# A dynamic perspective on consumers' price fairness perception: Empirical evidence from the airline industry

*Mark Friesen*

**Abstract:** This paper investigates the concept of perceived price fairness and its dynamic alteration along the customer buying cycle. Today, variable pricing is widespread in many service industries. Besides the current sales price, customers are extensively exposed to varying external reference prices (for example, advertised prices). Thus, this pricing practice risks being perceived as unfair at some stage along the purchasing process, and negative consumer reactions cannot be ruled out. However, previous research has adopted a quite static approach, which only offered an incomplete picture of fairness perceptions with a specific service offer. To better capture the dynamics, this study conducted a scenario-based experiment with 459 airline customers encompassing repeated measures. The results provide evidence that the perception of distributive and procedural fairness significantly varies with the exposure to changing external reference prices along the buying cycle. Therefore, marketers should be cautious regarding price variations and advertised prices.

**Keywords:** perceived price fairness, external reference prices, customer buying cycle, revenue management, airline industry

**Eine dynamische Perspektive der Preisfairnesswahrnehmung von Kunden – Empirische Evidenz aus der Airline-Industrie**

**Zusammenfassung:** Der Beitrag untersucht das Konzept der Preisfairnesswahrnehmung von Kunden und deren dynamische Veränderung im Kaufprozess. Heutzutage sind variable Preise in vielen Dienstleistungsbranchen weit verbreitet. Neben dem aktuellen Verkaufspreis sind Kunden verstärkt einer Vielzahl von sich ändernden, externen Referenzpreisen (z. B. Werbepreise) ausgesetzt. Dadurch erhöht sich die Wahrscheinlichkeit, dass solche Preismodelle von Kunden in irgendeiner Phase des Kaufprozesses als unfair wahrgenommen und negative Kundenreaktionen nicht ausgeschlossen werden können. Allerdings hat die bisherige Forschung eher einen statischen Ansatz verfolgt, welcher nur ein unvollständiges Bild der Fairnesswahrnehmung einer spezifischen Dienstleistung wiedergibt. Um die Dynamik der Preisfairnesswahrnehmung besser zu erfassen, wurde in dieser Studie ein szenariobasiertes Experiment mit 459 Airline-Kunden entlang des Kaufprozesses durchgeführt. Die Ergebnisse zeigen, dass sich die Wahrnehmung von distributiver und prozessualer Fairness signifikant verändern kann, wenn Kunden unterschiedlichen, sich verändernden externen Referenzpreisen im Kaufprozess ausgesetzt sind. Vor diesem Hintergrund sollten Unternehmen beim Einsatz von Preisvariationen und Werbepreisen vorsichtig sein.

**Stichworte:** Wahrgenommene Preisfairness, Externe Referenzpreise, Kaufprozess, Revenue Management, Airline-Industrie

## 1. Introduction

Recent generations of revenue management systems systematically vary prices between different consumption times or performance levels, and particularly according to the time of booking (*Pompl* 2002). Consequently, prices for the same product or service may vary considerably at different points along a potential buying cycle (for example, through price promotions posted in advertisements or prices revealed in conversations with co-consumers) (*Kimes* 2002). This is notable in many service industries such as airlines or rental car companies, where the act of purchasing or booking is often considerably distant from the moment of consumption (*Hilke* 1989; *Shugan/Xie* 2000). Thus, this prevalent service pricing practice risks being perceived as unfair at some stage along the purchasing process (*Maxwell* 1997; *Kimes/Wirtz* 2002; *Hermann et al.* 2003).

The (low-cost) airline industry is considered to be the most relevant field of research because (i) it displays the typical constitutional elements of services (*Meffert/Bruhn* 2003; *Bieger* 2007), (ii) its revenue management techniques are regarded as one of the most dynamic and sophisticated pricing strategies (*McGill/Van Ryzin* 1999; *Lindenmeier* 2005) and finally, (iii) its product is widely perceived as a commodity, implying that the price of an airfare is one of the most important choice criteria for customers along the buying cycle (*Bieger et al.* 2002; *Pompl* 2002; *Friesen*, 2008). According to previous findings, unfair pricing may lead to negative consumer reactions such as claiming financial compensation (*Xia et al.* 2004), searching for alternatives (*Okun* 1981; *Kaufmann et al.* 1991), switching to a different supplier, or spreading negative word-of-mouth (*Kahneman et al.* 1986a; *Campbell* 1999). Consequently, perceived price fairness is a highly relevant marketing issue for service firms, and has been found to influence willingness to purchase (*Huppertz et al.* 1978; *Kalapurakal et al.* 1991; *Maxwell* 2002), customer satisfaction (*Herrmann et al.* 2000; *Huber et al.* 2006), and is claimed to influence loyalty, and hence long-term profitability (*Kahneman et al.* 1986a; *Kimes/Wirtz* 2003; *Maxwell* 2002; 2005). Once established, several authors postulate that price fairness judgments change over time (*Kamen/Toman* 1970; *Monroe* 1982; *McClintock/Keil* 1982; *Gabor* 1988; *Franciosi et al.* 1995; *Martins* 1995; *Bereby-Meyer/Grosskopf* 2004; *Bieger et al.* 2005; *Homburg/Koschate* 2005b). However, previous empirical studies on price fairness lack a dynamic view and neglect the way perceived price fairness varies over time. (For an overview on previous price fairness research see *Xia et al.* 2004; *Homburg/Koschate* 2005a; 2005b).

To remedy these deficiencies in the literature, this paper explores changes in consumers' perception of price fairness along the buying cycle by empirically investigating the dynamic alterations of distributive and procedural price fairness induced by changing external reference prices. As a research setting, we chose airline revenue management pricing, mainly because sophisticated revenue management was introduced very early in this service industry (*McGill/Van Ryzin* 1999; *Lindenmeier* 2005), and most customers already have had a broad exposure to differing airline prices.

This paper addresses four major research gaps. First, previous empirical studies have applied a quite static approach in their measuring of the concept of price fairness either in the pre-consumption stage (see for example, *Dickson/Kalapurakal* 1994; *Maxwell* 2002; *Vaidyanathan/Aggarwal* 2003; *Campbell* 2007; *Wirtz/Kimes* 2007), or in the consumption

stage of the buying cycle (see for example, *Maxwell* 1995; *Kimes* 2002; *Fasciati/Bieger* 2007). However, empirical results on related constructs in behavioral pricing research (such as price satisfaction, price interest, and price image) show dynamic changes over time (for price satisfaction, see *Diller/That* 1999; *Diller* 2002; *Pohl* 2004; for price interest, see *Diller* 1982; for price image, see *Simon* 1992).

Second, previous research has mainly focused on the distributive fairness of prices (see for example, *Huppertz et al.* 1978; *Urbany et al.* 1989; *Darke/Dahl* 2003; *Vaidjanathan/Aggarwal* 2003; *Bolton et al.*2003). Therefore, this paper considers the notion of procedural fairness by introducing the concept of price *system* fairness. The literature review contains more detail on this subject.

Third, price fairness has been extensively researched in consumer goods industries (with the exception of *Urbany et al.* 1989; *Boyd/Bhat* 1998) while widely neglecting the service context (for an overview, see *Homburg/Koschate* 2005a; 2005b). With the empirical investigation of airline pricing, we intend to add to this research gap.

Fourth, most previous empirical studies employ price increase scenarios to study price fairness issues (*Homburg/Koschate* 2005a; *Campbell* 2007). This study builds on revenue management pricing, and thus includes both alternating price increase and decrease scenarios.

Thus, the degree of empirical and practical novelty of this paper is constituted by both, filling in major empirical research gaps and testing our hypotheses in a scenario-based experiment with customers of European low-cost airlines as the most relevant field of research.

## 2. Literature Review

### 2.1 An interdisciplinary View on the Concept of Fairness and its Dimensionality

The concept of "fairness" is of vital interest in various research disciplines, including philosophy, socio-psychology, and economics. In philosophy, the discussion on the notion of fairness as a moral concept has persisted for centuries (*Hume* 1740). Fairness is considered an integral element of social justice, consisting of two inseparable components: distributive and procedural justice (*Rawls* 2001; *Rescher* 2002). Taking a socio-psychological perspective, fairness is commonly linked to exchange relations (see *Thibaut/Kelley* 1959; *Homans* 1961; *Adams* 1963; *Deutsch* 1975). It is also understood as a concept consisting of distributional justice, as emphasized in the equity theory (*Homans* 1961); and procedural justice, for example, as expressed in research based on the principle of dual entitlement (*Kahneman et al.* 1986a; 1986b). While the equity theory suggests that fairness is assessed in reference to the proportion of an input-output ratio (that is, an investment-reward ratio) between two transaction parties (*Martins/Monroe* 1994), in the principle of dual entitlement, fairness is benchmarked against an entire reference transaction (*Kahneman et al.* 1986a). Research on the principle of dual entitlement proposes that a price increase resulting from an increase in costs is perceived as fair; whereas when it comes about because of an increase in market power (for example, in the case of excess demand), it is perceived as unfair (*Kahneman et al* 1986a, *Tarrahi et al.* 2016).

The first systematic observation of fairness considerations in the field of behavioral pricing revealed that consumers have a clear picture about what they perceive as a fair price (*Kamen/Toman* 1970). More recent works have conceptualized perceived price fairness as

outcome-related distributive price fairness and/or process-related procedural price fairness (see for example, *Maxwell* 1995; *Campbell* 1999; for a review, see *Friesen* 2008). Overall, the concept of perceived price fairness is a widely researched topic in behavioral pricing research (for a review, see *Homburg/Koschate* 2005a; *Homburg/Koschate* 2005b). However, the majority of behavioral pricing research has encompassed distributive fairness considerations while neglecting the procedural fairness dimension (*Kimes* 2002; *Maxwell* 1997; *Kimes/Wirtz* 2004; *Campbell* 2007).

### 2.2 The Role of internal and external Reference Prices in Price Fairness Perceptions

According to behavioral pricing literature, consumers evaluate prices relative to a standard or reference price (see *Emery* 1969; *Feider* 1985; *Hay* 1987; *Briesch et al.* 1997). Drawing on this relativity of price perception (*Emery* 1969) and the dichotomous dimensionality of the concept of fairness, we conceptualize (1) *perceived price fairness* as a consumer's continuous comparison between a current sales price and a reference price (distributive fairness) and (2) *perceived price system fairness* as a comparison between a current pricing procedure and a reference transaction (procedural fairness).

The current literature distinguishes between two types of reference prices: internal and external (*Vaidyanathan* 2000). Internal reference prices (IRPs), on the one hand, represent saved price experiences or price expectations which serve as subjective internal comparison standards (see *Diller* 1978; *Feider* 1985). Previous literature has produced various operationalizations and the IRP has often been measured as a multidimensional construct (*Winer* 1988; *Briesch et al.* 1997). As an example, *Chandrashekaran/Grewal* (2003; 2006) measured the IRP as the arithmetic mean of subjective estimates of the fair/just price, the normal/average market price, the lowest market price, and the highest (reservation) price.

External reference prices (ERPs), on the other hand, originate from contextual stimuli (see *Eschweiler* 2006) in the decision-making context (*Chandrashekaran/Grewal* 2006), and the literature suggests multiple operationalizations for ERPs (*Tull et al.* 1964; *Emery* 1969; *Bearden et al.* 1992; *Folkes/Wheat* 1995).

Regarding the interrelation between internal and external reference prices, strong empirical evidence exists that the internal reference price is influenced by external reference prices (see *Compeau/Grewal* 1998; *Chandrashekaran/Grewal* 2003). This finding is in line with the adaption-level theory: The adaptation level, or fair IRP, is composed of a weighted geometric mean of focal stimuli (that is, the current sales price), contextual stimuli (that is, external reference prices), and residual stimuli (that is, memory-based prices) (*Helson* 1964; *Hay* 1987). Although most previous conceptualizations implicitly assume that consumers do not change their IRP for a current decision based on current sales prices (*Chandrashekaran/Grewal* 2006), adaption-level theory, combined with recent findings, suggest that the inclusion of the current sales price improves the prediction of the adaptation of the IRP (*Chandrashekaran/Grewal* 2006). Therefore, this study includes the current sales price and external reference prices as antecedents to changes in the current IRP.

Taken together, the current internal reference price ($IRP_t$) is the result of an initial internal reference price ($IRP_{t-1}$), a current external reference price ($ERP_t$), and the current sales price ($p_t$) (*Hay* 1987; *Kucher* 1987; *Urbany et al.* 1988; *Urbany/Dickson* 1991; *Kalyanaram/Little* 1994). Drawing on the psychophysics of price perception, price fairness perceptions ($PF_t$) result from the comparison of a given current sales price ($p_t$) with the

internal reference price ($IRP_t$) (see *Martins* 1995; *Mazumdar et al.* 2005; *Huang et al.* 2005; *Sheng et al.* 2007) (see *Figure 1*). The outcome of this comparison process is a categorical judgment about a current sales price or pricing procedure as positively unfair (that is, $IRP_t > p_t$, indicating a "gain"), negatively unfair (that is, $IRP_t < p_t$, indicating a "loss") or fair (that is, breakeven/indifference zone) (*Oh* 2003). Most studies claim a linear association between price fairness and the altered $IRP_t$, implying that the larger (smaller) the difference between $IRP_t$ and $p_t$, the larger (smaller) the positive or negative perceived price unfairness (see *Kopalle/Winer* 1996; *Grewal et al.* 2004).

### 2.3 Price Fairness Perception in the Buying Cycle

To gain insights into the dynamics of perceived price fairness, we investigated the concept along the overall purchasing process. In the service marketing literature, consumption decisions are typically structured using process models (*Hilke* 1989; *Müller/Klein* 1993; *Bieger* 2007). *Renoux* (1973) distinguishes between three main stages: (1) the pre-consumption stage, (2) the consumption stage, and (3) the post-consumption stage (see also *Fisk* 1981; *Kuhlmann* 2001; *Meffert/Bruhn* 2003; for a different model with five stages, see *Diller* 1997).

In the pre-consumption stage, information is collected, and buying or booking decisions are made. Because services are commonly characterized by a considerable delay between the time of purchase and consumption (*Shugan/Xie* 2000; *Bieger* 2007), additional information is collected to adjust and assure initial decisions (*Diller* 1997; *Diller* 2002). In this stage, friends and relatives serve as important sources of information (see *Diller* 1978; *Zeithaml* 1981; *Kuhlmann* 2001; *Meffert/Bruhn* 2003; *Fürst* 2003). In the consumption stage, consumers are exposed to additional information from co-consumers and service staff. The price a co-costumer paid plays a pivotal role in conducting fairness judgments (*Darke/Dahl* 2003; *Pohl* 2004; *Xia et al.* 2004). In the post-consumption stage, the service outcome and experiences are evaluated (see *Müller* 1996; *Meffert/Bruhn* 2003; *Pohl* 2004; *Mazumdar et al.* 2005). In the case of regularly consumed services such as media, leisure or transport services, the post-consumption stage may become the next pre-consumption

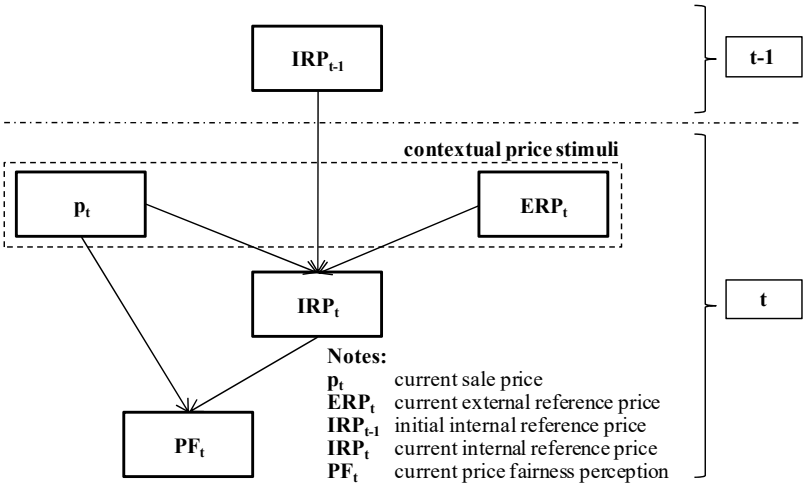


*Figure 1:* Role of internal and external Reference Price in Price Fairness Judgments

stage in a closed cycle (see *Friedman/Smith* 1993, *Kuhlmann* 2001; *Meffert/Bruhn* 2003), also known as the customer buying cycle (*Renoux* 1973).

In each stage of this cycle, consumers are exposed to various external reference prices. Thus, drawing on the role of external reference prices in price fairness perception, we propose that every new piece of price information along the buying cycle is perceived, encoded, and cognitively processed by the consumer (see *Chandrashekaran/Grewal* 2003). Thus, the internal reference price is constantly updated, and likewise, the perception of price (system) fairness of a given service is dynamically adapted..

With $PF_t = p_t - f(IRP_t; ERP_t)$ and $IRP_t$ as a superordinate reference price aggregate we follow the argumentation of *Bolton et al.* 2003 who refer to the $IRP_t$ as a single aggregated variable which serves as a measure to evaluate the fairness of $p_t$. Therefore, only $p_t$ and $ERP_t$ are manipulated with $p_t$ equalling the $IRP_t$ to be perceived as fair. We always distinguish between $p_t$ and $ERP_t$ in all our experimental hypotheses except for some manipulations where $p_t$ should equal the $ERP_t$.

*Hypothesis 1: The level of perceived price fairness and perceived price system fairness is influenced by different types of $ERP_t$ along the buying cycle.*

*Hypothesis 2: If one or more $ERPs_t$ are higher (lower) than the current sales price ($p_t$) along the buying cycle, perceived price fairness and perceived price system fairness increase (decrease).*

Regarding the direction of the discrepancy between an $ERP_t$ and the current sales price $p_t$, we can derive from prospect theory (*Kahneman/Tversky* 1979) that a price decrease (that is, a decrease in $ERP_t$ leading to $IRP_t < p_t$) has a lager effect on the adjustment of perceived price fairness than an equivalent price increase (that is, an increase in $ERP_t$ leading to $IRP_t > p_t$), or put another way, losses loom larger than corresponding "gains" (see *Tversky/Kahneman* 1991, p. 1039). Regarding the relative magnitude of changes in price fairness and price system fairness, the following asymmetric effect is proposed:

*Hypothesis 3: A price decrease ($ERP_t < p_t$) leads to a lager adjustment of perceived price fairness* and *price (system) fairness than an equivalent price increase ($ERP_t > p_t$).*

As an important extension to most previous price fairness studies, we distinguish between the distributive and procedural price fairness concept. What consumers perceive as a fair price system in a given industry may evolve over time (see for example, *Kimes/Noone* 2002). Thus, we propose that not only distributive, but also procedural fairness perception adjusts over time, albeit at a slower pace.

*Hypothesis 4: If the $ERP_t$ is higher (lower) than the current sales price ($p_t$), perceived price fairness and perceived price system fairness adjust in the same direction; however, the latter to a lesser degree.*

## 3. Methodology

### 3.1 Field of Research

To study the impact of external reference prices on perceived price (system) fairness along the buying cycle, we consider revenue management pricing in the airline industry because of its appropriateness as a relevant field of research. The airline industry displays the typical constitutional elements of services, such as simultaneity of production and consump-

tion, volatile demand, and a high proportion of fixed costs (*Meffert/Bruhn* 2003; *Bieger* 2007). These elements foster the implementation of segment-based price discrimination and allocation approaches to optimize revenues (*Simon* 1992; *Müller* 1996; *Woratschek* 1996). European low-cost airlines represent a particularly appropriate research object, because their core product is widely perceived as a commodity, implying that the price of an airfare is one of the most important choice criteria (*Bieger et al.* 2002; *Pompl* 2002; *Friesen*, 2008). In this context, Germany can be considered a well-developed low-cost airline market with savvy consumers and a sophisticated buying environment.

Examination of revenue management pricing in the airline industry allows us to investigate both price increase and decrease scenarios, as well as customers' perception of price level fairness and price system fairness. Because airline revenue management has a long history (*McGill/Van Ryzin* 1999; *Lindenmeier* 2005), customers are broadly exposed to and are familiar with varying airline prices. In addition, airline services evidence a considerable time lag between the information, booking, and consumption phase. This can be considered typical for services and is ideal for our purposes in studying the role of new external reference price stimuli entering consumers' price evaluation along the buying cycle.

### 3.2 Experimental Design

To test our hypotheses, we conducted a scenario-based experiment with customers of European low-cost airlines, encompassing repeated measures. Experiments are generally considered the most rigorous method to identify cause and effect relationships (see *Zimmermann* 1972; *Aronson et al.* 1990) and are widely applied in the field of behavioral pricing research (see *Koschate* 2002; *Kimes* 2002; *Choi/Mattila* 2004; *Eschweiler* 2006). A major issue in deducing causal interpretations is the internal and external validity of an experiment (*Campbell* 1957; *Campbell/Stanley* 1963). Therefore, we conducted a qualitative pre-study to refine relevant and valid operationalizations of external reference prices and price levels (for a similar approach, see *Miao/Mattila* 2007).

The explorative pre-study was threefold: First, we carried out sixteen semi-structured expert interviews in order to better understand customers' perception of actual pricing practices in the low-cost airline industry. Second, we conducted four focus group discussions with overall twenty-nine low-cost airline customers to explore the most relevant external reference prices which are perceived by low-cost airline customers along the buying cycle. The aim was to assess and consolidate the external reference prices drawn from the literature and to identify potential confounding variables. The focus group discussions revealed that price (system) fairness exerts its largest effect during the pre-consumption and the consumption stage of the buying cycle. Consequently, we considered only these two stages for our study. Third, we conducted a standardized self-administered questionnaire with a convenience sample of fifty low-cost airline passengers in order to further consolidate and rank the relevant external reference prices for customers in the pre-consumption and consumption-stage. This revealed four external reference prices as being of major importance along the buying cycle: (1) the current sales price, and (2) prices paid by friends and relatives in the consumption stage, as well as (3) promotional prices, and (4) prices paid by co-consumers in the post-consumption stage. As a second objective, the questionnaire aimed to define a "fair" internal reference price for low-cost flights departing from Germany to a destination within Europe (for a direct measurement

approach of fair internal reference prices, see *Anttila* 1977; *Kahneman et al.* 1986b). In accordance with assimilation-contrast theory, we found that customers perceive a fair price range as an internal standard, rather than a fair price point. The fair price range was acknowledged as lying between €46 (SD = 20) and €99 (SD = 31). A two-sided t-test showed no significant differences between business and leisure passengers for the fair internal price range.

As an overall result, the pre-study revealed four relevant external reference prices to constitute the independent variables (factors). From these, we derived the four different scenarios for the subsequent experimental study. Likewise, the factor levels and the $IRP_{t-1}$ were derived from the internal price range determined in the pre-test. We then applied a mixed experimental design with a factorial design (constituted as a between-subjects design) to analyse the effects of external reference prices on perceived price fairness, as well as a repeated-measures design to study the dynamics of price fairness perceptions over time (multiple measurement points) (see *Table 1*).

*Table 1:* Scenarios and Manipulations

| | *Scenarios and factors* | | | |
|---|---|---|---|---|
| *Factor levels* | **Scenario 1 / Measurement point 1** Factor 1: *Current sales price* | **Scenario 2 / Measurement point 2** Factor 2: *Price paid by friends and relatives* | **Scenario 3 / Measurement point 3** Factor 3: *Promotional price* | **Scenario 4 / Measurement point 4** Factor 4: *Price paid by co-consumer* |
| Current sales price €49 | €49 | €19/€79 | €9 | €19/€49/€79 |
| Current sales price €99 | €99 | €39/€159 | €19 | €39/€99/€159 |

The two price levels of the current sales price of €49 and €99, which were introduced in Scenario 1, were directly deduced from the fair price range explored in the pre-study and the common practice in the airline industry to display odd prices that end with nine. In Scenario 2, factor levels of €30 (€60) lower or higher than the current sales price were provided. A single price cue of €9 (€19) was presented as promotional price in Scenario 3. In Scenario 4, external reference prices (that is, the price paid by a co-consumer) of €30 (€60) lower or higher than the current sales price, as well as equal to the current sales price, were displayed. Following the mixed experimental design, we applied the independent variables as repeated-measure factors, leading to an overall total of twelve factor-level combinations.

### 3.3 Experimental Study and Measures

We conducted the study as an online experiment. Because most low-cost airline services are internet-based (for example, information, booking, and paying services), an online context fosters external validity. However, internet-based experiments might lack control over the sample selection process (sample bias) (*Theobald* 2000; *Dolnicar et al.* 2009),

as well as over the experimental setting (*Janetzko* 1999), which could sacrifice internal validity.

The questionnaire was structured into four parts. In the first part, the respondents were presented with a welcome page, followed by an introduction on the administration of the survey. Then they were asked to read an introduction page that described the initial situation, which aimed to condition the respondents for a specific evaluation or decision context: booking a flight with a low-cost airline from Germany to a western European city with their best friend (see Appendix).

In the second part, the respondents were randomly distributed to the two price levels (that is, €49 or €99). The four scenarios in the buying cycle were presented along the following chronology (derived from the buying cycle):

In Scenario 1, the respondents were confronted with the current sales price for a one-way flight with a low-cost airline of either €49 or €99 which they discovered on the internet but had not booked yet. Thus, for Scenario 1 the external price stimulus (that is, the current sales price) is identical with the $IRP_{t-1}$ derived from the pre-test. In the following three scenarios, new external price stimuli were introduced through a temporal indication (for example, "some days later…"), while the current sales price (that is, €49 or €99) was held constant throughout the whole experiment.

Scenario 2 mentioned a lower (higher) price that their best friend paid for the same flight seven days ago, while the current sales price for the respondent still remained €49 (€99).

In Scenario 3, the respondent was said to have finally booked the flight for €49 (€99). However, that same evening, the test person would discover that the low-cost airline announced a special internet promotion with prices of €9 (€19) for the specific flight.

Scenario 4 described a conversation between the respondent and a co-consumer during the flight. It turned out that the passenger in the next seat (the 'seat neighbour') paid more (less, or the same) for the same flight than the respondent (see Appendix).

While the perception of price fairness was measured in all four scenarios, price system fairness was only retrieved in the last three scenarios, because in Scenario 1, respondents were only presented with the current sales price offer which impeded a judgment about the perceived fairness of a price system (see Appendix). The two dependent variables, *perceived price fairness* and *perceived price system fairness*, were measured with a single-item seven-point Likert-scale ranging from 1 ("very fair") to 7 ("very unfair"), with 2 ("fair"), 3 ("rather fair"), 4 ("neither fair nor unfair"), 5 ("rather unfair"), and 6 ("unfair") (for other studies using Likert-scales in price fairness research, see *Campbell* 1999; *Kimes/Wirtz* 2004; *Homburg et al.* 2005; for other single-item scales in price fairness research, see *Bearden et al.* 1992; *Maxwell* 1997; *Choi/Mattila* 2004).

The final part of the scenario-based experiment involved a manipulation check (*Perdue/Summers* 1986). Respondents were confronted with the question whether they have paid more, the same or less than the passenger in the next seat (the 'seat neighbour') in Scenario 4. We also tested whether the scenarios were comprehensive and realistic using a seven-point Likert-scale (from 0 ("I totally agree") to 6 ("I totally disagree")).

### 3.4 Sample

Overall, we collected 459 completed questionnaires, or an average of 38 questionnaires for each of the twelve experimental cells. The majority of respondents were male (68,6 %

compared to 31,4 % female), German (83,9 % German compared to 16,1 % other nationalities) and on average, between 25 and 34 years old. They displayed a relatively high level of education (77,6 % with university education) and had a high familiarity with airline transport services. Overall, 32,9 % of the respondents said that they travelled more than ten times per year by plane, 37,9 % three to ten times, and 29,2 % less than three times. Regarding low-cost flights, the proportion of respondents that said they flew more than ten times per year was 10,7 %, with another 33,3 % flying three to ten times with a low-cost airline, and the majority (56,0 %) flying less than three times.

### 3.5 Means of Analysis

To test the initially introduced hypotheses we applied t-tests, univariate, and multivariate analyses of variance (ANOVA, MANOVA), covariance analyses (ANCOVA, MANCOVA), and correlation analyses.

## 4. Results

### 4.1 Dynamic Effects of ERP on Price Fairness Perceptions

*Hypothesis 1: The level of* perceived *price fairness and perceived price system fairness is influenced by different types of ERP$_t$ along the buying cycle: confirmed.*

To study the dynamics of perceived price (system) fairness along the buying cycle, we drew on the four ERPs along the buying process as repeated-measures factors, and the current sales price level of €49 or €99 as between-subject factor (see *Figure 2*). An ANOVA of the two dependent variables along the four test intervals of the buying cycle sustained a significant main effect from the buying process on perceived price fairness ($F_{(3,456)}$ = 135,905; p < 0,001) as well as on perceived price system fairness ($F_{(2,457)}$ = 41,882; p < 0,001). Therewith, Hypothesis 1 is supported. Furthermore, the interaction effect between the buying process and the current sales price as between-subject factor of €49 or €99 proved to be significant for perceived price fairness ($F_{(3,456)}$ = 13,546;

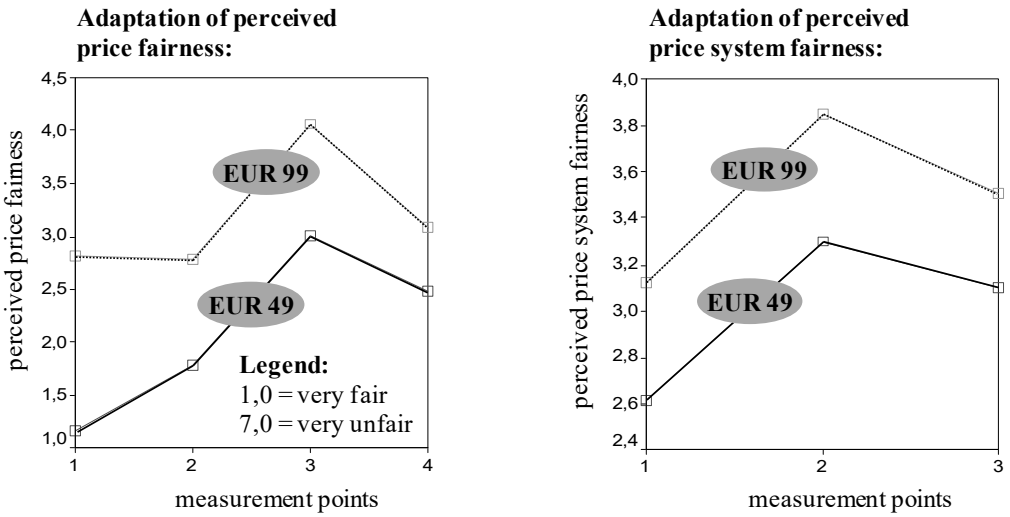


*Figure 2:* Adapation of distributive and procedural Price Fairness along the Buying Cycle

$p < 0{,}001$), but not for perceived price system fairness ($F_{(2,457)} = 0{,}457$; $p < 0{,}627$). An ANCOVA revealed that "age" figured as significant covariate on price fairness ($F_{(3,456)} = 4{,}156$; $p < 0{,}01$).

*Hypothesis 2: If one or more $ERPs_t$ are higher (lower) than the current sales price ($p_t$) along the buying cycle, perceived price fairness and perceived price system fairness increase (decrease): confirmed.*

The t-test showed that for both €49 and €99 price levels, perceived price fairness increased in Scenario 2 when the higher external reference price was introduced ($T_{(235)} = -2{,}623$; $p > 0{,}01$). Perceived price fairness also increased from Scenario 3 to Scenario 4, due to a higher external reference price presented ($T_{(293)} = -13{,}289$; $p > 0{,}001$). Likewise, price system fairness rose from the third to the fourth Scenario ($T_{(293)} = -6{,}922$; $p > 0{,}001$). Regarding the direction of price decreases, perceived price fairness declined in both conditions (€49 and €99), with lower ERPs presented in Scenario 2 ($T_{(222)} = 9{,}895$; $p > 0{,}001$), Scenario 3 ($T_{(458)} = 16{,}371$; $p > 0{,}001$) and Scenario 4 ($T_{(164)} = 5{,}211$; $p > 0{,}001$). Equally, price system fairness decreased from Scenario 2 to Scenario 3 ($T_{(458)} = 11{,}127$; $p > 0{,}001$), and from Scenario 3 to Scenario 4 ($T_{(164)} = 6{,}497$; $p > 0{,}001$). Thus, Hypothesis 2 is supported by the results.

*Hypothesis 3: A price decrease ($ERP_t < p_t$) leads to a larger adjustment of perceived price fairness and price (system) fairness than an equivalent price increase ($ERP_t > p_t$): partially confirmed — confirmed for perceived price fairness, but not confirmed for price system fairness.*

In accordance with the predictions of the prospect theory, the adjustment of perceived price fairness from Scenario 1 to Scenario 2 ($T_{(457)} = 2{,}894$; $p > 0{,}01$) and from Scenario 3 to Scenario 4 ($T_{(240)} = -3{,}796$; $p > 0{,}001$) was significantly larger for price decreases of ERP than for equivalent price increases. For perceived price system fairness, the mean differences were descriptively symptomatic, but not significant ($T_{(295)} = -1{,}155$; $p > 125$). As a result, Hypothesis 3 is confirmed for perceived price fairness, but not for perceived price system fairness.

*Hypothesis 4: If the $ERP_t$ is higher (lower) than the current sales price ($p_t$), perceived price fairness and perceived price system fairness adjust in the same direction; however, the latter to a lesser degree: confirmed.*

Correlation analysis further indicated that the adaptations in perceived price fairness and price system fairness significantly correlated in all three scenarios. Thus, distributive and procedural fairness change in the same direction over time.

*Table 2:* Correlation Analysis after Bravais-Pearson

| Dependent variable(s) | r | N | p |
|---|---|---|---|
| Price fairness and price system fairness in Scenario 2 | 0.338 | 459 | 0.000 |
| Price fairness and price system fairness in Scenario 3 | 0.568 | 459 | 0.000 |
| Price fairness and price system fairness in Scenario 4 | 0.655 | 459 | 0.000 |

A paired sample t-test further revealed that the weighted sums of the differences in the dependent variables between the scenarios were significantly higher for perceived price fairness than for perceived price system fairness ($T_{(418)} = 4{,}122$; $p > 0{,}001$). Because

procedural fairness adjusted in the same direction as distributive fairness, but to a lesser degree, Hypothesis 4 is supported.

### 4.2 Manipulation Checks

Of all respondents, 93,5 % perceived the different levels of the fourth factor as intended. Moreover, inferential statistics for the manipulations confirm that the subjects perceived the manipulations in the initially intended directions. In addition, the scenarios were judged to be comprehensive (M = 1,15; SD = 1,38) and realistic (M = 1,14; SD = 1,49).

## 5. General Discussion

### 5.1 Theoretical Implications

The results of our study provide evidence that in service industries the perception of price fairness and price system fairness may vary considerably over time under the influence of changing external reference price cues. Thus, perceived distributive and procedural fairness for specific services were found to be dynamic concepts. This finding is consistent with previous research on the dynamics of similar behavioral constructs (for price satisfaction, see *Diller/That* 1999; *Diller* 2002; *Pohl* 2004; for price interest, see *Diller* 1982; for price image, see *Simon* 1992). This contextual adaptation process is already approved for the static case by adaption-level theory and assimilation-contrast theory (see for example, *Monroe et al.* 1977; *Winer* 1986; *Biswas/Blair* 1991). Our study extended this concept with a dynamic perspective.

Our study further revealed that the current sales price, along with other external price cues, has a significant impact on consumers' distributive and procedural price fairness judgments. In particular, we found evidence that all four applied external reference prices have a substantial influence on the dynamic adaptation of perceived price (system) fairness: (1) the current sales price, (2) prices paid by friends and relatives, (3) promotional prices, and (4) prices paid by co-consumers.

While the introduction of one or more higher price cues along the buying cycle increases the perception of price (system) fairness of a specific service, price cuts lead to lower price (system) fairness perceptions. Consistent with prospect theory, we found that equivalent price increases (that is, $ERP_t > p_t$) and price decreases (that is, $ERP_t < p_t$) for a given service along the buying cycle have an asymmetric impact on price fairness perceptions (but not on perceived price system fairness). An apparent "loss" due to a foregone lower price is given more weight than an equivalent "gain" of having been charged a lower price.

Moreover, our results indicate that perceived distributive fairness is more sensitive to external price cues than perceived procedural fairness. Thus, consumers' conception of what constitutes a fair reference *transaction* seems firmer than the perception about a fair reference *price*. Hence, our findings show that considerations about price system fairness become crucial. Moreover, as others' findings in the literature indicate that when a price *procedure* is perceived as fair, the likelihood increases that the *price itself* is also perceived as fair (see for example, *van den Bos et al.* 1997; *Kukar-Kinney et al.* 2007).

This study provides deeper insights into consumers' perception of distributive and procedural price fairness, thus complementing previous research that measured fairness only in the pre-consumption or consumption stage. It further extends previous studies by showing that besides widely researched competitive prices ("between-brand prices")

and past prices ("within-brand prices") (*Eschweiler* 2006), price cues introduced between the purchase and consumption stage play an equally important role in price perception — particularly when we seek to capture the dynamics of perceived price fairness for a given service alternative along the buying cycle. Thus, our study introduced a third conceptualization; that is, "within-brand between-buying stages prices".

### 5.2 Practical Implications

Dynamic pricing practices (for example, revenue management pricing) are essential to optimize revenues in capacity-constrained service contexts (*Talluri/Van Ryzin* 2004). However, our study reveals that external price cues along the buying cycle play an equally important role for service providers such as airlines. As low-cost airlines are heavily relying on cheap airfares in their advertising strategy with the intent to stimulate demand the importance of the most appropriate use of external price stimuli along the buying cycle becomes evident. Constantly varying prices for a given service like airlines may affect consumers' judgments about the perceived fairness of prices and entire price systems in general. A specific price or pricing system may be perceived as fair or unfair at different stages along the purchasing process, depending on the alternative price cues perceived in the purchasing environment. Because service providers face a potential risk of being perceived as unfair along the buying cycle, consumer reactions might have negative consequences (*Campbell* 1999; *Xia et al.* 2004; *Haws/Bearden* 2006).

In order to better benefit from the inherent revenue potential, service firms such as airlines or rental car companies are well advised to incorporate price fairness considerations into the design of their variable price systems (*Diller* 2000; *Pechtl* 2003; *Fasciati/Bieger* 2007). The empirical results disclose that a strategic emphasis should be set on the design of external reference price cues consumers face along the pre-consumption and consumption stage. Our findings also suggest that price discrimination should be based on market segmentation according to reference price elasticity (that is, sensitivity to deviations around the internal reference price) instead of only considering reservation price or willingness-to-pay.

Besides the impact of price variations, marketers should also consider the respective pricing procedure and rules applied, according to which prices vary between customers and over time. This may have immediate consequences for the setup of airline revenue management systems. While we found that distributive fairness perceptions reacted rather quickly to marketing stimuli, perceived procedural price fairness seems rather sticky. Our study provides further evidence that price increases along the buying cycle may increase price (system) fairness of a specific service, while price cuts are likely to lower price (system) fairness perceptions. Hence, the pricing procedure of several low-cost airlines that gradually raises prices over time seems fairer to consumers from a dynamic perspective, than does introducing occasional price promotions. A "first-come-first-served" principle of gradually increasing pricing practices gives each customer the same chance to buy at a low price (see also *Calder* 2002; *Talluri/Van Ryzin* 2004). Higher prices closer to departure can be explained through opportunity costs of the airline to set seats on hold (see also *Shaw* 2004).

Our study also reveals another implication: that promotional prices may considerably erode price fairness perception as they decrease the IRP; that is, the standard against which the fairness of a current sales price is assessed. Hence, discounts should be set

and promoted with care, and targeted at specific customer segments or time intervals (for example, weekend specials for students only, or individualized discounts communicated through below-the-line marketing) (*Friesen* 2008).

Other fundamental approaches to decrease potential unfairness perceptions of variable pricing schemes include fencing, framing, and price communication. Rate fences are rules that assist to differentiate between transactions and intend to justify price differences between customers (for example, cancellation fees for low rates, special rates for frequent flyers). Setting effective rate fences helps customers to self-select according to their respective willingness-to-pay (*Kimes/Wirtz* 2002). In addition, framing of price stimuli can help to avoid unfairness feelings among consumers. In the likely case of price increases, the literature suggests, for example, to attribute the cause to an external source (for example, an unexpected increase in costs) (see for example, *Vaidyanathan/Aggarwal* 2003). Explaining to consumers the rationale behind a price procedure or price differences, and communicate price increases accordingly, is equally important (refer to *Monroe* 2003).

### 5.3 Limitations and Further Research

Even though this study is restricted to the case of low-cost airlines, the results may also apply to comparable service industries that adopt variable pricing, are characterized by a certain time lag between booking and consuming and denote a similar high degree of homogeneity and standardization (for example, the mobility, hospitality, or telecommunication sector). Nevertheless, replications on the dynamic adaptation process of distributive and procedural price fairness are needed, and these would be particularly interesting for service sectors characterized by a certain heterogeneity in its product or a less sophisticated price-capacity management system (for example, personal services, such as medical services or consulting).

Questions regarding whether the proven dynamic effects are durable over time when entering further stages of the buying cycle, or whether perceived price fairness stabilizes the longer a customer-supplier-relation persists, offer fruitful grounds for further research. Empirically, post-consumption price fairness evaluations might be included in the analysis. Apart from that, the experimental design focused on few, but relevant, external reference prices. Thus, further research could include other external reference price cues (for example, verbal cues), other operationalizations of external reference prices (for example, competitor prices or prices of other substitutable services), other price levels of external reference prices (for example, implausible high price levels), or differing levels of the current sales price.

## 6. Appendix: Questionnaire (Translated from German)

Extract of introduction: Together with your best friend, you plan to book a flight from Germany to a Western European city with a low-cost airline […]. Both of you are browsing on the internet for available offers. However, each of you will independently book and pay the flight.

Scenarios: Extract of a set of scenarios

**Scenario 1**: Current sales price

Try to imagine that on the internet you found a suitable offer of a low-cost airline that charges €49 for a one-way outbound flight including taxes, fees, and charges. However, you do not book immediately.

*I perceive the price of €49 for an outbound flight with the low-cost airline as …*

**Scenario 2**: Price paid by friends and relatives

Try to imagine some days later your friend calls and explains that seven days ago, the same outbound flight with the same low-cost airline was €19 including taxes, fees, and charges. He is pretty sure about this. Hence, you search again on the internet page of the respective low-cost airline still without booking. You notice that for €19 no seats are available anymore and that the outbound flight now costs €49 including taxes, fees, and charges.

*Compared to the price my best friend found on the internet seven days ago, I perceive the price of €49 for an outbound flight with the low-cost airline as …*
*Based on this situation, I perceive the price system of the low-cost airline as …*

**Scenario 3**: Promotional price

Try to imagine some hours later you book the outbound flight with this low-cost airline for €19 including taxes, fees, and charges on the internet. In the evening, you sit in front of your computer and notice that the same low-cost airline starts an internet price promotion for their third anniversary. Each of the 300,000 promoted tickets cost €9 for a short period of time. You are curious and enter the details of your flight already booked. You notice that your already booked outbound flight is now available for the promotional price of €9 including taxes, fees, and charges.

*Compared to the promotional price, I perceive the price of €49 for an outbound flight with the low-cost airline as …*
*Based on this situation, I perceive the price system of the low-cost airline as …*

**Scenario 4**: Price paid by co-consumer

Try to imagine some weeks later you board this very flight of the low-cost airline with your best friend. Your 'seat neighbour' asks you what you have paid for today's outbound flight. First, you are astonished. However, you answer that you have paid €49 including taxes, fees, and charges. He explains that for today's flight he paid €19 including taxes, fees, and charges. As he is quite talkative, he reports that he booked the flight on the internet on exactly the same day you bought your ticket.

*Compared to the price my 'seat neighbour' paid, I perceive the price of €49 for an outbound flight with the low-cost airline as …*
*Based on this situation, I perceive the price system of the low-cost airline as …*

All questions were provided with a seven-point Likert scale: "Very fair", "Fair", "Quite fair", "Neither fair nor unfair", "Quite unfair", "Unfair", and "Very unfair".

## 7. References


Adam, D. (1969): Consumer Reactions to Price, in: *Pricing Strategy: Reconciling Customer Needs and Company Objectives*, Taylor, B./Wills, G., eds., London, pp. 75-88.

Adams, J. S. (1963): Toward an Understanding of Inequity, in: *Journal of Abnormal and Social Psychology*, Vol. 67, Issue 5, pp. 422-36.

Anttila, M. (1977): Consumer Price Perception: A Multi-Dimensional Analysis of Perceived Quality and Adaption-Level Price as Determinants of Price Perception, Doctoral Dissertation, Helsinki School of Economics and Business Administration, Helsinki.

Aronson, E., et al. (1990): *Methods of Research in Social Psychology*, 2nd ed., New York.

Bearden, W. O., et al. (1992): Examining Alternative Operational Measures of Internal Reference Prices, in: *Advances in Consumer Research*, Vol. 19, Issue 1, pp. 629-35.

Bereby-Meyer, Y./Grosskopf, B. (2004): How Manipulable Are Fairness Perceptions? The Effect of Additional Alternatives, in: *Inequality, Welfare and Income Distribution: Experimental Approaches*, Vol. 11, Cowell, F., ed., London, pp. 43-53.

Bieger, T. (2007): *Dienstleistungs-Management: Einführung in Strategien und Prozesse bei Dienstleistungen*, 4th ed., Bern/Stuttgart/Wien.

Bieger, T., et al. (2005): Kundenwert durch neue Preissysteme im Tourismus — Ein neues Feld für Dienstleistungsinnovationen, in: *Erfolg durch Innovation: Perspektiven für den Tourismus — und Dienstleistungssektor*, Pechlaner, H., et al., eds., Wiesbaden, pp. 309-326.

Bieger, T., et al. (2002): Transformation of Business Models in the Airline Industry: Impact on Tourism, in: *Air Transport and Tourism*, Vol. 44, Keller, P./Bieger, T., eds., St. Gallen, pp. 49-82.

Biswas, A./Blair, E. A. (1991): Contextual Effects of Reference Prices in Retail Advertisements, in: *Journal of Marketing*, Vol. 55, Issue 3, pp. 1-12.

Biswas, A., et al. (1993): Reference Pricing Studies in Marketing: A Synthesis of Research Results, in: *Journal of Business Research*, Vol. 27, Issue 3, pp. 239-256.

Bolton, L. E., et al. (2003): Consumer Perceptions of Price (Un)Fairness, in: *Journal of Consumer Research*, Vol. 29, Issue 4, pp. 474-491.

Bortz, J. (2005): *Statistik für Human — und Sozialwissenschaftler*, 6th ed., Heidelberg.

Boyd, D. E./Bhat, S. (1998): The Role of Dual Entitlement and Equity Theories in Consumers' Formation of Fair Price Judgments: An Investigation Within a Business-to-Business Service Setting, in: *Journal of Professional Services Marketing*, Vol 17, Issue 1, pp. 1-14.

Briesch, R. A., et al. (1997): A Comparative Analysis of Reference Price Models, in: *Journal of Consumer Research*, Vol. 24, Issue 2, pp. 202-214.

Calder, S. (2002): *No frills: The truth behind the low-cost revolution in the skies*, London.

Campbell, D. T. (1957): Factors Relevant to the Validity of Experiments in Social Settings, in: *Psychological Bulletin*, Vol. 54, Issue 4, pp. 297-312.

Campbell, D. T./Stanley, J. C. (1963): *Experimental and Quasi-Experimental Designs for Research*, Chicago.

Campbell, M. C. (1999): Perceptions of Price Unfairness: Antecedents and Consequences, in: *Journal of Marketing Research*, Vol. 36, Issue 2, pp. 187-199.

Campbell, M. C. (2007): 'Says Who?' How the Source of Price Information and Affect Influence Perceived Price (Un)fairness, in: *Journal of Marketing Research*, Vol. 44, Issue 2, pp. 261-271.

Chandrashekaran, R./Grewal, D. (2003): Assimilation of Advertised Reference Prices: the Moderating Role of Involvement, in: *Journal of Retailing*, Vol. 79, Issue 1, pp. 53-62.

Chandrashekaran, R./Grewal, D. (2006): Anchoring Effects of Advertised Reference Price and Sale Price: The Moderating Role of Saving Presentation Format, in: *Journal of Business Research*, Vol. 59, Issue 10-11, pp. 1063-1071.

Choi, S./Mattila, A. S. (2004): Hotel Revenue Management and its Impact on Customers' Perceptions of Fairness, in: *Journal of Revenue and Pricing Management*, Vol. 2, Issue 4, pp. 303-314.

Compeau, L. D./Grewal, D. (1998): Comparative Price Advertising: An Integrative Review, in: *Journal of Public Policy & Marketing*, Vol. 17, Issue 2, pp. 257-273.

Cox, J. L. (2001): Can Differential Prices be Fair?, in: *Journal of Product & Brand Management*, Vol. 10, Issue 5, pp. 264-275.

Danziger, S./Segev, R. (2006): The Effects of Informative and Non-Informative Price Patterns on Consumer Price Judgments, in: *Psychology & Marketing*, Vol. 23, Issue 6, pp. 535-553.

Darke, P. R./Dahl, D. W. (2003): Fairness and Discounts: The Subjective Value of a Bargain, in: *Journal of Consumer Psychology*, Vol. 13, Issue 3, pp. 328-338.

Deutsch, M. (1975): Equity, Equality, and Need: What Determines Which Value Will Be Used as the Basis of Distributive Justice?, in: *Journal of Social Issues*, Vol. 31, Issue 3, pp. 137-149.

Diamond, W. D./Campbell, L. (1989): The Framing of Sales Promotions: Effects on Reference Price Change, in: *Advances in Consumer Research*, Vol. 16, Issue 1, pp. 241-247.

Dickson, P. R./Kalapurakal, R. (1994): The Use and Perceived Fairness of Price-Setting Rules in the Bulk Electricity Market, in: *Journal of Economic Psychology*, Vol. 15, Issue 3, pp. 427-448.

Diller, H. (1978): Theoretische und empirische Grundlagen zur Erfassung der Irreführung über die Preisbemessung, in: *Wirtschaftswissenschaftliches Studium*, Vol. 7, Issue 6, pp. 249-255.

Diller, H. (1982): Das Preisinteresse von Konsumenten, in: *Zeitschrift für betriebswirtschaftliche Forschung*, Vol. 34, Issue 4, pp. 315-334.

Diller, H. (1997): Preis-Management im Zeichen des Beziehungsmarketing, in: *Die Betriebswirtschaft*, Vol. 57, Issue 6, pp. 749-763.

Diller, H. (1999), Entwicklungslinien in Preistheorie und -management, in: *Marketing—Zeitschrift für Forschung und Praxis*, Vol. 21, Issue 1, pp. 39-60.

Diller, H. (2000): Preiszufriedenheit bei Dienstleistungen: Konzeptualisierung und explorative empirische Befunde, in: *Die Betriebswirtschaft*, Vol. 60, Issue 5, pp. 570-587.

Diller, H. (2002): Zum Preisverhalten bei Dienstleistungen: Die 'Preiszufriedenheit' verdient mehr Aufmerksamkeit, in: *Erfolg durch Dienen?: Beiträge zur wertsteigernden Führung von Dienstleistungsunternehmen*, Hinterhuber, H. H./Stahl, H. K., eds., Renningen, pp. 162-185.

Diller, H./ and That, D. (1999): Die Preiszufriedenheit bei Dienstleistungen, Working Paper No. 79, Lehrstuhls für Marketing an der Universität-Erlangen Nürnberg, Nürnberg.

Dolnicar, S., et al. (2009): Online Versus Paper: Format Effects in Tourism Surveys, in: *Journal of Travel Research*, Vol. 47, Issue 3, pp. 295-316.

Emery, F. (1969): Some Psychological Aspects of Price, in: *Pricing Strategy: Reconciling Customer Needs and Company Objectives*, Taylor, B./Wills, G., eds., London, pp. 98-111.

Eschweiler, M. (2006): *Externe Referenzpreise: Eine empirisch gestützte verhaltenswissenschaftliche Analyse*, Wiesbaden.

Falk, A., et al. (2008): Testing Theories of Fairness — Intentions Matter, in: *Games and Economic Behavior*, Vol. 62, Issue 1, pp. 287-303.

Fasciati, R./Bieger, T. (2007): Wahrgenommene Preisfairness: Ansatzpunkte für eine segmentspezifische Marktbearbeitung, in: *Thexis*, Vol. 24, Issue 4, pp. 45-50.

Fehr, E./Gächter, S. (1998): Reciprocity and Economics: The Economic Implications of Homo Reciprocans, in: *European Economic Review*, Vol. 42, Issue 3-5, pp. 845-859.

Feider, J. (1985): Konsumentenreaktion auf Preise, Schriftenreihe des Seminars für Allgemeine Betriebswirtschaftslehre der Universität Hamburg, Band 29, Göttingen.

Fisk, R. P. (1981): Toward a Consumption/Evaluation Process Model for Services, in: *Marketing of Services*, Donnelly, J. H./George, W. R., eds., Chicago, pp. 191-195.

Folkes, V./Wheat, R. D. (1995): Consumers' Price Perceptions of Promoted Products, in: *Journal of Retailing*, Vol. 71, Issue 3, pp. 317-328.

Foulihé, P. (1969): The Subjective Evaluation of Price: Methodological Aspects, in: *Pricing Strategy: Reconciling Customer Needs and Company Objectives*, Taylor, B./Wills, G., eds., London, pp. 89-97.

Franciosi R., et al. (1995): Fairness: Effect on Temporary and Equilibrium Prices in Posted-Offer Market, in: *Economic Journal*, Vol. 105, Issue 431, pp. 938-950.

Friedman, M. L./Smith, L. J. (1993): Consumer Evaluation Processes in a Service Setting, in: *Journal of Services Marketing*, Vol. 7, Issue 2, pp. 47-61.

Friesen, M. (2008): Wahrgenommene Preisfairness bei Revenue Management: Eine verhaltenswissenschaftliche und empirisch gestützte Untersuchung der zeitlichen Veränderung im Kaufentscheidungsprozess einer Luftverkehrsdienstleistung, doctoral dissertation, University of St. Gallen, St. Gallen.

Fürst, E. W. (2003): *Der Markt für Flugtickets in Europa: Informationsverhalten von Passagieren zur Verbesserung der Marktstrategie von Fluggesellschaften*, Wiesbaden.

Gabor, A. (1988): *Pricing: Concepts and Methods of Effective Marketing*, 2nd ed. Aldershot.

Gabor, A./Granger, C. W. J. (1969): The Attitude of the Consumer to Prices, in: *Pricing Strategy: Reconciling Customer Needs and Company Objectives*, Taylor, B./Wills, G., eds., London, pp. 132-146.

Grewal, D., et al. (2004): The Effects of Buyer Identification and Purchase Timing on Consumers' Perceptions of Trust, Price Fairness, and Repurchase Intentions, in: *Journal of Interactive Marketing*, Vol. 18, Issue 4, pp. 87-100.

Hardie, B. G. S., et al. (1993): Modeling Loss Aversion and Reference Dependence Effects on Brand Choice, in: *Marketing Science*, Vol. 12, Issue 4, pp. 378-394.

Haws, K. L./Bearden, W. O. (2006): Dynamic Pricing and Consumer Fairness Perceptions, in: *Journal of Consumer Research*, Vol. 33, Issue 3, pp. 304-311.

Hay, C. (1987): *Die Verarbeitung von Preisinformationen durch Konsumenten*, Heidelberg.

Helson, H. (1964): *Adaption-Level Theory: An Experimental and Systematic Approach to Behavior*, New York/Evanston/London.

Herrmann, A., et al. (2003), Preisfairness als Schlüssel zur Kundenzufriedenheit, in *Kundenzufriedenheit: Konzepte — Methoden — Erfahrungen*, 5th ed., Homburg, C., ed., Wiesbaden, pp. 267-289.

Herrmann, A., et al. (2000), Kundenzufriedenheit durch Preisfairness, in: *Marketing — Zeitschrift für Forschung und Praxis*, Vol. 22, Issue 2, pp. 131-143.

Hewson, C. M., et al. (1996): Proper Methodologies for Psychological and Sociological Studies Conducted Via the Internet, in: *Behavior Research Methods, Instruments, & Computers*, Vol. 28, Issue 2, pp. 186-191.

Hilke, W. (1989): Grundprobleme und Entwicklungstendenzen des Dienstleistungs-Marketing, in *Schriften zur Unternehmensführung: Dienstleistungs-Marketing*, Vol. 35, Hilke, W., ed., Wiesbaden, pp. 5-44.

Homans, G. C. (1961): *Social Behavior: Its Elementary Forms*. New York/Burlingame.

Homburg, C., et al. (2005): Customers' Reactions to Price Increases: Do Customer Satisfaction and Perceived Motive Fairness Matter? in: *Journal of the Academy of Marketing Science*, Vol. 33, Issue 1, pp. 36-49.

Homburg, C./Koschate, N. (2005a), Behavioral Pricing — Forschung im Überblick — Teil 1: Grundlagen, Preisinformationsaufnahme und Preisinformationsbeurteilung, in: *Zeitschrift für Betriebswirtschaft*, Vol. 75, Issue 4, pp. 383-423.

Homburg, C./Koschate, N. (2005b): Behavioral Pricing-Forschung im Überblick — Teil 2: Preisinformationsspeicherung, weitere Themenfelder und zukünftige Forschungsrichtungen, in: *Zeitschrift für Betriebswirtschaft*, Vol. 75, Issue 5, pp. 501-524.

Huang, J.-H., et al. (2005): Perceived fairness of pricing on the Internet, in; *Journal of Economic Psychology*, Vol. 26, Issue 3, pp. 343-361.

Huber, F., et al. (2006): Emotion und Marke als Einflussfaktor der wahrgenommenen Preisfairness: Eine theoretische und empirisch experimentelle Analyse, Working Paper, Center of Market-Oriented Product and Production Management, Johannes-Gutenberg-Universität Mainz, Mainz.

Hume, D. (1740): *A treatise of human nature*. London.

Huppertz, J. W., et al. (1978), An Application of Equity Theory to Buyer-Seller Exchange Situations, in: *Journal of Marketing Research*, Vol. 15, Issue 2, pp. 250-260.

Jacobson, R./Obermiller, C. (1990): The Formation of Expected Future Price: A Reference Price for Forward-looking Consumers, in: *Journal of Consumer Research*, Vol. 16, Issue 4, pp. 420-432.

Janetzko, D. (1999): *Statistische Anwendungen im Internet: Daten in Netzumgebungen erheben, auswerten und präsentieren*, München.

Kahneman, D., et al. (1986a), Fairness as a Constraint on Profit Seeking: Entitlements in the Market, in: *The American Economic Review*, Vol. 76, Issue 4, pp. 728-741.

Kahneman, D., et al. (1986b): Fairness and the Assumptions of Economics, in: *Journal of Business*, Vol. 59, Issue 4, pp. 285-300.

Kahneman, D./Tversky, A. (1979): Prospect Theory: An Analysis of Decision under Risk, in: *Econometrica*, Vol. 47, Issue 2, pp. 263-291.

Kalapurakal, R., et al. (1991): Perceived Price Fairness and Dual Entitlement, in: *Advances in Consumer Research*, Vol. 18, Issue 1, pp. 788-793.

Kalyanaram, G./Little, J. D. C. (1994): An Empirical Analysis of Latitude of Price Acceptance in Consumer Package Goods, in: *Journal of Consumer Research*, Vol. 21, Issue 3, pp. 408-418.

Kalyanaram, G./Winer, R. S. (1995): Empirical Generalizations from Reference Price Research, in: *Marketing Science*, Vol. 14, Issue 3, pp. 161-169.

Kamen, J. M./Toman, R. J. (1970): Psychophysics of Prices, in: *Journal of Marketing Research*, Vol. 7, Issue 1, pp. 27-35.

Katona, G. (1963): *Psychological Analysis of Economic Behavior*, New York/Toronto/London.

Kaufmann, P. J., et al. (1991): Fairness in Consumer Pricing, in: *Journal of Consumer Policy*, Vol. 14, Issue 2, pp. 117-140.

Kimes, S. E. (2002): Perceived Fairness of Yield Management, in: *Cornell Hotel & Restaurant Administration Quarterly*, Vol. 43, Issue 1, pp. 21-30.

Kimes, S. E./Wirtz, J. (2003): Has Revenue Management Become Acceptable? Findings from an International Study on the Perceived Fairness of Rate Fences, in: *Journal of Service Research*, Vol. 6, Issue 2, pp. 125-135.

Kimes, S. E/Noone, B. M. (2002): Perceived Fairness of Yield Management: An Update, in: *Cornell Hotel & Restaurant Administration Quarterly*, Vol. 35, Issue 1, pp. 28-29.

Kimes, S. E./Wirtz, J. (2002): Perceived Fairness of Demand-based Pricing for Restaurants, in: *Cornell Hotel & Restaurant Administration Quarterly*, Vol. 43, Issue 1, pp. 31-37.

Kimes, S. E./Wirtz, J. (2004): The Psychology of Revenue Management: Impact of Familiarity, Framing and Fencing Conditions on the Perceived Fairness of Rate Fences, working paper, CHR Working Paper Series 12/14/04, Cornell University School of Hotel Administration, Ithaca.

Konow, J. (2003): Which is the Fairest One of All? A Positive Analysis of Justice Theories, in: *Journal of Economic Literature*, Vol. 41, Issue 4, pp. 1188-1239.

Kopalle, P. K./Winer, R. S. (1996): A Dynamic Model of Reference Price and Expected Quality, in: *Marketing Letters*, Vol. 7, Issue 1, pp. 41-52.

Koschate, N. (2002): *Kundenzufriedenheit und Preisverhalten: Theoretische und empirisch experimentelle Analysen*, Wiesbaden.

Krishnamurthi, L., et al. (1992), Asymmetric Response to Price in Consumer Brand Choice and Purchase Quantity Decisions, in: *Journal of Consumer Research*, Vol. 19, Issue 3, pp. 387-400.

Kucher, E. (1987), Absatzdynamik nach Preisänderung, in: *Marketing — Zeitschrift für Forschung und Praxis*, Vol. 9, Issue 3, pp. 177-186.

Kuhlmann, E. (2001): Besonderheiten des Nachfrageverhaltens bei Dienstleistungen, in *Handbuch Dienstleistungsmanagement: Von der strategischen Konzeption zur praktischen Umsetzung*, 2nd ed., Bruhn, M./Meffert, H., eds., Wiesbaden, pp. 213-242.

Kukar-Kinney, M., et al. (2007): Consumers' Perceptions of the Fairness of Price-Matching Refund Policies, in: *Journal of Retailing*, Vol. 83, Issue 3, pp. 325-337.

Lindenmeier, J. (2005): *Yield-Management und Kundenzufriedenheit: Konzeptionelle Aspekte und empirische Analyse am Beispiel von Fluggesellschaften*, Wiesbaden.

Martins, M. O. (1995): An Experimental Investigation of the Effects of Perceived Price Fairness on Perceptions of Sacrifice and Value, Doctoral Dissertation, University of Illinois, Urbana-Champaign.

Martins, M. O./Monroe, K. B. (1994): Perceived Price Fairness: A New Look at an Old Construct, in: *Advances in Consumer Research*, Vol. 21, Issue 1, pp. 75-78.

Maxwell, S. (1995), What Makes a Price Increase Seem Fair"?, in: *Pricing Strategy and Practice*, Vol. 3, Issue 4, pp. 21-27.

Maxwell, S. (1997), Fair Price and its Effect on Willingness to Purchase, Doctoral Dissertation, Florida International University, Miami.

Maxwell, S. (2002): Rule-Based Price Fairness and its Effect on Willingness to Purchase, in: *Journal of Economic Psychology*, Vol. 23, Issue 2, pp. 191-212.

Mayhew, G. E./Winer, R. S. (1992): An Empirical Analysis of Internal and External Reference Prices Using Scanner Data, in: *Journal of Consumer Research*, Vol. 19, Issue 1, pp. 62-70.

Mazumdar, T., et al. (2005): Reference Price Research: Review and Propositions, in: *Journal of Marketing*, Vol. 69, Issue 4, pp. 84-102.

McClintock, C. G./Keil, L. J. (1982): Equity and Social Exchange, in *Equity and Justice in Social Behavior,* Greenberg, J./Cohen, R. L., eds., New York, pp. 337-387.

McGill, J. I./Van Ryzin, G. J. (1999): Revenue Management: Research Overview and Prospects, in: *Transportation Science*, Vol. 33, Issue 2, pp. 233-255.

Meffert, H./Bruhn, M. (2003): *Dienstleistungsmarketing: Grundlagen — Konzepte — Methoden*, 4th ed., Wiesbaden.

Miao, L./Mattila, A. S. (2007): How and How Much to Reveal? The Effects of Price Transparency on Consumers' Price Perception, in: *Journal of Hospitality and Tourism Research*, Vol. 31, Issue 4, pp. 530-545.

Monroe, K. B. (1982): The Influence of Price on Product Perceptions and Product Choice, in: *Advances in Consumer Research*, Vol. 9, Issue 1, pp. 206-209.

Monroe, K. B. (2003): *Pricing: Making Profitable Decisions*, 3rd ed., New York.

Monroe, K. B., et al. (1977): Contextual Influences on Subjective Price Perceptions, in: *Journal of Business Research*, Vol. 5, Issue 4, pp. 277-291.

Monroe, K. B./Petroshius, S. M. (1981): Buyers' Perceptions of Prices: An Update of the Evidence, in: *Perspectives in Consumer Behavior*, 3rd ed., Roberts, T./Harold, H., eds., Dallas, pp. 43-55.

Müller, W. (1996): Grundzüge des Preisbeurteilungsverhaltens von Dienstleistungsnachfragern, in: *Der Markt*, Vol. 35, Issue 136, pp. 23-48.

Müller, W./Klein, S. (1993): Grundzüge einer verhaltensorientierten Preistheorie im Dienstleistungsmarketing — Teil 1: Preisgünstigkeitsurteile, in: *Jahrbuch der Absatz — und Verbrauchsforschung*, Vol. 39, Issue 3, pp. 261-282.

Müller-Hagedorn, L. (1983): Wahrnehmung und Verarbeitung von Preisen durch Verbraucher — ein theoretischer Rahmen, in: *Zeitschrift für betriebswirtschaftliche Forschung*, Vol. 35, Issue 11/12, pp. 939-951.

Nwokoye, N. G. (1975): Subjective Judgments of Price: The Effects of Price Parameters on Adaption Levels, in *Marketing in Turbulent Times and Marketing: The Challenges and the Opportunities*, Mazze, E. M., ed., Chicago, pp. 545-548.

Oh, H. (2003): Price Fairness and its Asymmetric Effects on Overall Price, Quality, and Value Judgments: the Case of an Upscale Hotel, in: *Tourism Management*, Vol. 24, Issue 4, pp. 387-399.

Okun, A. M. (1981): *Prices and Quantities: A Macroeconomic Analysis*. Washington DC.

O'Neill, R. M./Lambert, D. R. (2001): The Emotional Side of Price, in: *Psychology & Marketing*, Vol. 18, Issue 3, pp. 217-237.

Pechtl, H. (2003): Logik von Preissystemen, in: *Handbuch Preispolitik: Strategien — Planung — Organisation — Umsetzung*, Diller, H./Herrmann, A., eds., Wiesbaden, pp. 69-91.

Peine, K., et al. (2009): Getting a Feel for Price Affect: A Conceptual Framework and Empirical Investigation of Consumers' Emotional Responses to Price Information, in: *Psychology and Marketing*, *Vol.* 26, Issue 1, pp. 39-66.

Perdue, B. C./Summers, J. O. (1986): Checking the Success of Manipulations in Marketing Experiments, in: *Journal of Marketing Research*, Vol. 23, Issue 4, pp. 317-326.

Pohl, A. (2004): *Preiszufriedenheit bei Innovationen: Nachfrageorientierte Analyse am Beispiel der Tourismus — und Airlinebranche*, Wiesbaden.

Pompl, W. (2002): *Luftverkehr: eine ökonomische und politische Einführung*, 4th ed., Berlin.

Rao, V. R./Gautschi, D. A. (1982): The Role of Price in Individual Utility Judgments: Development and Empirical Validation of Alternative Models, in: *Choice Models for Buyer Behavior*, McAlister, L., ed., Greenwich, pp. 57-80.

Rawls, J. (2001): *Justice as Fairness: a restatement*, Cambridge/London.

Reips, U.-D. (2002): Standards for Internet-Based Experimenting, in: *Experimental Psychology*, Vol. 49, Issue 4, pp. 243-256.

Renoux, Y. (1973): Consumer Dissatisfaction and Public Policy, in: *Public Policy and Marketing Practices*, Allvine, F. C., ed., Chicago, pp. 53-65.

Rescher, N. (2002): Fairness: Theory and Practice of Distributive Justice, New Brunswick/London.

Ricardo, D. (1984): *The Principles of Political Economy and Taxation*, New York.

Seiders, K./Berry, L. L. (1998): Service fairness: What it is and why it matters, in: *Academy of Management Executive*, Vol. 12, Issue 2, pp. 8-20.

Shaw, S. (2004): *Airline Marketing and Management*, 5th ed., Aldershot/Burlington.

Sheng, S., et al. (2007), Partitioning or Bundling? Perceived Fairness of the Surcharge Makes a Difference, in: *Psychology & Marketing*, Vol. 24, Issue 12, pp. 1025-1041.

Sherif, C. W. (1963): Social Categorization as a Function of Latitude of Acceptance and Series Range, in: *Journal of Abnormal and Social Psychology*, Vol. 67, Issue 2, pp. 148-156.

Sherif, M./Hovland, C. I. (1961): *Social Judgment: Assimilation and Contrast Effects in Communication and Attitude Change*, New Haven/London.

Shugan, S. M./Xie, J. (2000): Advance Pricing of Services and Other Implications of Separating Purchase and Consumption, in: *Journal of Service Research*, Vol. 2, Issue 3, pp. 227-239.

Simon, H. (1992): *Preismanagement: Analyse, Strategie, Umsetzung*, 2nd ed., Wiesbaden.

Simon, L., et al. (1974): Managerial Uses of Price and Product Preference Data, in: *Increasing Marketing Productivity and Concept and Methodological Foundation of Marketing*, Greer, T., ed., pp. 145-150.

Sinha, I./Batra, R. (1999): The Effect of Consumer Price Consciousness on Private Label Purchase, in: *International Journal of Research in Marketing*, Vol. 16, Issue 3, pp. 237-251.

Spann, M., et al. (2005): Interaktive Preismassnahmen bei Low-Cost-Fluglinien, in: *Zeitschrift für Betriebswirtschaft*, Vol. 75, Issue 1, pp. 53-77.

Stoetzel, J. (1969): Psychological/Sociological Aspects of Price, in *Pricing Strategy: Reconciling Customer Needs and Company Objectives*, Taylor, B./Wills, G., eds., London, pp. 70-74.

Talluri, K. T./Van Ryzin, G. J. (2004): *The Theory and Practice of Revenue Management*, Boston/Dordrecht/London.

Tarrahi, F., et al. (2016): A meta-analysis of price change fairness perceptions, in: *International Journald of Research in Marketing, Vol.* 33, Issue 1, pp. 199-203.

Theobald, A. (2000): *Das World Wide Web als Befragungsinstrument*, Wiesbaden.

Thibaut, J. W./Kelley, H. H. (1959): *The Social Psychology of Groups*, New York.

Tsai, D./Lee, H.-C. (2007): Will You Care when You Pay More? The Negative Side of Targeted Promotions, in: *Journal of Product & Brand Management*, *Vol.* 16, Issue 7, pp. 481-491.

Tull, D., et al. (1964): A Note on the Relationship of Price and Imputed Quality, in: *Journal of Business*, Vol. 37, Issue 2, pp. 186-191.

Tversky, A./Kahneman, D. (1991): Loss Aversion in Riskless Choice: A Reference-Dependent Model, in: *Quarterly Journal of Economics*, Vol. 106, Issue 4, pp. 1039-1061.

Uhl, J. (1970): Consumer Perception of Retail Food Price Changes, paper presented at the First Annual Meeting of the Association for Consumer Research, Amherst.

Urbany, J. E., et al. (1988): The Effect of Plausible and Exaggerated Reference Prices on Consumer Perceptions and Price Search, in: *Journal of Consumer Research*, Vol. 15, Issue 1, pp. 95-110.

Urbany, J. E./Dickson, P. R. (1991): Consumer Normal Price Estimation: Market versus Personal Standards, in: *Journal of Consumer Research*, Vol. 18, Issue 1, pp. 45-51.

Urbany, J. E., et al. (1989): All's Not Fair in Pricing: An Initial Look at the Dual Entitlement Principle, in: *Marketing Letters*, Vol. 1, Issue 1, pp. 17-25.

Van den Bos, K., et al. (1997): Procedural and Distributive Justice: What is Fair Depends More on What Comes First Than on What Comes Next, in: *Journal of Personality and Social Psychology*, Vol. 72, Issue 1, pp. 95-104.

Vaidyanathan, R. (2000): The Role of Brand Familiarity in Internal Reference Price Formation: An Accessibility-Diagnosticity Perspective, in: *Journal of Business and Psychology*, Vol. 14, Issue 4, pp. 605-624.

Vaidyanathan, R./Aggarwal, P. (2003): Who is the Fairest of Them All? An Attributional Approach to Price Fairness Perceptions, in: *Journal of Business Research*, Vol. 56, Issue 6, pp. 453-463.

Winer, R. (1986): Behavioral Perspective on Pricing: Buyer's Subjective Perceptions of Price Revisited, in: *Issues in Pricing: Theory and Research*, Devinney, T. M., ed., Lexington/Toronto, pp. 35-57.

Wirtz, J./Kimes, S. E. (2007): The Moderating Role of Familiarity in Fairness Perceptions of Revenue Management, in: *Journal of Service Research*, Vol. 9, Issue 3, pp. 229-240.

Woratschek, H. (1996): Möglichkeiten und Grenzen preispolitischer Faustregeln für den Dienstleistungsbereich, in: *Grundsatzfragen und Herausforderungen des Dienstleistungsmarketing,* Meyer, A., ed., Wiesbaden, pp. 97-124.

Wricke, Martin, et al. (2000): Behavioral Pricing: Erklärungs — und Operationalisierungsansätze des Referenzpreiskonzepts, in: *Wirtschaftswissenschaftliches Studium*, Vol. 6, Issue 12, pp. 692-697.

Xia, L., et al. (2004): The Price Is Unfair! A Conceptual Framework of Price Fairness Perceptions, in: *Journal of Marketing*, Vol. 68, Issue 4, pp. 1-15.

Zeithaml, V. A. (1981): How Consumer Evaluation Processes Differ between Goods and Services, in: *Marketing of Services*, Donnelly, J. H./George, W. R., eds., Chicago, pp. 186-190.

**Mark Friesen**, Dr., is Managing Partner at QUINTA Consulting and Lecturer in the Master in Marketing Management (MiMM) at the University of St. Gallen (HSG)

*Anschrift:* Bockenheimer Landstr. 22, D-60323 Frankfurt, Germany, Tel.: +49 172 276 8548, E-Mail: mark.friesen@unisg.ch