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# The Role of Price Perceptions in an Integrated Model of Behavioral Intentions

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*Compared to the emphasis that service quality research has received in service marketing, much less work has been done on the role of price perceptions and their effect on customer retention. This article seeks to fill this gap in the literature. The authors build propositions of price's role vis-à-vis customer value, satisfaction, and behavioral intentions and then test these propositions using empirical data from the banking industry in the United States and New Zealand. Their findings indicate that (a) price perceptions have a stronger influence on customer value perceptions than quality, and (b) price perceptions, when measured on a comparative basis, have a significant direct effect on customer satisfaction and behavioral intentions—over and above their mediated effect through the construct of customer value. These results indicate that price perceptions significantly affect customer retention and suggest that managers may benefit from actively managing consumers' price perceptions, in addition to consumers' quality perceptions.*

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Research has shown that increases in customer retention result in increased profitability for firms that compete

in mature, competitive markets; a characteristic true of several service industries like banking, telecommunications, hotels, airlines, and so on, to name but a few (e.g., Fornell and Wernerfelt 1987; Reichheld and Sasser 1990). As Bolton (1998) and Rust, Zahorik, and Keiningham (1995) note, this increased profitability results from increased consumption by existing customers, lower cost of retention, the spread of positive word of mouth, and the engagement of fewer resources in the satisfaction of existing customer needs.

Recently, both academics (e.g., Slater 1997; Woodruff 1997) and consultants (Gale 1994, 1997; Laitamaki and Kordupleski 1997) have recommended that firms orient their strategies for customer retention toward superior customer value delivery because customer value incorporates both the cost and benefits of staying with a firm and, as such, is a strong driver of customer retention.

*Customer value* is defined by Zeithaml (1988) as a “consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given,” and implicit in her definition is the notion of a consumer trade-off between a “get” and a “give” component. Although Zeithaml's use of the get and give components are in terms of the benefits and sacrifices involved in the

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use of a product or service, it has most often been operationalized in terms of the trade-off between quality (benefit) and cost (price) (see Bolton and Drew 1991). As Monroe (1990) notes, value is “the trade-off between the quality or benefits [consumers] perceive in a product relative to the sacrifice they perceive by paying the price” (p. 46).

Considering that price and quality are two component drivers of value perceptions, surprisingly little work has been done on the impact of price perceptions on value and, more important, behavioral intentions. This is all the more surprising given Voss, Parasuraman, and Grewal’s (1998) observation that price plays a critical role in services because of the variable, demand-based pricing that is often experienced in service industries (e.g., hotel, airline), given that performances cannot be readily inventoried.

Critical questions, both empirical and theoretical, about the role of price in services remain unanswered. For example, does price have a direct effect on overall customer satisfaction and behavioral intentions, above and beyond its indirect effect through the construct of customer value? If so, this would indicate that service price perceptions ought to be actively managed because of their impact on value perceptions *and* their direct effect on customer satisfaction and repatronage intentions. Similarly, theoretical questions about the formation of price perceptions in services remain unexplored and have implications with regard to the measurement and management of price perceptions.

In our research, we seek to answer some basic questions about the role of price perceptions and their impact on the variables that affect customer retention, namely, customer value, overall customer satisfaction, and behavioral intention. In addition to complementing prior research in services that has examined similar questions with regard to quality’s impact on customer satisfaction (Cronin and Taylor 1992; Spreng and Mackoy 1996) and behavioral intentions (e.g., Zeithaml, Berry, and Parasuraman 1996), our research into the role of pricing perceptions in customer retention has important managerial implications. A recent business example involving First USA, a major credit card issuer, illustrates the point. The CEO of First USA recently admitted that the firm’s policy of charging late fees had resulted in unfavorable price perceptions among its consumers of the cost of doing business with the firm, and this had resulted in a substantial erosion of the firm’s customer base (Davis 1999). The recovery cost was expected to be in the order of \$500 million as the firm attempted to keep its existing customers and woo new ones through interest rate concessions (Davis 1999).

In this article, we use empirical data to examine the role of pricing in services within an integrated model of behavioral intentions. First, we develop a set of propositions about the role of price, based on theory from the combined literatures of services, product pricing, and behavioral de-

cision theory. Second, using banking data made available to us from the U.S. and New Zealand banking industries, we test these propositions in an empirical setting. Last, we discuss these empirical findings along with managerial implications and areas for future research.

## HYPOTHESIS DEVELOPMENT

### Price Perceptions Have a Stronger Influence on Customer Value Perceptions

Value perceptions are considered to be the result of a cost-benefit trade-off (Zeithaml 1988), a trade-off that is often operationalized as a price-quality trade-off (Monroe 1990). In a service setting, Bolton and Drew (1991) have shown price and quality perceptions to influence value perceptions in the telecommunications industry. However, we take the argument one step further and propose that price perceptions have a stronger effect on value than quality; an argument that is based on prospect theory and on the relative accessibility of price cues.

According to prospect theory, “losses loom larger than gains” for consumers (Einhorn and Hogarth 1981; Kahneman and Tversky 1979). That is, consumers exhibit loss aversion; an effect that has been found across several disciplines of marketing including services. In Mittal, Ross, and Baldasare (1998), prospect theory is used to explain why consumers react more strongly when services underperform on an attribute (a loss) than when services overperform on some attribute (a gain). In Anderson and Sullivan (1993), prospect theory is used to explain why negative disconfirmation (loss) has a stronger influence on customer satisfaction than positive disconfirmation (gain). In Bolton and Lemon (1999), prospect theory is used to explain the asymmetric effect of service failures (loss) and service recovery efforts (gain) on consumers’ ongoing assessment of the service provided. Thus, considering that price is a monetary sacrifice (or loss) incurred for service, the tenets of prospect theory would indicate that price paid would be salient in consumers’ evaluation of services (Bolton and Lemon 1999).

Furthermore, if price and perceived quality are thought of as cues for inferring value, price would be considered an extrinsic cue that is readily observable and comparable in comparison with quality, an intrinsic cue that the service literature has shown to be multidimensional and correspondingly more difficult to evaluate (e.g., Parasuraman, Zeithaml, and Berry 1988). In addition, research in psychology (e.g., Taylor 1982) has shown that negatively valenced information is more readily accessible from memory than positively valenced information and elicits a

stronger consumer response (cf. Mittal, Ross, and Baldasare 1998). Because the extrinsic cue of price has a negative valence, this would indicate that price cues are more readily accessible from memory. Accordingly, unlike earlier studies that have examined the role of price and quality on value perceptions (e.g., Bolton and Drew 1991), we propose, based on the salience and accessibility of price information, the following:

*Hypothesis 1:* Price perceptions will have a *stronger* influence on customer value than perceived quality.

### Price Perceptions Influence Satisfaction

The role of price, as an attribute of performance, has been examined in several satisfaction studies. In an experimental setting involving a hotel check-in scenario, Voss, Parasuraman, and Grewal (1998) found price perceptions to affect satisfaction. In a macroeconomic study involving seven industry sectors, Fornell et al. (1996) found price perceptions to affect customer satisfaction. However, their study did not use a direct measure of price perception but, instead, computed it indirectly as a ratio of value and quality perceptions.

A recent study by Bolton and Lemon (1999) has looked at the price-satisfaction link in the entertainment and cellular phone industry. In both industries, Bolton and Lemon (1999) report finding price disconfirmation (deviations from normative payment expectations), payment equity (perceptions of price fairness/unfairness), and actual price (measured in dollar terms) to have a significant effect on overall customer satisfaction.

Given the importance of overall customer satisfaction as a driver of customer retention, we seek to replicate the findings of Bolton and Lemon (1999) in our study within the banking industry, using banking data collected across two countries. Also, in comparison to the Bolton and Lemon study, we test the effect of price perceptions on customer satisfaction using both an absolute measure of price perceptions and a comparative measure of price perceptions; the comparison being vis-à-vis competition. The reader may note that the latter measure of comparative price perceptions is a special case of Bolton and Lemon's measure of price disconfirmation (deviation from normative payment standards) in that the normative standard is established by prices charged by competition. In contrast, the use of absolute price perceptions without reference to any comparison standard is unique to this study. Accordingly, we test the following proposition:

*Hypothesis 2:* Favorable price perceptions, both absolute and comparative, have a positive effect on overall customer satisfaction.

### Price Perceptions Influence Behavioral Intentions

In an important qualitative study of customer switching among services, Keaveney (1995) reported finding that more than half the customers she surveyed had switched because of poor service price perceptions, thereby suggesting that unfavorable price perceptions may have a direct effect on customer intention to switch. The theoretical basis for this argument is provided in part by Mittal, Ross, and Baldasare's (1998) conclusion that "negatively valenced information is more perceptually salient than positively valenced information, is given more weight than positive information, and elicits a stronger physiological response than positive information" (p. 35). Thus, switching could be posited to be an immediate *physiological response* to negatively valenced information like high price.

Surprisingly, except for the study by Bolton and Lemon (1999), which examines the impact of price perceptions on depth of usage of cellular phone and entertainment services, we are aware of no other empirical studies that investigate the impact of price perceptions on traditional behavioral-intention measures such as customer intention to switch, likelihood to recommend, and likelihood of doing more business with the firm (cf. Zeithaml, Berry, and Parasuraman 1996), after controlling for the effects of quality, customer satisfaction, and value on behavioral intentions. Accordingly, we test the following proposition:

*Hypothesis 3:* Unfavorable price perceptions have a direct, negative effect on behavioral intentions after controlling for other systematic effects on behavioral intention.

## METHODOLOGY

As Farris, Parry, and Ailawadi (1992) and Rust and Donthu (1995) have noted in the marketing literature, a piecemeal approach to testing can result in incorrect conclusions because of the misspecification that results when variables that affect a dependent variable (besides the variable of interest) are excluded. Hence, we test our propositions about the role of price within an integrated model of behavioral intentions so that the effects hypothesized in Hypotheses 1, 2, and 3 are tested along with all the known links established in the literature (see Figure 1). In Figure 1, the effects that are the focus of this article are shown in dotted lines, and the effects that are well established in the service literature are shown in solid lines. The dotted line from price to value relates to Hypothesis 1, the dotted line from price to overall customer satisfaction relates to Hypothesis 2, and the dotted line from price to behavioral in-

tentions relates to Hypothesis 3. In contrast, the solid line between quality and overall customer satisfaction (Cronin and Taylor 1992; Spreng and Mackoy 1996), between quality and value (e.g., Bolton and Drew 1991; Fornell et al. 1996), between quality and behavioral intentions (Boulding et al. 1993; Kordupleski, Rust, and Zahorik 1993; Zeithaml, Berry, and Parasuraman 1996), between value and behavioral intentions (cf. Bolton and Drew 1991; Grewal, Monroe, and Krishnan 1998), between customer value and overall customer satisfaction (e.g., Patterson and Spreng 1997; Woodruff 1997), and between overall customer satisfaction and behavioral intentions (E. W. Anderson and Sullivan 1993; Swan and Oliver 1991) represent established links in the service literature.

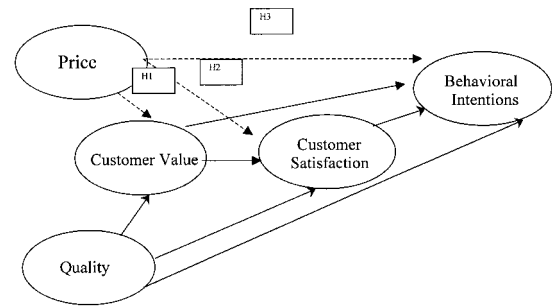
## DATA DESCRIPTION

To test our hypotheses, we employ two data sets made available to us by the banking industries in New Zealand and the United States. The New Zealand data cover six major banks and the U.S. data cover three major banks in southeastern United States. The U.S. data set consists of 188 complete responses from a mailout of approximately 800 questionnaires, and according to the managers at the U.S. bank, the sample of respondents is representative of bank customers in their region. The data set in New Zealand consists of 838 responses based on an initial mailout of 2,000 questionnaires. Of the 2,000 questionnaires mailed out (the addresses were randomly sampled from the telephone directory of the largest city in New Zealand), 164 questionnaires were returned with a "return to sender" comment, and of the remaining 1,917 questionnaires, 838 questionnaires were returned, resulting in a response rate of 43.6%. Armstrong and Overton's (1977) test for nonresponse bias was used to check for nonresponse bias, and the test revealed no bias. Of the 838 questionnaires, however, only 640 were found usable because of missing data. Again, a check was done to determine whether the data were missing at random by comparing the two groups on the basis of whether there was any systematic difference in the demographic profile of those respondents who had left information out and those who had filled in all items in the questionnaire. Again, there was no significant, systematic difference in profile, indicating that the data were missing at random.

## Construct Operationalization

The measures used to operationalize the constructs are reported in Table 1 for the U.S. and New Zealand data separately. A quick look at Table 1 will reveal that in the U.S. data set, value and satisfaction are measured by overall

**FIGURE 1**  
**Diagrammatic View of Integrated Model of Behavioral Intentions**



questions, and in the New Zealand data set, value, satisfaction, and price perceptions are measured by overall questions. However, there is precedence in the academic literature for the use of single-item measures.<sup>1</sup> Customer value is measured as a single item in Bolton and Drew (1991); Grisaffe and Kumar (1998); Gale (1994); Patterson and Spreng (1997); and Rust, Danaher, and Varki (2000). Bolton and Drew (1991), in the context of telecommunication services, measure customer value by the question "[Please indicate] the overall value of services provided by the local telephone company, considering the amount paid for the services received," and Gale (1994) recommends the AT&T measure of customer value, namely, "Considering the products and services that your vendor offers, are they worth what you paid for them?" In more recent studies, Grisaffe and Kumar (1998) have measured customer value by the question "Considering XYZ's overall quality in relation to cost, how would you rate XYZ's value for the money?" Patterson and Spreng (1997), on the other hand, have measured customer value by asking consumers to indicate the extent of their agreement with the statement "Considering the fee paid and what the consultant delivered, overall I believe we received fair value for money." A positive aspect of the "worth what paid for" concept is that it is flexible enough to allow the researcher to anchor the concept within a particular usage context yet forces respondents to trade off the components of value in their minds (cf. Zeithaml 1988). Similarly, overall customer satisfaction is measured by a single summary question in E. W. Anderson and Sullivan

1. Note that Finn and Kayande (1997) have argued in favor of overall measures as being reliable as respondents are better able to make aggregate judgments.

**TABLE 1**  
**Construct Operationalization and Measurement Quality**

	U.S. Data			New Zealand Data		
	Items	$\alpha^a$	AVE <sup>b</sup>	Items	$\alpha$	AVE
Behavioral intentions	Likelihood of doing more business with bank	.73	.58	Likelihood of switching bank	.86	.77
	Likelihood of recommending the bank			Likelihood of recommending the bank		
Customer value	Extent to which quality of checking service was worth what paid for	.85	.85	Extent to which quality of checking service was worth what paid for	.85	.85
Customer satisfaction	Overall, how satisfied are you with the checking service?	.85	.85	Overall, how satisfied are you with the checking service?	.85	.85
Price perception	What is your perception of bank's checking fees?	.83	.62	How competitive do you perceive your bank's fees and charges are?	.83	.85
	What is your perception of bank's loan rates?					
	What is your perception of bank's saving rates?					
Quality perception	Please rate bank on overall quality of service	.82	.54	Please rate bank on overall quality of service	.88	.72
	Please rate bank on speed of service			Please rate bank on attentiveness of personnel		
	Please rate bank on extent of personal attention			Please rate bank on extent to which needs are met		
	Please rate bank on its ability to provide error-free checking					

NOTE: All measures were anchored at *poor* (1) and *excellent* (4), except for overall customer satisfaction, which was anchored at *extremely dissatisfied* (1) and *very satisfied* (5), and the behavioral intention measures, which were anchored at *very unlikely* (1) and *very likely* (5).

a. Reliability of construct  $j$  ( $\alpha$ ) computed as

$$\alpha = \frac{\left( \sum_i \lambda_{ij} \right)^2}{\left( \sum_i \lambda_{ij} \right)^2 + \sum_i \text{Var}(\epsilon_i)}$$

where  $\lambda_{ij}$  is the completely standardized parameter estimate in the path between indicator  $i$  and construct  $j$  (see Fornell and Larcker 1981). For clarity and brevity in exposition, the individual  $\lambda_{ij}$  are not shown but are available from the authors upon request.

b. Average variance extracted (AVE) of construct  $j$  is computed as

$$\text{AVE} = \frac{\sum_i \lambda_{ij}^2}{\sum_i \lambda_{ij}^2 + \sum_i \text{Var}(\epsilon_i)}$$

(Fornell and Larcker 1981).

(1993); Fornell (1992); and Mittal, Ross, and Baldasare (1998).

### Measurement Quality of Constructs

J. C. Anderson and Gerbing's (1988) recommendations were followed in evaluating the measurement quality of the indicators. Anderson and Gerbing recommend that researchers first refine their measurement model before testing the structural component of their model. This two-step procedure of Anderson and Gerbing has been adopted in marketing by authors such as Voss, Parasuraman, and Grewal (1998); Burton et al. (1998); and Patterson and Spreng (1997). As per Anderson and Gerbing's recommen-

dations, we employed confirmatory factor analysis in LISREL 8 to refine the measurement model. The construct reliabilities and average variance extracted for each of the constructs employed are reported in Table 1. Note that in estimating the measurement model (as well as the structural model), we followed Anderson and Gerbing's recommendation for dealing with single-item measures. They recommend that a *conservative* method for dealing with single-item measures is to fix the error variance (e.g.,  $\theta_{\epsilon}$ ) to "the smallest value found in the other estimated variances." Accordingly, the error variances of the single-item indicators were set at 10% in the New Zealand data set and 11% in the U.S. data set. The value of this approach is that at least one is not naively assuming that the measures are without error and thus skewing the analysis (Hayduk 1987).



As Table 1 shows, the construct reliabilities for all the constructs are above the minimum of 0.7 recommended by Nunnally (1978). Variance-extracted estimates are above 0.5, which indicates that there is more "signal" than "noise" in the data (Fornell et al. 1996). The fact that all the indicators load on the proposed constructs significantly (the  $t$  values, not shown, range from 9.97 to 16.52 for U.S. data and from 21.04 to 32.17 for New Zealand data), coupled with average variance-extracted estimates greater than 0.5 for each of the constructs, indicates convergent validity among items measuring the construct (Bagozzi and Yi 1988; Fornell and Larcker 1981). The discriminant validity of the constructs, on the other hand, was checked by determining whether twice the standard errors of the correlations between the latent constructs ( $\phi$ ) included the value of 1. If a value of 1 were to be included, this would suggest that there was no difference between the correlated constructs (J. C. Anderson and Gerbing 1988). This was not found to be the case for either data set, thereby indicating the discriminant validity of the constructs employed. (For reasons of space, the  $t$  values, the indicator loadings on constructs, and the latent factor correlations [ $\phi$ ] have not been shown but are available on request.)

## ANALYSIS AND FINDINGS

The structural component of the model shown in Figure 1 was tested with LISREL 8 (Jöreskog and Sörbom 1993) using the measures indicated in Table 1.<sup>2</sup> Results for the U.S. data and the New Zealand data are reported side by side for ease in comparison. The Goodness-of-Fit Index (GFI) and Adjusted Goodness-of-Fit Index (AGFI) were .94 and .87 for the U.S. data and .99 and .98 for the New Zealand data. Because these values are considerably influenced by variations in sample size and nonnormality of the measures, researchers recommend the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) as these measures are considered robust to these variations (Babin and Burns 1998; Bollen 1989; Burton et al. 1998; Hu and Bentler 1998). In both data sets, the CFI and TLI exceed the advocated fit levels of .9 range (CFI of .97 and TLI of .95 for U.S. data and CFI of 1 and TLI of 1 for New Zealand data). The path coefficients for each of the links in Figure 1 are reported in Table 2.

Examining Table 2 for the significance of the individual links in the model, we find that the links in Figure 1 are supported as hypothesized for the most part. Hypothesis 1

is borne out in both data sets. The effect of price on value is significant in both data sets, and the standardized coefficient values and  $t$  values of price's effect on value are greater than that of quality. The effect of price on value in the U.S. data set is given by a standardized path coefficient of 0.38 with a  $t$  value equal to 5.67 compared with the path coefficient of 0.31 with a  $t$  value of 4.75 for quality's effect on value. Similarly, the effect of price on value in the New Zealand data set is given by a standardized path coefficient of 0.78 with a  $t$  value equal to 19.95 compared with the path coefficient of 0.14 with a  $t$  value of 4.82 for quality's effect on value. With regard to Hypotheses 2 and 3, there is mixed evidence: Price perceptions do not have a significant effect on overall customer satisfaction (coefficient = 0.02,  $t$  value = 0.52) and behavioral intentions (coefficient = 0.09,  $t$  value = 1.167) in the U.S. data, whereas in the New Zealand data, price perceptions have a strong, significant influence on overall customer satisfaction (coefficient = 0.35,  $t$  value = 4.30) and behavioral intentions (coefficient = 0.21,  $t$  value = 4.25). The difference may lie in the way price perceptions were measured in the two data sets. The price perceptions in the New Zealand data were measured relative to other competing banks (e.g., how competitive do you perceive your bank's fees and charges are), whereas price perceptions in the U.S. banks were measured on an absolute scale without reference to competition (e.g., what is your perception of your bank's fees). Given work in the pricing literature on how price perceptions are formed, we are inclined to favor the results in the New Zealand data as the pricing literature suggests that price perceptions are formed in relation to internal reference prices; the theoretical justification for which can be found in prospect theory. A central notion in prospect theory is that losses or sacrifices are encoded by consumers with respect to internal reference points (Thaler 1985). Within the pricing literature itself, the study of internal reference prices is a well-established discipline of its own (Monroe 1990). As Kalyanaram and Winer (1995) note, "There is a significant body of literature to support the notion that individuals make judgments and choices based on the comparison of observed phenomena to an internal reference price" (p. 161). According to this literature, consumers recognize prices as being high or low, depending on their internal reference points, which are established either by exposure to competitive prices or past prices (e.g., Biswas and Blair 1991; Rajendran and Tellis 1994). Prima facie evidence that reference prices operate in services is provided by Keaveney (1995), as she found more than one third of the customers who had switched services had switched because "service prices exceeded some internal reference price" (p. 74). More recently, Bolton and Lemon (1999) have proposed that price deviations from internal reference prices are perceived as being fair/unfair (pay-

2. The model in Figure 1 was tested by using only the single-item overall measure of quality in both U.S. and New Zealand data sets based on a suggestion by a reviewer that the depth of the quality construct could be affecting the findings. In both instances, there was no change in which effects were significant and which were not.

**TABLE 2**  
**Model Path Coefficients (by country)**

<i>Model Links</i>	<i>U.S. Data</i>			<i>New Zealand Data</i>		
	<i>Standardized Path Coefficient</i>	<i>t Value</i>	<i>p Value</i>	<i>Standardized Path Coefficient</i>	<i>t Value</i>	<i>p Value</i>
<i>Price perception → Value perception</i>	0.38	5.67	<.01	0.78	19.95	<.01
<i>Quality perception → Value perception</i>	0.31	4.75	<.01	0.14	4.82	<.01
<i>Price perception → Satisfaction</i>	0.02	0.52	<i>ns</i>	0.35	4.30	<.01
<i>Quality perception → Satisfaction</i>	0.22	3.80	<.05	0.45	10.10	<.01
<i>Price perception → Behavioral intent</i>	0.09	1.67	<i>ns</i>	0.21	4.25	<.05
<i>Quality perception → Behavioral intent</i>	0.16	2.33	<.05	0.10	5.19	<.01
<i>Value perception → Satisfaction</i>	0.61	7.57	<.01	0.17	2.15	<.05
<i>Value perception → Behavioral intent</i>	-0.23	-1.25	<i>ns</i>	-0.02	-0.42	<i>ns</i>
<i>Satisfaction → Behavioral intent</i>	1.13	5.54	<.01	0.32	10.82	<.01

NOTE: Italics highlight results of particular interest to the reader.

ment equity), and this, in turn, has been shown to affect customer satisfaction and usage in the cellular phone and entertainment industries.

Accordingly, it seems plausible that the prices charged by competition shape the internal reference price of the consumer and that perceptions of price relative to competition's prices are a closer approximation of how consumers encode price information. In addition, Bolton and Lemon's (1999) work would suggest that these price perceptions are judged as being fair/unfair (shown to influence customer satisfaction and usage in the cellular phone and entertainment industries), thus providing a potential explanation for the stronger, significant effects of comparative price perceptions on overall customer satisfaction and behavioral intentions.

## DISCUSSION AND CONCLUSION

The main managerial implication of this study is that in addition to making quality improvements, managers desirous of improving value perceptions can do so by actively managing the price perceptions of their customers. As our study shows, price perceptions have an important influence on customer value perceptions. In addition, by managing the *comparative* price perceptions of their customers, managers could simultaneously influence overall customer satisfaction and behavioral intentions, because of comparative price perception's direct effect on these variables.

One obvious way in which marketers can manage price perceptions is through direct communication. This could include comparative price advertising via mass media, as well as simple price comparisons on points of purchase material. Grewal, Monroe, and Krishnan (1998) note that price comparison advertising is effective in that it allows

managers to influence the context in which price comparisons are made. Thus, instead of leaving price perceptions to chance, service managers can take an active role in setting up the appropriate comparisons. In conjunction with this, firms could employ the principles of integrated marketing communication and seize every opportunity to manage the price perceptions of their customers. Service firms could consider adopting the practice of several retail chains like Staples, who routinely remind customers of their savings by listing the actual retail price and the savings accrued to the customer as a result of shopping at the retail chain, thus reinforcing competitive price perceptions.

Another, more subtle, way of managing price perceptions is simply by way of presentation of prices, because what is shown to affect customer behavior are price perceptions (and not actual price per se). For example, as Roha (1999) points out, an offer like MCI's 5 cents Everyday Plan appears to be better than the 7 cents plan of AT&T (both charge a monthly membership fee of \$4.95), when, in fact, MCI restricts its 5 cent plan to calls made between 7:00 p.m. and 7:00 a.m. and charges 10 cents for calls made outside of these hours. Similarly, airline firms like Southwest Airlines tend to suggest a half-off deal when, in effect, they are merely discounting their fares by 25% when they advertise a "buy one and get one half off" deal.<sup>3</sup> By contrast, First USA is an example of a firm that has had to cut the interest rate on its cards because its practice of charging late fees (Davis 1999). On hindsight, it seems that if the firm had simply increased its interest rate a few basis points to cover for delayed payments, the firm would have been better off and lost fewer customers.<sup>4</sup>

Service firms could also consider price bundling concepts to manage customer price perceptions. For example,

3. This example was suggested to the authors by Albert Della Bitta.

4. A basis point is one hundredth of a percentage.



a hotel could offer its peak-time guests a half-off offer valid for an off-season. The advantage of this is that even if the customers do not take advantage of the offer, the fact that it is available for the asking could affect their price perceptions with regard to their hotel stay. Service firms are in the ideal position to take advantage of price-bundling concepts because the additional cost of bundling is minimal given that services very often cannot be inventoried (e.g., Parasuraman, Zeithaml, and Berry 1985).

### Limitations and Future Research

As we stated at the outset, the aim of our article has been to focus attention on the underrepresented topic of pricing in services and to illustrate its importance within models of customer retention. To that effect, our empirical test reveals that comparative price perceptions have a powerful effect on customer value perceptions, overall customer satisfaction, and behavioral intention. However, there are some limitations to our study that future researchers need to address. A major limitation of our study is that we were limited to testing our model on cross-sectional data obtained from a single industry. A true test of the causal structure of our behavioral-intention model would require measures of the constructs collected at different time points, free of intertemporal, extraneous disturbances.<sup>5</sup> A simpler approach, by comparison, would be to test our model in an experimental setting in which price perceptions are artificially manipulated and its effects on value, overall satisfaction, and behavioral intention noted, as long as care is taken to ensure that the experiment approximates reality (ecological validity). Nevertheless, our study provides a basis for future researchers to test our findings in other industry settings with data from longitudinal studies or experimental data. Another fruitful area of research for service researchers would be determining the actual formation of pricing perceptions among consumers and the use of cues in the formation of these perceptions. The insights generated by this research stream could prove invaluable to service managers with regard to the setting of specific price policies.

### REFERENCES

- Anderson, Eugene W. and Mary W. Sullivan (1993), "The Antecedents and Consequences of Customer Satisfaction for Firms," *Marketing Science*, 12 (Spring), 125-43.
- Anderson, James C. and David W. Gerbing (1988), "Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach," *Psychological Bulletin*, 103 (November), 411-23.
- Armstrong, J. Scott and Terry S. Overton (1977), "Estimating Non-Response Bias in Mail Surveys," *Journal of Marketing Research*, 14 (3), 396-402.
- Babin, Laurie and Alvin Burns (1998), "A Modified Scale for the Measurement of Communication-Evoked Imagery," *Psychology and Marketing*, 15 (3), 261-78.
- Bagozzi, R. P. and Youjae Yi (1988), "On the Evaluation of Structural Equation Models," *Journal of the Academy of Marketing Science*, 16 (Spring), 74-94.
- Biswas, Abhijit and Edward A. Blair (1991), "Contextual Effects of Reference Prices in Retail Advertisements," *Journal of Marketing*, 55 (July), 1-12.
- Bollen, Kenneth A. (1989), *Structural Equations with Latent Variables*. New York: John Wiley.
- Bolton, Ruth N. (1998), "A Dynamic Model of the Duration of the Customer's Relationships with a Continuous Service Provider: The Role of Satisfaction," *Marketing Science*, 17 (1), 45-65.
- and James H. Drew (1991), "A Multistage Model of Customers' Assessments of Service Quality and Value," *Journal of Consumer Research*, 17 (December), 375-84.
- and Katherine N. Lemon (1999), "A Dynamic Model of Customer's Usage of Services: Usage as an Antecedent and Consequence of Satisfaction," *Journal of Marketing Research*, 36 (May), 171-86.
- Boulding, William, Richard Staelin, Ajay Kalra, and Valarie Zeithaml (1993), "A Dynamic Process Model of Service Quality: From Expectations to Behavioral Intentions," *Journal of Marketing Research*, 30 (February), 7-27.
- Burton, Scot, Donald R. Lichtenstein, Richard G. Netemeyer, and Judith A. Garretson (1998), "A Scale for Measuring Attitude toward Private Label Products and an Examination of Its Psychological and Behavioral Correlates," *Journal of the Academy of Marketing Science*, 26 (4), 293-306.
- Cronin, J. Joseph Jr. and Stephen A. Taylor (1992), "Measuring Service Quality: A Reexamination and Extension," *Journal of Marketing*, 56 (July), 55-68.
- Davis, Kristin (1999), "Gotcha!: Delayed Postings, Late Fees, and Interest Penalties Have First USA Customers Seeing Red," *Kiplinger's Personal Finance Magazine*, November, 105-110.
- Einhorn, Hillel J. and Robin M. Hogarth (1981), "Behavioral Decision Theory: Processes of Judgment and Choice," *Annual Review of Psychology*, 32, 53-88.
- Farris, Paul W., Mark E. Parry, and Kusum L. Ailawadi (1992), "Structural Analysis of Models with Composite Dependent Variables," *Marketing Science*, 11 (1), 76-95.
- Finn, Adam and Ujwal Kayande (1997), "Reliability Assessment and Optimization of Marketing Measurement," *Journal of Marketing Research*, 34 (May), 262-75.
- Fornell, Claes (1992), "A National Customer Satisfaction Barometer: The Swedish Experience," *Journal of Marketing*, 56 (January), 6-21.
- , Michael D. Johnson, Eugene W. Anderson, Jaesung Cha, and Barbara Bryant (1996), "The American Customer Satisfaction Index: Nature, Purpose, and Findings," *Journal of Marketing*, 60 (October), 7-18.
- and Larcker (1981), "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," *Journal of Marketing Research*, 18 (February), 39-50.
- and Birger Wernerfelt (1987), "Defensive Marketing Strategy by Customer Complaint Management," *Journal of Marketing Research*, 24 (November), 337-46.
- Gale, Bradely T. (1994), *Managing Customer Value*. New York: Free Press.
- (1997), "Satisfaction Is Not Enough," *Marketing News*, October 27, 18.
- Grewal, Dhruv, Kent B. Monroe, and R. Krishnan (1998), "The Effects of Price-Comparison Advertising on Buyer's Perceptions of Acquisition Value, Transaction Value, and Behavioral Intentions," *Journal of Marketing*, 62 (April), 6-59.

5. We thank an anonymous reviewer for pointing this out to us.

- Grisaffe, Douglas B. and Anand Kumar (1998), "Antecedents and Consequences of Customer Value: Testing an Expanded Framework," MSI Working Paper #98-107, Marketing Science Institute.
- Hayduk, Leslie A. (1987), *Structural Equation Modeling with LISREL*. London: John Hopkins.
- Hu, Li-tze and Peter M. Bentler (1998), "Fit Indices in Covariance Structure Modeling: Sensitivity to Underparameterized Model Misspecification," *Psychological Methods*, 3 (4), 424-53.
- Jöreskog, Karl G. and Dag Sörbom (1993), *LISREL 8: User's Reference Guide*. Chicago: Scientific Software International.
- Kahneman, Daniel and Amos Tversky (1979), "Prospect Theory: An Analysis of Decision under Risk," *Econometrica*, 47 (2), 263-91.
- Kalyanaram, Gurumurthy and Russell S. Winer (1995), "Empirical Generalizations from Reference Price Research," *Marketing Science*, 14 (special issue), 161-69.
- Keaveney, Susan M. (1995), "Customer Behavior in Services Industries: An Exploratory Study," *Journal of Marketing*, 59 (2), 71-82.
- Kordupleski, Raymond E., Roland T. Rust, and Anthony J. Zahorik (1993), "Why Improving Quality Doesn't Improve Quality (Or Whatever Happened to Marketing?)," *California Management Review*, 35 (Spring), 82-95.
- Laitamaki, Jukka and Raymond E. Kordupleski (1997), "Building and Deploying Profitable Growth Strategies Based on the Waterfall of Customer Value Added," *European Management Journal*, 15 (2), 158-66.
- Mittal, Vikas, William T. Ross Jr. and Patrick M. Baldasare (1998), "The Asymmetric Impact of Negative and Positive Attribute-Level Performance on Overall Satisfaction and Repurchase Intentions," *Journal of Marketing*, 62 (1), 33-50.
- Monroe, K. B. (1990), *Pricing: Making Profitable Decisions*, 2nd ed. New York: McGraw-Hill.
- Nunnally, Jim C. (1978), *Psychometric Theory*. New York: McGraw-Hill.
- Parasuraman, A., Valarie Zeithaml, and Leonard L. Berry (1985), "A Conceptual Model of Service Quality and Its Implications for Future Research," *Journal of Marketing*, 49 (Fall), 41-50.
- , ———, and ——— (1988), "SERVQUAL: A Multiple Item Scale for Measuring Customer Perceptions of Service Quality," *Journal of Retailing*, 64 (Spring), 12-40.
- Patterson, Paul G. and Richard A. Spreng (1997), "Modeling the Relationship between Perceived Value, Satisfaction, and Repurchase Intentions in a Business-to-Business, Services Context: An Empirical Examination," *International Journal of Service Industry Management*, 8 (5), 414-34.
- Rajendran, K. N. and Gerard J. Tellis (1994), "Contextual and Temporal Components of Reference Price," *Journal of Marketing*, 58 (January), 22-34.
- Reichheld, Frederick F. and W. Earl Sasser (1990), "Zero Defections: Quality Comes to Services," *Harvard Business Review*, 14 (March), 495-507.
- Roha, Ronaleen (1999), "Our 2 Cents on the Nickel Calling Plan Shoot-out," *Kiplinger's Personal Finance Magazine*, November, 58.
- Rust, Roland T., Peter J. Danaher, and Sajeev Varki (2000), "Using Service Quality Data for Competitive Marketing Decisions," *International Journal of Service Industry Management*, 11 (5), 438-69.
- and Naveen Donthu (1995), "Capturing Geographically Localized Misspecification Error in Retail Store Choice Models," *Journal of Marketing Research*, 32 (1), 103-11.
- , Anthony J. Zahorik, and Timothy L. Keiningham (1995), "Making Service Quality Financially Accountable," *Journal of Marketing*, 59 (April), 58-70.
- Slater, Stanley F. (1997), "Developing a Customer Value-Based Theory of the Firm," *Journal of the Academy of Marketing Science*, 25 (Spring), 162-67.
- Spreng, Richard A. and Robert D. Mackoy (1996), "An Empirical Examination of a Model of Perceived Service Quality and Satisfaction," *Journal of Retailing*, 72 (2), 201-14.
- Swan, John E. and Richard L. Oliver (1991), "An Applied Analysis of Buyer Equity Perceptions and Satisfaction with Automobile Salespeople," *Journal of Personal Selling & Sales Management*, 11 (2), 15-26.
- Taylor, Shelley (1982), "The Availability Bias in Social Perception," in *Judgment under Uncertainty: Heuristics and Biases*, Daniel Kahneman, Paul Slovic, and Amos Tversky, eds. Cambridge, UK: Cambridge University Press, 190-200.
- Thaler, Richard (1985), "Mental Accounting and Consumer Choice," *Marketing Science*, 4 (Summer), 199-214.
- Voss, Glenn B., A. Parasuraman, and Dhruv Grewal (1998), "The Roles of Price, Performance, and Expectations in Determining Satisfaction in Service Exchanges," *Journal of Marketing*, 62 (October), 46-61.
- Woodruff, Robert B. (1997), "Customer Value: The Next Source for Competitive Advantage," *Journal of the Academy of Marketing Science*, 25 (Spring), 139-53.
- Zeithaml, Valarie A. (1988), "Consumer Perceptions of Price, Quality and Value: A Means-End Model and Synthesis of Evidence," *Journal of Marketing*, 52 (July), 2-22.
- , Leonard L. Berry, and A. Parasuraman (1996), "The Behavioral Consequences of Service Quality," *Journal of Marketing*, 60 (April), 31-46.

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