



When is the launch price of a new product (un)fair? The moderating effects of new product radicalness, customer innovativeness and expected future price reduction

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ABSTRACT

Research has highlighted the importance of the pricing strategy for a successful new product launch. Still, pricing new products is a major challenge for managers. To better understand the impact of prices on launch success it is necessary to focus on the role of individual price perceptions for adoption intentions. Our study investigates the effect of generic pricing strategies on perceived price fairness and, ultimately, adoption intentions. In a laboratory experiment with 217 participants we show that the negative effect of skimming compared to penetration pricing on perceived price fairness is moderated by new product radicalness, customer innovativeness, and expected future price reduction. Furthermore, we find price fairness to fully mediate the pricing strategy-adoption intention relationship. Results provide valuable insights regarding customer reactions to launch prices and help managers to better design pricing strategies for new products.

Keywords: *New product launch, pricing, product radicalness, price fairness, customer innovativeness*

Track: *Innovation and new product development*

1. Introduction

Pricing is critical for successful new product launch and new product performance (Henard & Szymanski 2001), which is, in turn, a key driver of a firm's long-term success (Hauser, Tellis & Griffin 2006). Among other marketing mix variables, the effect of price is of particular interest when launching a new product because it is an integral part of a new product's appeal at the time of launch (Hultink et al. 2000). The question of *how* to price new products is, however, not straightforward: In a conceptual article, Dean (1969) describes pricing new products as a key challenge for management. Since then, research has focused on normative pricing strategies for new products (e.g. Noble & Gruca 1999), essentially skimming and penetration, which are commonly used in practice (Lowe & Alpert 2010). The favorability of these pricing strategies for new product success has been investigated rather descriptively on a diffusion level as part of a bundle of other strategic and tactical decisions (e.g. Hultink et al. 1998, 2000). However, in practice, the decision for either strategy is often difficult (Lowe & Alpert 2010) and remains to be a "matter of sophisticated judgment" (Dean 1969, p. 170). One important reason is the lack of knowledge concerning customer reactions to pricing strategies. In innovation research, the underlying processes of adoption remain relatively unexplored (Herzenstein, Posavac & Brakus 2007) and particularly little research has addressed price perceptions (cf. Lowe & Alpert 2010). The aim of this study is to close this research gap. In order to shed light upon the isolated effect of pricing for successful new product launch, we focus on reactions to pricing strategies of new products on an individual's adoption level. Specifically, we investigate the effect of skimming vs. penetration strategy on perceived price fairness and, ultimately, adoption intentions. Price fairness has received considerable attention in the field of behavioral pricing because it is acknowledged to be an important variable that strongly determines purchase intentions (e.g. Xia, Monroe & Cox 2004). We therefore test the importance of price fairness in the context of new product launch and adoption by conducting a mediation analysis of the launch price-adoption intention relationship. When analyzing price fairness in the context of new products, the following idiosyncracies need to be considered. First, the perception of radical new products (RNP) differs substantially from incremental new products (INP). While INPs can be evaluated using knowledge from the same or related domains, RNPs create entirely new product categories (Gregan-Paxton & John 1997). Since price fairness evaluations are comparative (Xia, Monroe & Cox 2004), RNPs are a special case because appropriate reference prices may not exist (cf. Veryzer 2003). Second, we account for customer expectations of future prices. Price declines over the product life cycle are common and anticipated by customers (Balachander & Srinivasan 1998). We hence investigate the moderating effect of expected future price reductions, however allowing "negative reductions" if customers should in fact expect the price to increase. Third, we account for differences between individuals low versus high in customer innovativeness (CI). Investigating CI is of high practical relevance because it allows for a temporal segmentation of the market. Although CI is central to the theory of the diffusion of new products (e.g. Hauser, Tellis & Griffin 2006), little research has addressed its effect on individual price perceptions.

2. Hypotheses development

Generally, a high price is perceived less fair than a low price (Huppertz, Arenson & Evans 1978). This effect can be explained by the importance of reference prices for price fairness judgments. Reference prices are internally or externally available prices against which a given price is

evaluated (Biswas & Blair 1991). They are an important determinant of the perception of price fairness because all price fairness judgments “involve a comparison of a price [...] with a pertinent standard, reference, or norm” (Xia, Monroe & Cox 2004, p. 1). A deviation of the price to be judged from the reference price constitutes a norm-breaking event that triggers price fairness considerations by perceptions of inequality (Xia, Monroe & Cox 2004). Hence, the higher the launch price, the more likely it is that it exceeds the customers’ reference, thus leading to perceptions of disadvantaged inequality and thus price unfairness.

H₁: A skimming compared to a penetration price has a negative effect on price fairness.

Compared to INPs, the most intriguing feature of RNPs is that they are prototypical for a product category (Gregan-Paxton & John 1997), meaning that customers *lack* a relevant reference to compare it to (Veryzer 2003). This holds true for the price because no appropriate reference prices exist (Lowe & Alpert 2010). In fact, a RNP’s launch price has been shown to bias the *formation* of a reference price in the direction of the launch price such that skimming (penetration) pricing results in a high (low) reference price (Lowe & Alpert 2010). Therefore, the deviation of the launch price from the reference price is relatively small and, thus, the effect on perceived price fairness relatively weak. In case of an INP for which a price reference is available, a skimming (penetration) strategy is likely to imply a relatively large upward (downward) deviation from the reference price, and thus a strong effect on price fairness.

H_{1a}: New product radicalness moderates the negative effect of a skimming vs. penetration price on price fairness such that the effect is smaller for RNPs than for INPs.

Individuals high in CI, like innovators and early adopters, are relatively early in adopting new products (Rogers 2003). They place a premium on product features rather than on the price and therefore have a higher willingness to pay and lower price sensitivity in the category than customers low in CI (Ramirez & Goldsmith 2009). Hence, for customers high in CI, having to pay more than the reference is to a much lesser degree norm-breaking than for customers low in CI, leading to lower perceptions of inequality and thus reduced perceptions of price unfairness.

H_{1b}: Customer innovativeness moderates the negative effect of a skimming vs. penetration price on price fairness such that the effect is smaller (larger) for customers high (low) in customer innovativeness.

Usually, customers expect prices of new products to decline (cf. Balachander & Srinivasan 1998). The expectation of a lower future price serves as an internal reference price (Jacobson & Obermiller 1999) that is highly relevant for price fairness judgments because it involves the same product and therefore transaction similarity is high (cf. Xia, Monroe & Cox 2004). When expected future price reductions are neglectable, customers will focus on the reference price of a comparable product in the market to base their price fairness judgments on. In this case, a skimming price will be judged relatively unfair because it is likely to exceed the customers’ price reference; a penetration price will be judged relatively fair because it is likely to undercut the customers’ price reference. In contrast, when customers expect strong price reductions in the future, they will rather judge the price fairness by using the more salient expected future price as a reference because transaction similarity is higher (cf. Xia, Monroe & Cox 2004). Hence, if customers expect the price of a new product to strongly decrease, they will perceive unfairness regardless of whether the product is skimming or penetration priced. We therefore hypothesize:

H_{1c}: Expected future price reduction moderates the negative effect of a skimming vs. penetration price on price fairness such that effect is smaller (larger) if the expected price reduction is high (low).

Price fairness is an important variable in the field of behavioral pricing. Perceived unfairness is a norm-breaking event that leads customers to engage in activities that punish the seller such as leaving the exchange relationship, negative word of mouth or even legal action (Campbell 1999; Xia, Monroe & Cox 2004). These negative consequences may be especially harmful in the context of new products because they are an obstacle for a quick diffusion in the market. We expect the positive price fairness-purchase intention relationship to hold for adoption intentions.

H₂: Perceived price fairness has a positive effect on adoption intention.

Having hypothesized direct effects of pricing strategy on price fairness and of price fairness on adoption intention, the possibility of a mediating effect of price fairness has to be considered. Indeed, we expect that a skimming price does not imply lower adoption intentions than a penetration price as long as it is not perceived unfair. For instance, customers may perceive a skimming price to be fair simply due to a lack of comparable products that are priced lower (cf. Xia, Monroe & Cox 2004). Similarly, in a heterogeneous market customers may perceive a skimming price to be fair because they compare the transactions only within comparable customers who attach a higher value to the benefits the new product offers or to experience them earlier than other customer groups (e.g. Rogers 2003). If this is the case, we do not expect a lower adoption intention than if the product was penetration priced.

H_{2a}: Perceived price fairness mediates the launch price-adoption intention relationship.

3. Method

To test the hypotheses a 2 (launch price: penetration vs. skimming) x 2 (radicalness: INP vs. RNP) factorial between-subjects experimental design was chosen. Launch price was manipulated using price anchors indicating students' willingness to pay that had been assessed in a pilot study (N=52) using the van Westendorp method (van Westendorp 1976). Radicalness was manipulated using two innovative camcorders that had been rated to be significantly different in radicalness in another pilot study. On the basis of these pilot studies, the following treatment conditions were formed: (1) INP/penetration [69€], (2) INP/skimming [179€], (3) RNP/penetration [89€], and (4) RNP/skimming [209€]. Afterwards, all latent constructs were assessed by using adapted multi-item seven-point Likert scales. Price fairness was measured using an adapted scale from Darke and Dahl (2003). Customer innovativeness was measured using an adapted version of the domain specific innovativeness scale by Goldsmith & Hofacker (1991). The adoption intention scale was adapted from Castaño et al. 2008. Resulting α -values were .93 for both price fairness and domain specific innovativeness and .83 for adoption intention. The expected price change was calculated as the difference between the launch price and the subject's answer to the question "What price do you expect the product to have in 6 months?" 217 students (53% female, median age: 25 years, median disposable income: 500 €) participated for course credits and were randomly assigned to one of the four treatment conditions. Resulting cell sizes ranged from 50 to 59.

4. Results

Manipulation checks using ANOVAs confirmed that the launch prices were perceived significantly different in expensiveness ($M_{pen}=3.17$; $M_{skim}=4.78$; $F(1;215)=122.253$; $p<.001$) and products were perceived significantly different in radicalness ($M_{INP}=4.06$; $M_{RNP}=5.38$; $F(1;215)=65.652$; $p<.001$). We then calculated a structural equation model (SEM) using AMOS 19 with launch price as exogenous variables and price fairness and adoption intention as endogenous variables. Results showed a good model fit (CMIN/DF=1.106; TLI=.996; CFI=.998; RMSEA=.022). Regarding the impact of skimming price on perceived price fairness we find a negative relationship ($\beta=-.51$; $p<.001$). In addition, an ANOVA showed a significant negative effect of skimming price on perceived price fairness ($M_{pen}=5.66$; $M_{skim}=4.45$; $F(1;216)=29.263$; $p<.001$). Thus, H_{1i} is supported. In addition, the results show a significant positive impact of price fairness on adoption intention ($\beta=.37$; $p<.001$), confirming H_2 .

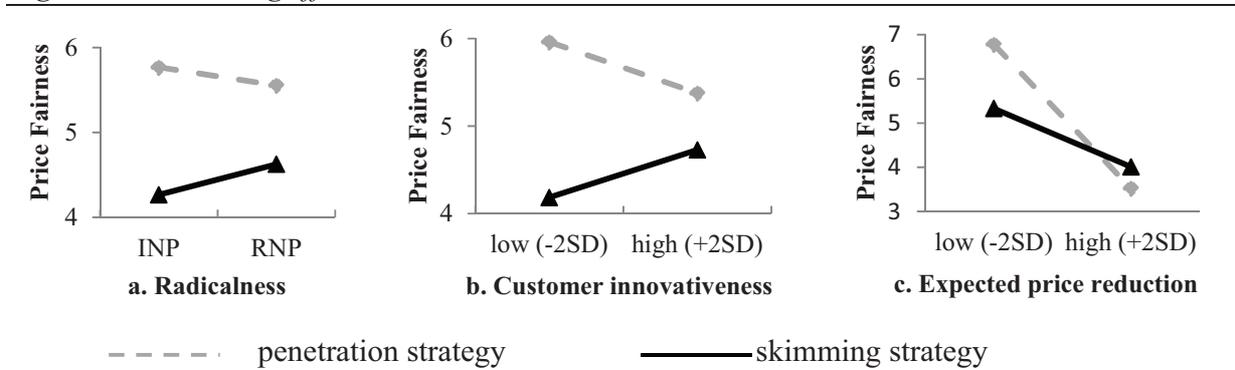
To analyze the proposed moderating effect of new product radicalness, we carried out an ANOVA with launch price and radicalness as independent and perceived price fairness as dependent variable. Results showed a significant interaction effect ($F(1;217)=3.89$, $p=.05$; see Figure 1a). For the INP group, the mean difference in perceived price fairness between penetration and skimming price is 1.502 and significant ($M_{pen}=5.77$, $M_{skim}=4.27$; $F(1;107)=53.204$; $p<.001$). For the RNP group, the difference is .93 and thus smaller than in the INP group, however still significant ($M_{pen}=5.56$, $M_{skim}=4.63$; $F(1;107)=20.661$; $p<.001$). Results support H_{1a} . To test H_{1b} and H_{1c} , we carried out moderated regression analyses, following the procedure as outlined by Fitzsimons (2008). To test H_{1b} , a regression was performed on price fairness with CI, launch price, and their interaction as independent variables (global F-Test: $F(3;214)=24.548$; $p<.001$; adjusted $R^2=.246$). The slope difference between the launch price groups was significant ($b_{\Delta}=.210$, $t=1.930$, $p=.055$), providing support for an interaction (see Figure 1b). To further explore the interaction, we carried out spotlight analyses to examine the differences in price fairness at very low levels of CI and at very high levels of CI. The spotlight analysis at two standard deviations (SD) below the mean of CI revealed significant differences in price fairness for skimming compared to penetration pricing ($b_{\Delta}=-1.777$, $t=-5.453$, $p<.001$). The spotlight analysis at two SD above the mean of CI also revealed significant though reduced differences in price fairness for skimming compared to penetration pricing ($b_{\Delta}=-.648$, $t=-1.983$, $p<.05$). H_{1b} is therefore supported. To test H_{1c} , a regression was performed on perceived price fairness with expected price reduction, launch price, and their interaction as independent variables (global F-Test: $F(3;206)=32.458$; $p<.001$; adjusted $R^2=.311$). The slope difference between the launch price groups was significant ($b_{\Delta}=.015$, $t=1.946$, $p=.053$), providing support for an interaction (see Figure 1c.). A spotlight analysis at two SD below the mean expected price reduction revealed significant differences in price fairness for skimming pricing compared to penetration pricing ($b_{\Delta}=-.967$, $t=-4.036$, $p<.001$). At two SD above the mean, the differences were insignificant, meaning that if customers expect prices to decrease strongly in the future, skimming and penetration prices are perceived equally unfair. H_{1c} is therefore supported. Our data also confirmed that respondents expected the price to decrease within the next 6 months for both penetration (avg. expected price reduction: €18.57) and skimming strategy (avg. expected price reduction: €60.96). To test H_{2a} we carried out mediation analyses as outlined by Zhao, Lynch, and Chen (2010), using the bootstrap test by Preacher and Hayes (2004). The mean indirect effect from the bootstrap analysis is negative (-.5327) and significant ($p<.001$) with a 95% confidence interval excluding zero [-.7502; -.3387]. The direct effect of launch price on adoption intention (-.2189) is insignificant. Thus, we found evidence for an indirect-only mediation, supporting H_{2a} .

5. Conclusion and managerial implications

Our study contributes to existing literature by investigating the effect of generic launch price strategies (skimming vs. penetration) on perceptions of price fairness and ultimately customer adoption intention. Our results reveal, that price fairness fully mediates the launch price-adoption intention relationship such that launch price has a negative effect on price fairness, which in turn positively affects adoption intentions. In addition, our analysis shows evidence for moderating effects such that the negative effect of launch price on price fairness is weaker for high levels of product radicalness and customer innovativeness and expected future price reductions.

Our results are of high managerial relevance. Firstly, managers need to account for the role of price fairness as an important driver of adoption behavior. In fact, a skimming price does not imply lower adoption intentions than a penetration price as long as it is not perceived unfair. Therefore, perceptions of price fairness need to be actively managed. For instance, firms offering a new product at a skimming price can justify the price by communicating to prospective customers that and why other products are not comparable and pronouncing the radicalness of the product. In contrast, firms seeking to penetrate the market with a new product should communicate relevant comparators in order to achieve higher price fairness judgments. Secondly, managers should account for CI in their price setting. When running a skimming strategy, special efforts need to be taken to emphasize the value of the offer to customers low in CI. Concurrently, managers need to pay more attention to reducing customer financial adoption barriers. Thirdly, results indicate that managers may reduce unfairness by managing customer future price expectations wisely, e.g. by guaranteeing to hold the price constant for a certain period.

Figure 1: Moderating effects



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