

# **Fairness through Transparency: The Influence of Price Transparency on Consumer Perceptions of Price Fairness**

**Sandra Rothenberger**

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Keywords: Price transparency, Price fairness, Satisfaction, Attitudinal loyalty, Price sensitivity.

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### **The Influence of Price Transparency on Consumer Perceptions of Price Fairness**

**Dr. Sandra Rothenberger**

#### **Abstract**

This study proposes that price transparency is a significant factor affecting customer judgments of the fairness of sellers' prices. Cognitive judgments of fairness require a certain amount of information processing; therefore, the level of transparency and the amount of price information affect fairness judgments. The more clear information consumers possess concerning seller prices, the more positive the judgment will be. Customer price fairness judgment is an effective measurement for the evaluation of customer satisfaction that can increase the attitudinal loyalty of customers to the seller. The impact of price transparency on judgments of price fairness and the effects on satisfaction and loyalty are tested using a structural equation model and a sample of 1,459 passengers of a major European train company.

**Key words:** Price transparency, Price fairness, Satisfaction, Attitudinal loyalty, Price sensitivity

## **Introduction**

Recent research has emphasized the significance of price fairness as a prevalent consumer-related concern because little is known about why certain prices are considered unfair by the consumer (Campbell 1999; Xia et al. 2004). Price escalation by sellers often causes consumers to question the fairness of increases (Bolton and Alba 2006; Campbell 2007). Moreover, various pricing practices, including dynamic pricing, often lead to consumer judgments of price fairness (Grewal, Hardesty and Iyer 2004; Haws and Bearden 2006). These price fairness judgments are critical to the consumer's perception of satisfaction with the transaction and their repeat purchase intentions (Grewal et al. 2004; Xia et al. 2004). Price fairness is the consumer's judgment of whether the price offered by the seller is reasonable, acceptable, and just (Bolton et al. 2003). Recent literature has examined the antecedents and consequences of price fairness perceptions (Campbell 1999; Xia et al. 2004), and the interpretation of price fairness is a judgment as to whether an outcome or the process to reach a price outcome is deemed reasonable and just (Bolton et al. 2003; Xia et al. 2004). This definition implies that a consumer's judgment involves the comparison of price with a reference point, standard, or norm.

In retailing, price fairness is significant because it affects a retailer's image, and unfairness in a perceived price may lead to negative consequences for the seller such as consumer switching and negative word of mouth (Campbell 1999). The price fairness evaluation of retail services is complex because although consumers may compare the invariant material costs of tangible goods, they may have a reference point other than competitive prices for services (Bolton and Alba 2006).

Price information for retail services is important to enable consumers to make comparisons and arrive at judgments concerning price fairness. In several industries, such as

automobile repair, consumer protection laws mandate that a detailed breakdown of the repair estimates be provided to the customer prior to service and the actual costs provided after the service. However, in most other forms of retail services, including travel, complete price information is not available. For example, airline tickets, particularly those purchased from travel agents, contain only rudimentary price information. In most services, the itemization of the various price components may not be possible.

In this research paper, price transparency refers to the available detailed price information. Price transparency, in conjunction with information related to availability and access, is a vital constituent of what economists refer to as market transparency. Market transparency enhances economic efficiency and the functioning of markets, whereas a lack of transparency causes information asymmetry that the consumer or the seller can exploit (Akerlof 1970). Similarly, we argue that price transparency is an integral input to the consumer's perception of fairness.

The present article seeks to understand the impacts of price transparency on consumers' fairness perceptions and satisfaction. We develop a conceptual model related to price transparency, price fairness, satisfaction, and attitudinal loyalty and empirically test the model. The theoretical framework and hypotheses are presented in the next section followed by an elaboration on the empirical method and a discussion of the results. We conclude by offering some suggestions for research and practice.

### **Theoretical Framework and Hypotheses**

Xia et al. (2004) indicated that value decency alludes to buyers' evaluations of whether a dealer's cost is sensible, worthy, or legitimate. In a different study on the factors influencing consumer loyalty, the author found that "charging a reasonable value serves to create consumer loyalty and steadfastness." (Sulehri 2014). This is challenged by a study from

Ingenbleek (2015), who reasoned that consumer loyalty is specifically affected by value observations but, indirectly, through the perspective of value decency. Value decency, and the way it is altered and presented, has a remarkable effect on fulfillment. To illustrate, an IT services provider offers an additional service package at a premium cost. This strategy implies that the customers' fulfillment levels are influenced by the amount charged (Ingenbleek 2015). Therefore, if the consumer is paying a premium (more than other consumers), the consumer will expect a premium offering: speedier reaction times and quality administration. If the consumer is then offered an alternative basic plan, the consumer's desires decrease with the recognition that the costs exclude the included profits of an IT supplier offering a more sophisticated product or service. How can value be used to enhance consumer loyalty? This can be achieved by providing estimates for items that are sufficiently high to elicit positive reactions from clients (Chung 2015). By expanding or increasing costs, the additional assets convey superior client administration to consumers. The IT services provider, for example, can now offer two-hour reaction times rather than four, enhancing perceived customer fulfillment. Pricing judgments by consumers involve two basic dimensions: economic and psychological dimensions (Rothenberger and Hinterhuber 2005). The economic dimension focuses on costs and targets return on investment and the demand and supply side of the industry, whereas the psychological dimension concentrates on the consumer's perception of price or change in price. Money-back guarantees, fixed prices, honest pricing, and customer advocacy represent some of the tools aimed at increasing satisfaction with pricing policies and company strategies. The central determinants of consumers' reactions to prices are identified as customer value and perceived price fairness (Reavey 2015).

A study that examined the relationship between customer satisfaction and price tolerance found a positive association between changes in customer satisfaction and changes in price tolerance (Anderson, 1996). He reported in the study that the findings imply that

increasing customer satisfaction is likely to decrease price elasticity of demand. In particular, the findings imply a one percent increase in customer satisfaction should be associated with a 0.60 percent decrease in price sensitivity. This tells us that, over time, customer satisfaction does influence price tolerance. It means that as a customer becomes more satisfied with the level of service delivered by a company, price becomes less of a factor. Therefore, customer satisfaction leads to customer loyalty.

Companies should orient their strategies to deliver superior customer value defined as “a consumer’s overall assessment in the form of information of the use of a product, based on perceptions of what is received and what is given.” (Zeithaml 1988, p. 14). Superior customer value can be provided through information that drives customer satisfaction, retention, and profitability. Although the “get” and “give” components of this approach are conceptualized in terms of benefits and sacrifices, most studies use quality and monetary prices as components of value perception. Value perception represents a trade-off between the quality of benefits the customer identifies in the product and the sacrifice the customer perceives by paying the price. Several studies have shown empirically that price information and quality perceptions influence value judgments and highlight the significance of price perception in customer value. Therefore, managers should actively manage consumer perceptions.

Viswanathan et al. (2007) show in an automotive retailing context that consumers who use product- and price-related information revise their vehicle preferences, suggesting that information adds value by helping consumers with superior product choices (Kuester, 2015).

According to the theory of distributive justice, consumers form judgments by comparing their information and investments (e.g., price paid) to the benefits (quality) they receive. Equity theory suggests various comparative factors that might influence a fairness judgment, such as other individuals, a group of people, organizations, or the individual’s own experiences. That is, equity or inequity judgments have several antecedents. Buyers compare their gains to the gains of the exchange partner. If a buyer considers a seller to earn

exceptionally high profits and that any increase in price is not attributable to quality increases, the exchange is perceived as unfair. In a bank setting, Urbany, Madden and Dickson (1989) found that customers perceive a price increase as unfair if they consider it serves only to increase profits. Moreover, buyers perceive an exchange as unfair if they discover that other buyers in another exchange relationship with the same seller paid a lower price for the same product. They also indicate that consumers use social norms and personal and societal approval to arrive at fairness judgments (Urbany, Madden and Dickson 1989).

Price transparency and judgments of price fairness affect customer satisfaction. The significance of customer satisfaction as a performance indicator is increasing. Theoretical and empirical studies continue to show that an increase in customer satisfaction correlates with an increase in shareholder value. A number of companies continuously measure customer satisfaction adopting it as a primary objective and a central component of their mission statement. Moreover, companies are now linking customer satisfaction with employee compensation and use satisfaction measures as key contributions for marketing audits and feedback for marketing strategy. The development and implementation of customer satisfaction management programs are based on the assumption that greater customer satisfaction leads to improved economic returns through increased repurchase intentions, word-of-mouth effects, cross-buying, and reduced price sensitivity (Chung 2015). Theory and practice in customer satisfaction measurement emphasize performance measurement. However, although quality and customer satisfaction is composed of multiple attributes, price as an influence on customer satisfaction has received minimal attention.

At best, measures of price perceptions use a single item in conjunction with measuring various product or service attributes. Surprisingly, customer satisfaction measurement neglects the central factor of price in influencing purchase decisions and post-purchase behavior. In a qualitative study focusing on consumer switching behavior with respect to services, Keaveney and Hunt (1992) reported that more than half of customers switched

service providers because of poor price perceptions (compared with those of competitors). Varki and Colgate (2001) arrived at similar results in a study of the banking industry. The authors found that price perceptions directly influence customer satisfaction, the likelihood of switching, and the likelihood of recommendation (Jaramillo and Spector 2015).

Research suggests that four factors influence price fairness judgments. First, a price fairness judgment can be based on comparative transactions involving different parties. Second, information that provides the reasons for a certain price or a price change may influence price fairness perceptions (price transparency). Third, the customer's previous experiences may affect individual perceptions as to what is considered reasonable, acceptable, or justifiable. Fourth, the consumer's general knowledge or beliefs concerning the seller's practices and actions may affect the formation of price fairness judgments (Xia et al. 2004). In turn, perceived price fairness can be defined as consumers' assessments of whether the difference or a lack of difference between a seller's price and the price of a comparator in a transaction is equitable, reasonable, and justifiable (Xia and Monroe 2010).

This study examines and identifies the specific factors that influence consumers' perceptions of price fairness and finds several compelling results. Price transparency assumes a key role in customers' judgment processes in the stages of perception formation. Because the process of judging price fairness is cognitive and requires a certain amount of information processing, information and greater transparency concerning prices influence the outcome of price fairness judgments. When consumers have more information on a vendor's price, positive price fairness perceptions increase, which encourages a more favorable evaluation of satisfaction perceptions. Attitudinal loyalty in the form of repurchase and recommendation intentions increases. Price fairness perception leads to a stronger consumer-seller relationship (Hortamani, et al., 2013).

Several theories attempt to clarify the impact of price transparency and price fairness on loyalty beyond service and quality satisfaction. Zhu and Chen (2012) argued that service



fairness predicts customer satisfaction, and the two are positively correlated. The authors categorize service fairness into four dimensions – informational, interpersonal, distributive, and procedurally fair. Similarly, Carr (2007) empirically found that all four of these service dimensions positively affect customer satisfaction. Moreover, the author stated that overall service fairness is positively related to customer satisfaction. All of the studies discussed demonstrate a positive relationship between service fairness, service quality, and price fairness perception and the satisfaction and loyalty of customers.

Voss, Parasuraman and Grewal (1998) argued that satisfaction is a component of price function, performance, and expectation; therefore, perceived price fairness might be one of the dominant determinants of satisfaction. According to Gielissen et al. (2008), several factors drive the perception of fair price: reference price, the costs of the seller, a self-interest bias, and the perceived motives of the seller.

Figure 1 shows the relationship between price transparency, price fairness, satisfaction, and attitudinal loyalty.

(Insert Figure 1 about here)

### ***Price Transparency, Price Fairness, and Satisfaction***

Providing transparent, honest, and complete information about prices and complex fee structures to customers, particularly in situations of intense price competition, fluctuating prices, and complex price mechanisms, may lead customers to infer that prices are fair and that they will be satisfied with the service (Puccinelli et al., 2009). Hence,

*H1: Price transparency enhances positive price fairness perceptions.*

*H2: Price transparency enhances customers' positive satisfaction judgments.*

These hypotheses are based on the assumption that complete, accurate, and honest price information from a company offers benefits in the form of satisfaction and fairness to consumers because it assists the informed consumer decision (see also Bearden et al. 2003).

Cost as a buying determinant and as a component of post-purchasing procedures has been established by studies. In a subjective study on exchanging conduct in administrations, Hanna, Smith and Lemon (2015) report that a substantial portion of clients exchanged goods because they discerned poor value (in contrast with contenders). Varki and Colgate (2001) arrived at comparative results in their investigation of the management accounting industry. The authors found that value observation specifically impacts consumer loyalty, the probability of exchange, and the probability of suggestion to others. Considering the focus on buyer conduct, consumer loyalty overviews lack appropriate attention to the different components of estimating. Cost is viewed as only one of a few characteristics, and the precursors and outcomes of value fulfillment are minimally researched.

### ***Price Fairness and Satisfaction***

When a company provides more price information and, therefore, greater price transparency, more customers perceive the price as fair. Therefore, price transparency should lead directly to a perception of price fairness, which significantly affects satisfaction.

Research on consumer behavior reveals that fairness perceptions have a positive influence on satisfaction perceptions (Bowman and Narayandas 2001; Cao et al. 2003; Huffman and Cain 2001; Kim and Mauborgne 1996; Ordonez et al. 2000), in part because these perceptions depend on the supplier's commitment to provide sufficient information about the price and adequate quality goods and services relative to the price paid (Oliver and Swan 1989a; Oliver and Swan 1989b; Szymanski and Henard 2001). Price transparency and fairness perceptions directly influence satisfaction judgments because consumers judge the price paid according to the consistency in product or service performance. When consumers compare their perceived gains or benefits with the transaction involving their perceived monetary sacrifice and judge that their sacrifice is greater than the benefits, they are more likely to become dissatisfied. Therefore, information on price (price transparency) should

influence consumers' satisfaction judgments both directly and indirectly through price fairness perceptions (Tang 2015).

*H3: Price fairness perceptions positively influence satisfaction judgments.*

Perceived price fairness also represents a psychological factor that exerts influence on consumers' reaction to prices. Price fairness judgments can be somewhat implicit and highly subjective; in turn, consumers' subjective beliefs that the price is favorable and meets their image and service expectations directly influences their price fairness judgments. Fairness judgments entail a process that evaluates whether a price that differs from a reference point (compared with alternative services and products or social norms) is justifiable, reasonable, and acceptable. If consumers are confident that a company's price is favorable, they perceive it as fair.

Empirical research indicates that customers' perceived price fairness directly influences their overall satisfaction and, therefore, post-purchase attitudes and behaviors. Voss, in studying the effect of price perceptions in a hotel check-in scenario, found that price perceptions directly influence overall customer satisfaction. Bolton and Lemon also reported that price disconfirmation, payment equity, and the actual price significantly affect overall customer satisfaction in the entertainment and cellular phone industries.

Substantial research in the fairness literature links price fairness judgments and attitudinal intentions. Oliver and Swan (2011) showed that perceptions of unfair prices lead to dissatisfaction and a lack of positive attitudinal intentions, and other studies note that judgments of unfairness lead to negative consumer reactions such as lower purchase intentions, complaints, and negative word of mouth. Thus, price fairness judgments directly influence customers' post-purchase attitudes including positive or negative recommendations and repurchase intentions (Wang, Orford and Gong 2015).

### ***Satisfaction and Attitudinal Loyalty***

The evaluation of satisfaction in terms of service quality judgments equates to a consumer's overall impression of personal satisfaction with the organization and its services. Satisfaction refers to a judgment made on the basis of a specific service encounter. Various researchers attempt to understand the relationship between satisfaction and service quality and its effect on customer purchase intentions. For example, research shows that delivering high service quality is essential for every travel transportation company because service quality significantly drives passenger satisfaction, passenger loyalty, and the choice of transportation.

Customer satisfaction is a focus of most service operations because companies assume a strong relationship between satisfaction and consumer behavior. Higher customer satisfaction leads to greater repurchase and recommendation intentions and behavior. In a competitive environment, satisfying customers has a positive effect on long-term survival. Building customer relationships is necessary for all organizations in general and service industry companies in particular. Customer satisfaction, service quality, customer perception, and customer loyalty represent the main concerns of service companies today and improve an organization's performance translating to profit

Significant debate surrounds the distinction and association between service quality and customer satisfaction. Previous studies agree that customer satisfaction and service quality are conceptually distinct, but researchers have not reached consensus on their causal order. Some researchers argue that service quality leads to customer satisfaction, whereas others posit that customer satisfaction is an antecedent of service quality. Some researchers claim that there is no relationship between service quality and customer satisfaction.

However, based on the evidence, this study proposes that:

*H4: Judgments of satisfaction positively affect customers' attitudes toward loyalty in the form of repurchase and recommendation intentions.*

Empirical research emphasizes the importance of distinguishing customer satisfaction by two different loyalty components (Feng, Luo and Krueger 2015). Attitudinal loyalty reflects the customer's intention to repurchase or recommend and, thus, the psychological disposition toward the same brand or brand set. Additionally attitudinal loyalty involves the measurement of consumer attitudes. In contrast, behavioral loyalty represents a cognitive process that measures past purchases of the same service or product and/or the probability of future purchase given past purchase behaviors.

### ***Consumer and Contextual Moderators***

The price fairness literature argues that attributions such as higher price or price increases affect consumer perceptions of price fairness. Haws and Bearden (2006) argued in the context of dynamic pricing that context matters when consumers evaluate price fairness of various dynamic pricing circumstances.

A positive relationship between client devotion and gainfulness is typically assumed. Reichheld and Sasser (1990) found that when an organization increases clients by five percent, benefits increase by 25 percent to 125 percent. The authors' study received the attention of both experts and scientists, creating enthusiasm for client unwaveringness. Gould (1995) helped solidify the enthusiasm for unwaveringness through his exploration that upheld Reichheld and Sasser's work. Today, advertisers seek data on the most proficient methods to create client devotion. Consumer loyalty has been a noteworthy objective of business associations because it is assumed to influence client maintenance and organizations' market share (Hansemark and Albinsson 2004). Fulfilled clients are considered less value sensitive, less affected by contenders, likely to purchase extra items and/or services, and to stay loyal for a longer period (Zineldin 2000). However, in 1991, the Xerox Company made an amazing – and troubling – disclosure. "Fulfilled" clients were not behaving as expected and were not

returning to Xerox to repurchase (McCarthy 1997 p. 13). Only clients, who settle on decisions, will become steadfast. Jones and Sasser (1995) supported in their own examination of Xerox that the main steadfast clients are completely fulfilled clients. Consequently, the Xerox study shed new light on a moderately unexplored domain, that is, the link between consumer loyalty and client loyalty. Client loyalty of clients is thought to be a factor of fulfillment (Fecikova 2004), and faithful clients add to an organization's benefit by spending more on an organization's products and services and by recommending the company to other consumers through positive word of mouth..

Buyer perceptions of value are based on perceived gain relative to monetary sacrifice; therefore, the greater the perceived monetary sacrifice, the lower the perceived value of the product or service. Similarly, Martins and Monroe (2013) showed that a perceived unfair price represents lower value than a financially equivalent fair price. However, because price fairness depends on comparisons, it is possible that consumers' perceptions of fair prices vary across the population. A significant source of variance is price sensitivity, and another is income. Perceived price unfairness leads to increased price consciousness of buyers (Sinha and Batra 1999). The reverse could also be true, that is, increased price sensitivity may cause consumers to evaluate prices more carefully and, therefore, to develop stricter standards of what constitutes a "fair price." We argue that:

*H5: Consumer perceptions of fairness and, therefore, their satisfaction and attitudinal loyalty, is moderated by their price sensitivity.*

Similarly, the determination of fair price depends on perceived value, which in turn is evaluated by the extent of monetary sacrifice required to obtain the product or service gains. The perception of monetary sacrifice may be less for consumers with higher income levels than for consumers with lower income levels. Therefore, we offer that:

*H6: Consumer perceptions of fairness and, therefore, their satisfaction and attitudinal loyalty are moderated by their income levels.*

In some cases, products or services are offered as gifts. For example, in the case of travel, it is not unusual for parents, spouses, or other relatives to buy tickets for other family members. In cases where the payment for the product or service is made by someone else, the monetary sacrifice is made by another person. In most instances, the extent of the monetary sacrifice is easily determined from the price information. Even for gifts or services such as air or train tickets, the price is difficult to conceal. Price information allows fairness evaluations. However, the perceptions of unfairness may be mitigated by the fact that the price was paid by another. However, a perception of unfairness may cause negative consequences because the price was paid by a close relative. Therefore, we offer that:

*H7: Consumer perceptions of fairness and, therefore, consumers' satisfaction and attitudinal loyalty are moderated by whether the payment is made by themselves or someone else.*

Value certainty represents the extent to which the buyer accepts that an offered cost is positive. The more certainty clients have in the benefits of an offer, the higher the fulfillment with cost will be. Value certainty is associated with value straightforwardness, value quality, and relative cost. Clients appreciate straightforwardness, which simplifies the process of offer assessment. Retailers tend to overestimate buyer response to costs, which implies that consumers may not process value data effectively. Customer value certainty may be a subjective observation rather than a consequence of extensive data evaluation. Therefore, value certainty may be considered a different measurement of value fulfillment.

## **Method**

### ***Questionnaire and Data Collection***

A standardized questionnaire with closed-ended response questions using statement or satisfaction scales was developed and administered to a sample of 1,459 passengers of a major European train company. Based on the literature review and model definitions (see

Figure 1), the research team generated several items to measure the constructs and presented these items to the market research department of the train company. The team members discussed the chosen items, added items, and reworded or deleted items to improve the questionnaire. The questionnaire pre-test was administered to 10 train passengers. The recorded statements of the passengers mentioned that some formulations were unclear. The unclear items were reworded before collecting data for the large-scale empirical study with random sampling.

For randomly selected routes in Austria, Germany, and Switzerland, wagons and seat numbers were randomly selected, and questionnaires were placed on those seats. Passengers completed the questionnaires during their travel. Of the 2,600 questionnaires distributed, 1,459 were returned for a response rate of approximately 56.12 percent.

### ***Measures***

The key constructs shown in Figure 1 were measured by multiple indicators using seven-point, Likert-type scales. Each scale underwent a three-step item reliability and purification procedure. First, the inter-item and item-to-total correlations were computed for each item to ensure that all items have a significant correlation coefficient at the 0.01 level. Second, Cronbach's alphas were calculated for each construct. In the case of a low alpha value, the lowest item-to-correlation was removed.

The development of the measurement scales relied on the review and implications derived from the literature. The price transparency scale consists of the following items: (1) the price information is comprehensible; (2) the price information is complete; (3) the price information is true, and (4) the price information is clear. Price fairness measures whether (1) price meets the service expectation; (2) price meets the image perception; (3) price meets the quality expectation, and (4) price meets overall expectations. The satisfaction scale includes: (1) the train is reliable (punctuality); (2) the train offers catering; (3) the railroad network is



satisfactory, and (4) the service is satisfactory during travel. Finally, the measure of attitudinal loyalty consists of the following items: (1) I would repurchase a train ticket and (2) I would recommend the train company. A seven-point semantic scale (1 = very satisfied to 7 = not very satisfied at all) measured respondents' responses. Table 1 shows all of the items.

(Insert Table 1 about here)

## **Results**

### ***Model Specification***

Structural equation analysis software, analysis of moment structures (AMOS) version 22.0, was used to test the measurement and structural equation models of the conceptual model (Figure 1). Relationships among variables were determined through maximum likelihood estimates. A two-stage method was used as recommended by Anderson and Gerbing (1988). Confirmatory factor analysis was first applied to the multi-item scales. Next, the measurement model and structural equation paths were estimated simultaneously to test the proposed (overall) model. This two-stage method ensured the reliability and validity of the constructs before attempting to draw conclusions concerning the relations among constructs.

### ***Measurement Model***

Table 1 shows the results of the measurement model including the standardized factor loadings, construct reliabilities, and the proportion of extracted variance. All factor loadings are significant ( $p < .01$ ), which demonstrates that the chosen generic questions for each latent variable reflect a single underlying construct. The reliabilities and variances extracted for each variable indicate that the model is reliable and valid.

Nearly all composite reliabilities exceed .50, whereas the variance extracted estimates are less than .50 with the exception of price fairness and price transparency. These reliabilities and variances are computed using indicator standardized loadings and measurement errors (Hair et al. 1998; Shim et al. 2001). All items loaded significantly ( $t$ -value  $> 1.96$ ) on their corresponding latent construct, which indicates convergent validity. These initial model considerations further demonstrate that the constructs exist and are tapped by the measures. The measurement model also fits the data well. The comparative fit index (CFI = .968) is above the recommended threshold of 0.90 for satisfactory goodness of fit (Bentler and Bonett 1980). The root mean squared error of approximation (RMSEA) value of .053 is below the recommended level of .08. Browne and Cudeck (1993) suggest, as a rule of thumb, that RMSEA values less than .08 imply adequate model fit, that RMSEA values less than .05 suggest a good model fit, and models with  $RMSEA \geq .1$  should be rejected. Hence, the uni-dimensionality criterion is satisfied (Frambach et al. 1998).

Exploratory factor analysis investigates the discriminant validity of the constructs in the framework; the results show that the hypothesized discrimination between constructs remains in existence. Testing of the discriminant validity of the applied constructs involves applying the approach proposed by Fornell and Larcker (1981). An examination of the matrix displayed in Table 2 shows that none of the nondiagonal entries exceed the diagonals of the specific constructs.

(Insert Table 2 about here)

### ***Fit of the Overall Structural Model***

The chi-square statistic for the overall model is 377.088 ( $df = 73$ ,  $p < .001$ ) and the  $p$ -value is less than .05; therefore, the model fails to fit in an absolute sense. However, because the chi-square test is powerful, even a good fitting model (that is, just small discrepancies between observed and predicted covariances) could be rejected. Thus, researchers

recommend complementing chi-square with other goodness-of-fit measures. The CFI value of .968 exceeds the .90 cutoff, and the point estimate of RMSEA of .053 is less than .08. Additionally, the parsimonious fit measure  $\chi^2/df = 5.166$  falls within the proposed threshold limits for this measure (Carmines and McIver 1981; Jöreskog 1970). Thus, the overall proposed model is sufficiently supported.

### ***Hypotheses Testing***

Table 3 shows the standardized regression weights from the estimated structural model. All four hypotheses receive support. Price transparency has a high positive influence on price fairness perceptions (H1), as conformed by the standardized regression weight of .599 and the p-value of .001. Price transparency can influence satisfaction in terms of service quality judgments (standardized regression weights = .204, p-value = .001) in support of H2, although a comparison of the influence intensity of price transparency versus price fairness on service quality judgments reveals that the direct influence of price transparency on service quality judgments is lower (see Table 3). Moreover, the model supports the hypothesis that price fairness perceptions positively influence satisfaction judgments (H3) (standardized regression weight = .493, p-value = .001). Finally, the influence of service quality judgments on attitudinal loyalty (H4) is also supported as highly positive (standardized regression weight = .716, p-value = .001).

(Insert Table 3 about here)

### ***Testing For Moderator Effects***

The relations among constructs may vary depending on consumer characteristics and willingness to pay, prompting the possibility of moderating effects by three variables: payment, income, and price sensitivity. The price sensitivity and income moderating

variables are median split into two subgroups, low versus high, and the payment variable consists of either the consumer or others.

Table 4 shows the results. The fit measures are similar to both the constrained and unconstrained analyses. The comparative fit index (CFI) values in all models remain above .90, and the values of the root mean square error of approximation (RMSEA) in all cases are below the recommended threshold of .08. Thus, the individual paths may be examined separately across sub-samples. The estimation results of the unconstrained models reveal size effects and show that payment and income have no significant influence on any of the path coefficients in the unconstrained models. However, price sensitivity indicates two significant moderator effects. Price transparency has a significant positive impact on satisfaction in the price sensitive group ( $\beta = .30, p < .01$ ) but not in the price insensitive group ( $\beta = .09, n.s.$ ). Moreover, greater price sensitivity leads, through a higher satisfaction judgment, to a significant positive impact on attitudinal loyalty in the form of repurchase and recommendation intentions ( $\beta = .82, p < .01$ ). In contrast, in the group with low price sensitivity, although a significant positive impact on attitudinal loyalty is implied, the effect is less than that of the high price sensitivity group ( $\beta = .53, p < .01$ ).

(Insert Table 4 about here)

### **Discussion and Implications**

This study examines the direct effect of price transparency on price fairness and satisfaction and its indirect effect on attitudinal loyalty. The results confirm that when customers are more informed about price, their price fairness perceptions and satisfaction judgments increase, which indirectly positively affects attitudinal loyalty.

### ***Structural Model***

Price fairness is a central construct in pricing theory and practice. Price fairness perceptions are critical to understanding costumers' behaviors in terms of their satisfaction judgments and post-purchase actions. Consumers note that clear, comprehensive, complete, and true information about a company's quoted price has a positive and strong impact on price fairness perceptions. The results indicate that consumers who have a better understanding of the quoted price and, therefore, a more confident price fairness perception, reveal higher satisfaction with the offered services and show greater attitudinal loyalty. Thus, price transparency indirectly and positively influences satisfaction judgments. The direct influence of price transparency on satisfaction is weaker than the influence of creating price fairness perceptions. If customers believe that a price is favorable, the likelihood of a positive price fairness judgment increases.

These findings are significant for the theory and the practice of pricing. First, from a theoretical point of view, this study contributes to the literature on the antecedents of price fairness, which has not previously addressed price information or price transparency as possible antecedents of price fairness judgments. Because fairness judgments involve a certain amount of cognitive effort and information processing, these two constructs should be considered logical extensions of the price fairness literature.

Second, this study introduces the concept of price satisfaction, which implies that price fairness perceptions influence consumers' satisfaction. Additionally, studies should build on this concept by including related constructs, such as customer value, or extending models to include perceived quality as another component of customer value. Future research could replicate these findings in other industries in which price information and price uncertainty play a significant role. Signaling theory in pricing (Biswas et al. 2002; Srivastava and Lurie 2004) suggests that delivering price information becomes particularly relevant

when consumers do not have full price information and intense price competition causes price fluctuations in the market. However, it is unclear how the constructs in this study might apply in situations where consumers have easy access to all price information, there is little price competition, or prices do not fluctuate. The Internet is another environment for studying the effects that strongly influence the price perceptions of consumers (Suri et al. 2003).

### ***Moderating Effects***

It is reasonable to assume that moderating effects, including price consciousness (Sinha and Batra 1999), involvement (Chandrashekar 2001), or price presentation (Krishna et al. 2002) play a role in price perceptions and, therefore, should be included in additional studies. Literature on price-matching guarantees indicates that the effectiveness of a guarantee depends on whether the consumer's search costs are high or low (Srivastava and Lurie 2004) and the extent to which other cues indicate high or low prices (Biswas et al. 2002).

This study explores the moderating effect of consumer characteristics including payment, income, and price sensitivity on the relationships between price transparency, price fairness, satisfaction, and attitudinal loyalty. Price sensitivity, measured with items such as price consciousness, price knowledge, and price shopper, represents the most important determinant of fairness through the transparency construct. Within this moderator-affecting group, price sensitive customers have greater price information needs and more positive price fairness perceptions; therefore, price sensitive customers show greater attitudinal loyalty through positive satisfaction perceptions.

Income and payment have no moderating effects on the construct, which confirms the lack of a significant difference between high-income and low-income customers for the fairness through transparency construct. The payment variable also confirms that no

significant difference exists in the relationship between price transparency, price fairness, satisfaction, and attitudinal loyalty, regardless of who pays.

With respect to the practical implications of this study, although price fairness judgments are highly subjective, consumers typically have little knowledge about the seller's actual costs and profit margins (Bolton et al. 2003). Therefore, delivering a clear, complete, and comprehensive overview of prices can increase customers' price fairness perceptions by indicating that the company has nothing to hide. Price fairness, in turn, increases perceived satisfaction. If a company's competitors offer unfavorable price comparisons, a company should focus on product differentiation to justify the higher price of a certain product or service. Customers perceive high price reliability if no hidden costs exist and if prices do not change unexpectedly. When prices do change, information should be provided to customers to maintain trust and long-term relationships. Studies show that consumers consider practices such as demand-based pricing, including dynamic pricing, to be unfair and damaging to trust relationships (Garbarino and Lee 2003). In many industries (e.g., cell phone operators, rental car companies), hidden pricing is common, and companies often announce a low price but hide various charges (Ayres and Nalebuff 2003). In the long run, these practices are harmful to customers who become frustrated when they realize the true cost of the product or service, and to the industry, because such behavior induces unfair price competition (Ayres and Nalebuff 2003).

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**Table 1**  
**Measures and Confirmatory Factor Analyses Results**

Construct	Variable	Standardized Factor Loadings	Variance Extracted	Construct Reliability
<b>Price Transparency</b>	Information on prices is comprehensive	.90	<b>.72</b>	<b>.98</b>
	Information on prices is complete	.86		
	Information on prices is true	.77		
	Information on prices is clear	.86		
<b>Price Fairness</b>	Ticket price corresponds to the service	.86	<b>.59</b>	<b>.97</b>
	Ticket price corresponds to the image	.52		
	Ticket price corresponds to the quality	.88		
	Ticket price meets my expectations	.75		
<b>Satisfaction</b>	I am satisfied with the service reliability	.63	<b>.40</b>	<b>.95</b>
	I am satisfied with the catering	.44		
	I am satisfied with the railroad network	.64		
	I am satisfied with the service in general	.76		
<b>Attitudinal Loyalty</b>	I will repurchase a ticket again	.53	<b>.35</b>	<b>.89</b>
	I will recommend this train to others	.64		

**Table 2**  
**Discriminant Validity of Constructs**

Construct	1	2	3	4
Price transparency	0.89			
Satisfaction	0.22	0.48		
Price fairness	0.36	0.31	0.72	
Attitudinal loyalty	0.22	0.40	0.42	0.51

**Table 3**  
**Structural Model Results**

Hypothesis	Path from/to	Standardized Estimate	t-value	Supported?
H1	Price Transparency → Price Fairness	.60**	21.95	✓
H2	Price Transparency → Satisfaction	.20**	5.68	✓
H3	Price Fairness → Satisfaction	.49**	12.28	✓
H4	Satisfaction → Attitudinal Loyalty	.72**	14.26	✓

\*\* p < 0.01, \* p < 0.05, n.s. = not significant.

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**Goodness-of-Fit Statistics**

Chi-square (degrees of freedom)	377.09 (73)
Comparative Fit Index (CFI)	.968
Tucker-Lewis Index (TLI)	.960
Root Mean Squared Error Approximation (RMSEA)	.053

**Table 4**  
**Multi-Group Analysis Results for the Unconstrained Model**

Path from/to	Payment		Income		Price Sensitivity	
	Myself	Others	Low	High	Low	High
Price transparency → Price fairness	.64**	.52**	.58**	.63**	.60**	.61**
Price transparency → Satisfaction	.21**	.19**	.23**	.15*	<b>.09 n.s.</b>	<b>.30**</b>
Price fairness → Satisfaction	.48**	.52**	.45**	.56**	.44**	.51**
Satisfaction → Attitudinal loyalty	.70**	.75**	.68**	.76**	<b>.53**</b>	<b>.82**</b>

Notes: Bold numbers that imply the chi-square difference test shows that the coefficients in the two groups are unequal.  
 \*\*  $p < 0.01$ , \*  $p < 0.05$ , n.s. = not significant.

**Figure 1**  
**Conceptual Model**

