

IDENTIFYING THE KEY DRIVERS OF CUSTOMER SATISFACTION AND REPURCHASE INTENTIONS: AN EMPIRICAL INVESTIGATION OF JAPANESE B2B SERVICES

**M. Sajid Khan , American University of Sharjah, United Arab Emirates
Earl Naumann, American University of Sharjah, United Arab Emirates
Paul Williams, American University of Sharjah, United Arab Emirates**

ABSTRACT

The purpose of this article is to report the results of a study that examines the drivers of customer satisfaction and repurchase intentions among Business-to-Business (B2B) service customers in Japan. The article offers both a conceptual and practical review of the literature surrounding service performance, customer satisfaction, and repurchase intentions in B2B services. Using a sample of 700 managers in Japan and a structural equation modelling approach, several significant drivers of customer satisfaction and repurchase intentions were found from both the supplier's product and service delivery performance. We found that the service delivery dimensions of account rep and technician performance, as well as product perceptions, were strongly related to customer satisfaction, which, in turn, was strongly related to repurchase intentions. Price perceptions were not related to satisfaction but were related to repurchase dimensions. The results have implications for both academic research and managers who are interested in managing the customer interface more effectively in Japanese B2B services.

BACKGROUND TO THE STUDY

Based on a worldwide survey of CEO's of multinational corporations, improving customer loyalty and retention was one of the top two or three major challenges facing their organizations (Briscoe 2002). These firms continue to allocate substantial resources to programs that measure customer perceptions of service quality, satisfaction, perceived value, and repurchase intentions. The hope is that by tracking such customer perceptions, the firm can quickly identify gaps in operational performance, fill those gaps to better meet customer demands, and hopefully retain the customers for the future. The overriding goal of these programs is increased

customer satisfaction and loyalty, which provides a number of associated financial benefits for firms.

There has been a good deal of recent academic research focusing on the financial benefits of high customer satisfaction (Anderson, Fornell, and Mazvancheryl 2004; Gruca and Rego 2005; Homburg, Koschate, and Hoyer 2005; Reichheld 2006; Williams and Naumann 2011). For example, customer satisfaction has been found to positively and directly influence the following business indicators: customer repurchase intentions (Anderson and Sullivan 1993; Curtis, Abratt, Rhoades, and Dion 2011; Mittal and Kamakura 2001); positive word of mouth (Parasuraman, Berry, and Zeithaml 1991); financial performance (Anderson, Fornell, and Lehmann 1994; Anderson and Mittal 2000; Bernhardt, Donthu, and Kennett 2000); and equity prices (Anderson et al. 2004; Keiningham, Aksoy, Cooil, and Andreassen 2008). In short, high and/or improved customer satisfaction typically leads to improved revenue flows, profitability, cash flow, and stock price of the firm.

The vast majority of this research is based on U.S. data, often using the American Customer Satisfaction Index and public financial databases such as Compustat. There has been little published research that has examined customer satisfaction and repurchase intentions in a Japanese B2B services context. Japan is the third largest economy in the world, and the fourth largest market for U.S. exports (OECD 2011). However, the Japanese culture is distinctly different from the U.S. culture, possibly leading to differences in the drivers of satisfaction and loyalty. Therefore, a better understanding of decision making in Japanese companies is important, especially for the multi-national corporations that dominant world trade.

Given the pervasive influence of national culture on many consumer attitudes (Donthu and

Yoo 1998; Furrer, Liu, and Sudharsan 2000; Khan, Naumann, Bateman, and Haverila 2009; Mattila 1999; Reimann, Lunemann, and Chase 2008), we wanted to explore Japanese customer perceptions and their influence on satisfaction and repurchase intentions. Ueltschy, Laroche, Aggert, and Bindl (2007) studied service quality perceptions and customer satisfaction in a cross cultural study of the U.S., Germany, and Japan, but did not specifically address repurchase intentions. Barry, Dion, and Johnson (2008) included Japan as one of 42 countries in their cross cultural study of consumer relationships, but did not address repurchase intentions. Others have examined specific aspects of supplier-customer interactions, but not repurchase intentions (Johansson and Roehl 1994; Reisinger and Turner 1999). Given this evidence, there appears to be very little research that has examined repurchase intentions in Japan. Since repurchase intentions are typically a strong predictor of actual loyalty behavior (Curtis et al. 2011), the lack of research in a Japanese B2B context is a gap in the literature.

As many U.S. firms globalize their operations, it is important to examine cross-national differences in consumer attitudes and behaviors (Morgeson, Mithas, Keiningham, and Aksoy 2011). Firms that understand how to improve customer satisfaction and repurchase intentions in foreign markets will likely gain competitive advantages. A review of the literature reveals that most previous satisfaction and loyalty research has been conducted in the U.S. and Europe, so adding a Japanese cultural dimension could enhance our understanding in a different cultural context. Certainly, it was expected that the Japanese cultural preference for long term personal relationships would influence the drivers of satisfaction and repurchase intentions.

To summarize, the specific purpose of the study presented in this article was to identify the key drivers of customer satisfaction and repurchase intentions in a Japanese B2B services context. The intent was to examine the direct relationships between the keys drivers and the dependent variables. A large sample of Japanese managers (n=700) who had major influence in the selection and evaluation of service providers *in the facilities management industry* were surveyed. In the following sections, we review the literature related to Japanese cultural dimensions, in general, and then specifically towards service

performance, customer satisfaction, and repurchase intentions.

THEORETICAL REVIEW AND RESEARCH HYPOTHESES

The Expected Impact of Japanese Culture on Customer Attitudes

The traditional view of the operation of multinational corporations (MNCs) often compared “home” and “host” country distinctions (Hymer 1960; Buckley and Casson 1976). This focus often dealt with internationalization issues and business practices across borders. The more recent, broader view of the MNC is an organization that operates in spatial heterogeneity (Dunning 1998, 2009). Spatial heterogeneity, or space, is typically viewed as the “distance” of geographic, cultural, economic, and political dimensions (Ghemawat 2001). This view contends that all aspects of distance and space should be evaluated when an MNC is formulating international strategies. A major challenge for MNCs is managing the increasing global interface between people, nations, and cultures, while maintaining local distinctiveness (Meyer, Mudambi, and Narula 2011). One purpose of this article is to examine the impact of one aspect of distance, psychic or cultural distance, on the formulation of repurchase intentions in Japan in a B2B Services context.

There are several taxonomies that have been widely used to classify cultures, and cultural distance, such as: masculine-feminine, individual-collective, and low context-high context (Hofstede and Bond 1988; Triandis 1989). While these taxonomies appear to have direct relevance to this study, additional cultural factors will be highlighted here to reinforce their potential impact on customer attitudes. Hofstede (1991) finds that the U.S. and Japanese cultures differ significantly on most of the widely used dimensions of culture. In general, Japan is widely considered to have a more collectivist and high-context culture compared to most Western countries (Furrer et al. 2000).

As a highly collectivist culture, Japanese citizens place group interests ahead of individual interests (Kim, Triandis, Kagitcibasi, Choi, and Yoon 1994). For example, Lohtia, Bello, and Porter (2009) found that the Japanese notion of collectivism motivates Japanese buyers to develop

and maintain close relationships with sellers. Similarly, Huff and Kelly (2003) conclude that organizations from collectivistic cultures find it difficult to trust external partners, particularly from other cultures or groups. This collectivism may lead to a more dispersed decision making process in an organization, involving more participants. The more diverse group may lead to somewhat different decision criteria in evaluating satisfaction and making repurchase decisions.

Japan has also been identified as having a high-context culture (Hall, 1987). According to Lohtia et al. (2009), high context cultures stress relationship closeness and the personal nature of business interactions. *Ningen kankei*—the necessity of establishing social bonds—is a key part of business in Japan. With such bonds and personalization important to Japanese, the service climate and the personal interactions through the service interface are likely to be very important to the development of long term relationships between buyers and sellers. Due to its high-context nature, communication and meaning are often implicit in Japanese culture. For example, the use of nonverbal cues, subtle recognition of the status of individuals, and the prevention of loss of “face” are common in Japan (Irwin, 1996).

Such subtle, high-context activities are very important in communication in Japan but are less important in Western cultures. In Western businesses, interaction is often seen more objectively through its focus on the task, time efficiency, and service processes rather than non-verbal recognition and personalization. In terms of customer attitudes, business customers in Japan are thus more likely to place a strong emphasis on the personal service interactions with the supplier’s personnel. Collectively, we would expect that these cultural tendencies would cause respondents in our study to highly value personal interaction with service provider personnel. The touch points of personal interaction between a service provider and the customer should be relatively more important in Japan than in the Western countries.

Another cultural factor that is likely to affect business practices is the Japanese emphasis on developing and maintaining long-term relationships between organizations (Czinkota and Woronoff, 1986). Relationships and trust are very important when conducting business in Japan (Johnson, Sakano, and Onzo 1990; Kim and Michell 1999). The long term, mutually

beneficial supply chain orientation that is common in Japan implies the importance of the customer partnerships and alliances between members. Hodgson, Yoshihiro, and Graham (2000) suggested that suppliers in Japan must establish and maintain close personal contacts at all organization levels of the customer firm. Similarly, Cousins and Stanwix (2001) note that the Japanese managers view relationship building with suppliers as a part of their daily job responsibilities. Other research on relationships in Japan has highlighted the importance of trust in business interactions (Johnson, Nader, and Fornell 1996). This would also appear to make the touch points of personal interaction more important than in Western cultures.

Finally, Japan has a culture that emphasizes the need for harmony and courtesy (Reisinger and Turner 1999). Maintenance of ongoing relationships is supported by an emphasis on harmony that discourages any overt displays of dissatisfaction (Reisinger and Turner 1999). As members of a collectivist culture, the Japanese desire for harmony leads to an aversion to aggression or confrontation (Lazer, Murata, and Kosaka 1985). The desire for harmony also makes courteous behavior important (Fukutake 1981). While harmony and self-discipline are encouraged, confrontation and complaining are discouraged. Shutte and Ciarlante (1998) also suggest that Asian customers may even attribute product or service failures to forces beyond the control of the provider, a perspective that allows the problem to be considered less of a personal affront. The desire for harmony may mitigate the expression of dissatisfaction in the relationship (Khan et al. 2009). From a research standpoint, this implies that many (most) Japanese respondents may avoid giving low ratings on response scales. This could cause responses to be less widely distributed across the scale, thus reducing the predictive ability.

In summary, there has been very little research on the drivers of customer satisfaction and repurchase intentions in a Japanese B2B service context. It is evident that conceptualizations of service interaction will need to include a significant social interaction component between a supplier’s personnel and their contact in the customer organization. It would appear that the Japanese culture is more conducive to social interaction and harmony in organizational relationships (Furrer et al. 2000;

Hewett and Bearden 2001). Similarly, Liu and McClure (2001) found that the Japanese are more inclined than members of individualist cultures to praise the service they receive, and less likely to switch after a bad service experience. The impact of factors such as price, product quality, and service efficiency would appear to play a less significant role than personal interaction and relationships in repurchase decisions by Japanese customers than in other studies conducted in the USA and Europe.

Antecedents and Consequences of Repurchase Intentions

Customer repurchase intention typically is measured by a customer's intent to stay with an organization (Zeithaml, Berry, and Parasuraman 1996). In general, it represents a commitment by the customer to purchase more goods and services from the organization, and also to promote positive word-of-mouth recommendations. Recently, there has been a large body of literature that has focused on customer repurchase intentions (Anderson and Mittal 2000; Capraro, Broniarczk, and Srivistava 2003; Cooil, Keiningham, Aksoy, and Hsu 2007; Lam, Venkatesh, Erramilli, and Murthy 2004). Simply put, customers with high repurchase intentions tend to stay with their existing suppliers, typically spend more money with the supplier, and promote positive word of mouth. In turn, this leads to increased revenue, reduced customer acquisition costs, and lower costs of serving repeat customers, and better profitability (Ganesh, Arnold, and Reynolds 2000).

The extended revenue stream from loyal customers is often referred to as customer lifetime value (CLV) (Reinartz and Kumar 2003). The implication is that loyal customers have a substantially higher CLV than non-loyal customers, conveying benefits to a supplier over an extended period of time. Customer loyalty in a B-to-B market situation is often the result of a stay/go or renewal/non-renewal decision with an existing supplier. However, identifying and tracking the stay or go decision is difficult in many supplier-customer service situations due to their dynamic and longitudinal nature. The additional expense of longitudinal studies means most academic researchers have used repurchase intentions as a surrogate indicator for actual

subsequent customer loyalty behavior (Bolton 1998).

Previous studies have reported a number of possible drivers of customer repurchase intentions. Customer satisfaction is considered a key antecedent of repurchase intentions, with a good deal of research finding a positive main effect between customer satisfaction, and both repurchase intentions, and actual subsequent loyalty behavior (Anderson and Sullivan 1993; Bolton 1998; Bolton and Lemon 1999; Curtis et al. 2011; Mittal and Kamakura 2001; Oliver 1999; Sirdeshmukh, Singh, and Sabol 2002). Other studies have found similar results, where increased customer satisfaction leads to higher repurchase intentions (Zeithaml et al. 1996). Consistent with this research, we expected customer satisfaction to fully mediate the relationship between dimensions of service and product performance and repurchase intentions. While there is little research that has examined the satisfaction-repurchase intentions linkage in Japan, there is an overwhelming body of literature that indicates that satisfaction is positively related to repurchase intentions in other countries. We expected these relationships to be consistent. Based on the literature review above, the following research hypothesis emerged for our study:

H1: Customer satisfaction is positively related to repurchase intentions.

Antecedents of Customer Satisfaction

In a B2B services context, it is only logical that dimensions of service performance are among the drivers of satisfaction. It should be noted at this juncture that service performance has emerged as a rather fuzzy concept in the literature, with a wide divergence of opinions on how it should be operationalized (Winer 2001; Richards and Jones 2008). While some have used relationship satisfaction to measure service performance (Crosby, Evans, and Cowles 1990), others have used commitment (Dorsch, Swanson, and Kelley 1998), trust (Bejou, Barry, and Ingram 1996), conflict resolution (Kumar, Sheer, and Steenkamp 1995), and perceived service quality (Henning-Thurau and Klee 1997).

In the B2B services focus of this study, we reviewed current literature on the service

performance interface between supplier and customer organizations. Homburg and Garbe (1999) suggested that B-to-B service consisted of structural quality (the quality of the core product/service offering), process quality (how service is delivered), and outcome quality (the actual results). They noted that process quality, the way things get done, has a strong impact on the customer satisfaction of business customers. Arnaud (1987) suggested that service has technical, relational, functional, and institutional dimensions. Both of these conceptualizations emphasize the process of service delivery and the more technical nature of B-to-B services (Homburg and Rudolph 2001). Others have also found interaction and social exchange to be important dyadic factors in service delivery (Woo and Enew 2005). It is noteworthy that viewing B2B service delivery as dyadic social exchange is quite similar to the earlier conceptualizations of personal interaction in business relationships in Japan (Barry et al. 2008; Bove and Johnson 2001). Similarly, Schellhase, Hardock, and Ohlwein (2000) found that technical competence and knowledge of the service provider's personnel and cooperation between supplier and customer were important drivers of customer satisfaction.

Viewing service delivery as dyadic social interaction is consistent with Vargo and Lusch's (2004) Service Dominant Logic (SDL) framework. Vargo and Lusch contended that value is co-created by actors from both supplier and customer organizations through mutually beneficial interactions. Vargo and Lusch (2008) subsequently noted that the SDL framework was particularly appropriate for studying B-to-B services where multiple individuals in supplier and customer organizations work closely together to meet the customer's needs. Vargo and Lusch (2011) further suggested that value is co-created through the integration of service offerings with other resources (such as tangible products).

Account representatives, maintenance, repair, customer service, and technical support are common dimensions of B2B service quality (Jackson and Cooper 1988; Patterson and Spreng 1997) and are actors in the SDL framework. Most of these dimensions of service delivery involve the touch points of personal contact between a service provider and customers who are co-creating value.

For the current study, there were three touch points of personal contact between the service provider and the customer. These were account reps, technicians, and emergency service personnel. Each customer organization had a specific account rep that was the point of direct communication. The account rep interacted with the key contact, usually a facilities manager, in the customer organization. Based on feedback from customers (to be discussed in more detail), account rep performance was evaluated based on six questions that measured different aspects of performance. Technicians were the individuals who performed the regular technical support aspects of the heating, ventilation, air conditioning, and security systems. Technician performance was evaluated based on five questions measuring the technician's service performance. Emergency services were delivered by the first available technician, not necessarily the regular technician. For example, if the heating or cooling system failed, an emergency service person was immediately dispatched to fix the problem. Emergency service was evaluated using five questions (**Note: questions for all constructs appear in Appendix A**). Based on the previous literature and the Japanese cultural context, we expect these touch points of service performance to be strongly and positively associated with customer satisfaction. Hence, we propose to address the following research hypotheses:

H2: Service Performance is positively related to Customer Satisfaction.

H2a: Account rep performance is positively related to Customer Satisfaction.

H2b: Technician performance is positively related to Customer Satisfaction.

H2c: Emergency service performance is positively related to Customer Satisfaction.

Product Perceptions

Another potential driver of customer satisfaction examined in this study was customer perceptions of products. Many B-to-B services have a tangible product component that influences customer satisfaction (Vargo and Lusch 2011;

Zolkiewski, Lewis, Yuan, and Yuan 2007). Therefore, the quality of the installed control system contributes to the customer's overall evaluation of the supplier. If product quality is high, the system will work as it should. This should also lead to more positive overall evaluations of the supplier (Gill and Ramaseshan 2007). If quality of the product is evaluated as low, the system may require frequent adjustments and maintenance, or the system may fail completely, resulting in downtime. For example, system failure could result in higher maintenance support and costs or more frequent use of emergency services, leading to lower evaluations of supplier performance and less repurchase intentions.

Certainly there is some literature that empirically shows the direct or indirect effects of products on customer satisfaction in B2B services (Homburg and Garbe 1999; Homburg and Rudolph 2001), but there is an absence of published research on this subject in a Japanese context. We felt that product perceptions would be an important driver, but perhaps play a lesser role than the social interaction of the service personnel to Japanese buyers. Since customers' evaluations of the installed system can influence the supplier-customer relationship, it is proposed that:

H3: Product perceptions are positively related to customer satisfaction.

Price Perceptions

The price perception of customers is the final expected key driver of repurchase intentions. In a B2B context, selecting the right source of supply has long been regarded as one of the most important business functions (Soukup 1987). At the initial purchase decision, value perceptions are important in customer decision making (Johnson, Hermann, and Huber 2006). Inherently, value perceptions involve a trade-off between price paid and expected benefits. Further, if the price is outside a customer's range of acceptability or the price signals that the quality is inferior, the offer may then have little overall perceived value (Dodds, Monroe, and Grewal 1991). In other words, it may be argued that during the renewal phase of the service contract, a customer's perceptions of a supplier's price might directly

affect intentions to repurchase (Patterson and Spreng 1997).

Since price plays such an important role in vendor selection, it should also play similar role in the formation of repurchase intentions (Katsikeas and Leonidas 1996; Lye and Hamilton 2000). We thus operationalized price as "relative price" to enable clarity in the model when contrasting the other drivers. Relative price is where customers rate the price paid for their product and service, relative to the industry average for such equivalent products and services and competitive alternatives. This has an implicit assumption that if the price is significantly below the industry average, there should be a positive perception of price. In contrast, if price is significantly above industry average there is a negative perception of price. Consistent with prior research, we expected to find a negative relationship between the relative price paid and repurchase intentions (Homburg and Koschate 2005; Noone and Mount 2007): i.e., the higher relative price paid for the services and parts, the lower should be the repurchase intentions.

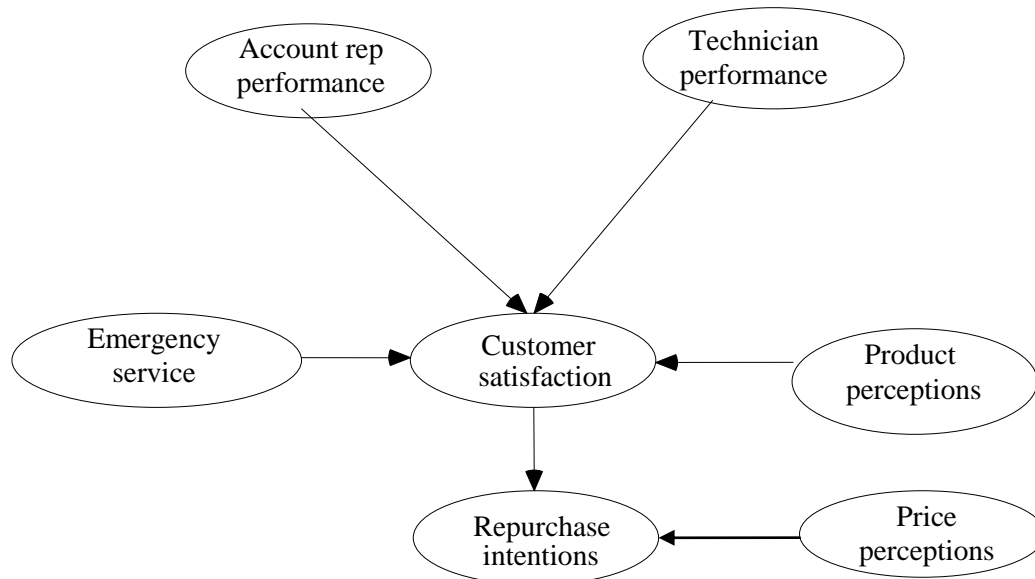
H4: Relative Price perceptions are negatively related to Repurchase Intentions.

By integrating the discussion to this point, we present our conceptual model to be tested (Figure 1). The model shows the three service performance dimensions (account rep, technician, emergency service), and product perceptions being positively related to customer satisfaction. Customer satisfaction is expected to be positively related to repurchase intentions. Price perceptions are expected to be negatively related to repurchase intentions.

The impact of Japanese culture on these expected relationships is relatively unknown, although literature suggests that the service constructs involving personal interaction appear to be very important in Japanese business activities. The expected direct and indirect effects are unknown and difficult to hypothesize. However, consistent with existing research (Cronin, Brady, and Hult 2000; Dabholkar, Shepherd, and Thorpe 2000), customer satisfaction should mediate the relationships between dimensions of service performance, product perceptions, and repurchase intentions.

FIGURE 1

Conceptual Model



METHODOLOGY

The firm in this study is a multinational company that provides facilities management services to businesses worldwide, including Japan. The primary facilities management services provided in Japan are maintenance, repair, and upgrading of heating, ventilation, air conditioning, and security systems in large organizations across the country. Since this service provider has a threshold dollar volume for service contracts, most clients are large organizations. Indeed, the customer organizations were mostly large, Fortune 1000-type organizations with structures such as office buildings, factories, and industrial complexes. In addition, facilities management was provided to some educational institutions (i.e. universities) and healthcare organizations (i.e. hospitals). In all cases, building services were formalized by annual service contracts for the on-going maintenance of the respective buildings. Each

facility had a separate service contract. The “key contact,” usually a facilities manager, was always specified in the contract. This key contact person was the source of the sample frame.

The Sample

A sample frame of customers was provided by the Japanese division of the MNC in the study. All customers who were at the mid-point of their annual service contract were included in the sample frame. The primary logic for interviewing at the midpoint of the contract was to allow time for service recovery if disaffected customers were identified. Each potential respondent was attempted to be contacted up to five times by telephone.

The cooperation rates (completed interviews/respondents contacted) were in the range of 55-65% each month but were not tracked specifically for non-response bias. The high

response rate was achieved since each respondent had agreed at the time that the contract was initiated to later participate in a survey. This was also part of the supplier's strategy to keep close contact with its customers with regular follow up and opportunities for feedback. The sample of customers interviewed was broadly representative of the whole customer base of the MNC's Japanese division.

A total sample size of 700 was accomplished over six consecutive months of interviews, and the resulting data was aggregated for detailed analysis in this study. The respondents were predominantly "key decision makers" or managers who had "major influence" in the selection and management of facilities management service providers. An experienced Tokyo based market research firm conducted the telephone interviews in the Japanese language. Each survey was answered by different individuals due to the survey protocol that a customer could be interviewed only once every six months. There were no repeated measures issues.

Questionnaire Development

A two-step approach was used to develop the questionnaire for this study. First, the items used in the study were derived from an extensive review of academic research (Oliver 1999; Zeithaml 1988; Zeithaml et al. 1996). Second, the questionnaire items were subsequently refined for the specific context of the study by conducting depth interviews with customers about their key drivers of service performance and satisfaction in the B-to-B building services context. The questionnaire was developed through initial qualitative research with a group of 20 of the firm's customers in Japan. The qualitative interviews were intended to capture the "voice of the customer" and to understand the customer's needs and expectations. Therefore, telephone depth interviews were initially conducted in Japan by a Tokyo based marketing research firm. Customers were asked to identify their key drivers of customer satisfaction and drivers of the renewal decision for facilities management providers. Their responses were crafted into specific questions on the questionnaire. In order to establish face validity, these questions were examined and modified by an expert scholar who was skilled in questionnaire design and familiar

with the B2B building services industry. The draft questionnaire was then circulated to an executive steering committee at the firm for further review and feedback. The steering committee consisted of the worldwide customer satisfaction research director, country manager, regional managers, and the CEO of the research firm. The steering committee also aligned the questionnaire with the firm's internal Six Sigma process improvement initiative.

To improve validity and to be consistent with existing research methodologies, each construct was measured using multi-item variable composites. For example, repurchase intentions consisted of two questions, one question about the "likelihood to renew" the service contract, and a question on the customer's "willingness to recommend" the firm. This is the most widely used composite for repurchase intentions (Dick and Basu 1994; Johnson et al. 2006; Sirdesmukh et al. 2002). Repurchase intentions is typically viewed as a behavioral indicator, while willingness to recommend is viewed as an affective indicator of customer attitudes.

The customer satisfaction construct consisted of a linear composite of two questions. One question was a question on overall satisfaction, and one assessed whether customer expectations were being met. This is also consistent with previous research (Barry et al. 2008; Tokman, Davis, and Lemon, 2007; Zeithaml 1988; Zolkiewski et al. 2007) and was considered to be a more robust technique than using single-item measures. The account rep construct initially consisted of six measures, while technician and emergency service performance each had five measures. The product construct consisted of four measures. Relative price perceptions consisted of three measures. The questionnaire also included questions on "complaint handling." Interestingly, there were too few responses to these questions for statistical analysis. The resultant survey included 32 questions that were felt to capture the respective attitudes of the customers of the firm. **The specific wording of the questions is presented in Appendix A.**

The scales used in this research are commonly used in both academic and managerial research. The survey was administered by telephone, and five point response scales were used. For example, overall customer satisfaction was measured using a balanced, five point scale:

Very Satisfied-Satisfied-Neither Satisfied nor Dissatisfied-Dissatisfied-Very Dissatisfied. This is the most widely used wording and scale for overall satisfaction (Gruca and Rego 2005). Met expectations, willingness to recommend, likelihood to renew, and the price questions also involved balanced five point scales.

The more specific questions on product and service dimensions all used the same response scale of Excellent-Very Good-Good-Fair-Poor to evaluate supplier performance, another very commonly used scale. The use of unbalanced scales is common in customer satisfaction research. When current customers are surveyed, most customers have positive perceptions of their supplier. For example, less than 10% of respondents typically give a rating of "Fair" or "Poor". Roughly 90% of existing customers give a rating of "Good-Very Good-Excellent". The use of an unbalanced scale gives respondents three positive choices, better representing the distribution of their perceptions.

Data Analysis

The data analysis followed a two-stage procedure. In the first stage, preliminary analysis of the data was conducted to assess the validity of the various items and constructs of interest. Confirmatory factor analysis (CFA) using AMOS 17.0 was used to test the validity of measures in the study (Byrne 2001). This was done to see if the individual items loaded into the a priori model in Figure 1, as expected. CFA was preferred over the exploratory factor analysis because it is theory based (Bollen 1989) and is a well-recognized technique (Hair, Black, Babin, Anderson, and Tatham 2006). Average Variance Extracted (AVE) scores were calculated to assess the constructs' convergent validity, and we used Fornell and Larcker's (1981) test to assess the discriminant validity between the constructs. The initial measurement model was assessed for stability using the typical goodness of fit indices for CFA to see if the model fit the data well, and whether the respective items represented the correct construct.

In the second stage of the data analysis, we used structural equation modelling (SEM) to estimate parameters of the hypothesized model (Figure 1). We wanted to see which of the independent variables would impact directly on customer satisfaction. These drivers of account

reps, emergency services, technicians, and product perceptions were expected to be positively related to customer satisfaction. Customer satisfaction was expected to be positively related to repurchase intentions. Price perceptions were expected to be negatively related to repurchase intentions.

RESULTS

Measurement Model Development

We initially conducted CFA to assess the validity of all of the respective items and constructs. It was apparent that there was some initial cross-loading of some items, as the model did not fit the data very well. We ran further tests on the basis of item-to-item correlations and standardized residual criteria to refine the items used to represent the constructs. Similar refinement procedures have been used extensively in other research studies into this area (Hair et al. 2006).

Therefore, in our measurement model, this was done using the modification indices. We found that some of the standardized residual covariances were higher than the recommended value of 2.0 (Byrne, 2001). We decided to drop ten items from the subsequent analyses that did not meet the criteria. The 'account rep performance' factor which went from 6 to 3 items, the 'emergency service performance' and 'technicians performance' factors each went from 5 to 3 items, and the 'relative price perception' factor went from 3 to 2 items. The 'product perceptions' factor went from 4 to 2 items. In particular, for account rep performance, we excluded questions of how would you rate account reps for arriving when promised, account reps for the timeliness of quotes for service work, and account reps for submitting proposals. Similarly, for emergency service performance we excluded questions of ability to diagnose system problems and personnel's willingness ability to explain any necessary repairs. For technicians, questions on notifying the customer in advance and preventative maintenance dropped out. For price perceptions, one question on prices for system maintenance was excluded. Two questions on product perceptions were deleted: how would you rate the innovativeness of products, and products and parts for availability. We also excluded all three questions related to

“complaint handling” due to very few responses to these questions. The items (10) excluded from the primary constructs were carefully evaluated in the light of the original conceptual definitions of the constructs. We felt that the exclusion of the items in each case did not significantly risk the domain of the construct and the theoretical model as it was initially conceived.

The reduced set of items was then subjected to a second CFA, and a completely standardized solution generated by AMOS 17.0 using maximum likelihood method showed that

all of the items loaded highly on the their corresponding factors, had construct validity, and the model fit the data well (Byrne 2001; Hu and Bentler 1999). In particular, the diagnostics of the model included a comparative fit index (CFI) of 0.97, goodness of fit index (GFI) of 0.966, adjusted goodness of fit index (AGFI) of 0.944, and root mean square error of approximation (RMSEA) of 0.49. The measurement model and the standardized loadings, along with critical ratios are shown in Table 1.

TABLE 1

CFA Measures and Construct Reliabilities

<i>Constructs and Items</i>	<i>Standardized Loadings</i>	<i>Critical Ratio</i>
Account rep performance ($\alpha = 0.865$; AVE = 0.850) Technical knowledge Keeping in touch Listening to needs	0.92 0.84 0.78	Constrained 27.70 25.02
Technician performance ($\alpha = 0.806$; AVE = 0.785) Courtesy and friendly Technical competence Communicating effectively	0.72 0.80 0.85	19.21 Constrained 22.00
Emergency service performance ($\alpha = 0.853$; AVE = 0.830) Quick response Arriving on time Keeping you informed	0.77 0.80 0.77	19.87 Constrained 19.74
Product perceptions ($\alpha = 0.884$; AVE = 0.870) Overall product quality Dependability	0.80 0.81	10.04 Constrained
Price perceptions ($\alpha = 0.929$; AVE = 0.926) Installation price Replacement parts prices	0.88 0.93	8.23 Constrained

Notes: Goodness-of-fit statistics of the model: $\chi^2/700 = 159.773$, $p = 0.000$; degrees of freedom (df) = 55; comparative fit index (CFI) = 0.977; goodness-of-fit index (GFI) = 0.966; adjusted goodness-of-fit index (AGFI) = 0.944; root mean square error of approximation (RMSEA) = 0.052

Construct validity was assessed using Cronbach alpha scores, ranging from 0.81 to 0.93, while average variance extracted (AVE) scores

ranged from 0.79 to 0.92 (Fornell and Larcker 1981). In addition, convergent validity and discriminant validity was assessed using the

procedures recommended by Fornell and Larcker (1981) and Anderson and Gerbing (1988). The *t*-values for the loadings were high and in the range of 8.23 and 27.70 representing adequate convergent validity (Hair et al. 2006). The discriminant validity between the value constructs was assessed where the average variance extracted (AVE) score for each construct is higher than the

squared correlation between that construct and any other construct. All scores suggest that discriminant validity was supported between the constructs. The shared variance matrix is shown in Table 2 with all constructs displaying discriminant validity.

TABLE 2

Shared Variance and (Average Variance Extracted) for Main Constructs

	Accounts rep performance	Technician performance	Product perceptions	Emergency service performance	Price perceptions
Accounts rep performance	(0.85)				
Technician performance	0.21	(0.79)			
Product perceptions	0.09	0.13	(0.87)		
Emergency service performance	0.19	0.44	0.09	(0.83)	
Price perceptions	0.02	0.28	0.02	0.02	(0.93)

The preliminary analysis of the items, constructs and measurement model suggested that the data fits the model well, and further structural equation modelling (SEM) could be conducted.

Addressing the Research Hypotheses

We used SEM to examine the theoretical model, using AMOS 17. Specifically, we examined the hypothesized relationships among the constructs that emerged from the CFA. The exploratory nature of the study allowed us to examine this in contrast to previous literature. The results are presented in Table 3.

The results suggest that the model fits the data well. In particular, the statistics suggested the overall fit of the model was acceptable: $\chi^2_{700} = 274.967$; $p = 0.000$; degrees of freedom = 103; GFI = 0.956; AGFI = 0.935; and RMSEA = 0.049. Customer satisfaction was positively related to repurchase intentions, ($\beta = 0.796$) so hypothesis 1 was able to be supported. Similarly, the two main customer contact variables were

significant and positive influences on customer satisfaction (account rep performance, $\beta = 0.332$; technicians performance, $\beta = 0.584$). Their respective influences on satisfaction meant that hypothesis 2a and 2b were supported. However, emergency service performance did not load as expected with a non-significant influence on satisfaction so hypothesis 2c could not be supported. Product perceptions, as expected, was a significant and positive influence on customer satisfaction ($\beta = 0.18$), thus, hypothesis 3 was supported. Price perceptions influenced customer repurchase intentions negatively, as hypothesized, meaning that hypothesis 4 could be supported. The relatively strong influence of account rep performance and technician performance on customer satisfaction would appear to suggest that, in Japanese culture, personal contact in service delivery is valued highly. The product quality perceptions were relatively less important, but still significant at the .0001 level.

TABLE 3
Structural Model Estimates

Regression weights	Estimates	Standard error	Critical ratio	<i>p</i>	Standardized estimates
Technician perf. → customer satisfaction	0.415	0.047	8.905	0.0001	0.584
Accounts rep perf. → customer satisfaction	0.183	0.025	7.270	0.0001	0.332
Emergency service → customer satisfaction	0.010	0.039	0.254	0.799	0.015
Product perceptions → customer satisfaction	0.110	0.026	4.210	0.0001	0.187
Customer satisfaction → repurchase intentions	0.642	0.079	8.132	0.0001	0.796
Price perceptions → repurchase intentions	-0.128	0.041	3.142	-0.002	-0.19

Notes: Goodness-of-fit statistics of the model: $\chi^2_{700} = 274.967$, $p = 0.000$; degrees of freedom (df) = 103; comparative fit index (CFI) = 0.968; goodness-of-fit index (GFI) = 0.956; adjusted goodness-of-fit index (AGFI) = 0.935; root mean square error of approximation (RMSEA) = 0.049

DISCUSSION AND IMPLICATIONS

This study sought to identify the key drivers of customer satisfaction and repurchase intentions using a multi-attribute model in B-to-B services in Japan. In particular, this study posited that service providers must understand the involvement and interactive role of the touch points of personal interaction that influence customer satisfaction and repurchase intentions. This was achieved in the light of a customer service ethos in the company, with the aim to identify key drivers that influence repurchase intentions and develop a better understanding of these drivers and outcomes (Henning-Thurau, Gwinner, and Gremler 2002; Morgan and Hunt 1994).

As hypothesized, we found the touch points of personal contact (account rep performance, technician performance) and product perceptions to be all significantly and positively related to customer satisfaction. These customer relationships were all significant at the 0.0001 level. Consistent with the previous literature, our study supports the contention that personal interactions between service delivery personnel and customers are important contributors to B-to-B relationships in general

(Bolton, Lemon, and Verhoef 2004; Gill and Ramaseshan 2007) and in Japan, in particular.

The emergency services construct was not significantly related to customer satisfaction. Intuitively this makes sense. Emergency services are needed when something goes wrong. If the building system works properly, there should be no need for emergency services. So a customer is likely to prefer to never use the emergency service. It is somewhat like life insurance. Most of us carry life insurance, but we would really prefer that our beneficiaries not collect on the policy.

While our study focused on B2B services, the product construct was related to the customer satisfaction construct as expected. This suggests that tangible product evaluations do influence the relationship between the service provider and the customer, even when the core “product” is a service. Further, our results, consistent with Gill and Ramaseshan (2007), suggest that customers might have ensured that product offerings are of consistently high quality. Well designed, reliable products probably require a different service delivery mix than lower quality products. In other words, high quality products may require less maintenance and related costs. This should have been and was viewed positively by Japanese

service customers. However, product perceptions were relatively less important than the personal contact drivers of technician and account rep performance. This again supports the contention that personal business relationships are very important in a Japanese context (Lohtia et al. 2009).

From a theoretical standpoint, the findings reported here provide empirical support for the customer satisfaction construct as it was strongly related to repurchase intentions. Customer satisfaction is an important antecedent of repurchase intentions. This finding of our study is consistent with much existing research (Fornell, Johnston, Anderson, Cha, and Bryant 1996; Johnson, et al. 2006; Seiders, Grewal, and Godfrey 2005). We also concur with Johnson et al. (2006) who argued that as customers developed a relationship with the supplier in a mature market, with passage of time, more favorable attitudes toward the overall customer relationship and the supplier come to drive intentions. Therefore, based on our findings, it is important that customer relationship managers should take into account deeper understanding of the role of the various factors that drive customer repurchase intentions.

Price was an important element for customers when formulating repurchase intentions, but it appears it is not fully investigated in previous empirical studies (Bei and Chiao 2001). In our study, price has a negative relationship with repurchase intentions. The negative impact of price on repurchase intentions must be considered by suppliers when designing their value propositions and pricing strategies.

In sum, our study generally confirms previous findings that repurchase intentions in Japan largely depends on evaluations of the service provider-customer interaction but are context specific (Khan et al. 2009; Liljander and Strandvok 1995). The mediating role of customer satisfaction in affecting repurchase intentions demonstrates a strong relationship, suggesting the complex nature of B2B services. Our finding that the price perceptions are negatively related to repurchase intentions is consistent with other studies in western countries. It appears that Japanese customers generally tend to avoid high switching costs that, in our study, include important personal relationships between the service provider and customer organization (Lee and Overby 2004).

LIMITATIONS AND FUTURE RESEARCH

The findings reported here should be interpreted in the light of certain limitations of the study. A key limitation to broad generalizations from this research is the nature of services investigated. Facilities management services are delivered over a long period of time and are usually formalized by an annual service contract that is negotiated and agreed upon by both parties. This contractual service delivery situation may be quite different from transactional services that involve independent, discreet interactions. Simply put, other types of services may produce different results.

In an effort to shorten the questionnaire, the demographic questions had been deleted by the firm sponsoring this research. Therefore, we do not know how the results might have varied across different market segments or across different respondent characteristics. We do know that the respondents were primarily key decision makers in the selection of facility vendors in their large organizations. We do not know their age, job title, or years of experience dealing with the vendor.

The research setting was very specific: Japan-based B2B services. It is evident from previous research that customers from different cultures, including customers from Japan, may have different evaluations of overall service quality and its outcomes (Furrer et al. 2000; Winsted 1997, 1999). Generalizations from our study, therefore, should be exercised with caution.

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For correspondence regarding this article, contact any of the following:

M. Sajid Khan
 Associate Professor of Marketing
 Department of Marketing, School of Business
 American University of Sharjah, P O Box 26666, Sharjah,
 United Arab Emirates
 Tel: +971 6 515 2463
 Email: mskhan@aus.edu

Earl Naumann
 Professor of Marketing
 Department of Marketing, School of Business
 American University of Sharjah, P O Box 26666, Sharjah,
 United Arab Emirates
 Email: rnaumann@aus.edu
 Tel: +971 6 515 2472

Paul Williams
 Professor of Marketing
 Department of Marketing, School of Business
 American University of Sharjah, P O Box 26666, Sharjah,
 United Arab Emirates
 Email: awilliams@aus.edu

APPENDIX A**Wording and Measurement Scales**

1. Thinking about your overall experience with.....during the past 12 months, how satisfied are you in doing business with.....?
5 (*Very Satisfied*), 4 (*Satisfied*), 3 (*Neither Satisfied Nor Dissatisfied*), 2 (*Dissatisfied*), 1 (*Very Dissatisfied*)
2. How likely would you be to recommend.....to others?
5 (*Definitely Would Recommend*), 4 (*Would Recommend*), 3 (*Might or Might Not Recommend*), 2 (*Would Not Recommend*), 1 (*Definitely Would Not Recommend*)
3. Considering.....'s overall performance, would you say that.....has
5 (*Significantly exceeded your expectations*), 4 (*Somewhat exceeded your expectations*), 3 (*Met your expectations*), 2 (*Somewhat below your expectations*), 1 (*Significantly below your expectations*)
4. What is the likelihood that you will renew your service contract when it expires?
5 (*Definitely would*), 4 (*Probably Would*), 3 (*Might or Might Not*), 2 (*Probably Would Not*), 1 (*Definitely Would Not*)
5. Overall, how do you rate the quality of the business relationship you have with.....?
5 (*Excellent*), 4 (*Very Good*), 3 (*Good*), 2 (*Fair*), 1 (*Poor*)
6. How would you rate.....for following up with you to ensure resolution of issues you have brought to their attention?
5 (*Always*), 4 (*Usually*), 3 (*Sometimes*), 2 (*Rarely*), 1 (*Never*)
7. How would you rate.....performance in establishing fast, accurate, two-way communication with its customers?
5 (*Excellent*), 4 (*Very Good*), 3 (*Good*), 2 (*Fair*), 1 (*Poor*)

The following questions have the same response scale of *Excellent, Very Good, Good, Fair, Poor*

Product Perceptions

8. How would you rate.....on overall product quality?
 9. How would you rate.....products for dependability?
 10. How would you rate the innovativeness of.....products?
 11. How would you rate.....products and parts for availability?
-

Account Rep Performance

- 12. How would you rate.....account reps for their technical knowledge?
- 13. How would you rate.....account reps for keeping in touch?
- 14. How would you rate.....account reps for arriving when promised?
- 15. How would you rate.....account reps for the timeliness with which quotes for service work are provided?
- 16. How would you rate.....account reps for listening and clearly proposing solutions that best address your business needs?
- 17. How would you rate..... account reps for submitting proposals that are easy to understand?

Technician Performance

- 18. How would you rate.....technicians for notifying you in advance of preventive maintenance service calls?
- 19. How would you rate.....technicians for being courteous and friendly?
- 20. How would you rate.....technicians for the level to which preventive maintenance work is performed completely?
- 21. How would you rate the technical competence of.....technicians?
- 22. How would you rate.....technicians for communicating effectively?

Emergency Service Performance

- 23. How would you rate.....for quick response in emergency situations?
 - 24. How would you ratepersonnel for arriving at your facility within a specified time frame?
 - 25. How would you rate.....personnel on the ability to diagnose and resolve equipment or system problems in one visit?
 - 26. How would you rate.....personnel's willingness and ability to explain any necessary repairs?
 - 27. How would you rate.....personnel on keeping you informed of progress from start of repair through completion?
-

Complaint Handling

Have you ever complained to.....about a problem?

Yes (Continue)

No (Skip to Q. 30)

28. How would you rate.....for listening to your complaints and taking appropriate action to resolve the issues?

29. How would you rate.....for having a clear process for escalating service complaints, if not originally resolved to your satisfaction?

Relative Price Perceptions

30. How would you rate.....prices for the installation of the new system components?

5 (*Significantly Above Average for the Industry*), 4 (*Somewhat Above Average*), 3 (*About Average*), 2 (*Somewhat Below Average*), 1 (*Significantly Below Average*)

31. How would you rate.....prices for replacement parts?

5 (*Significantly Above Average for the Industry*), 4 (*Somewhat Above Average*), 3 (*About Average*), 2 (*Somewhat Below Average*), 1 (*Significantly Below Average*)

32. How would you rate.....prices for system maintenance (such as diagnostics, technical support, etc.)?

5 (*Significantly Above Average for the Industry*), 4 (*Somewhat Above Average*), 3 (*About Average*), 2 (*Somewhat Below Average*), 1 (*Significantly Below Average*)
