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Perceived Quality, Customer Satisfaction, and Customer Loyalty: the Case of Lexus in Taiwan

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ABSTRACT *The purpose of this study is to examine overall customer satisfaction associated with Toyota's Lexus automobiles in Taiwan by applying Fornell et al.'s (1996) customer satisfaction index (CSI) model. By analysing a set of 320 Taiwanese Lexus owners of more than 7 months, the study uses the structural equation model with LISREL software to show that the perceived quality has a direct effect on overall customer satisfaction, and has an indirect effect on customer complaint-levels and customer loyalty. That is, customer expectations have a direct impact on customer perceived quality; therefore, such expectations have an indirect effect on overall levels of customer satisfaction. Not surprisingly, overall customer satisfaction negatively influences customer complaints and positively influences customer loyalty. Importantly, the study also finds that customer complaints do not have negative impact on customer loyalty. Additionally, the study demonstrates that the CSI model should be modified in the case of Lexus' Taiwanese customers: because the notion of 'perceived value' is not present in the existing model, further exploration is required. Finally, the study finds that firms should do their utmost to improve perceived quality, as doing so seems to represent the most effective way of increasing levels of customer satisfaction.*

KEY WORDS: Perceived quality, customer expectation, customer satisfaction, customer complaints, customer loyalty

Introduction

As the features, quality, and appearance of products and services become increasingly similar (and, by extension, more and more difficult to differentiate), customers increasingly exhibit fickle and non-loyal purchasing behaviours. In response to ever-more

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prevalent 'price war' tactics, and the need to maintain a core group of loyal customers, companies are becoming increasingly aware of the importance of customer satisfaction. A satisfied customer might well become a repeat buyer; for example, s/he might purchase multiple automobiles of a certain brand – and keep coming back to a particular dealer for every service s/he needs through her or his lifetime. Just as negative word-of-mouth leads to reduced customer satisfaction (Richins, 1983), it follows that satisfied customers spreading positive word-of-mouth might create new customers for a business.

For the Lexus division of Hotai Motor Co., the sole distributor of Toyota, Lexus and Hino in Taiwan, there is no doubt that the road to customers' patronage is a hard one. Taiwan's automobile market is, fundamentally, both extremely complex and incredibly complicated. Whether winning new customers or defending old customers from competitors, a company's overall market share will be influenced (Lin, 1996). Although Lexus has decided that its strategic thrust will be customer satisfaction, it has no clear benchmarks to serve as guidelines. Lexus' main competitors, Mercedes Benz and BMW, have not established strong systems in Taiwan for measuring customer satisfaction. In the US, Lexus dealers such as Sewell Lexus have established such systems with great effectiveness. In the case of Taiwan, however, the conditions in which the company operates – and therefore the goals it must set for itself – differ greatly. Customer satisfaction systems of US or European dealers may be referred to or studied, but it would be a mistake to treat them as ideal systems for Taiwan's Lexus dealers to emulate. Western systems cannot be simply mimicked in Taiwan.

Technically, 'Lexus', as a brand, is not sold in Japan. That is, the products sold under the Lexus brand name around the world are sold within Japan under the brand name Toyota. Moreover, Toyota dealers in Japan are segmented according to the kinds of models a dealer can sell at a particular location. Toyota has multiple groups of dealers, known, among other names, as Toyota, Toyopet, Toyota Corolla, Nets Toyota, and Toyota Vista. Each dealer is limited as to which models they can sell.

Although Lexus sell well in Japan, they are not regarded as luxury automobiles in the way that they are in the rest of the world. Rather, they are treated as higher-end, more expensive Toyotas. For example, Lexus' flagship LS 400 model might be driven by an upwardly-mobile twentysomething – that is, someone who's not necessarily rich, but who enjoys fast cars. The reason, perhaps, for the lack of differentiation between 'Lexus' and 'Toyota' in the mind of Japanese consumers is that 'Lexus' has not been effectively segmented from other Toyota models. In any case, no matter how well the customer satisfaction system might work in Japan, Taiwan's Lexus sellers cannot follow the Japanese system.

Because Taiwan is a distinct and unique market for Lexus, this study seeks to explore Lexus' Taiwanese system of customer satisfaction. Namely, we seek to apply the Customer Satisfaction Index (CSI) model (Fornell *et al.*, 1996) to current users of Lexus in Taiwan, and to identify causal relationships leading to overall customer satisfaction in Taiwan, and possibly in other developing countries as well. The findings should have implications for firms that hope to improve overall levels of customer satisfaction.

Literature and Hypotheses

In giving reasons for the mounting importance of customer satisfaction, most firms face a number of problems faced by a variety of industries today: increasing international

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competition, faster economic growth rates, and mature markets. As a result of such circumstances, firms often find themselves engaged in cut-throat rivalries as they struggle to win over the same limited pool of customers. Doing so requires the commitment of a company's resources; additionally, such competition often puts painful downward pressure on a firm's pricing power. Because of the limitations of competing on price alone, and the costs of pursuing new customers, competing on the basis of quality (which could become a competitive advantage in its own right), and working to retain current customers, become more logical and effective strategic methods (Rust & Oliver, 1994). Although customer satisfaction only emerged as a legitimate area of inquiry in the early 1970s in the US (Churchill & Surprenant, 1982), and companies only truly began to realize the strategic benefits of quality in the 1990s (Bolton & Drew, 1991), the achievement of customer satisfaction has already become a cornerstone of smart business practice across a diverse multitude of companies and industries (Szymanski & Henard, 2001). Thus, the following sections review the literature of customer satisfaction, including its antecedents (e.g. customer expectation, perceived quality, and perceived value) and its consequences (e.g. customer loyalty and customer complaints).

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Customer Satisfaction Model

Fornell *et al.* (1996) argued that the nature of the current economic system differs greatly from that of the past. Therefore, the measurement of economic performance must be changed so that it takes into account not only the quantity, but also the quality of economic output. In accordance with this need, the CSI model was introduced in 1996 by Fornell *et al.* to evaluate, in the US, the satisfaction-levels of firms, industries, and economic sectors. The idea was to take more accurate measures of the performance of a modern economy.

In his earlier study, Fornell (1992) used 15 measurement indicators to evaluate six latent constructs (e.g. perceived quality, customer expectation, perceived value, overall customer satisfaction, customer complaints, and customer loyalty); those same measurements were used to establish questionnaires for telephone surveys. Later, Fornell *et al.* (1996) built a CSI model in which customer expectations, perceived quality, and perceived value comprise the antecedents of overall customer satisfaction. In turn, overall customer satisfaction affects customer complaints and loyalty (see Figure 1). In short, Fornell's CSI

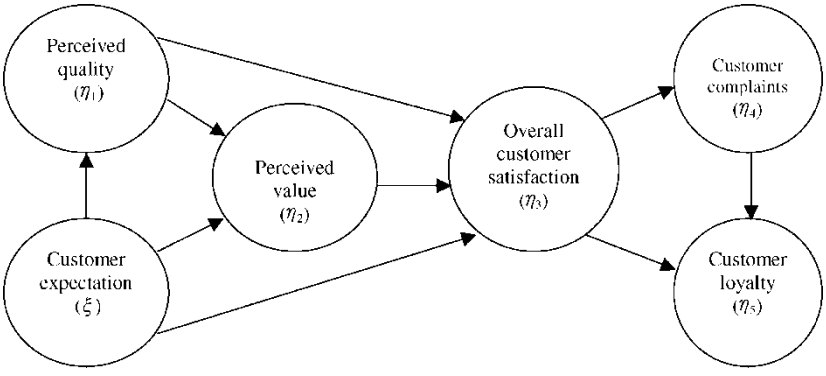

Figure 1. Fornell *et al.*'s (1996) Customer Satisfaction Index (CSI) model

system identified and described the causal relationships among these above constructs. Because the CSI model has such significant implications for managers but has not been tested in Taiwan, this study both introduces and empirically tests the CSI model on Lexus users in Taiwan.

On the surface, customer satisfaction seems a straightforward concept. However, its definition is one that is not fixed, but rather it evolves over time. After reviewing various related studies, Oliver (1980) concluded that satisfaction is a function of some initial standard working in combination with some perceived discrepancy from the initial reference point. To make the idea of an 'initial standard' more specific, Bolton & Drew (1991) defined customer satisfaction or dissatisfaction as a 'function of the disconfirmation arising from discrepancies between prior expectations and actual performance.' Anderson *et al.* (1994) offered two definitions of customer satisfaction, in accordance with the two broad classes of customer experiences identified by the literature (i.e. transaction-specific experiences and cumulative experiences). In the case of a transaction-specific experience, customer satisfaction is defined as the post-choice evaluative judgement of a specific purchase occasion. In the case of a so-called 'cumulative' experience, customer satisfaction is determined as a result of a customer's evaluation of his or her total purchase and consumption experience over time. In their CSI model, Fornell *et al.* (1996), described customer satisfaction as a function of customer expectations, perceived quality, and perceived value.

The Antecedents of Customer Satisfaction: Customer Expectations, Perceived Quality, and Perceived Value

According to Parasuraman *et al.*'s (1991) findings, four factors impact customers' expectations. These are word-of-mouth (or reputation), personal needs, past experience, and external communications (including both the direct and indirect messages communicated from a company to its customers – i.e. advertising, company brochures, the attitude of the company's employees, and the price of the company's products or services). Other researchers (e.g. Oliver, 1980) have postulated that customer expectations are influenced by (1) the product itself, (2) the context in which the product or service is sold, including the content of communications from salespeople and social referents, and (3) individual characteristics, including persuasibility and perceptual distortions. Tse & Wilton (1988) offered three more definitions of customer expectations in their study: (1) equitable performance – a normative standard for performance based on implicit relationships between an individual's cost/investment and anticipated rewards. In this case, expectations are likely to be affected by the price paid, the effort invested, and previous product experiences. (2) Ideal product performance – the optimal product performance; a consumer's ideal product-performance scenario. Such expectations may be based on previous product experiences, messages gleaned from advertisements, or word-of-mouth communications. (3) Expected product performance – that is, a product's most likely performance. These sorts of expectations are affected by the average product performance, as well as by advertisements. In the CSI model, the determinants of expectations are customers' pre-purchase experience of a firm's product/service, combined with a sort of forecast of a company's ability to deliver quality (Fornell *et al.*, 1996). Pre-purchase experiences include past consumption experiences, as well as non-experiential information, such as advertising and word-of-mouth.

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Clearly, different studies have proposed different definitions of customer expectations. However, the great majority of all such literature has found that the one factor that consistently and directly affects the perceived quality – and therefore customer satisfaction – is that of the customer's expectation (Bearden & Teel, 1983; Tse & Wilton, 1988; Fornell *et al.*, 1996; Halstead *et al.*, 1994). Thus, we adopt the definition of the CSI model, holding that customer expectations are an antecedent of customer satisfaction. Thus,

H_1: *Customer expectations will positively affect perceived quality.*
H_2: *Customer expectations will positively affect overall customer satisfaction.*

Taking a different point of view, Oliver (1993) made distinct the meanings of 'satisfaction' and 'quality' by raising four points of difference between the two concepts. First, satisfaction may result from any number of causes, and is not necessarily the direct result of a high-quality product or service experience; quality, on the other hand, is a designation achieved through the fulfilment of specific attributes. Second, satisfaction is largely the result of non-quality-related factors, such as needs and equity, whereas expectations of quality are formed from ideals. Third, dis/satisfaction is felt only after an experience with a product, while perceived quality does not require an actual experience. Fourth, feelings of satisfaction are influenced by many factors, such as equity, attribution, and emotion; quality has only a few, specific, antecedents.

Although some researchers have attempted to draw distinctions between customer satisfaction and quality of service, it is fair to say that most of the researchers are not in agreement when it comes to defining the two concepts. Along with this lack of standardization, differences exist in the perception of the relationship between customer satisfaction and quality of service. As mentioned earlier, the CSI model does not specifically identify quality of service; rather, it gives customer satisfaction as a function of customers' expectations and perceptions of quality and value. However, Bolton & Drew (1991) viewed customer satisfaction as an antecedent of the quality of service.

It should be noted, however, that while clear differences exist over the definition of customer satisfaction, as well as over the issue of the relationship between customer satisfaction and quality of service, the fundamental notion of customer satisfaction is in fact quite similar among the various definitions. Oliver (1993) argued that customers must have contact experiences of some quality in order to decide whether or not they are satisfied. In this light, service quality is akin to the concept of appraisal, and satisfaction becomes an affective concept. That is, appraisal functions as the antecedent, or cause, of affective reactions (Oliver, 1999). Likewise, most studies have considered service quality as the antecedent of customer satisfaction (e.g. Anderson *et al.*, 1994; Chiou *et al.*, 2002; Cronin *et al.*, 2000; Fornell, 1992; Fornell *et al.* 1996). In this study, we adopt most of the arguments and findings of the various prior studies (e.g. Anderson *et al.*, 1994; Cronin *et al.*, 2000), and take quality of service to be a determinant of customer satisfaction.

H_3: *Perceived quality will positively affect overall customer satisfaction.*

In contrast to the treatment of customer satisfaction and expectation, a number of researchers have not, as yet, offered definitions of customers' perceptions of quality (Churchill & Surprenant, 1982; Oliver, 1980; Tse & Wilton, 1988). Indeed, some seem

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to positively avoid defining the term. Not surprisingly, too, those definitions that have been put forth vary greatly. To wit: Fornell *et al.* (1996) defined perceived quality as 'formed from customization and reliability.' In this case, customization refers to how well the company's product is tailored or customized to satisfy the various needs of a specific customer, and reliability refers to how reliable, standardized, and free from deficiencies a company's product is. Other research has defined perceived quality as '. . .the customer's assessment of the overall excellence or superiority of the service' (Zeithaml, 1988). As mentioned above, some researchers (Churchill & Surprenant, 1982; Oliver, 1980; Tse & Wilton, 1988) have discussed the idea of the perception of quality in their literature, but have avoided defining the term.

'Perceived value', then, is a unique construct; both part of the CSI model and one of the antecedents of overall customer satisfaction. Fornell and his colleagues defined the construct as one that represents the perceived level of product quality relative to the price of the product (Fornell *et al.*, 1996). Further, they argued that by including perceived quality as a variable, price information can be incorporated into the model, thereby increasing the comparability of results across firms, industries, and sectors.

Zeithaml (1988) also recognizes the functionality of the notion of perceived value. Unlike Fornell, however, she does not treat it as one of the constructs present in the SERVQUAL model, but rather as a component of perceived quality. Her definition is '. . .the customer's overall assessment of the utility of a product based on perceptions of what is received and what is given' (Zeithaml, 1988).

In summary, then, it can be said that on the one hand, Fornell *et al.* (1996) and Zeithaml (1988) recognized perceived value as an important factor in the marketing of products and services. Further, Fornell *et al.* even incorporate the construct to measure the overall customer satisfaction model. On the other hand, both Fornell *et al.* and Zeithaml considered customer perceptions of quality to be comprised of perceived quality and perceived value. (In light of this consideration, it might be reasonable, in the future, to explore whether perceived value really exists as an independent construct influencing customer satisfaction.) As recognized by the existent literature, however (e.g. Cronin *et al.*, 2000; Zeithaml, 1988), it is no easy task to draw a clear delineation between the two constructs (i.e. perceived value and perceived quality). For this reason, the current study does not propose to test any hypothesis in terms of perceived value. Instead, we attempt to discuss the role of perceived value through the use of the structural equation model.

The Consequences of Customer Satisfaction: Customer Loyalty and Customer Complaints

Few studies have investigated the outcomes of customer satisfaction (Cronin *et al.*, 2000; Szymanski *et al.*, 2001). However, understanding the outcomes of customer satisfaction, including (Cronin *et al.*, 2000), consumer loyalty (Bei & Chiao, 2001) and the intention to continue to do business with a particular provider (Burnham *et al.*, 2003), is of central importance to marketers. Among such possible outcomes, this study examines both customer complaints and customer loyalty.

Fewer customer complaints will lead to greater customer loyalty (Tax *et al.*, 1998). Customers' complaints to vendors serve as a mechanism for relieving cognitive dissonance, venting anger and frustration, and initiating or seeking redress when a consumer experience is unpleasant or dissatisfying (Nyer, 2000). Although dissatisfied consumers

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have the simple option of discontinuing their patronage of a particular seller, a deeply felt dissatisfaction can also prompt complaining to the seller. The expectation, then, is that the more frequent customers' deep dissatisfaction, the more frequent customers' complaints to sellers. Thus, we propose the following hypotheses.

H_4: *Overall customer satisfaction will negatively affect customer complaints.*
H_5: *Overall customer satisfaction will positively affect customer loyalty.*
H_6: *Customer complaints will negatively affect customer loyalty.*

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Research Design

In order to avoid the potential problems associated with non-users (or students) as respondents (Syzmanski & Henard, 2001), we sampled only actual users of the product. With support from the Lexus Division of Hotai Motor Co., it was possible to work only with actual Lexus owners. The sample group comprised individual Lexus owners (versus corporate owners) who had themselves purchased his/her Lexus and used it for more than 7 months. The reason for using such parameters was that we postulated that new automobiles would be less likely to have operational problems. In addition, respondents who had owned their car for longer periods of time would be more likely to be familiar with the automobile than new owners. To avoid the very real possibility of a non-user (i.e. secretary or assistant) filling out the questionnaire instead of the actual user, we did not include corporate owners in our survey. Finally, all qualified respondents were asked to fill out the questionnaire in order to make the survey more complete.

We sent 879 questionnaires to individual Lexus owners in Taiwan. 320 questionnaires (36.41%) had been collected one month after the send-date. One of these questionnaires came back with only the customer's personal data, rendering it useless. Not surprisingly, some of the questionnaires contained unanswered questions. However, due to the limitation of the sample size, those unanswered questions were treated as missing data. Therefore, statistically analysed data were 319 (36.29%). The final analysed results, then, represent 36.29% of the total (personal use) Lexus users in Taiwan who have been using their automobiles for more than 7 months.

The questionnaire contained six parts. Those parts were: customer expectations, perceived quality, perceived value, overall customer satisfaction, customer complaints, and customer loyalty; there was an additional section for customer's personal data (see Table 1 for a description). All the rated questions were measured on a seven-point scale, with the exception of two questions, which asked for responses in terms of percentages. The weightings of the seven-point scale were not standardized, and differed according to each question. In most cases, though, 1 represented the most negative possible response, while 7 represented the most positive possible response. As reflected in Table 1, SEM (structural equation model) with LISREL software, a statistical technique with the ability to deal with multiple indicators and multiple constructs, was used in the analysis of the data.

For the customer complaint section, a number of questions and much of the content was expanded (in comparison to the original Fornell *et al.*, 1996, questionnaire) to take into consideration the fact that there are multiple methods and channels through which a Lexus owner might voice his/her complaints. In the personal data section, we did not

Table 1. Constructs and measurements

Latent constructs	Measurement indicators
Perceived quality(η_1)	(Y1) Overall evaluation of Lexus' quality experience (Y2) Evaluation of Lexus' customization experience (Y3) Evaluation of Lexus' reliability experience
Perceived value(η_2)	(Y4) Lexus' rating of quality given price (Y5) Lexus' rating of price given quality
Overallcustomer satisfaction(η_3)	(Y6) Overall satisfaction from all experiences with Lexus (Y7) Expectancy disconfirmation from Lexus (Y8) Lexus' performance compared to the customer's ideal product or services in the category
Customer complaints (η_4)	(Y9) Has the customer complained about Lexus or its service and how many times? (Y10) If your friend wants to buy a car, would you recommend Lexus?
Customer loyalty(η_5)	(Y11) In the future, if you want to buy another automobile or change to another automobile, would you buy Lexus again? (Y12) If you are willing to repurchase Lexus, how important is the price factor? or If you are not willing to repurchase Lexus, how related the price factor to your decision? (Y13) Price tolerance (increase) given repurchase or Price tolerance (decrease) to induce repurchase
Customer expectation (ξ)	(X1) Pre-purchase overall expectation of Lexus' quality (X2) Pre-purchase expectation to Lexus regarding customization (X3) Pre-purchase expectation to Lexus regarding reliability

elect to ask more sensitive or personal questions, such as those regarding education or income level. In order to heighten the response rate, and to demonstrate our appreciation, a gift was sent to all those who sent back the questionnaire.

Results and Analyses

Pre-analysis

In the first stage of statistical analysis using LISREL (Jöreskog & Sörbom, 1996), one of the indicators (Y13) of customer loyalty was found to be less than ideal in the measurement of the construct in question. As the results came out negatively, the indicator was taken out of the analysis. Thus, the indicator of customer complaints was the only means (Y9) for measuring customer complaints. In an attempt to run LISREL, the theta-epsilon (TE) of Y9 could not be identified, thus influencing the entire model. More specifically, standard errors, *t*-values, modification indices, and standardized residuals could not be computed. Thus, the theta-epsilon value of Y9 was fixed (meaning its value was set to 1).

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In a further attempt to run LISREL with the exact model introduced by Fornell *et al.* as in Figure 1, the outcome in terms of our sample profile was far from ideal. The CSI model showed a simple and absolute disconnection between perceived value and overall customer satisfaction, indicating that none of the three constructs – perceived quality, customer expectation, and perceived value – bore any relationship to overall customer satisfaction. Further, the relationship between some constructs appeared to be insignificant and/or negative when they should have emerged as positive. In terms of the overall goodness-of-fit of the model, the results were as follows: $\chi^2_{(\mathrm{df}=82)} = 200.00$ ($p = 0.00$), GFI = 0.92, RMSEA = 0.067, NNFI = 0.90, AGFI = 0.89, NFI = 0.87, where the chi-square statistic, AGFI, and NFI values are below their recommended values (0.9).

As we had doubted the existence of 'perceived value' from the beginning of the research, and based upon the LISREL results, perceived value was removed from any further analysis. In the CSI model, at least, the existence of perceived value as one of the antecedents of overall customer satisfaction was proven. Considering that only Fornell *et al.* incorporate perceived value as one of the antecedents of customer satisfaction, the reason for the absence of perceived value among Taiwanese Lexus owners may be that when reflecting on perceived value, they consider it simply as a part of perceived quality, rather than as a separate construct existing apart from perceived quality.

Model Estimation

The final result of the modified CSI model is expressed as Figure 2, where $\chi^2_{(\mathrm{df}=60)} = 148.90$ ($p = 0.00$), GFI = 0.93, RMSEA = 0.068, NNFI = 0.91, AGFI = 0.90, NFI = 0.89. This research employed a Maximum Likelihood method for the estimation of its parameters. The values of LAMBDA-Y determine whether or not each measurement indicator can reflect the latent constructs. If the result of a measurement indicator is significant, it indicates that the observed indicator can measure latent construct. From the outputs of the measurement model (i.e. confirmatory factor analysis, CFA), we observed that the *t*-values of the quality customization, and reliability of an experience were all significant. Therefore, it may reasonably be argued that those three indicators in particular can reflect the latent construct of perceived quality. As tests measuring overall levels of

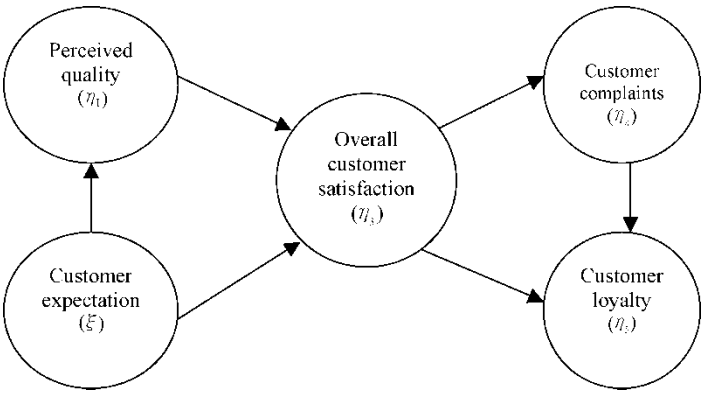

Figure 2. Modified CSI model

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customer satisfaction, the results indicate significance. Therefore, three indicators of overall customer satisfaction may be considered reflective of the latent construct.

Because there was only one indicator available for the measure of customer complaints, theta-epsilon was set as 0 and Lambda Y was freed. The *t*-value indicates that the indicator is significant; our data show that it did indeed reflect customer complaints. Finally, the results of the three tested indicators of customer loyalty also appeared to be significant, thereby confirming that the three indicators of customer loyalty could reflect the latent construct.

Worth mentioning, too, is the fact that, in the case of customer loyalty, the coefficient value for the importance of price factor is negative. This result reveals that whether or not current Lexus owners intended to purchase another Lexus at some future time, price would not be an important factor in their decision.

The values of LAMBDA-X determine whether each of the various measurement indicators does or does not reflect the latent constructs. From the LISREL results, we found that the *t*-values of pre-purchase expectations of quality, customization, and reliability were significant. These results support the contention that those three indicators are effective in measuring the latent construct (i.e. customer expectations).

Tables 2 and 3 give the estimate of the model and are used to verify the hypotheses. Referring to Table 2, we see that the *t*-value of customer expectations to perceived quality is 3.78, which indicates that the relationship is significant ($p < 0.05$). Therefore, hypothesis 1 was supported; that is, customer expectations positively influence perceptions of quality.

From Table 2, we see that the *t*-value of customer expectations with respect to overall customer satisfaction was −0.63, and, thus, that the relationship is insignificant ($p > 0.05$). Therefore, hypothesis 2 was not supported. For hypothesis 2, the result indicates that customer expectations do not significantly influence overall customer satisfaction for Lexus owners. Fornell *et al.* (1996) hypothesize that customer expectation positively influences overall customer satisfaction (CSI). However, according to Churchill & Surprenant (1982), '...an individual's expectations are: (1) confirmed when a product performs as expected, (2) negatively disconfirmed when the product performs more poorly than expected, and (3) positively disconfirmed when the product performs better than expected.' Therefore, the CSI model assumes that customers' expectations will be positively disconfirmed. On the other hand, Lin's (1996) research results show that customer expectations negatively influence customer satisfaction. In the case of this research, it can be assumed that Lexus owners' expectations are simply confirmed by the actual performance of the automobile, and that customers' expectations have neither a positive or negative influence on their satisfaction.

Table 2. GAMMA values

	Customer expectation
Perceived quality	0.61 (0.16) 3.78*
Overall customer satisfaction	−0.06 (0.10) −0.63
Customer complaints	–
Customer loyalty	–

Standard error in parentheses and the third value is *t*-value.
*Significant at $\alpha < 0.05$.

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Table 3. BETA values

	Perceived quality	Overall customer satisfaction	Customer complaints	Customer loyalty
Perceived quality	–	–	–	–
Overall customer satisfaction	1.10 (0.08) 13.94*	–	–	–
Customer complaints	–	−0.51 (0.07) −7.24*	–	–
Customer loyalty	–	0.93 (0.06) 14.81*	0.05 (0.04) 1.12	–

Standard Error in parentheses and the third value is *t*-value.
*Significant at $\alpha < 0.05$.

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According to Table 3, the *t*-value of perceived quality with respect to overall customer satisfaction was 13.94, and the relationship is significant ($p < 0.05$). Therefore, hypothesis 3 was supported – that is, perceived quality positively influences overall customer satisfaction.

For hypothesis 4, the *t*-value of overall customer satisfaction with respect to customer complaints was −7.24 and the relationship is significant ($p < 0.05$). Therefore, hypothesis 4, which states that overall customer satisfaction negatively influences customer complaints, finds support in our data.

From Table 3, the *t*-value of overall customer satisfaction with respect to customer loyalty was 14.81, and the relationship is significant ($p < 0.05$). Therefore, hypothesis 5 is supported. From this support, we may deduce that overall customer satisfaction positively influences customer loyalty.

For the final hypothesis, number 6, the *t*-value of customer complaints to customer loyalty was 1.12 and the relationship was insignificant ($p > 0.05$). Therefore, our hypothesis 6, that customer complaints negatively influence customer loyalty, was not supported. However, *t*-value was positive, meaning that Lexus is successful in turning unsatisfied customers into satisfied customers.

The rejection of hypothesis 6 merits further discussion. In the CSI model it is assumed that customer complaints are negatively associated with customer loyalty; however, in these empirical results, it was found that customer complaints did not in fact negatively affect customer loyalty. We argued that when the relationship is not negative, it simply means that the company is successful in turning customers with complaints into loyal customers. This indicates that customer complaints are handled with tremendous skill and care at Lexus. However, the positive relationship between customer complaints and customer loyalty did not reach statistically significant levels. Further study in examination of this relationship would help further understanding of this issue. Generally speaking, in Fornell *et al.*'s study, all of the hypotheses were found to be true, except hypotheses 2 and 6.

Conclusions

Customer satisfaction leads to profitability (Jacobs *et al.*, 2001; Srivastava *et al.*, 1998). The purpose of this research is to explore Taiwan Lexus's system of customer satisfaction. Applying a survey approach, and based on the estimated results of the modified CSI model, the following conclusions with respect to the implications of customer satisfaction can be inferred.

First, perceived quality is the only construct that positively and directly influences overall customer satisfaction. Thus, as the level of perceived quality increases, the level of overall customer satisfaction also increases.

Second, customer expectations also have a positive effect on overall customer satisfaction. However, they can only indirectly influence overall customer satisfaction by means of the perception of quality. It was found that customer expectations do not have a significant direct effect on overall levels of customer satisfaction. As a consequence, increases in the level of customer expectations also increase the perceived level of quality, and increases in the level of perceived quality increase, in turn, the level of overall customer satisfaction.

Third, different levels of overall customer satisfaction have significantly negative direct effects on customer complaints or significantly positive direct effects on customer loyalty. Therefore, as overall levels of customer satisfaction escalate, customer complaint-levels reduce, and levels of customer loyalty improve. As the rate of customer loyalty improves, it becomes more likely that a customer will again purchase a Lexus, recommend Lexus automobiles to friends or relatives, and become less sensitive to the price of a Lexus.

Finally, and perhaps most interestingly, we found that the influence of customer complaints on customer loyalty was not negative. This non-negative result indicates that Lexus is successful in turning complaining customers into loyal customers. In another words, Lexus does a masterful job of handling customer complaints. It might be said that after a customer has voiced a complaint with Lexus, the possibility of that customer becoming satisfied with their overall Lexus experience is better than that of a customer who never voices a complaint. It is encouraging to know that effectively handling customer complaints enables a firm to turn seeming negatives into positives.

Managerial implications and further research

Our major finding – that perceived quality is the only construct that directly affects overall levels of customer satisfaction – should have some implications for firms intending to increase the level of customer satisfaction associated with the sale of durable goods. Because perceived quality is measured by overall quality, customization, and reliability, firms can emphasize these indicators in providing services or products to better serve their customers. For example, customization may include adapting quality, style, variety, price, prestige, drivability, warranty, or convenience of repair to appeal to customers' needs. By examining the findings of this research, ample room for improvement may become evident to various sorts of firms.

As for further directions along this line of inquiry, we propose three possible points of view for future research based on our findings. First, in sharp contrast to the findings of US-based research (e.g. Fornell *et al.*, 1996), customer complaints in Taiwan did not negatively influence customer loyalty in Taiwan. What might be the cause of such a striking difference? Might it be due to cultural differences, the maturity of customers, or firms' skill at handling complaints, as we have suggested? Certainly, such inconsistent findings merit further study. Second, with the goal of more general applicability in mind, the CSI model might be examined in some other contexts – i.e. in different industries or countries. Doing so would allow for investigation into the validity of our findings. Finally, the question of whether consumers treat perceived value as part and parcel of perceived quality is also one that merits a great deal more exploration.

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