One firm, one product, two prices: Channel-based price differentiation and customer retention

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1. Introduction

Driven by the immense growth of digitalization technologies, most firms use multiple channels to distribute products and services to customers. More than 80% of U.S. retailers and 90% of the most successful retailers use two or more channels to distribute their offerings (DMA, 2005; Kilcourse and Rowen, 2008); substantial research thus has focused on issues related to multichannel management (e.g., Neslin and Shankar, 2009; Walter et al., 2006; Zhang et al., 2010). In particular, multichannel retailers must consider whether and how to engage in channel-based price differentiation by setting different prices for the same product across multiple channels (Wolk and Ebling, 2010). Some retailers insist on price consistency across channels (e.g., Ann Inc., Kohl's Corp.), but successful multichannel players such as Walmart, Tesco, and AT&T differentiate their prices across online and offline channels. Although price differentiation promises to increase profitability (Phlips, 1989), researchers often assume negative effects for customers (Neslin and Shankar, 2009). The realization that most multichannel retailers engage in some channel-based price differentiation suggests the need to specify exactly how customers react to price differentiation and determine the conditions in which it is feasible (Wolk and Ebling, 2010).

With this study, we pursue two related objectives. First, we develop and empirically test a conceptual model to identify four typical price instruments for realizing channel-based price differentiation (online discount, online promotion, online clearance, service fee) and reveal their distinct effects on customer perceptions of perceived value, price unfairness, and limited self-determination, as well as on retention outcomes such as relationship quality and repurchase intentions. Extant research investigates price levels, price dispersion, and price comparison processes in a multichannel environment (e.g., Ancarani and Shankar, 2004; Granados et al., 2012) and some researchers discuss the opportunities associated with channel-based price differentiation (Cavero et al., 1998; Kauffman et al., 2009; Wolk and Ebling, 2010; Zettelmeyer, 2000). However, we are not aware of any empirical investigation of the effects of channel-based price differentiation instruments on customers. With this study, we show that such instruments have both positive and negative effects on customer perceptions, which then influence customer retention.

Second, we specify the conditions in which channel-based price differentiation is feasible by considering channel costs and self-selection conditions. We formalize these conditions in a generalizable manner and apply them to the mobile communications sector. According to our results, a retailer needs to achieve 5.1% lower operating costs through the Internet than in-store if it hopes to ensure profitability and steer the right customers to the right channel. These findings should encourage mobile communications firms to engage in channel-based price differentiation.

We propose a conceptual model, from which we develop hypotheses about the impact of price instruments on customer perceptions and retention. After we test our model by using a laboratory experiment, we separately analyze the conditions in

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which a channel-based price differentiation strategy is feasible for mobile communications retailers. We conclude with implications for multichannel researchers and practitioners.

2. Channel-based price differentiation: concept and extant research

2.1. Content

With price differentiation strategies, companies seek to appeal to different customer segments that exhibit disparate willingness to pay (Cassady, 1946; Jain and Srivastava, 2000). Ideally, each customer pays a price that corresponds to her or his maximum willingness to pay, so the seller's profitability increases due to higher revenues, ideally without concomitant costs to implement the price differentiation strategy (Cassady, 1946; Jain and Srivastava, 2000; Khan and Jain, 2005). Research in marketing and economics highlights that price differentiation can maximize a firm's profits in markets in which customer tastes are heterogeneous and interconsumer arbitrage is difficult (Khan and Jain, 2005; Phlips, 1989).

As a form of second-degree price differentiation, channel-based price differentiation builds on customers' heterogeneous channel preferences when they self-select into a preferred channel–price combination (Granados et al., 2012; Phlips, 1989; Wolk and Ebling, 2010). Customers differ in their channel preferences, whether due to inherent channel characteristics (e.g., convenience of shopping online, closer inspection in stores) or their willingness to pay for certain services (e.g., personal advice) (Konus et al., 2008; Wolk and Ebling, 2010). For multichannel retailers that provide traditional stores and online sites, their profitability depends on the price and service level offered in each channel (Moorthy, 1987; Pan et al., 2004). Service levels tend to be higher in traditional store formats (Grewal et al., 2010; Pan et al., 2004); because price levels are determined mainly by channel costs (including costs for service), they tend to be higher offline than online (Ancarani and Shankar, 2004; Ratchford, 2009; Wolk and Ebling, 2010). A retailer's inherent goal is to maximize its profits, so two crucial conditions must exist for channel-based price differentiation to be feasible: lower operating costs in the channel in which prices are lower and self-selection of customers into the right channels for them. Because prices tend to be lower online than in stores, due to the lower service levels and thus lower operating costs on the Internet (Anderson et al.,1997; Pan et al., 2004),[1] customers who are price sensitive and do not require personal advice should choose the Internet; customers who are service sensitive and willing to pay more for service should choose the store channel.

2.2. Extant research

Many research articles investigate the opportunities that occur with offering multiple channels (e.g., Grewal et al., 2010; Walter et al., 2006). Studies which focus on pricing in a multichannel environment analyze overall price levels and price dispersion within and between channels (Granados et al., 2012), but usually do not consider channel-based price differentiation where a firm sets different prices for the same product across channels.

Several researchers recognize the possibility of channel-based price differentiation (Grewal et al., 2010; Kauffman et al., 2009; Myers et al., 2004; Neslin and Shankar, 2009; Zettelmeyer, 2000; Zhang, 2009; Zhang et al., 2010) and note its potential positive and negative effects, though without offering empirical evidence of the outcomes of such a strategy. In the first study to verify the existence of channel-based price differentiation in practice, Wolk and Ebling (2010) report that for almost 63% of products sold by retailers that engage in channel-based price differentiation, prices are higher offline than online. Most multichannel retailers (92%) follow a mixed strategy, such that they set some prices higher offline and others higher online. Furthermore, market, product, and retailer characteristics affect the probability that a firm will engage in channel-based price differentiation. Additionally, Kauffman et al. (2009) show analytically that the level of customer channel migration and the online proportion of its business should determine a firm's pricing strategy. Despite their great contribution to channel-based price differentiation research, these studies did not include customer-level effects of such price differentiation (e.g., customer perceptions and retention). Wolk and Ebling even call for empirical evidence of these effects: “further investigation of the consumer perspective may reveal insights concerning the optimal level of price differences accepted by consumers” (Wolk and Ebling, 2010, p. 150).

Other theoretical studies assume negative effects for customers (Neslin et al., 2006; Neslin and Shankar, 2009; Zhang, 2009). Zhang (2009) argues that multichannel retailers tend to set the same prices in different channels to achieve consistency across their offers. In addition, price inconsistency could invoke negative effects such as confusion, unfairness perceptions, resentment, or switching behavior (Neslin et al., 2006; Neslin and Shankar, 2009). Because channel-related price differences may encourage customers to use specific, lower priced channels, customers might come to feel coerced to use channels that do not match their preferences, which could lower customer retention (Neslin and Shankar, 2009).

Yet other researchers cite potential advantages of channel-based price differentiation (Grewal et al., 2010; Myers et al., 2004; Neslin and Shankar, 2009), such as in digital product contexts. Customers likely expect lower prices online, because they realize the low marginal cost of an additional digital product (relative to traditional versions) (Grewal et al., 2010). Therefore, they might consider lower prices online more fair. For retailers, “right-channeling” customers to specific channels can increase profits (Myers et al., 2004; Neslin and Shankar, 2009), because this principle refers to the mechanism of consumer self-selection in response to a second-degree price differentiation strategy. Thus, the success of channel-based price differentiation appears to depend on its implementation and the specific price instruments used.

3. Identification of channel-based price differentiation instruments

3.1. Online search

To determine price instruments for channel-based price differentiation that are typically applied in practice, we analyzed leading multichannel retailers through a two-step online search. First, we identified the largest multichannel retailers in the United States and Europe by applying three criteria to the 50 largest *Fortune* 500 companies in each region: multichannel distribution, consumer business, and direct retailing. A company qualifies as a multichannel firm if it distributes its products or services at least through one online (i.e., Internet store) and one offline (i.e., bricks-and-mortar store) channel. Because we focus on consumer markets, only firms that earn more than half of their revenues from consumer products or services qualify for our study. For

[1] For our study, it is not important whether costs drive prices or prices drive costs, as long as lower prices correlate with lower costs. For example, stronger online competition could induce lower prices, which force online retailers to reduce their channel costs to remain profitable. Alternatively, online retailers with lower costs may charge lower prices to improve their competitive positions.

simplification, we concentrated on retailers that distributed at least 10% of their offerings directly to consumers in both channels. Thus, the online observation sample consisted of 17 U.S. and 22 European companies (i.e., a total of 39 firms), which we list in Appendix A.

Second, we sought to identify which channel-based price differentiation instruments these multichannel companies used. In line with real-world practices, we concentrated on price instruments that led to lower prices online than offline (Anderson et al., 1997; Wolk and Ebling, 2010). Thus, we found online instruments that mentioned online exclusivity, observable by customers. Then we contacted each firm via e-mail to verify if any additional costs (e.g., fees) were charged offline that we could not observe on the website. For this step, two analysts searched the multichannel retailers' websites for channel-based price differentiation instruments. The first analyst identified all possible instruments on the basis of price differences related to the online or offline channel, then compared the identified instrument with price instruments mentioned in prior pricing or multichannel retailing literature (Levy and Weitz, 2009; Monroe, 2003). This analyst recorded instruments for each firm in our list. The second analyst browsed the same websites again, searching for the identified instruments and also seeking out any new channel-based price differentiation instruments. Their overall intercoder agreement reached 95.7%; only 10 of 234 possible price instruments were coded differently by the coders. These 10 instruments ultimately were assigned by a third coder. With this procedure, we aimed to identify channel-based price differentiation instruments that are close to reality with the goal of increasing external validity of our experimental study.

3.2. Identified instruments

Through this process, we identified six channel-based price differentiation instruments: online bundling, online clearance, online discount, online new customer discount, online promotion, and service fee (see Appendix B). Online bundling refers to a bundle of products offered together for a lower price, available online only. For example, Walmart offered a bundle of a television with a DVD player online for a special price ($599.00 instead of $629.98) (Walmart 2011). Online clearance refers to items that are only sold online, while stocks last. Many retailers such as Target (Target 2011) and Walgreens (Walgreens 2011) feature online clearance offers, with savings of up to 65% on their websites. An online discount is a permanent price reduction on products available on the Internet; an online promotion instead is temporally limited. Walmart.com sells cell phones for 15% less than its local stores (Thatshepits.com, 2011) and Verizon offers a discount of $50 on cell phones sold online (Verizon, 2012), whereas CVS Caremark only occasionally offers 25% off everything bought online until the end of that day (CVS Caremark, 2012). The online new customer discount refers to a price discount provided to customers on their first purchase from the website, such as when BNP Paribas (BNP Paribas, 2011) offers new accounts for one year free of charge when opened online. Finally, customers might pay service fees offline but not online, as it is common for banking services (e.g., Barclays charges £5 when customers request a copy of statement in a local branch (Barclays, 2012)).

Across these six types, we found 66 channel-based price differentiation instruments, 33 implemented by European firms and 33 by U.S. firms. The online promotion type was the most frequently implemented instrument by the 39 firms in our sample (19 times, or 48.7%), closely followed by online discounts (14, 35.9%) and online clearance (13, 33.3%). Regarding service fees, we received answers to our e-mails from 23 firms, of which 4 refused to respond via e-mail and 5 confirmed the existence of additional fees in stores. That is, 26.3% of these firms used service fees. Finally, we discovered 8 (20.5%) examples of online bundling and 7 (17.9%) online new customer discounts. For the experimental study, we thus focus on four instruments most frequently used in practice: online clearance, online discount, online promotion, and service fees.

4. Conceptual model and hypotheses

4.1. Overview of conceptual model

We propose that channel-based price differentiation instruments influence two key outcomes, customer perceptions and retention. Customer perceptions include perceived value, price unfairness, and limited self-determination (DeCharms, 1968; Gupta and Kim, 2007; Xia et al., 2010); these perceptions also likely affect retention outcomes such as relationship quality and repurchase intentions (Liang et al., 2011; Park et al., 2010). Furthermore, we propose that perceived channel-based price differentiation – or the degree to which a customer recognizes price differences between channels for the same products – mediates the link between price instruments and customer perceptions, in that price instruments should exert no effects if customers do not perceive them. Fig. 1 displays our conceptual framework.

4.2. Effects of channel-based price differentiation instruments on customer perceptions

4.2.1. Perceived value

Defined as the customer's assessment of an offer according to her or his perception of the ratio of sacrifices and gains (Gupta and Kim, 2007; Monroe, 2003; Zeithaml, 1988), perceived value has

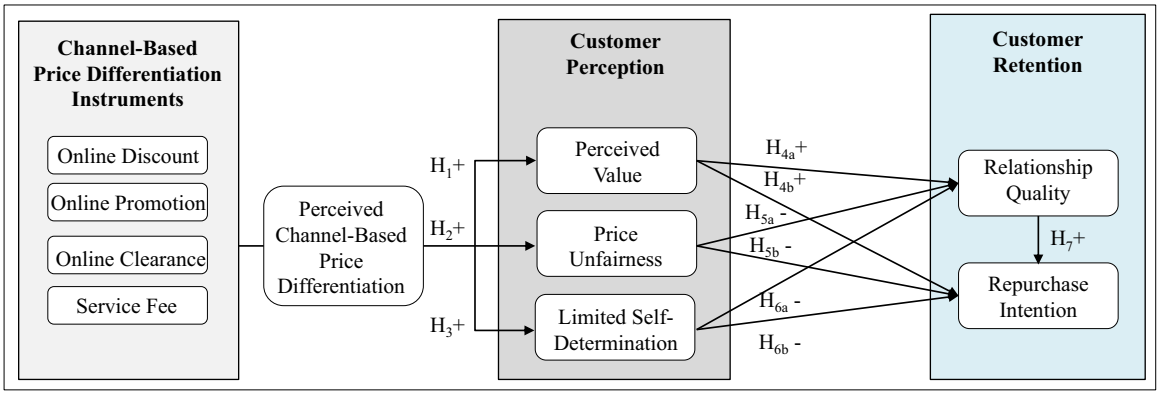

Fig. 1. Conceptual framework. *Notes*: + = positive effect; - = negative effect.

substantial impacts on firm success (Dodds et al., 1991). It can refer to a specific product (Zeithaml, 1988) or the retailer's overall offering (Xia et al., 2004). For our study, perceived value refers to overall perceptions of a retailer's offerings across different channels (Sirohi et al., 1998). Although perceived value often appears in channel and retailing research (e.g., Blair and Landon, 1981, Grewal et al., 1998), it has not been related previously to channel-based price differentiation.

When engaging in channel-based price differentiation, retailers offer regular prices in a reference channel (e.g., store) and lower prices in another channel (e.g., Internet) (Wolk and Ebling, 2010). Thus, customers' perceptions of the retailers' overall price level (i.e., average price across channels) should be lower than they would be in a setting without price differentiation (Alba et al., 1994, 1999). Perceived value thus should be higher, because the quality of and benefits derived from the offerings remain the same, but overall prices are lower (Zeithaml, 1988). The assumption that customer perceptions of a retailers' overall price level are sensitive to changes in the mean prices across channels reflects psychological theories of impression formation, which state that consumers consider an average across a set of items when forming impressions (Anderson, 1965; Troutman and Shanteau, 1976).

Channel-based price differentiation also could enhance customer perceived value by increasing transaction value, defined as the pleasure customers experience from being offered a good deal (Parasuraman and Grewal, 2000). Building on research into price comparison advertising, we expect that lowering prices in one channel (e.g., Internet) compared with a reference channel (e.g., store) signals a good deal to customers and creates pleasure for them, which should enhance their overall value perceptions (Blair and Landon, 1981; Compeau and Grewal, 1998; Grewal et al., 1998). Building on these arguments, we hypothesize:

H_1:. Channel-based price differentiation instruments increase customers' perceived value, through their perceptions of the differentiation.

4.2.2. Price unfairness

We define price unfairness as the assessment of a price as unreasonable, unacceptable, and unjustifiable, compared with a reference price (e.g., prices others pay) (Xia et al., 2004). Perceived price unfairness occurs when customers observe different prices for the same item (Monroe and Xia, 2005); it exerts a strong influence on customers' price reactions (Campbell, 1999; Kahneman et al., 1986). For this study, we predict that price unfairness results from perceived channel-based price differences for the same products. Although research has shown that price promotions can increase unfairness perceptions (Kukar-Kinney et al., 2007; Xia et al., 2010), the impact of channel-related price differentiation has not been investigated.

According to both equity theory and the theory of distributive justice (Adams, 1965; Homans, 1961), customers engage in a cognitive process to compare the prices they pay with the prices others pay (Martins and Monroe, 1994). Specifically, they compare whether the benefits and costs are distributed in accordance with the principle of equity, such that the outcomes should be proportional to inputs (Adams, 1965; Greenberg, 1987; Pizzutti and Fernandes, 2010). With channel-based price differentiation, outcomes (products received) remain equal across customers, but customer inputs (prices paid) differ, depending on the purchase channel. This difference may prompt unfairness perceptions among both advantaged and disadvantaged customers (Ordóñez et al., 2000; Xia et al., 2004).[2] In addition, the negative emotions that occur concurrently with or precede cognitions of price equality or inequality influence price fairness perceptions (Xia et al., 2004). For example, a buyer may feel guilt or unease if the inequality is to his or her advantage but anger or outrage if it is to his or her disadvantage. If customers perceive price inequalities due to channel-based price differentiation, they likely experience such negative emotions, which help them distinguish perceptions of unfairness versus fairness (Xia et al., 2004).

Price unfairness seems likely in our study setting, considering the conditions that apply to channel-based price differentiation. In particular, with channel-based price differentiation, transaction similarity is fairly high, because the same firm offers the same product across channels, which should enhance price unfairness perceptions (Xia et al., 2004). Regarding attributions of responsibility, when customers think that the firm has control over price differences, their price unfairness perceptions increase (Campbell, 1999). From customers' perspective, price differences due to channel-based differentiation clearly are under the firm's control, because both channels belong to the same firm. Finally, price unfairness judgments reflect social norms that people who must use a specific channel should not be disadvantaged (Maxwell, 1999). Many customers (e.g., older people) use traditional stores because they lack the necessary role clarity or ability to adopt technology-based channels (Meuter et al., 2005). Charging these customers more for choosing the channel that they need may enhance price unfairness perceptions. We thus hypothesize:

H_2:. Channel-based price differentiation instruments increase customers' perceived price unfairness, through their perceptions of the differentiation.

4.2.3. Limited self-determination

We define a sense of limited self-determination as a customer's belief that he or she has chosen a channel only through an inducement by the firm (DeCharms, 1968; Dholakia, 2006). In contrast, a customer who chooses a channel on his or her own initiative is self-determined. Perceptions of limited self-determination generally emanate from any decision constraints (Reeve, 2002); they can predict outcomes such as customer satisfaction (Mogilner et al., 2008) and customer loyalty (Dholakia, 2006).

On the basis of self-determination theory (Deci and Ryan, 1985, 2002; Ke and Zhang, 2009), we posit that channel-based price differentiation functions as a monetary reward, contingent on customers' channel choice. Such contingent monetary rewards can reduce the person's perceived self-determination by introducing an external locus of causality. That is, customers feel compelled by external rewards to choose a specific channel, rather than choosing a channel according to their own preferences (DeCharms, 1968; Reeve, 2002). Extant research into sales promotions and economic relational programs indicates that customers perceive such tactics as controlling or as attempts by firms to change their behaviors to make use of an offered reward (Dholakia, 2006; Melancon et al., 2011).

Similarly, personal control theories (Averill, 1973; Hui and Bateson, 1991) predict that when customers are constrained in their freedom to make choices for themselves, their perceptions of

[2] No inequality seemingly exists if customers who pay more (higher input) also receive more, such as personal advice or information (higher output). However, we contest this argument for two reasons. First, research on free riding shows that customers who prefer information services, which have characteristics similar to a public good, often are not willing to pay for them and simply purchase from a retailer other than their primary source of information (Huang et al., 2009). Second, fairness perceptions depend on not only monetary inputs (i.e., price paid) but also nonmonetary inputs, such as the time and effort invested to obtain a product, which tend to be higher for offline purchases (Xia et al., 2010). Therefore, it seems unlikely that a public good such as personal advice or information can compensate for higher monetary and nonmonetary inputs (Chintagunta et al., 2012).

decisional control – that is, "the extent of choice on means and goals that a person has in a situation" (Ancarani and Shankar, 2004, p. 1827) – decrease, which leads to limited self-determination. We argue that customers perceive lower levels of decisional control when they confront channel-based price differentiation, because price differences urge customers to choose the lower priced channel. Extant research also has shown that when only self-service channels are available, customers perceive low decisional control and feel forced (Reinders et al., 2008). We consider this finding applicable to our study context, in which different channels exist but customers are punished for using a specific channel. We hypothesize:

H_3:. Channel-based price differentiation instruments increase customers' perceptions of limited self-determination, through their perceptions of the differentiation.

4.3. Effects of customer perceptions on customer retention outcomes

A repurchase intention reflects a customer's desire to buy repeatedly from the firm (Paul et al., 2009). Relationship quality represents the "overall assessment of the strength of a relationship" (Palmatier et al., 2006, p. 138). Drawing from extant research, we conceptualize relationship quality as a second-order construct, consisting of satisfaction and trust (Crosby et al., 1990; Dwyer et al., 1987). Satisfaction is commonly defined as a customer's confirmation or disconfirmation, based on the comparison of her or his pre-purchase expectations against post-purchase experiences with the firm (Heitmann et al., 2007; Oliver, 1980). We define trust "as existing when one party has confidence in an exchange partner's reliability and integrity" (Morgan and Hunt, 1994, p. 23).

4.3.1. Effects of perceived value on customer retention

Perceived value should have a positive impact on relationship quality (Crosby et al., 1990; Palmatier et al., 2006). Consistent with need satisfaction theory (Oliver, 2010), we suppose that a higher level of value offered by a retailer enhances the fulfillment of customer needs and thus has positive effects on the relationship quality dimension of customer satisfaction (Bolton and Lemon, 1999). With regard to trust, customers perceive high-value offers as expressions of benevolence, because the firm puts customers' interests ahead of its own (Morgan and Hunt, 1994; Sirdeshmukh et al., 2002). Customer perceived value also may relate positively to customer repurchase intentions. Relationship marketing research empirically supports the positive influence of value on repurchase intentions (Sirdeshmukh et al., 2002, Sirohi et al., 1998), in accordance with goal and action identity theories that value is a superior goal, pursued by customers who regulate their actions to attain this outcome (Bagozzi and Dholakia, 1999). If customers perceive an offer as valuable, they should be more willing to repurchase at this retailer to attain their goal of high value (Sirdeshmukh et al., 2002). We hypothesize:

H_4:. Perceived value has a positive impact on (a) relationship quality and (b) repurchase intentions.

4.3.2. Effects of perceived unfairness on customer retention

A customer who finds a firm's prices unfair should perceive a lower quality relationship with it (Kumar et al., 1995). Previous research shows that fairness perceptions relate to the relationship quality dimension of customer satisfaction (Bolton and Lemon, 1999; Ordóñez et al., 2000). Consumers expect prices to be equal for the same product (Martins and Monroe, 1994; Xia et al., 2004), but if prices differ, and consumers perceive unfairness, their expectations are violated, which reduces their satisfaction (Oliver and Swan, 1989). Fairness also is generally considered a precondition of trust, so if customers perceive a firm's prices as unfair, trust should diminish (Morgan and Hunt, 1994). We also propose that price unfairness perceptions have negative effects on repurchase intentions (Campbell, 1999; Kukar-Kinney et al., 2007). Customers are unwilling to pay a price they find unfair (Kahneman et al., 1986; Urbany et al., 1989). Specifically, perceived unfairness causes feelings of tension and discomfort (Adams, 1965; Martins and Monroe, 1994), and to cope with these negative emotions, people tend to exit the situation, such that they are less likely to repurchase from the firm that causes the negative feelings (Xia et al., 2004). We hypothesize:

H_5:. Perceived price unfairness has a negative impact on (a) relationship quality and (b) repurchase intentions.

4.3.3. Effects of limited self-determination on customer retention

Customers' limited self-determination should harm relationship quality (Patrick et al., 2007; Ryan et al., 2005). Self-determination theory identifies autonomy as a basic human need; it is diminished when customers perceive limited self-determination (Deci and Ryan, 1985, 2000). Consistent with need satisfaction theory (Oliver, 2010), we expect that an unfulfilled autonomy need results in lower customer satisfaction (La Guardia et al., 2000; Patrick et al., 2007). In terms of trust, customers' willingness to rely on a firm also is facilitated when it is supportive of customer autonomy (Ryan et al., 2005). When customers perceive a firm as controlling, they infer that it pursues its own interests more than theirs, which reduces perceptions of support (Morgan and Hunt, 1994; Sirdeshmukh et al., 2002). Moreover, they might perceive a higher risk of using a firm-mandated channel, which reduces trust (Grewal et al., 2007; Meuter et al., 2005). Customers with limited self-determination also should be less likely to repurchase (Dholakia, 2006; Hui and Bateson, 1991), consistent with theories of goal-directed behavior. That is, people's behavior results from their desire to act in accordance with their own will (Bagozzi et al., 2003). If customers perceive limited self-determination with regard to channel choice, their desire to repurchase declines, because their choices are not based on their own will (Bagozzi et al., 2003; Dholakia, 2006). Thus, we hypothesize:

H_6:. Perceived limited self-determination has a negative impact on (a) relationship quality and (b) repurchase intentions.

A positive relation between relationship quality and repurchase intention already has been established in research (Liang et al., 2011; Palmatier et al., 2006). If the quality of the consumer–firm relationship seems high, such that customers are satisfied with and trust the retailer, they are more likely to maintain their relationship by repurchasing from that retailer (De Wulf et al., 2001; Moorthy, 1987). Therefore,

H_7:. Relationship quality has a positive impact on repurchase intention.

5. Empirical study

5.1. Procedure

5.1.1. Study design

We conducted a laboratory experiment using a $2 \times 2 \times 2 \times 2$ between-subjects design. We manipulated four channel-based price differentiation instruments, as absent or present, resulting in 16 experimental groups. Participants were randomly assigned to these experimental groups. We conducted the survey in Germany, the largest market in Europe, and chose the mobile

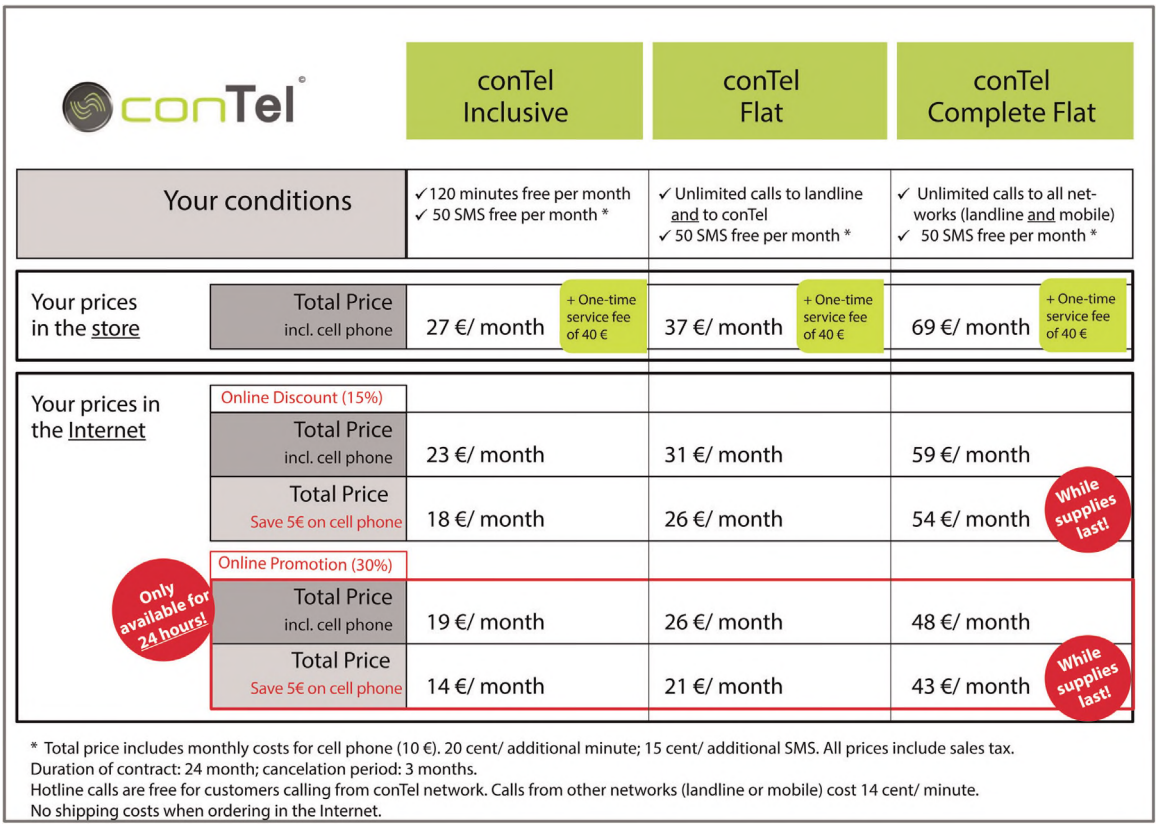

Fig. 2. Leaflet for fictitious mobile communications firm conTel .

communication industry, because it emerged as the most prominent industry in our previous online search, with all five firms using channel-based price differentiation. Three other industries in the sample involved more firms than mobile communications, but not all firms in those industries employed channel-based price differentiation: banking 50%, insurances 50%, and retail 92%. The scenario description told participants that they were a loyal, satisfied customer of a fictitious mobile communications firm, conTel. They were searching for a new mobile communications contract (including a new cell phone) and considering a repurchase with conTel. Next, we presented them with a leaflet (Fig. 2) summarizing the current plans offered by conTel, which included the price manipulations, and asked them to choose the plan they preferred. The scenario text appears in Appendix C.

To define the levels for our manipulations, we analyzed the websites of the main mobile communications firms active in Germany and chose levels representative of their offers. Thus we increased the realism and external validity of our tests; however, we could not disentangle the potentially differential effects resulting from the instruments per se or potential differences in economic value. To operationalize the online discount, we indicated a permanent price reduction of 15% on plans bought online; the online promotion was a reduction of 30%, available for the next 24 h. For online clearance, we described reduced price cell phones (5€ off), available exclusively in the Internet while supplies lasted. Finally, the service fee was an additional fee of 40€, to be paid once in the store if consumers purchased their plans offline. This fee thus was equivalent to 4% of the average value of the plans in our scenario, consistent with service fees used in other retail industries (Amadeus, 2007).

5.1.2. Sample

A total of 2135 consumers, representative of the national population (at least 18 years of age, owners of a cell phone contract), were invited to participate by a certified market research firm. Among the 641 respondents who completed the questionnaire (response rate=30.0%), we deleted 23 cases in which the respondents answered too fast (< 6.2 min) or too slow (> 60 min), as well as 28 cases with schematic answers. The final sample thus contains 590 people, between the ages of 18 and 73 years (M=36.2, SD=11.7), 50.7% of whom were men. The experimental group sizes varied from 33 to 44 people.

5.1.3. Measures

We measured perceived value (three items), price unfairness (three items), and limited self-determination (four items) using established multi-item reflective scales (1="strongly disagree" to 7="strongly agree"). Relationship quality was modeled as a second-order construct of satisfaction and trust, each measured with established four-item reflective scales. For repurchase intention, we measured percentage probability values; for perceived channel-based price differentiation, we used a single item: "conTel offers different prices in the Internet and the store." The items for the reflective constructs are in Appendix D.

5.2. Validity assessment and manipulation checks

5.2.1. Reliability and validity

Table 1 contains the descriptive statistics and construct correlations. The Cronbach's α scores were between .73 and .96, and composite reliability was greater than .88 for all constructs ($\rho_{\text{perceived value}}$ = .96, $\rho_{\text{price unfairness}}$ = .96, $\rho_{\text{limited self-determination}}$ = .93, $\rho_{\text{relationship quality}}$ = .88). The average variance extracted (AVE) values were greater than .77 for all constructs ($\text{AVE}_{\text{perceived value}}$ = .88, $\text{AVE}_{\text{price unfairness}}$ = .90, $\text{AVE}_{\text{limited self-determination}}$ = .77, $\text{AVE}_{\text{relationship quality}}$ = .79) and consistently higher than the latent constructs' squared correlations, in support of convergent and discriminant validity (Fornell and Larcker, 1981).

Table 1
Correlation matrix and descriptive statistics.

	Number of items	M	SD	1	2	3	4	5	6	7
1. Perceived price differentiation	1	5.65	1.98	n.a.						
2. Perceived value	3	3.54	1.43	.19	**.93**					
3. Price unfairness	3	3.80	1.73	.11	−.20	**.94**				
4. Limited self-determination	4	3.47	1.79	.14	−.12	.43	**.90**			
5. Relationship quality*	2	3.92	1.23	.16	.65	−.25	−.20	**.73**		
6. Repurchase intention	1	43.70	37.13	.15	.51	−.15	−.16	.59	n.a.	
7. Channel preference Internet	2	25.77	58.82	.01	−.04	−.07	−.19	−.06	.02	n.a.

Notes: The Cronbach's α of the reflective scales appears in the upper diagonal. n.a.= not applicable.

* The α scores of second-order constructs of relationship quality are .93 for satisfaction and .95 for trust.

5.2.2. Manipulation checks and external validity

We used manipulation checks to confirm that participants perceived the channel-based price differentiation instruments, using one item per instrument (i.e., "conTel offers an online discount of 15 percent," "conTel offers an online promotion of 30 percent, available for 24 h," "conTel offers lower priced cell phones only in the Internet, available while supplies last," and "conTel charges a one-time service fee"), which relied on seven-point Likert scales (1="strongly disagree" to 7="strongly agree"). We applied analyses of variance (ANOVA) to check if the treatments varied as we intended. The results demonstrated that the manipulations were successful; participants in each scenario marked by the presence of an instrument reported significantly higher scores on the corresponding manipulation check than in the parallel scenario without that instrument (see Table 2). No manipulation significantly influenced a non-corresponding manipulation check, in support of the validity of these manipulations (Perdue and Summers, 1986).

To assess the external validity of our experiment, we asked participants to answer two reflective items (α=.89) about the realism of the situation and offers in our scenario ("I find the purchase situation very realistic" and "The offers of conTel could exist in reality"; 1 = "strongly disagree" to 7="strongly agree"). The average composite score of 4.71 (SD=1.61) confirmed that participants perceived the experiment as realistic.

5.2.3. Goodness of model

All Q^2 values were positive ($Q^2_{\text{price differentiation}}$ = .24, $Q^2_{\text{perceived value}}$ = .05, $Q^2_{\text{price unfairness}}$ = .09, $Q^2_{\text{limited self-determination}}$ = .06, $Q^2_{\text{relationship quality}}$ = .34, $Q^2_{\text{repurchase}}$ = .37), indicating that the model offered predictive power (Fornell and Robinson, 1983; Stone, 1974). The overall goodness of fit, or the geometric mean of the average communality and average R^2, was satisfactory at .41 (Tenenhaus et al., 2005). Multicollinearity was not a concern, because the highest variance inflation factor was 1.32 (Hair et al., 1998).

5.3. Hypothesis testing

We tested our hypotheses with partial least squares structural equation modeling (PLS-SEM) (Fornell and Bookstein, 1982; Pentina et al., 2013), using SmartPLS software (Ringle et al., 2005). Unlike ANOVA, PLS can analyze structural relations between perception and retention variables (Bagozzi and Yi, 1989) and account for the mediating role of perceived channel-based price differentiation. It also includes full information from multi-item scales, which reduces measurement error (Bagozzi and Yi, 1994), and is distribution-free (Fornell and Robinson, 1983). As a control, we added customer channel preferences (operationalized as the combined percentage probability value of a customer's last and next channel used to purchase mobile plans), linking it with each endogenous variable. We used the manipulation checks for price instrument variables to rule out perceptual biases (Bagozzi and Yi, 1989; MacKenzie, 2001).

The tests of the mediated relations in H1–H3 consisted of two steps. First, we successively added direct paths from each price instrument to each perception variable and fit the model by retaining only the significant paths (Iacobucci et al., 2007; Wagner et al., 2009). Second, we calculated Sobel (1982) tests to confirm if our mediator carried the influence of price instruments to the perception variables (see Table 3). We found significant direct paths from online promotion to perceived value (γ=.14; t=3.24) and from service fees to price unfairness (γ=.30; t=7.27) and limited self-determination (γ=.16; t=3.63). No other direct paths were significant. When we excluded direct paths from our model, all the hypothesized relations were supported ($p < .05$). If we added the direct path from service fee to price unfairness, the significant path from perceived price differentiation to price unfairness (γ=.11; t=2.46) disappeared (γ=.05; t=1.18). In line with H1, the Sobel tests confirmed that perceived channel-based price differentiation mediated the influence of all four price instruments on perceived value ($p < .05$). We also found partial confirmation for H3, in that the Sobel tests showed that except for online clearance (z=1.72; p=.09), the effects of the instruments on

Table 2
Manipulation checks.

Manipulation		Mean online clearance (*F*-value)		Mean online discount (*F*-value)		Mean online promotion (*F*-value)		Mean service fee (*F*-value)	
Online clearance	Present	4.97*	(86.14)	4.53	(1.73)	4.01	(.12)	4.22	(1.66)
	Absent	3.36*		4.27		3.94		4.47	
Online discount	Present	4.27	(.46)	5.65*	(225.62)	4.08	(1.11)	4.30	(.22)
	Absent	4.14		3.19*		3.87		4.39	
Online promotion	Present	4.38	(3.77)	4.37	(.13)	5.57*	(486.17)	4.33	(.01)
	Absent	4.02		4.44		2.37*		4.35	
Service fee	Present	4.12	(.90)	4.30	(1.24)	3.90	(.60)	5.56*	(221.50)
	Absent	4.29		4.52		4.05		3.10*	

Note.

* $p < .05$.

Table 3
Sobel tests.

Path (a → b → c)	*z*	*p*
Hypothesis 1		
Online discount → Channel-based price differentiation → Perceived value	2.72	.01
Online promotion → Channel-based price differentiation → Perceived value	2.85	.00
Online clearance → Channel-based price differentiation → Perceived value	2.07	.04
Service fee → Channel-based price differentiation → Perceived value	2.90	.00
Hypothesis 2		
Online discount → Channel-based price differentiation → Price unfairness	1.67	.10
Online promotion → Channel-based price differentiation → Price unfairness	1.08	.28
Online clearance → Channel-based price differentiation → Price unfairness	0.91	.36
Service fee → Channel-based price differentiation → Price unfairness	1.15	.25
Hypothesis 3		
Online discount → Channel-based price differentiation → Limited self-determination	2.50	.01
Online promotion → Channel-based price differentiation → Limited self-determination	2.03	.04
Online clearance → Channel-based price differentiation → Limited self-determination	1.72	.09
Service fee → Channel-based price differentiation → Limited self-determination	2.34	.02

Table 4
Partial least squares analysis.

Effects of	On	Path coefficients (standardized)	*t*-Values
Online discount	Perceived channel-based price differentiation	.37	10.53*
Online promotion	Perceived channel-based price differentiation	.16	4.20*
Online clearance	Perceived channel-based price differentiation	.10	2.41*
Service fee	Perceived channel-based price differentiation	.17	4.56*
Perceived channel-based price differentiation	Perceived value	.16	4.00*
Perceived channel-based price differentiation	Price unfairness	.05	1.12
Perceived channel-based price differentiation	Limited self-determination	.12	2.71*
Service fee	Price unfairness	.30	7.27*
Service fee	Limited self-determination	.16	3.63*
Online promotion	Perceived value	.14	3.24*
Perceived value	Relationship quality	.63	23.06*
Price unfairness	Relationship quality	−.09	2.32*
Limited self-determination	Relationship quality	−.08	2.25*
Perceived value	Repurchase intention	.21	4.50*
Price unfairness	Repurchase intention	.03	.97
Limited self-determination	Repurchase intention	−.07	2.03*
Relationship quality	Repurchase intention	.45	9.70*
Channel preference Internet	Perceived value	−.05	1.32
Channel preference Internet	Price unfairness	−.07	1.83
Channel preference Internet	Limited self-determination	−.19	4.86*
Channel preference Internet	Relationship quality	.03	.82
Channel preference Internet	Repurchase intention	−.07	1.73

Notes: The *t*-values are calculated using a bootstrapping test with 590 samples.
* Significant at $p < .05$.

limited self-determination were mediated by perceived price differentiation. Because the mediated relation to price unfairness was not supported for all instruments, we rejected H2. Table 4 contains the results of the final SEM.

Perceived value increased relationship quality and repurchase intention, in support of H4a and H4b. In line with H5a, price unfairness decreased relationship quality, but it did not affect repurchase intentions, so we must reject H5b. Finally, we confirmed H6a, H6b, and H7: Limited self-determination lowered relationship quality and repurchase intentions, and relationship quality increased repurchase intention. The control variable of channel preference only affected limited self-determination; all other relations were not significant.

6. Analysis of feasibility conditions

In addition to our experimental study, we analyzed the feasibility conditions for channel-based price differentiation. First, cost conditions must be met to ensure profitability. Prices (and, *ceteris paribus*, revenues) tend to be lower online in a channel-based price differentiation setting, so operating costs also should be lower on the Internet than in stores. Second, self-selection conditions must be fulfilled, such that price-sensitive customers choose the channel with the lowest prices (i.e., Internet), whereas service-sensitive customers adopt the channel with better service (i.e., store).

6.1. Cost conditions

Eq. (1) describes the necessary cost conditions to ensure the profitability of channel-based price differentiation:

$$pr_{t+1} \geq pr_t \Leftrightarrow \Delta r \leq c_{Store} - c_{Internet}, \text{ with } \Delta r = r_t - r_{t+1}, \{\Delta r > 0\}, \quad (1)$$

where r_t is revenue, and pr_t is profit in period t without channel-based price differentiation. When price differentiation is implemented in period $t+1$ by reducing online prices, r_{t+1} should be

Table 5
Chi-square tests.

Price Instrument	Segment	Store	Internet	Pearson χ^2	*p*
Online discount	Service-sensitive	9.9% ($n=13$)	90.2% ($n=119$)	.12	.73
	Price-sensitive	8.7% ($n=14$)	91.3% ($n=147$)		
Online promotion	Service-sensitive	16.9% ($n=24$)	83.1% ($n=118$)	4.83	.03
	Price-sensitive	8.4% ($n=13$)	91.6% ($n=141$)		
Online clearance	Service-sensitive	14.5% ($n=20$)	85.5% ($n=118$)	.79	.37
	Price-sensitive	11.1% ($n=19$)	88.9% ($n=152$)		
Service fee	Service-sensitive	24.3% ($n=35$)	75.7% ($n=109$)	5.68	.02
	Price-sensitive	13.6% ($n=21$)	86.5% ($n=134$)		
Overall sample	Service-sensitive	25.1% ($n=69$)	74.9% ($n=206$)	6.12	.01
	Price-sensitive	16.8% ($n=53$)	83.2% ($n=262$)		

lower than r_t (assuming customers do not buy more or more expensive products). To keep profits constant, this change in revenues (Δr) must be covered by lower operating costs on the Internet ($c_{Internet}$) than in stores (c_{store}). A basic condition for the profitability of channel-based price differentiation thus is that revenue losses at least equal channel-related cost differences.

We analyze whether these cost conditions hold for our study context. Our experimental data enable us to calculate revenues in both channels, with and without channel-based price differentiation; however, we have no access to channel-specific cost information. Therefore, we applied the average profit margin of 10.6% for German mobile communications retailers as the benchmark by calculating operating costs required online when no margin differences exist across channels.[3] This combination of industry data with experimental data does not diminish the credibility of our results, because we operationalized the price levels to be similar to real-world prices. On average, the online margin must reach 15.8% if costs are the same, or else costs must be 5.1% lower on the Internet when the margin for both channels is 10.6%. Considering each price instrument, the required online cost reductions were smallest for online clearance (4.2%) but largest for the online promotion tool (9.0%), with service fees (4.6%) and online discounts (4.7%) in between. We checked if instruments influenced customer contract choices and found no significant effects, so the revenue changes appeared due to price effects, not contract choices.

6.2. Self-selection conditions

Channel-related price differentiation builds on the self-selection of customers into the channel most consistent with their preferences, which maximizes their utility (Chu et al., 2007). We assume that utility U for consumer i is a function of the sum of price p and service s offered in a channel c, each multiplied by its importance weight of w_{pi} and w_{si}, respectively, as in Eq. (2).

$$U_i(p_c, s_c) = p_c \times w_{pi} + s_c \times w_{si}, \{p_c > 0; s_c > 0; w_{pi} + w_{si} = 1\}. \quad (2)$$

To model customers' channel choice, we assume that the probability P that consumer i chooses channel c also is a function of price p and service s offered in the channel; we include two choice options (CC): 0= store and 1= Internet. We add a vector a to represent any other possible determinant of channel choice. A cumulative distribution function Φ (e.g., logit or probit) links the linear predictors with the binary response variable, as in Eq. (3):

$$P_{ic}(CC_i = 1; p_c, s_c) = \Phi(\beta_0 + \beta_1 p_c + \beta_2 s_c + \beta_i a_i + \varepsilon). \quad (3)$$

Eq. (4) links utility and channel choice, in that the utility U of customer i is maximized when the channel choice CC is consistent with customer preferences for price and service:

$$U_i \rightarrow \max \Leftrightarrow CC_i = 1 \wedge w_{pi} > w_{si}, \vee CC_i = 0 \wedge w_{si} > w_{pi}. \quad (4)$$

In order to analyze whether these self-selection conditions hold for our study context, we tested whether price-sensitive customers chose the Internet but less price-sensitive customers, with their greater willingness to pay for service, chose the store (Pan et al., 2004). To segment the sample, we used composite mean scores on an established, three-item, reflective measure of price sensitivity (1="strongly disagree" to 7="strongly agree"; α=.78; see Appendix D) and split the responses at the median (MD=5.33). On average, 8.3% more price-sensitive customers chose the Internet (χ^2=6.12, p=.05). As Table 5 shows, all four price instruments steered price-sensitive customers to the Internet.

The chi-square tests also showed that the channel choices of price-sensitive customers differed significantly from those of less price-sensitive customers in the service fee (χ^2_{fee} = 5.68, p=.02) and promotion ($\chi^2_{promotion}$= 4.83, p=.03) conditions, but not in response to the discount or clearance offers ($\chi^2_{discount}$ =.12, p = .73; $\chi^2_{clearance}$ =.79, p=.37).

7. Discussion and implications

7.1. Discussion of results

This study has analyzed the effects of channel-based price differentiation on customer retention and the feasibility of such a strategy for mobile communications, as an exemplary industry. We find that customers perceive channel-based price differentiation in an ambivalent manner: It positively affects their perceptions of value, increases relationship quality, and enhances repurchase intentions, but it also leads to perceptions of price unfairness and limits customer self-determination, which negatively affect retention outcomes. We predict a positive net effect on customer retention, because the influences of perceived value on customer retention outcomes appear much stronger and more consistent than those due to price unfairness and limited self-determination.

Beyond the effects mediated by perceived price differentiation, we find direct effects of online promotions and service fees, which imply the potential presence of other mediators (Zhao et al., 2010). For example, an online promotion is a short-term deal, which

[3] We used the following equations: (a) $m_{Internet} = pr_{store}/r_{Internet} \times 100$, with $pr_{store} = (r_{store} \times 10.6)/100$, where $m_{Internet}$ is the margin required on the Internet to achieve store profits when there are no cost differences between channels. (b) $\Delta c = m_{Internet} - 10.6$, where Δc is the cost reduction required on the Internet when the margin is 10.6% in both channels.

might enhance perceptions of exclusivity and thereby the perceived value of the offer (Barone and Roy, 2010). With regard to the service fee, its punishing (cf. rewarding) character might explain its direct effects on price unfairness and limited self-determination. Contrary to our expectations, channel-based price differentiation did not lead to unfairness perceptions per se; only service fee as a specific instrument did so. Thus, the determination of whether channel-based price differentiation will be perceived as unfair appears to depend on the instruments used to implement the strategy. To enhance the external validity of our findings, we chose an industry whose customers were familiar with these instruments. The effects might be even stronger in an industry in which channel-based price differentiation is uncommon.

In addition, we analyzed the cost conditions theoretically, which revealed that, *ceteris paribus*, cost differences across channels should be at least as great as price differences (i.e., revenues) to ensure profitability. We ignored possible customer effects though: Lower prices in one channel could attract new customers and increase revenues, such that the lower costs would not be obligatory for assuring profitability. Alternatively, retailers could lose customers after steering them to the online channel, because of its greater price transparency or competition. Thus, these effects may balance out, which is part of the reason we chose to focus on the retailer's cost conditions and keep everything else equal.

The analysis of the feasibility conditions shows that costs should be at least 5.1% lower in Internet channels to maintain profitability. That level seems reasonable, considering that the telecommunications industry margins can be as high as 16% (e.g., E-Plus in 2009). To interpret this result, we acknowledge that both Internet and store margins are included in the initial average profit margin of German mobile communication providers. Therefore, we recommend greater attention to cost differences (e.g., 5.1%), which would be even lower if the initial margin were lower. Regarding the generalizability of these conditions, we propose these explanations as a basic model of feasibility conditions for channel-based price differentiation. Specific margins and revenues would naturally differ for other industries.

With regard to the self-selection feasibility condition, we assumed that consumers' preferences for price and service were mutually exclusive, though some customers are both price and service sensitive. In our view though, a more realistic scenario forces customers to decide between a better price *or* better service. The price differentiation instruments steered customers to the right channels, such that price-sensitive consumers relied on the Internet channel. However, less price-sensitive customers entered that channel as well, even if to a smaller extent. Reaching the wrong customers is a well-known, difficult to avoid, risk of retail price reductions (Riggins, 2004; Sirohi et al., 1998).

7.2. Implications for theory and limitations

This study addresses an often discussed gap in multichannel research (Neslin and Shankar, 2009; Wolk and Ebling, 2010). Whereas price differences in a multichannel environment have been discussed in extant research (Granados et al., 2012; Kauffman et al., 2009), no study investigates the customer-level effects of channel-based price differentiation. Our conceptual model identifies different price instruments that can be used to realize channel-based price differentiation; it also specifies the effects on customer perceptions and retention. This study offers the first empirical demonstration of how customers react to channel-based price differentiation. Although our classification of price differentiation instruments and the direction of their effects on customer outcomes should generalize to other retailing industries, the strength of the effects depends on the specific level of each instrument; our study reflects levels typical for mobile communications retailing. In addition, we formalized the crucial feasibility conditions in a generalizable manner, such that they can be applied to any industry. Along with these efforts, our study features several limitations that need to be addressed by further research.

First, the direct effects of online promotions and service fees demand further investigation. Beyond extending our conceptual framework with additional mediators, studies should consider the probability that customers perceive channel-based price differentiation. In our experimental study, the channel-based price differentiation was easy to observe, which is not always true. Companies might not explicitly communicate these differences, or customers might be unwilling or unable to compare prices. Because channel-based price differentiation causes negative and positive reactions only when customers perceive it, we need studies that specify the conditions in which customers perceive channel-related price differences.

Second, replications in other industries, using field experiments, would provide more evidence of the generalizability of our findings. We chose an industry in which channel-based price differentiation is common and for which the offering is a complex combination of products (phone) and services (contracts), such that customers often perceive high switching costs. Research in other industries is needed to identify potential industry-specific moderators or mediators. For example, customers might expect price differences between channels in some industries because of their knowledge of production cost differences (Grewal et al., 2010; Zhang et al., 2010). Field experiments also could enhance the external validity of the results by testing channel-based price differentiation instruments in real market conditions. Such investigations might provide a clearer assessment of competitive strategies too, though we reasonably might assume stronger effects when no competitor implements channel-based price differentiation.

Third, researchers should address potential profitability increases due to various effects. We focused on retention effects, but the acquisition potential of channel-based price differentiation should be considered as well. The long-term profitability of such a strategy might be examined in more detail, using longitudinal customer data from a multichannel company.

7.3. Implications for managers

Price instruments, in certain conditions, can profitably steer customers to lower cost channels. Although the effect sizes of the price instruments we found are not generalizable to all retailing industries, we expect that the direction of these effects should hold. Therefore, we recommend that multichannel firms implement channel-based price differentiation, taking care to use appropriate instruments. Although we found positive perceptions, in terms of perceived value (with the strongest influences from online promotions), firms must be aware of the potential negative effects for customer relationships too. Specifically, unfairness perceptions can result from the imposition of a service fee; companies need to be careful before using that instrument and might prefer an occasional online promotion instead. Moreover, before implementing any instruments, firms should determine whether their internal and external situations reflect the feasibility conditions required for channel-based price differentiation. Managers can use our cost condition formula to calculate the ideal level of price differentiation for their markets. To test self-selection, they need to conduct a market study observing customer reactions.

Although firms might increase their profitability in the short run by steering customers to a lower cost channel, there is some longer-term danger if customers still consider the price instruments unfair or constraining. We advise managers to try to

improve acceptance of price instruments by informing customers about the firm's motives for channel-based price differentiation. Such explanations induce more positive reactions among customers (Kahneman et al., 1986; Urbany et al., 1989); for example, a service fee could be justified as a payment for an extra service. Explanations of lower prices on the Internet could highlight the lower operational costs or customers' own information search efforts. These arguments should reduce perceptions of unfairness, by referring to distributive fairness in explanations of different channel-related outputs that result from different inputs (Adams, 1965; Greenberg, 1987). To mitigate feelings of limited self-determination, firms also could demonstrate all possible channel options and accentuate consumers' free choices among them.

Negative perceptions might be more likely when customers compare prices across channels. Therefore, firms might try to prevent comparisons by reducing integrated firm communication across channels or strictly separating online customers from in-store customers. Such a strategy seems possible for fast moving consumer goods, for which consumers' search intentions tend to be very low (Chu et al., 2000). However, it is probably infeasible in other settings, because it might reduce channel reach or prompt an inconsistent brand image. In this sense, we again highlight the need for further contributions to this research field, to help practitioners design their strategies.

Appendix A

See Table A1

Appendix B

See Table B1

Appendix C Scenario text.

You have been a loyal customer of conTel, your mobile communication provider, for several years, and you have been satisfied with its offers and services. The nearest conTel store is in the vicinity, and its employees are always competent and friendly. In addition, conTel's website is well laid out and easy to use.

You have owned your cell phone for quite some time, and you realize that it is time for a new one. Quite coincidentally, conTel has sent you a letter, reminding you that your contract is about to expire, together with a leaflet presenting the company's current offers. You discover that conTel is offering the cell phone you really want. You can obtain the same cell phone plan at the store or on the Internet. You study the leaflet again and start wondering if you should purchase a new contract with conTel and, if so, which plan you should choose.

The next day, you receive another letter from conTel, informing you that contracts purchased online are now cheaper than in the stores. Other than the price differences between channels, nothing else has changed. You have not yet purchased a new contract and are therefore really interested in this new offer.

The price changes applied by conTel are as follows: When purchasing a contract in a store, you have to pay an additional, one-time service fee of about 40 Euros for the personal service you receive. When purchasing a contract on the Internet, you receive an online discount of 15% off your monthly tariff rate. The company also is running an online promotion, such that you can save 30% monthly, but you have to make your decision within the next 24 h. In addition, conTel's website allows you to choose cheaper basic or older cell phone models while the supply lasts (5€ off).

You study the leaflet again and wonder which contract you should choose.

Appendix D

See Table D1

Table A1
Multichannel companies used to identify price instruments.

U.S. Firms			European Firms		
Position *Fortune* 500 list	**Multichannel company**	**Industry**	**Position *Fortune* 500 list**	**Multichannel company**	**Industry**
1	Wal-Mart	Retail	3	AXA	Insurance
5	Bank of America Corp.	Banking	7	BNP Paribas	Banking
7	AT&T	Telecommunication	9	Allianz	Insurance
12	Citigroup	Banking	10	Carrefour	Retail
13	Verizon Communications	Telecommunication	16	Banco Santander	Banking
18	CVS Caremark	Pharmacy	17	HSBC Holdings	Banking
19	Wells Fargo	Banking	19	Lloyds Banking Group	Banking
23	Kroger	Retail	24	Aviva	Insurance
25	Costco Wholesale	Retail	25	Royal Bank of Scotland	Banking
29	Home Depot	Retail	26	Metro	Retail
30	Target	Retail	27	Tesco	Retail
32	Walgreen	Retail	28	Deutsche Telekom	Telecommunication
34	State Farm Insurance Cos.	Insurances	30	Société Générale	Banking
42	Lowe's	Retail	31	Telefónica	Telecommunication
43	United Parcel Service	Shipping Services	33	Prudential	Insurance
45	Best Buy	Retail	34	Munich Re Group	Insurance
48	Sears Holdings	Retail	36	Vodafone	Telecommunication
			41	Deutsche Post	Shipping Services
			42	Legal & General Group	Banking
			46	Barclays	Banking
			48	RWE	Energy
			49	UniCredit Group	Banking

Table B1
Results of online search.

Channel-based price differentiation instrument	Definition	Firms using instruments	Number of firms using instruments (percentage)		
			Europe	United States	Overall
Online bundling	A bundle of products offered together at a lower price than individually, available online only.	AT&T, Best Buy, Carrefour, CVS Caremark, Tesco, Target, Sears Holdings, Wal-Mart	2 (9.1%)	6 (35.3%)	8 (20.5%)
Online clearance	Items sold for less online, only while stocks last.	AT&T, Best Buy, Deutsche Post, Deutsche Telekom, Lowe's, Metro, Sears Holdings, Target, Telefónica, Tesco, Verizon Communications, Walgreens, Wal-Mart	5 (22.7%)	8 (47.1%)	13 (33.3%)
Online discount	Permanently offered price reduction on products available on the Internet.	Aviva, AT&T, Barclays, BNP Paribas, Deutsche Post, Deutsche Telekom, Home Depot, Prudential, Target, Telefónica, Tesco, Verizon Communications, Vodafone, Wal-Mart	9 (40.9%)	5 (29.4%)	14 (35.9%)
Online new customer discount	Discount offered only to customers who purchase on the retailer's website for the first time.	BNP Paribas, Carrefour, Deutsche Telekom, Lloyds Banking Group, Royal Bank of Scotland, UniCredit Group, Verizon Communications	6 (27.3%)	1 (5.9%)	7 (17.9%)
Online promotion	Temporally limited price reduction on products available on the Internet.	AT&T, Bank of America Corp., Best Buy, BNP Paribas, Carrefour, Costco Wholesale, CVS Caremark, Deutsche Telekom, Home Depot, Lowe's, Metro, Sears Holdings, Target, Tesco, UniCredit Group, Verizon Communications, Vodafone, Walgreens, Wal-Mart	7 (31.8%)	12 (70.6%)	19 (48.7%)
Service fee	Additional fee charged in the traditional store.	AXA, Barclays, Lloyds Banking Group, Société Générale, United Parcel Service	4 (33.3%)*	1 (14.3%)*	5 (26.3%)*

Notes.
* Of 66 firms, only 19 answered our question about whether they use service fees (12 European, 7 U.S.). The percentages refer to the firms that answered this question.

Table D1
Reflective scale items.

Construct/ Items	Source
Perceived value	
The cell phone contracts are a good level of performance for the money to pay.	Johnson et al. (2006)
The cell phone contracts are a good deal relative to other offers available in the market.	Johnson et al. (2006)
The cell phone contracts are a great value.	Johnson et al. (2006)
Price unfairness	
The prices of conTel are unfair.	Bolton et al. (2010)
The prices of conTel are not at all just.	Bolton et al. (2010)
The prices of conTel are unreasonable.	Bolton et al. (2010)
Limited self-determination	
I believe I had some choice about buying a contract in the store or in the Internet.	Ryan et al. (1991)
I felt like it was not my own choice whether to buy a contract in the store or in the Internet. (-)	Ryan et al. (1991)
I didn't really have a choice whether to buy a contract in the store or in the Internet. (-)	Ryan et al. (1991)
I felt like I had to buy the contract in the Internet. (-)	Ryan et al. (1991)
Satisfaction	
I am very satisfied with the contract I chose.	Fitzsimons (2000)
I am very happy with the contract I purchased.	Fitzsimons (2000)
Given the identical set of alternatives to choose from, I would choose the same contract again.	Fitzsimons (2000)
Thinking of an ideal example of a contract, my choice was very close to the ideal example.	Fitzsimons (2000)
Trust	
Overall, I believe conTel is honest.	Tax et al. (1998)
I believe conTel can be relied upon to keep its promises.	Tax et al. (1998)
I would not find it necessary to be cautious in dealing with conTel.	Tax et al. (1998)
I believe conTel is trustworthy.	Tax et al. (1998)
Price sensitivity	
I buy the lowest priced cell phone contract that will suit my needs.	Lichtenstein et al. (1988)
When it comes to choosing a cell phone contract, I rely heavily on price.	Lichtenstein et al. (1988)
I usually buy cell phone contracts when they are on sale.	Lichtenstein et al. (1988)

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