest that the model lacks predictive relevance. In the defectors group, Q-square was 0.61 for customer satisfaction and 0.53 for behavioral intentions. In contrast, in the stayers group, Q-square was 0.39 for customer satisfaction and 0.43 for behavioral intentions. As a result of these findings, we concluded that the model had a good degree of predictive power for both group subjects.

4.2. Descriptive analysis of the customer attitudes

Frequency distribution of the 18 items indicated no problems of floor or ceiling effects in the measurements. Kolmogorov–Smirnov and Shapiro–Wilk tests also showed that each indicator of the model constructs was normally distributed. By testing the structural means to identify differences of the levels of the latent variables (see Table 3), we found some statistically significant differences. In relation to customer satisfaction, significant differences were found in the mean scores between stayers versus defectors (t = –2.195, p < 0.05) with stayers perceiving higher levels of customer satisfaction (M = 3.79; SD = 0.72) when compared to defectors (M = 3.60; SD = 1.01). H1 is thus supported.

Similarly, with respect to behavioral intentions, significant differences were found in the mean scores between stayers versus defectors (t = –4.751, p < 0.01). Stayer respondents reported higher levels of behavioral intentions (M = 4.20; SD = 0.70) when compared to defector respondents (M = 3.79; SD = 0.91). H2 is also supported. It is interesting to note that the magnitude of difference is much greater for behavioral intentions than for satisfaction.

Further t-tests were conducted to assess any differences in price perceptions and service performance, when measured as a second order factor from its first order factors—account rep performance, technician performance, call center performance. No significant differences were found between stayers and defectors in the mean

Table 1
Model validation results for defectors and stayers.

Construct name and items	Defectors (n = 75)			Stayers (n = 948)		
	Loading	IC	AVE	Loading	IC	AVE
Service performance (higher order construct)		0.96	0.64		0.95	0.61
Technician performance				0.92		
Account rep. performance	0.90			0.92		
Call center performance	0.89			0.88		
Technician performance		0.93	0.72		0.93	0.71
Courteous and friendly	0.79			0.80		
Maintenance work complete	0.75			0.81		
Technical competence	0.89			0.86		
Communicating effectively	0.86			0.87		
Promptness of call handling	0.92			0.89		
Resource allocation	0.88			0.79		
Account rep. performance		0.95	0.76		0.94	0.72
Technical knowledge	0.81			0.81		
Keeping in touch	0.82			0.86		
Arriving when promised	0.87			0.85		
Timeliness of quotes	0.90			0.85		
Listening and solutions	0.91			0.89		
Proposals understandable	0.81			0.82		
Call center performance		0.97	0.91		0.94	0.83
Promptness handling	0.96			0.91		
Quickly directing resources	0.96			0.92		
Scheduling services timely	0.95			0.90		
Price		0.88	0.71		0.88	0.70
New system prices	0.88			0.87		
Replacement parts prices	0.76			0.84		
System maintenance prices	0.88			0.80		
Customer satisfaction		0.94	0.89		0.89	0.80
Customer satisfaction	0.95			0.91		
Met expectations	0.94			0.88		
Behavioral intentions		0.93	0.87		0.88	0.79
Willingness to recommend	0.95			0.91		
Likelihood to renew	0.92			0.86		

Notes: IC: internal consistency; AVE: average variance extracted.

Table 2
Shared variance and (average variance extracted) for main constructs.

	Service perf.	Price perceptions	Customer satisfaction	Behavioral intentions
Service perf.	0.64 (0.61)			
Price perceptions	0.08 (0.01)	0.71 (0.70)		
Customer satisfaction	0.61 (0.47)	0.17 (0.02)	0.89 (0.80)	
Behavioral intentions	0.56 (0.39)	0.10 (0.04)	0.61 (0.55)	0.87 (0.79)

Note: Stayers in parenthesis.

scores for service performance. Thus H3 was rejected. In addition the hypothesis H4 to assess differences in price perceptions was also rejected as there were no statistical difference in the two means of stayers and defectors.

4.3. Analysis of the inter-relationships between the customer attitudes

Table 4 shows the results of the hypotheses testing of H5, including the path coefficients as well as the t values for the defectors and stayers groups using the bootstrapping method in PLS. In order to fully establish the stability and significance of our parameter estimates, we computed the t values on the basis of 1000 bootstrapping runs.

The explained variances and the t values for the differences between defectors and stayers (t value diff) using Chin's (2009) procedure are also shown. For the defectors group, three of the four hypothesized relationships are significant. Customer satisfaction is strongly influenced by service performance ($\beta = 0.73$, $t = 11.97$). Customer satisfaction is also a significant predictor of behavioral intentions ($\beta = 0.73$, $t = 11.99$). Price perceptions have a significant negative influence on customer satisfaction ($\beta = -0.21$, $t = 2.15$) but have no significant direct effect on behavioral intentions. The non-significant direct relationship between price and behavioral intentions and the significant price-customer satisfaction-behavioral intentions link suggests that customer satisfaction is a mediator of price on behavioral intentions in the defectors group.

In the stayers group, three of the four hypothesized relationships are also significant. As expected, customer satisfaction is influenced by service performance ($\beta = 0.68$, $t = 34.39$). Customer satisfaction ($\beta = 0.78$, $t = 38.52$) and price ($\beta = 0.11$, $t = 4.41$) are also significant predictors of behavioral intentions with the effects being significantly stronger for customer satisfaction. Price perceptions, however, have no significant direct effect on customer satisfaction ($\beta = 0.04$, $t = 1.34$). However, the relationship between price and behavioral intentions should be treated with caution, even though it is statistically significant, since the substantive value of the path must also be considered. Paths of 0.10 for example, at best, represent a one-percent explanation of variance (Chin, 1998). Meehl (1990) argues that anything lower may be due to what he has termed the crud factor

Table 3
Descriptive results: mean scores of construct items.

	Defectors n = 75		Stayers n = 948		T test significance
	Mean	SD	Mean	SD	
Customer satisfaction	3.60	1.01	3.79	0.72	Yes ($p < 0.05$)
Behavioral intentions	3.79	0.91	4.20	0.70	Yes ($p < 0.01$)
Service performance	3.79	0.87	3.80	0.75	n.s.
Technician performance	3.96	0.87	4.00	0.75	n.s.
Account rep performance	3.75	0.89	3.78	0.78	n.s.
Call center performance	3.86	1.11	3.81	0.87	n.s.
Price perceptions	2.35	0.49	2.43	0.48	n.s.

Note: Scale 1–5.

where “everything correlates to some extent with everything else” (p.204) because of “some complex unknown network of genetic and environmental factors” (p.209). Therefore, at best, the relationship between price perceptions and behavioral intentions is weak among stayers even though it is statistically significant.

A comparison of the defector and stayers groups with respect to the effects of service performance on customer satisfaction (see t-value, diff in Table 4) shows that the path coefficients are significant and positive for each group, but there are no significant differences between the groups. The findings in Table 4 also suggest that there are no significant differences between both groups when examining the effect of customer satisfaction on behavioral intentions. Price, however, is a significant predictor of customer satisfaction for defectors suggesting that negative price perceptions have a negative impact on perceptions of customer satisfaction, but the relationship is non-significant for stayers. Table 4 also indicates that there is a significant difference in the path coefficients between the two groups.

Therefore, there is partial support for H5 as path coefficients for price to satisfaction is statistically different for both groups. The relative stability of the other path coefficients suggests that in this study, loyal customers do not tend to conceptualize their relationship with the firm differently than those who defected in terms of service performance, customer satisfaction and behavioral intentions. However, price plays a significant influence on satisfaction for the defectors group and not the stayers. Finally, there is no significant difference in the t-value for both groups when comparing path coefficients between price perceptions and behavioral intentions.

Although PLS estimation does not utilize formal indices to assess overall GoF such as GFI, CFI, chi-square values, NNFI and RMSEA, it can be demonstrated by strong factor loadings, high R² values combined with the substantial and statistically significant structural paths (Chin, 1998; Tenenhaus et al., 2005). Standardized paths should be at least 0.20 in order to considered meaningful (Chin, 1998). In accordance with the categorization of effect sizes by Cohen (1988) [small: 0.02; medium: 0.13; large: 0.26], we concluded that all of these effect sizes are large, with R² values of 0.66 and 0.61 in the defectors group and 0.47 and 0.56 in the stayers group.

5. Discussion and implications

Customer satisfaction and behavioral intentions are among the most common customer attitude metrics used in loyalty research. In this study, there appears to be a number of similarities in customer attitudes between stayers and defectors as well as a number of differences. To illustrate, both average mean scores for satisfaction and behavioral intentions were higher for stayers than for defectors, and these differences were statistically significant. This would appear to indicate that lower satisfaction scores and lower behavioral intentions scores are indicators of future disloyalty. In particular, the magnitude of difference between the behavioral intentions scores suggests that it is a key indicator.

Additionally, both stayers and defectors had very similar perceptions of service performance. The average mean scores for account reps, technicians, and call center performance were not significantly different between the two groups. In other words, defectors did not view the supplier's performance in these areas as any worse than stayers. Similarly, both stayers and defectors had about the same perceptions of price levels. Defectors did not perceive prices to be significantly higher than stayers. We would have expected defectors to have more negative perceptions of price, but this was not evident in the study findings. While satisfaction and behavioral intentions appear to be weak differentiators of stayers and defectors, service performance or price differentiated between the two groups when the mean scores were compared. Very similar results were found when the conceptual model of interrelationships was tested.

Table 4
PLS results of the hypotheses testing.

	Defectors n = 75			Stayers n = 948			Diff in path coefficient	t-value
	Path coefficient	t-value	Hypothesis support	Path coefficient	t-value	Hypothesis support		
Effects on customer satisfaction	R ² = 0.66			R ² = 0.47				
Service performance	+0.73	11.97****	Yes	+0.68	34.39****	Yes	0.05	0.69
Price	-0.21	2.15**	Yes	+0.04	1.34	No	0.25	2.56**
Effects on behavioral intentions	R ² = 0.61			R ² = 0.56				
Price	-0.002	0.02	No	-0.11	4.41****	Yes	0.11	1.15
Customer satisfaction	+0.73	11.99****	Yes	+0.78	38.52****	Yes	-0.05	0.72

**** p < 0.000.

** p < 0.050.

According to extant theory, customers who defect should conceptualize the relationship with the firm differently. However, there were, again, more similarities than differences. The paths between service performance, satisfaction and behavioral intentions were all significant, and essentially similar, for both stayers and defectors. This contradicts earlier studies indicating that these human factors discriminate between switchers and stayers (Ganesh et al., 2000), but confirming other studies into service quality and satisfaction (Bitner, Booms, & Mohr, 1994; Rust & Zahorick, 1993). This appears to indicate that the service performance to satisfaction relationship may be contextual.

While such findings are interesting and to some extent noteworthy, the use of path modeling in this study also enabled the researchers to fully explore the simultaneous relationships of the key attitudinal variables and measure any differences between the two groups. Again, there are a number of similarities and differences suggesting that some of the typical attitudes such as service performance, and satisfaction may not differentiate between stayers and defectors. Our results appear to contradict earlier studies that service performance, customer satisfaction, and behavioral intentions are indicators of loyalty behavior—switching or staying (Bolton, Lemon, & Bramlett, 2006; Ganesh et al., 2000; Mittal and Lassar, 1998). It would seem therefore that some customer attitudes are relatively weak predictors of actual staying or defecting behavior as they do not easily differentiate between the two groups in this study. This also links our study more closely with other studies who have found similar discrepancies (Chandrashekar et al., 2007; Reichheld & Teal, 1996; Szymanski & Henard, 2001). In this study, there are many more similarities in customer attitudes between stayers and defectors than there are differences suggesting that satisfaction and behavioral intentions do not do a particularly good job of differentiating stayers and defectors in this B2B context.

The most significant finding involved price perceptions when loaded into the path model for each group. Both stayers and defectors perceived price levels as about the same level (H4), yet, in our model, price was significantly and strongly related to satisfaction among defectors, but not for stayers. Since there were no differences in perceptions of price levels, a possible explanation is that defectors were more price sensitive than stayers, something found previously in the B2C banking sector (Santonen, 2007). This is also consistent with other studies that have found that the majority of defectors leave because of price issues (Colgate & Hedge, 2001; Keaveney, 1995; Reichheld, 1993). The implication appears to be that price sensitivity may be the best differentiator between stayers and defectors in B2B markets possibly due to the complex products, greater bonds between parties, and greater value accounts (Bendapudi & Leone, 2002; Coviello & Brodie, 2001). The variables tested in the model did not differentiate between stayers and defectors very well. This begs an obvious question. If customer attitudes do not differentiate between stayers and defectors, what does? The answer may be found in issues

that extend well beyond the traditional boundaries of customer satisfaction research.

The findings in this study have several implications for managers who are seeking to retain customers in a B2B services context. Firstly, the descriptive results suggest that customers who actually defect have significantly lower satisfaction and behavioral intentions levels than customer who stay. By tracking such metrics over time, managers should be able to identify customers who have a higher propensity not to renew their maintenance contract. As customer attitudes were measured in this study during the three to six months period immediately prior to the contract renewal deadline, managers should plan for relationship management strategies that help to manage these disgruntled customers over the immediate contract renewal period. In effect, the supplier should become more “intimate” over the short-term contract renewal period. Relationship management strategies could include: close proximity of contact personnel; one-to-one discussions and courtesy calls; provision of bespoke services that are tailor-made for the ‘at-risk’ customers; effective use of CRM software; and key-account management. In particular the strong drop in “behavioral intentions” scores for customers who did not renew seems to be a particularly useful indication of non-renewal.

Another managerial implication is that service performance is still an important factor in the satisfaction, behavioral intentions equation. We justified through the literature, the importance of contact personnel and ‘touchpoints’ of service in a B2B environment. Even though our results suggest service performance does not differentiate very well between stayers and defectors, it still plays a relatively strong direct influence on the variance in customer satisfaction in both groups (stayers $\beta = 0.68$; defectors $\beta = 0.73$). As customer satisfaction levels influence behavioral intentions strongly, service performance needs to be maintained consistently and well throughout the whole contract period. The model indicates that service performance metrics should be still included in models of retention. We acknowledge the relatively narrow conceptualization of “service” in this B2B study. However, the personal contact touchpoints of service performance that were operationalized, appear to be key determinants of customer satisfaction, which directly affects behavioral intentions. This seems to reinforce the need for managers to invest in effective human resource strategies for their people who interact with customers: account representatives; call center staff and service technicians. This may include appropriate HR strategies for recruitment, retention, incentives or training of such personnel.

Another implication from this study is the indication that customers who defect appear to be more price-sensitive. While we suggest that other research studies should examine this empirically, the price perceptions of defectors had a direct and significant impact on customer satisfaction in this study. For stayers, price perceptions had a negligible effect on both customer satisfaction and behavioral intentions when the relationships were measured simultaneously. Coyles and Gokey (2005) found that in most industries, more

customers change their spending behavior than defect, suggesting that managers should manage price-sensitive customers differently as they are probably more likely to want to stay with the firm than leave.

For example, managers may wish to invest in relationship management strategies as noted earlier, for the key accounts that are identified as price sensitive. More specifically, there may be bonds that can be established with such customers—such as relocating a dedicated service technician on-site to manage the relationship over the period of the contract renewal period. In addition, both the supplier and the customer have invested significant amounts of time, energy, capital, technology over the term of the contract, and are unlikely to want to change due to customer inertia and switching costs in B2B services as they are relatively high due to the size of the maintenance contracts. Managers, during courtesy visits and calls to customers, may with subtlety, highlight and reinforce problems faced by firms who switch such as extra time, costs, effort, loss of trust, loss of knowledge, and other risks from changing suppliers (Lam et al., 2004). Conversely, they may also reward customers who renew multiple contracts, over longer time periods with additional services that are personalized, and dedicated to the firm.

As rational decision makers in B2B markets, customers are obviously seeking the optimum value for their firms. As such, managers need to respond to these price-sensitive customers by focusing on “benefits” of the services, products, packages that offer unique value propositions to these customers rather than on the “sacrifices” such as price. For example, once a price-sensitive customer is identified, managers should focus on providing the best quality goods and providing “superior” services for such customers. By providing benefits, through added-value services, rather than price reductions, at contract renewal time the customer will be focused on the superior service they have received, rather than the cost of receiving the service.

6. Conclusions and directions for future research

Given the cross-sectional nature of our study, we can only identify possible relationships between the variables, so causality in direction and influence of these relationships cannot be inferred. To reveal causal direction of these relationships would require a more quasi-experimental design or longitudinal study (Barry et al., 2008) which should prove fruitful in better understanding loyalty behaviors. Broadening the scope of customer research in other ways could also be helpful.

For service providers, our study also raises the issue of increasing the awareness of the price sensitivity of customers as a research variable, especially when studying defection. Regardless of customer satisfaction levels, service providers need specific marketing strategies to address issues pertaining to stayers and defectors. Price sensitivity appears to be related to loyalty, but identifying price sensitive B2B customers is seldom addressed in either academic or corporate customer satisfaction research.

It appears that some customer attitudes are not particularly good predictors of customer loyalty, with a range of other possible alternatives that could influence customer loyalty behaviors. For example other factors such as: customer acquisition strategies, industry issues, length of relationship, perceptual changes over time, competitive intensity, customer inertia, switching costs and changes within a customer organization could all influence loyalty behaviors by B2B customers. All of these issues should be integrated into future research studies in the relationship between customer attitudes or stayers and defectors.

For example, customer acquisition strategies could directly influence customer loyalty. If a firm used a low bid to acquire a customer, the firm would, in effect, be acquiring a price sensitive customer (i.e. disloyal to another supplier) who would probably leave for the next low bid at contract renewal time. This would be consistent with the Ganesh et al. (2000) research. Business customers acquired through a merger or acquisition could be disaffected by the transition and be less loyal. The

implication is that a firm's customer acquisition strategy could directly affect subsequent loyalty, but this is seldom addressed in research. Similarly, industry factors could influence customer loyalty. Customer organizations in declining industries (mining, forest products, and automotive) could have much lower loyalty than customers in growing industries. Customer organizations with a declining market share may be less loyal due to slow, or negative, growth. The implication is that a customer organization's industry can directly affect customer loyalty.

Further research should also address some of the methodological weaknesses in our study. Our survey questions and scale development were based largely on the B2B services literature but have not been fully validated in this context. The influence of the management team of the firm in this study meant we had to reduce the number of questions, affecting the number of items per construct. In particular, as Whittaker et al. (2007) suggest, we ended up with rather simplistic operationalization of the key dimensions. This limitation meant we could not run sophisticated multivariate statistical analysis, such as covariance based structural equation modeling. While we explored the data using PLS, more accurate prediction models should be developed under quasi-experimental conditions.

In conclusion, this study has made one of the first attempts to track customer attitudes in relation to actual loyalty behavior. It has shown that such data is not particularly effective at predicting defection or staying with a firm in a B2B services context. Price perceptions were the only significant difference in changing the nature of the supplier–customer relationship, indicating that some customers are more price-sensitive than others. Conducting the study at the firm-level has been useful, as it has allowed the researchers to access real customers, who actually defected or stayed with a firm. Many studies have implicitly measured loyalty behavior from loyalty intentions which is inherently problematic. Finally the use of PLS has been noteworthy as the data could be explored without many of the constraints of some multivariate statistical techniques. Firms have invested significant amounts into service quality and customer satisfaction programs as key metrics to measure performance of the firm and gain an indication of customer loyalty. The results of this study suggest that customers who defect may have lower customer satisfaction and behavioral intentions levels than stayers. Similarly, defectors appear to be more price sensitive than stayers, suggesting that “price-sensitivity” should be an additional variable to be used when measuring customer metrics for the firm.

Appendix A. Constructs and measurement items

Construct	Measurement items
Technician performance	Courteous and friendly Maintenance work complete Technical competence Communicating effectively Promptness of call handling
5 point scale (excellent to poor) Account rep. performance	Resource allocation Technical knowledge Keeping in touch Arriving when promised Timeliness of quotes Listening and solutions
5 point scale (excellent to poor) Call center performance	Proposals understandable Promptness handling Quickly directing resources Scheduling services timely
5 point scale (excellent to poor) Price	New system prices Replacement parts prices System maintenance prices
5 point scale (Sig above to Sig below industry average) Customer Satisfaction	Customer satisfaction Met expectations
5 point scale (very satisfied to very dissatisfied) Behavioral intentions	Willingness to recommend Likelihood to renew
5 point scale (definitely to definitely not recommend/renew)	

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