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Evaluation effects of bundle size and price presentation¹

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Structured Abstract:

Purpose – Marketers often combine products in bundles to increase demand. Research has shown that itemizing the prices of the individual products in the bundle raises evaluations in some situations. The purpose of this paper is to investigate how bundle size influences the effect itemizing prices have on bundle evaluation.

Design/methodology/approach – We conduct two experiments. In the first, we test the effects of price presentation formats (itemized vs consolidated) and bundle size on consumers' evaluations of product bundles. In the second experiment, we test the proposed mechanism that itemizing the price leads to a more realistic price expectation which in turn enhances evaluation. We also test whether this effect is stronger for larger bundles.

Findings – In Study 1, we find that large, but not small, bundles are evaluated more positive when presented with itemized prices. In Study 2 mediated moderation analysis supports the prediction that price expectation mediates the effect of the price presentation x bundle size interaction on bundle evaluations. The findings show that itemizing prices results in more realistic price expectations and that this effect is stronger for larger bundles. In turn, more realistic price expectations leads to higher evaluation.

Research limitations/implications – The implication of this research is that by directing attention to individual items in the bundle, consumers are better able to assess bundle benefits. More research is needed to investigate other potential explanations for the findings in Study 1. Further research should also investigate whether the findings reported here holds in other settings, with other products, and with other types and size of bundles.

Practical implications – Managers are recommended to itemize the prices of product bundles, particularly when bundles are large.

Originality/value – This article extend our knowledge about the effect itemizing the prices of individual items in a bundle has on consumer evaluation by (1) demonstrating the moderating effect of bundle size, and (2) showing that more realistic price expectation explains these effects.

Keywords: Price presentation, Itemized pricing, Product bundles, Bundle size, Consumer evaluations, Experimental design,

Bundling, the practice of combining two or more products and/or services in a single package, is a pervasive marketing strategy. Research has shown that bundles benefit consumers through discounts (Dewan and Freimer, 2003; Janiszewski and Cunha, 2004). Moreover, bundles may be attractive to consumers because they represent reduced search cost, contribute to lower risk, and add value by integrating components necessary to create an overall valuable product experience (Harris and Blair, 2006a, 2006b). For managers trying to increase the attractiveness of their products through packaged deals, it is crucial to understand how different bundling and price presentation strategies influence consumer evaluations.

When presenting the price of a bundle, the marketer can choose to display one price for the whole bundle (consolidated pricing) or separate prices for each product in the bundle (itemized pricing). Previous research has found mixed results for the effect of itemizing prices on evaluation (for a review, see Chakravarti *et al.*, 2002). In this article, we examine whether bundle size (i.e., the number of products included in the bundle) influences the relationship between price presentation format and bundle evaluation. Many previous studies on the effects of price presentation formats have included a price promotion component (e.g., Janiszewski and Cunha, 2004; Tanford *et al.*, 2011). However, marketers often offer bundles not as a price discount strategy but as a value-enhancing vehicle. Therefore, it is important to understand how price presentation formats influence consumer evaluations when no discount is present. This study does so by investigating the impact of price presentation format and bundle size on consumer evaluations of bundles offered at market price.

Studies investigating the effects of price presentation formats tend to rely on reference price concepts central to the prospect theory value function (Kahneman and Tversky, 1979) and mental accounting principles of segregating gains and integrating losses (Thaler, 1985). According to these principles, consumers code bundle price as one large, single loss for consolidated price presentation and smaller, multiple losses for itemized presentation

(Drumwright, 1992). Given a value function that is convex in losses, consumers should evaluate the total price less negatively when consolidated, leading to a more positive evaluation of a bundle when prices are presented in a consolidated manner. However, empirical findings show mixed results for the effectiveness of the different price presentation formats (e.g., Chakravarti *et al.*, 2002; Johnson *et al.*, 1999). The proposed advantage of consolidating prices rests on the assumption that bundle benefits (i.e., the value side of the prospect theory value function) are equal in the two presentation formats. While this is true, itemized price presentation can attract consumers' attention to the individual items in the bundle (Chakravarti *et al.*, 2002; Hamilton and Srivastava, 2008; Kwon and Jang, 2011; Tanford *et al.*, 2012). This facilitates a more detailed processing of both costs (i.e., prices) and benefits (i.e., the products in the bundle). In addition, it has been suggested that itemized prices can easily be added by consumers to determine the total price (Chakravarti *et al.*, 2002). If this is the case, the perception of loss between itemized and consolidated presentations may be identical. The content of the bundle on the other hand may be easier to evaluate separately. Therefore, when itemized pricing draws attention to individual products in the bundle, equal perceptions of loss combined with higher perception of benefits may lead to higher overall evaluation of the bundle.

The size of the bundle is likely to influence several factors relevant for how consumers attend to and interpret the value of the bundle when prices are itemized, including the ease of adding individual prices and perceptions of overall value. In this article, we examine the effect of price presentation formats on evaluation of bundled offerings when no discount is offered. We predict that itemizing the price will have positive effect on evaluation, and that this effect will be stronger when bundle size (i.e., number of products included in the bundle) increases. While previous research has examined the effect of price presentation formats on

evaluation, no studies have to our knowledge included bundle size as a moderator of this effect.

Identifying factors that interact with price presentation in influencing evaluations is of both theoretical and managerial importance. From a theoretical standpoint, our research contributes by providing a more detailed understanding of the mechanisms underlying the effects of price presentation formats on evaluation of product bundles. For managers, insights into the relationships studied herein will enable them to develop strategies for increasing the attractiveness of their bundled offerings. Previous research has focused mainly on small bundles containing two or three products, and thus our research enhances understanding of how presentation format effects vary and how different strategies should be applied in different situations.

Literature review

Marketers often present bundles with one consolidated price for the whole bundle (Guiltinan, 1987). Alternatively, they can assign prices for each component in the bundle (itemized pricing). If the content of the bundle and the total price is equal, will consumers' evaluations vary depending on how the price is presented? Classic economic theory predicts that price presentation format will not affect evaluation as long as the total price is identical. This prediction is grounded in the normative principle of descriptive invariance, which holds that preferences should not vary as long as the objective stimuli remains constant (Tversky *et al.*, 1998). However, research shows that the presentation formats of bundle prices and discounts do influence consumers' evaluations and choices (Arora, 2011; Chakravarti *et al.*, 2002; Gamliel and Herstein, 2011; Hamilton and Srivastava, 2008; Janiszewski and Cunha, 2004; Johnson *et al.*, 1999; Morwitz *et al.*, 1998).

In the literature, itemizing the price is sometimes referred to as price partitioning (see e.g., Chakravarti *et al.*, 2002) and other times as unbundling (see e.g., Janisewski and Cuhna, 2004). While price partitioning is associated with presenting individual prices for different attributes of one single product such as a refrigerator and an icemaker, unbundling is when prices for individual products in a bundle is presented separately such as the price of transportation and accommodation in a vacation package. However, in the literature the two terms seem to be used interchangeably to describe an itemized pricing strategy, and both focus on how the segregation of a larger entity (price for the whole bundle/the product) into multiple smaller entities (price per product/product attributes) influence evaluation. Therefore, we draw on literature from both price partitioning and unbundling in our review.

In the following sections, we first present research on the effects of price presentation formats on evaluations of an offering. We then discuss bundle size as a factor influencing the price presentation–bundle evaluation relationship.

Effects of price presentation formats on bundle evaluation

Stremersch and Tellis (2002) define bundling as “the sale of two or more separate products in a package” (p.2). They distinguish between two distinct types of bundles – price bundles and product bundles. While price bundles are two or more products in a package offered with a discount (e.g., “buy three pairs of socks, pay for two”), product bundles integrate two or more separate products sold at any price (e.g., a PC and software). The difference between the two is that the product bundle integrates different products in a way that adds value to the consumer while the added value of buying a price bundle lies in the discount offered. In this research, we focus on product, and not price bundles, and we ask how itemizing the price of a bundle affects evaluation when no discount is offered.

Many studies find that itemizing prices of a bundle leads to more positive evaluations. For example, Morwitz *et al.* (1998) found that partitioning the price decreased consumers’

recalled total costs and raised demand. Arora (2011) tested the effect of price bundles on attitudes and intentions to buy the focal product in a bundle and found that when no discount was offered, consumers were more likely to buy and recommend the focal product when prices were unbundled. Other studies have reported similar findings as well (e.g., Chakravarti *et al.* 2002; Drumwright, 1992; Kim *et al.*, 2009, Mazumdar and Jun, 1993). However, some studies have come to the opposite conclusion. Johnson *et al.* (1999) found that consumer evaluations of an automobile offer increased when price information was consolidated and discount information unbundled, and Tanford *et al.* (2012) report a negative effect of price unbundling on choice likelihood. In Johnson *et al.* (1999) and Tanford *et al.* (2012), both discount and price information was included. Discount information most likely influenced evaluations in a way that makes these studies not directly comparable to the ones where itemized pricing has had a positive effect. Moreover, in a qualitative study Arora (2011) found that consumers prefer bundled offerings only when they come with a discount. Taken together, existing research suggest that itemizing the price have positive effect on evaluation when no discount is offered. An overview of findings from different studies on effects of price and discount presentation formats is presented in Appendix A.

What can explain a positive effect of itemizing the price compared to consolidated presentation of an equally priced bundle? Bundle benefits have equal value in both presentations – that is, the products in the bundles are equal across presentation formats. Bundle cost is also equal, the only difference is that in the consolidated presentation, one overall price for the whole bundle is presented with a single price tag as opposed to presenting one price for each product in the itemized condition. By itemizing the price, consumers' attention are drawn not only to the loss (price) side, but also the benefit (product) side of the bundle. Compared to the more holistic evaluation of the items that is encouraged when price

presentation is consolidated, this piecemeal processing may lead to higher perceived total benefits.

Existing research provide support for this notion that when prices are itemized, consumers process information about bundle benefits more thoroughly. In a study on the effects of price discount framing on consumer evaluation of product bundles, Janiszewski and Cunha (2004) show that a consumer's overall evaluation of a product bundle is the result of the sum of the subjective value assigned to each item in the bundle. For example, if consumers perceive the price–value relationship as fair, they are likely to evaluate the itemized offer more thoroughly and thereby gain a more detailed understanding of the content of the bundle. Several studies provide results in support of a more detailed processing of information for itemized bundles. Chakravarti *et al.* (2002) showed that partitioning the price of a refrigerator focused participants' attention on the partitioned component and its related features. When the price of a component was partitioned, participants in the experiments processed the information more thoroughly, which in turn influenced their evaluations of both the partitioned element and the overall bundle. In another study, Hamilton and Srivastava (2008) reached the same conclusion—partitioning the price directed attention to the part partitioned. They found that the relative benefit of the component partitioned moderated the effect of partitioning the price on evaluation. Other research has shown that consumers prefer itemized pricing of bundles because the more detailed information processing resulting from such presentation formats reduces uncertainty and thereby simplifies the decision process (Tanford *et al.*, 2012). Quality uncertainty reflects a situation when itemizing the price has a positive effect on evaluations of bundled menus (Kwon and Jang, 2011). This is explained by the potential role of the more detailed price information in reducing uncertainty. As consumers process information about the price on each item, they develop a more detailed understanding of the content and its related value, which in turn enhances their evaluations of the overall bundle.

Taken together, these studies suggest that price presentation influences mode of evaluation; by facilitating a more detailed processing of the content of the bundle, itemized bundle prices are likely to yield a positive effect on consumer evaluations of product bundles.

Effects of bundle size on the price presentation format–bundle evaluation relationship

How does bundle size affect consumer evaluations? Research suggest that consumers frame price differences relative to total purchase price, rather than calculate absolute differences in price (Smith and Nagel, 1995). This tendency to frame price differences in relative terms known as the Weber–Fechner law (Urban, 1933) has implications for evaluation of bundled offerings. To explain this, we draw on the framework proposed in the empirical law of sensations (Stevens, 1986). According to this law, a percentage change in objective magnitude leads to the same percentage change in subjective magnitude, and perceptions increase at a slower rate than actual magnitudes. For example, when one more item is added to a bundled offering, consumers’ subjective perceptions of increase will depend on the size of the bundle. Adding one item to a bundle that already contains five items will have less impact on perceptions of bundle size than an increase from two to three items. The psychophysical function consistent with the empirical law of sensations is a compressive power function (Chandon and Wansink, 2007; Krueger, 1989). Krishna (2005, p. 22) reviewed psychophysics research on size perception and concluded that “the exponent range of .5–1.0 appears fairly robust and generalizable across shapes of the same dimensionality.” Figure 1 shows a hypothetical situation in which the subjective perception of bundle sizes containing different amounts of items deviates from the actual bundle sizes at an exponent of .7.

Figure 1 Illustration of deviations between actual and estimated bundle size at an exponent of .7



Figure 1 illustrates that as bundle size increases, the relative difference between the subjective perception of bundle size and the actual bundle size also increases. This implies that a consumer's tendency to under-estimate the value of a bundle will increase with increasing bundle size. Chandon and Wansink (2007) found a similar effect in a study of meal size estimation. They showed that as meals increased in calories, participants' subjective calorie estimations increased by only .73. This finding was consistent across different groups of consumers.

What are the potential implications of this law of sensations to evaluations of bundles? The first implication is that there will be a subjective imbalance between benefits (number of products in the bundle) and what the consumer is asked to pay. The holistic processing encouraged by consolidated prices may lead consumers to process the bundle as one entity. As this entity becomes larger, the perception of increase will according to the law of sensations be smaller than it actually is. If prices are not discounted, they will reflect the actual increase and hence be perceived as relatively higher and thus less favorable. In other words, if the subjective perception of the size of the bundle is smaller than the actual size, consumers will perceive a larger bundle as relatively more expensive than a smaller bundle and thus evaluate it less favorably. Given that the power function is compressive, this effect will be stronger as the bundle size increases.

The second implication of the law of sensations is that decomposing the estimation procedure will help correct the misperception that larger bundles are smaller than they really are. A large body of research documents that automatic, low-level perceptual processes drive the psychophysical function (Folkes and Matta, 2004; Krider *et al.*, 2001; Raghubir and Krishna, 1996, 1999; Wansink and Van Ittersum, 2003). Therefore, drawing people's attention to the estimation bias will not be effective in overcoming the under-estimation of increasing sizes (Chandon and Wansink, 2007). Rather, encouraging people to decompose the estimation procedure and replace the single large estimation with multiple smaller estimations will increase accuracy because smaller entities are located on the steeper portion of the curve, where the slope is closer to 1 (see Figure 1 for illustration). Assuming that consumers are capable of adding up the different itemized estimations, their perceptions of the magnitude of the offering will be more accurate when they process information about the items one at a time. In addition, piecemeal processing reduces the likelihood that an item will be overlooked (e.g., the breakfast in an all-inclusive hotel package). In Chandon and Wansink's (2007) study, consumers who used a piecemeal estimation of the calories (e.g., per ingredient rather than for the meal as a whole) improved their accuracy in estimating the calories substantially. A positive effect of itemizing the price on consumer evaluations of a product bundle is therefore likely to be stronger as the size of the bundle increases.

Hypotheses

Building on the literature discussed above, we suggest that the piecemeal processing of information prompted by itemized price presentation leads to higher perceived total benefits. Further, according to the law of sensations, sizes are underestimated to a greater extent as entities grow larger. When prices are consolidated people are encouraged to process information of benefits more holistically. This implies that as bundles grow larger, the tendency to underestimate benefits will lead to a relatively lower price expectation. In turn,

evaluation will be less positive since the actual price will be higher than expected price. We propose:

H1a: Evaluation of a bundle will be more positive when presented with itemized prices than when presented with one consolidated price.

H1b: The effect proposed in H1a will be stronger for larger (vs. smaller) bundles.

Study 1

Design

We tested Hypothesis 1 in an experiment with a 2 (small vs. large bundle) \times 2 (consolidated vs. itemized price presentation) factorial design. We used a weekend at a winter vacation destination in Norway as the scenario to manipulate bundle size and price presentation. We chose this setting because it enabled us to develop bundles of different sizes in a product category highly familiar to the participants. Ski weekends and vacations are popular among students, and at the time of the data collection, the skiing season was at its peak. Selecting a highly familiar category was important because it made it more likely that the participants would be able to make a realistic assessment of the market value of the product.

We included several factors that could potentially influence the relationships proposed. Involvement with the product could motivate some participants to process the information more thoroughly, thereby minimizing any additional effects of itemizing the price on evaluation. Similar effects could be argued for both price consciousness, or “the degree to which a consumer focuses exclusively on paying low prices” (Lichtenstein *et al.*, 1993, p. 235), and price–quality schema, or the degree to which a consumer uses price as a cue for quality (Lichtenstein *et al.*, 1993). In addition, knowledge and experience may reduce the

additional insights we hypothesize to occur because of the more detailed processing of information in the itemized condition, making consumers less influenced by mode of processing. Thus, we included measures of these constructs (involvement, price consciousness, price–quality schema, knowledge, and experience) to determine whether they influenced the relationships proposed in the hypotheses.

One possible confound in our experimental design was that the price was higher in the large bundle than in the small bundle condition; thus, any effects on evaluation stemming from bundle size may be caused by the higher price in the large bundle condition. We used market prices to keep the offerings as realistic as possible. Equal prices across bundle sizes would have required manipulating the quality of the offering, thus introducing another potential confound to our design. Therefore, we kept the level of quality constant in the main experiment, resulting in a higher price for the large than the small bundle. To test whether the price level in itself influences evaluations, we ran a pretest.

Pretest

To rule out the possibility that the differences in price level would influence evaluations, we conducted a pretest with a 2 (price level: high vs. low) \times 3 (bundle size: small vs. medium vs. large) factorial design experiment. The purpose was to check whether the level of price influenced evaluations directly. In total, 167 participants read one of the six scenarios. In each of them, participants were asked to imagine that they were about to purchase a membership in a fitness club. They were asked to evaluate either a bundle of two items (all forms of exercise and monthly massages), four items in which the two-item bundle was extended with private sessions with personal trainer and 24-hour access to the club, or a seven-item bundle with additional products, including a fitness test, body analysis, and a bag with Nike shoes and towel. We manipulated price by adding quantity to the products—for example, more hours of monthly massages, more time with the personal trainer, and so forth.

The overall price, which was constant across bundle sizes, was Norwegian Kroner (NOK) 1,499 for the high-price bundle and NOK 599 for the low-price bundle. If the price itself influenced evaluations, we would observe a significant difference in evaluations following the price manipulation. To measure evaluations, we asked participants to evaluate the offering on three seven-point (“totally agree/not at all agree”) items derived from previous studies (e.g., Lehmann and Pan, 1994). The items were “This is an acceptable offer,” “This is an offer I could have taken,” and “This is an offer I would have considered.” Scale reliability was satisfactory (Cronbach’s alpha = .92) and we averaged the responses on the three items to form one measure of evaluation. The results revealed no main effect of price level on evaluation ($M_{\text{high}} = 3.95$, $M_{\text{low}} = 3.60$; $F(1, 166) = 1.82$, $p = .18$, *ns*), no main effect of bundle size ($M_{\text{high}} = 3.90$, $M_{\text{medium}} = 3.97$, $M_{\text{low}} = 3.42$; $F(1, 166) = 1.72$, $p = .18$, *ns*), and no interaction between price level and bundle size ($F(1, 166) = .000$, $p = 1.0$, *ns*). These results indicate that neither adding different components (i.e., increasing bundle size) nor adding quantity to the number (i.e., increasing price) had an effect on consumers’ evaluations. The manipulations held the benefit (bundle content) – cost (price) ratio constant across conditions. This way any significant difference in evaluation between the price conditions would have indicated that the magnitude of the price in itself influenced evaluations. Since this was a concern following the choice of design of the main experiment, we wanted to check whether such an effect was likely. Results show now effect of price level on evaluation under these conditions, and we assume that any differences in evaluations in the main experiment are not due to the difference in price level in the different conditions.

Main experiment procedure

Sixty-seven participants recruited from a university in Norway read scenarios that asked them to imagine that they were about to purchase a weekend at a winter vacation destination in Norway. The scenarios presented bundles of either two products

(accommodation and ski-lift tickets) or six products (accommodation, ski-lift tickets, train tickets, taxi from the train station to the hotel, taxi from the hotel to the train station, and dinner Friday and Saturday). The items were priced according to the market price for each product, and we calculated the overall bundle price by adding the prices of products in the bundle (small bundle: NOK 4,820; large bundle: NOK 7,476). We manipulated the price presentation by quoting one price for the whole bundle (consolidated) or one price for each of the products in the bundle (itemized). In the itemized condition, the total sum was not displayed to participants.

The inferred bundle saving effect states that consumers infer a bundle discount even in the absence of explicitly stated bundle savings (Heeler *et al.*, 2007). To prevent this effect from coming into play in the evaluation, we explicitly told the participants that the prices were market prices with no discounts attached. We instructed participants to examine the offering and evaluate it on a three-item seven-point scale. Then, we asked them to respond to questions measuring involvement, price consciousness, price–quality schema, knowledge, and experience.

Measures

We used the same items as in the pretest to measure evaluation. Personal Involvement Inventory for Advertising was used to measure involvement (Zaichowsky, 1994). Consistent with previous research (e.g., Park *et al.*, 1994), the participants provided a self-assessment of knowledge in comparison with the general population, their friends/peers, and experts. We measured experience with three items: number of visits to a winter tourist destination in the last two years, number of times planning a visit to a winter tourist destination in the last two years, and number of times paying for a trip to a winter tourist destination in the last two years. We measured price consciousness and price–quality schema with the scales developed

and validated by Lichtenstein *et al.* (1993). All items were measured on seven-point scales, except involvement, which was measured on a five-point scale.

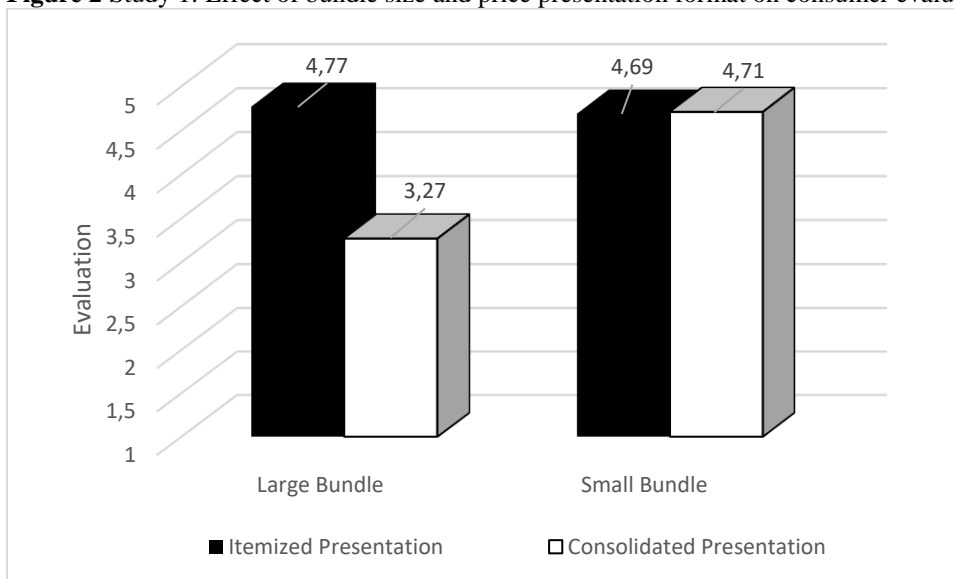
Results

All scales measuring the dependent variable (evaluation) and potential covariates (involvement, price consciousness, price–quality schema, knowledge, and experience) scored satisfactory on Cronbach’s alpha measure, and we averaged them to form one measure of each of the constructs (Cronbach’s alpha in parentheses): evaluation (.90), involvement (.95), price consciousness (.85), price–quality schema (.88), knowledge (.85), and experience (.94). Before testing the hypotheses, we wanted to rule out the possibility that any of the general characteristics measured influenced the effect of price presentation on evaluation. To do this, we performed an analysis of covariance with all variables included in the model to check whether there were any significant interactions between the covariates and the experimental conditions. The results showed that involvement ($F = 5.71, p < .05$) and price consciousness ($F = 4.93, p < .05$) significantly influenced evaluation. However, ANCOVA with the covariates included in the model produced similar results as ANOVA without the covariates. Specifically, the effect of the price presentation x bundle size interaction on evaluation was significant both in the ANCOVA ($F(1, 63) = 4.26, p < .05$) and in the ANOVA ($F(1, 63) = 4.75, p < .05$). Therefore, we concluded that these characteristics had not influenced the relationships studied and we removed them from further analyses, and the results reported below are without any covariates in the models.

Hypothesis 1a predicted that itemized pricing would lead to more positive evaluations. A one-way analysis of variance (ANOVA) test revealed support for this prediction. Mean evaluation for participants who saw the consolidated price was 3.97, while the mean in the itemized price presentation condition was 4.73 ($F(1, 66) = 4.42, p < .05$).

We used ANOVA to test Hypothesis 1b, with bundle size and price presentation as independent variables and evaluation as the dependent variable. There was a significant size \times presentation interaction effect on evaluation ($F(1, 63) = 4.75, p < .05$). Follow-up tests using one-way ANOVA in each of the size conditions showed that in the large bundle condition, participants evaluated the offering with itemized prices the highest ($M_{\text{itemized}} = 4.77, M_{\text{consolidated}} = 3.27; F(1, 34) = 13.04, p < .01$). There was no difference in evaluations in the small bundle condition ($M_{\text{itemized}} = 4.69, M_{\text{consolidated}} = 4.71; F(1, 31) = .002, p = .97, ns$). These results are in line with predictions in Hypothesis 1b. Figure 2 illustrates the results.

Figure 2 Study 1: Effect of bundle size and price presentation format on consumer evaluations of the bundle



Discussion

Previous research on the effects of price presentation formats on evaluation has yielded conflicting results. The current study focuses on the evaluation of bundles consisting of different products that are often sold separately, with no discounts included. The results revealed a significant, positive main effect of itemizing price on evaluations. However, when bundle size served as a moderator, the effect in the small bundle condition became non-significant. These results are in line with predictions of the law of sensations (Stevens, 1986). As the bundle size increases, consumers increasingly under-estimate the size, resulting in a negative difference between the expected price (which follows from perceptions of value

connected with the perceived size of the offering) and the actual price. Study 1 contributes to the literature on price presentation formats by showing evidence of a boundary condition for effects previously found in the literature. Both increased perception of benefits and decreased perception of cost are mechanisms that potentially explain the observed effects. Although researchers previously have argued that consumers are likely able to add individual prices to form an accurate perception of overall price (Chakravarti *et al.*, 2002), our large, itemized bundle contained six different prices and hence the calculation process may not have been so straightforward. It may be that participants in this condition underestimated the overall price for the bundle and ended up evaluating it more favorably because of this.

The other potential explanation is that itemizing the price led to higher perception of benefits, which in turn resulted in more positive evaluations. Itemizing the price helps draw attention to the individual items (Chakravarti *et al.*, 2002; Janiszewski and Cunha, 2004; Kwon and Jang, 2011; Tanford *et al.*, 2012). This focused attention prompts consumers to process information about each item. Two consequences of itemized processing likely explain the observed effects. First, by processing one item at the time, consumers attend to the content of the bundle in more detail, become less likely to overlook an item, and assess the actual value of the bundle more accurately. Second, the empirical law of sensations predicts that replacing a large estimation with multiple smaller estimations aids the consumer in more accurately predicting the size (and, thus, the value) of the bundle. Drawing consumers' attention to the items in the bundle will result in a more accurate estimation, and the difference between the expected price based on their estimations and the actual price will be smaller. If the increased benefit perception we argued for explain the increase in evaluation, we should expect the following to occur: When estimating the price of a bundle, consumers will expect lower prices when they estimate one consolidated price than when they estimate prices for each item in the bundle, and this effect will be stronger for larger bundles. In turn,

when they observe the actual price of the bundle, those who estimated one consolidated price will experience a negative disconfirmation of their price expectation, as the actual price is higher than the expected price. This disconfirmation will likely lead to less positive evaluations of the bundle. In other words, we expect bundle size to influence the effect of price presentation format on expected price, which in turn will influence bundle evaluation. We test this prediction in Study 2.

Study 2

Design and procedure

Seventy students participated in the experiment. The design and stimuli were identical to that in Study 1, but this time participants did not see the price up front. Instead, they were asked to report the price they expected a marketer would charge for the presented bundle given that no discount was offered. One group quoted an expected price for each item (itemized presentation), and the other quoted one expected price for the bundle as a whole (consolidated presentation). After reporting the expected price, participants evaluated the bundle on the same three-item scale as in Study 1. Finally, participants were presented with the actual price of the bundle in either a consolidated or itemized way depending on condition. They then evaluated the offering on the same items again, this time with the actual price in mind. The prices were real market prices at the time of the experiment.

Measures

We used the same measures for evaluation as in Study 1. We developed the measure of price expectation by comparing the price participants expected with the actual market price of the bundle. Recall that the hypothesis predicts that the higher the actual price relative to the expected price, the lower the evaluation will be after market price is revealed. We therefore deemed the difference between the expected price before price was revealed and the actual

revealed price as the best measure of the estimation effect proposed. We calculated the measure as follows: first, we summed the expected price of each product in the itemized offering to form a measure of one expected price for the bundle. Second, we calculated the percentage deviation between the actual and expected price to form a measure of the relative difference. Participants who estimated the price to be lower than the actual price would thus obtain a lower score on the expected price measure than participants who had estimated the price to be higher. Because evaluation and price expectation were on different scales, we standardized the measures by calculating their z-scores before entering them into the analysis.

Results

Descriptive statistics. Mean expected price was NOK 6,106 for the large and NOK 4,670 for the small bundle. Analysis identified four statistical outliers who reported an expected price more than two standard deviations from the average (all above the mean); we removed these before further analysis. In the remaining set of 66 observations, mean expected price was highest in the group that reported expected itemized prices in the large bundle and lowest in the group that reported expected price for the small consolidated bundle. Scale reliability was satisfactory for the measures of evaluation before (Cronbach's alpha =.91) and after (Cronbach's alpha =.93) price reveal and we averaged the items to form one measure of each evaluation. Table I reports descriptive statistics for the expected prices in each of the four conditions and mean evaluations before and after price reveal in each condition. A repeated measures test showed a significant effect of the presentation \times time of evaluation interaction on evaluations ($F(1, 64) = 15.89, p < .01$). For the consolidated presentation, evaluations changed substantially ($M_{\text{price not revealed}} = 5.01$ vs. $M_{\text{price revealed}} = 3.39$), while the change in evaluations of the itemized presentation was only marginal ($M_{\text{price not revealed}} = 4.64$ vs. $M_{\text{price revealed}} = 4.46$).

Table I Study 2: Descriptive statistics for price expectation and evaluation

Experimental treatment	Actual price in NOK	Mean expected price in NOK (standard deviation)	<i>t</i> -value	<i>p</i>	Mean evaluation before price reveal (standard deviation)	Mean evaluation after price reveal (standard deviation)
Large bundle with consolidated presentation	7,476	4,667 (2,393)	5.24	<.01	5.02 (1.32)	3.10 (1.65)
Small bundle with consolidated presentation	4,820	4,027 (1,145)	2.94	<.01	5.00 (1.34)	3.70 (1.64)
Large bundle with itemized presentation	7,476	7,475 (1,832)	.00	.99, ns	3.90 (1.58)	4.02 (1.31)
Small bundle with itemized presentation	4,820	4,440 (748)	1.77	.11, ns	5.64 (1.1)	5.06 (1.20)

Mediated moderation analysis. To test the prediction that bundle size will influence the effect of price presentation format on expected price and that this, in turn, will influence bundle evaluation, we conducted a mediated moderation analysis. Price presentation format (itemized = -1, consolidated = 1) was used as the independent variable, bundle size (small = -1, large = 1) as the moderator variable, price expectation as the mediator variable, and post-price reveal evaluations as the dependent variable. We tested the significance of the proposed effects using mediation analysis with bootstrapping procedures (Hayes, 2013).

Unstandardized indirect effects was computed for each of 1000 bootstrapped samples, and the 95% confidence interval ranged from -.29 to -.03. Thus, the indirect effect was statistically significant. Providing support for the mediated moderation hypothesis, the price presentation × bundle size interaction had a significant effect on price expectation ($\beta = .19$, $t(66) = 2.26$, $p < .05$). Furthermore, a significant main effect of price presentation on price expectation ($\beta = .30$, $t(66) = 3.59$, $p < .01$) emerged, indicating that participants in the itemized condition estimated the price of the bundle more accurately than participants in the bundled condition. This finding is consistent with our predictions. In addition, price expectation significantly predicted bundle evaluation ($\beta = -.73$, $t(66) = 4.99$, $p < .01$), indicating that the higher the price expectation relative to the actual price, the higher the overall bundle evaluation. Finally,

when we controlled for the effect of the mediator, there was a significant residual effect of the interaction between bundle presentation and bundle size on bundle evaluation ($\beta = .21$, $t(66) = 2.02$, $p < .05$).

To illuminate the moderation of indirect effect, we examined the effect of price presentation format on evaluation through price expectation for each of the two bundle size condition. In the small bundle condition, the unstandardized indirect effect was not significant (the 95% confidence interval ranged from $-.33$ to $.08$). Specifically, the effect of price presentation on price expectation was not significant ($\beta = .11$, $t(30) = 1.09$, $p = .28$, *ns.*). However, there was a significant direct effect of price presentation on evaluation ($\beta = -.28$, $t(30) = 2.27$, $p < .05$). In contrast, the effect of price presentation on price expectation in the large bundle condition was statistically significant ($\beta = .49$, $t(36) = 3.87$, $p < .01$), and the unstandardized indirect effect was significant with a 95% confidence interval ranging from $-.53$ to $-.11$. In this condition, there was no significant direct effect of price presentation on evaluation ($\beta = -.01$, $t(36) = .07$, $p = .95$, *ns.*). These results show that participants in the small bundle condition evaluated the offering higher when it was itemized, but presentation had no impact on price expectation. In the large bundle condition, participants had a more realistic price expectation when the bundle was itemized, this resulted in turn in a higher post-price reveal evaluation of the bundle. Hence, although the itemized presentation led to more positive evaluation of both large and small bundles, this effect was mediated by a more realistic price expectation only for the large bundle.

Discussion

Study 2 demonstrates that for large bundles, consumers tend to underestimate the price when they are asked to report one consolidated price for the whole bundle. In turn, this underestimation leads to less positive overall evaluation of the bundle. As the bundle increased in size, participants were less able to accurately predict the overall bundle price.

This finding is consistent with predictions from the empirical law of sensations; people tend to under-estimate sizes as they increase. In turn, this inaccuracy influenced participants' evaluations of the bundle.

For small bundles we did not find the same effect of price presentation on price expectation. However, there was a direct effect of price presentation on evaluation. It may be that when participants were forced to process information about the bundle without knowledge of actual price, this led to a more thorough processing of bundle benefits resulting in higher overall evaluation even after price was revealed. This would be consistent with previous findings looking at how drawing attention to specific components in a bundle enhances the overall evaluation of the bundle (e.g., Chakravarti *et al.*, 2002; Hamilton and Srivastava, 2008). This was not tested in our research but is a fruitful avenue for further research in this area.

General discussion and managerial implications

Consumers value product bundles because they lead to lower search cost, reduce perception of risk, and create additional value through product integration (Harris and Blair, 2006a, 2006b). Promoting bundles is therefore an important strategy to increase demand even when no discount is present. In addition to bundle content, marketers need to consider how the bundle should be presented to the market in order to enhance evaluation and purchase willingness. The results presented here suggest that by itemizing the prices of the items in the bundle, consumers' evaluations become more positive. The mechanism explaining this positive effect of itemized prices on evaluation is that it leads the consumer to process bundle content more thoroughly and hence enable them to form a more realistic price expectation. This finding is especially interesting for marketers looking to use bundles as a strategy to enhance the value of their offering by integrating separate products rather than by offering discounts.

Itemized pricing leads consumers to process information about the price–value relationship item by item, as opposed to the more holistic evaluation that takes place when the price is consolidated. As items are added to the bundle, the empirical law of sensations predicts that the accuracy in assessing a consolidated price will be less precise, leading consumers to expect relatively lower prices for larger bundles (Stevens, 1986). This expectation of relatively lower prices can be disrupted by itemizing the price because decomposing the estimation procedure and replacing one large estimation with multiple smaller estimations will increase accuracy in estimations (Chandon and Wansink, 2007).

We found that people evaluated the bundle more favorably when the prices were itemized in the large bundle condition (Study 1). Previous research have shown conflicting results for the effects of price presentation on evaluation (Chakravarti *et al.*, 2002), and our research shows that bundle size may be one factor explaining why itemized pricing leads to more positive evaluations in some but not all instances. Itemizing the price had no effect on evaluations when the bundle was small. The empirical law of sensations predicts that estimations will be more accurate at the lower end of the curve, where the difference between subjective size perceptions and the objective magnitude is smaller (Stevens, 1986; see Figure 1 for illustration). For a bundle with only two items, the difference between processing one or both at the same time is small and likely explains the non-significant difference between the two conditions.

We propose that the mechanism explaining the findings in Study 1 is that (1) consumers under-estimate the price of larger bundles, (2) this under-estimation leads to price expectations that are lower than the actual price, and (3) this negative difference between actual and expected price leads to less positive evaluations. We tested this reasoning in Study 2. Mediated moderation analysis showed that price expectations fully mediated the effect of presenting itemized prices on evaluations, and this effect was stronger for larger bundles.

Participants formed a more realistic expectation of the price when the presentation was itemized. In turn, accuracy in price estimation influenced evaluations positively and even more so when the bundle was larger.

Our research suggests that when marketing product bundles, managers should find ways to attract consumers' attention to the individual items in the bundle. Pricing each product separately is an effective way of doing this, and thus before the overall bundle price is presented, marketers should present itemized prices. As the bundle size increases, itemized pricing becomes even more important. The larger the bundle, the less accurate consumers are able to predict the actual price, and expecting lower prices reduces evaluation. Conveying the actual value of each item in the bundle therefore increases overall evaluation of the bundle.

Further research is necessary to fully understand the relationship among bundle size, price presentation, and bundle evaluation. We report only two studies, and none of the effects are tested in different settings with different product categories. Such replication is warranted to verify the findings reported herein. Another area for future research could be to test whether directing attention to the items in the bundle in itself will produce similar effects as the ones reported in this article. Marketers could present one consolidated price of the bundle but use other means to encourage detailed processing of each item in the bundle. According to our theorizing, we should expect the same results as when the consolidated price is not revealed up front. The results in Study 1 may also be explained by another mechanism not tested in this research, namely that participants may have had a hard time adding the prices in the large, itemized condition. This may have resulted in lower expected price which in turn resulted in more positive evaluations. More research is needed to better understand the role itemizing prices may have on reducing perceptions of cost vs increasing perceptions of benefits.

The results are relevant for understanding how price information may influence consumers' evaluations and purchase intentions of bundles of products they assemble and buy online. Consumers can now plan, design, and purchase products in almost any categories using websites. On these sites, they have the opportunity to purchase bundled offerings, such as those used in the design of the current studies, but they can also choose and assemble different products and create their own unique bundles themselves. The results from our studies suggest that these tools should present the prices of each product separately to enhance the overall evaluation of bundles as customers create them by themselves. Further research is necessary to test different price presentation formats in this context. For example, as products are chosen and reserved in a "shopping cart," should item prices be visible on the page? When is the best time during the search and assembly process to present the summated price of all items? These are questions that additional research could address.

Another area for further research is in the mechanism used to explain the findings in the studies. We argued that price itemizing led participants to attend to more detailed information about the different products in the bundle and that this more detailed information processing led to a more accurate estimation of the prices. If this is the case, perhaps other strategies designed to enhance detailed processing of information will lead to the same results. Online booking systems enable a host of opportunities for consumer to customize their products. Opportunities to customize individual products in a bundle (e.g., upgrade to a larger room or choose the color of a sweater), to add or detract products in a bundle, or even to create their own packages using products available from a "menu" are examples of ways of engaging consumers that may result in more positive evaluations and higher willingness to pay.

In conclusion, when offering product bundles with no discounts, managers can enhance evaluation by itemizing the prices of individual items in the bundle. This effect will be stronger for larger bundles.

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APPENDIX A: Overview of findings from research on presentation effects of discounts and prices

Product	Partitioning vs Unbundling	Discount vs Price	Main effect of presentation	Mechanisms and boundary conditions	Reference
Restaurant menu	Unbundling	Discount	Itemizing discount information led to higher willingness to order.	Itemizing discount information help resolve quality uncertainty.	Kwon <i>et al.</i> (2011)
Vacation packages	Unbundling	Price and discounts	Itemizing prices led to lower choice likelihood.	Itemizing prices influenced choice positively when uncertainty was reduced and when it simplified the decision.	Tanford et al (2011)
Menu items	Unbundling	Discount	Assigning the discount to the item with lower value to the consumer leads to higher overall evaluation of the bundle.	The finding is explained by the reference dependence model: The less valued item is located on the steeper part of the value function than the higher valued item, leading to a greater change in the attractiveness of the bundle offer.	Janisewski and Cuhna (2004)
Refrigerator	Partitioning	Price	Itemizing prices led to higher evaluation of the bundle	The positive effect of itemizing prices was stronger when consumption related component was partitioned rather than when a performance related component was partitioned. Drawing attention to the component partitioned explains the findings.	Chakravarti <i>et al</i> (2002)
Automobiles	Unbundling	Price and discount	Itemizing prices led to lower evaluations, itemizing discounts led to higher evaluations	The findings are explained by mental accounting principles: That consumers prefer to integrate losses (i.e., prices) and segregate gains (i.e., discounts).	Johnson <i>et al</i> (1999)
A jar of pennies and a buyer premium	Partitioning	Price	Itemizing price increase demand.	Partitioning the price increase demand by decreasing consumers recalled total cost.	Morwitz <i>et al</i> (1998)
Teethwithener	Unbundling	Price	Itemizing price increase intention to purchase, intention to recommend, and perceived value.	Results of qualitative interviews suggest consumers prefer bundled offerings only when they come with a discount.	Arora (2011)

