

Differentiation and Parity in Assortment Pricing

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Are consumers more likely to purchase an item from an assortment in which options are priced at parity or from an assortment in which options vary in price? This research examines the influence of parity-pricing and differentiation-pricing strategies on consumer choice and identifies conditions in which parity pricing facilitates choice, as well as conditions in which choice is facilitated by differential pricing. In a series of three experiments, the impact of assortment pricing on choice is shown to be a function of the uncertainty associated with consumers' preferences and the consistency of these preferences with options' prices.

When launching a new product line, managers often face the question of whether to price products at parity or to let the pricing vary as a function of other factors such as the actual cost or the anticipated demand for each product. To illustrate, a restaurant could price all the options on its dessert menu the same, or, alternatively, it could let the pricing reflect the actual cost of making each dessert. A wine manufacturer could price different wine varietals at parity or let the pricing vary as a function of anticipated consumer demand.

The advantages of using a differential pricing strategy, such as cost-based pricing, are evident: linking prices to costs allows managers to achieve more consistent profit margins, and linking prices to consumer demand allows optimizing profitability. In fact, there has been virtually no empirical evidence documenting the drawbacks of using differential pricing. In this context, this research takes a consumer's point of view and questions whether individuals are more likely to make a purchase from an assortment when the products making up this assortment are priced at parity or when their prices vary. Conceptually, this question raises the issue of the role of differentiation and parity in assortment pricing and its impact on the overall purchase probability from a given choice set.

Most of the extant research on product assortment has focused on issues such as assortment size (Broniarczyk, Hoyer, and McAlister 1998; Chernev 2003a, 2003b; Huffman and Kahn 1998; Iyengar and Lepper 2000), assortment structure (Chernev 2005; Hoch, Bradlow, and Wansink 1999;

Kahn and Wansink 2004), assortment attractiveness (Chernev and Hamilton 2006), variety-seeking behavior (Lehmann 1998; McAlister 1982; Ratner, Kahn, and Kahneman 1999; Read and Loewenstein 1995; West, Brown, and Hoch 1996), and choice among assortments (Chernev 2006; Kahn and Lehmann 1991). Despite the growing interest in assortment-related issues, little research has been done on assortment pricing (although see Diehl, Kornish, and Lynch 2003; Lynch and Ariely 2000) and, in particular, the role of price differentiation and price parity in consumer choice.

Building on prior findings, this research examines the role of differentiation-pricing and parity-pricing strategies in consumer choice. It argues that the impact of pricing strategy on choice is influenced by the degree of uncertainty associated with performance of options on nonprice attributes. Thus, when consumers are uncertain about the relative attractiveness of choice alternatives on nonprice attributes, price-based differentiation reduces this uncertainty by offering price as a diagnostic criterion for making a choice. In contrast, when uncertainty about the preference ordering of choice options on nonprice attributes is low, the impact of price differentiation on choice is a function of the degree of consistency of consumers' preferences on price and nonprice attributes, such that consistency of these two types of preferences increases the overall choice probability while inconsistency decreases it. The theoretical rationale leading to this prediction and the empirical analyses are outlined in more detail in the following sections.

THEORETICAL BACKGROUND

Building on prior findings, this research identifies two distinct types of preferences: consumption preferences, aimed at optimizing the benefits derived from the purchased product, and resource-allocation preferences, aimed at managing the allocation of resources such as money, time, and effort (Dhar and Simonson 1999). In particular, in this research the term "consumption preferences" is used in reference to the expected utility from nonprice attributes de-

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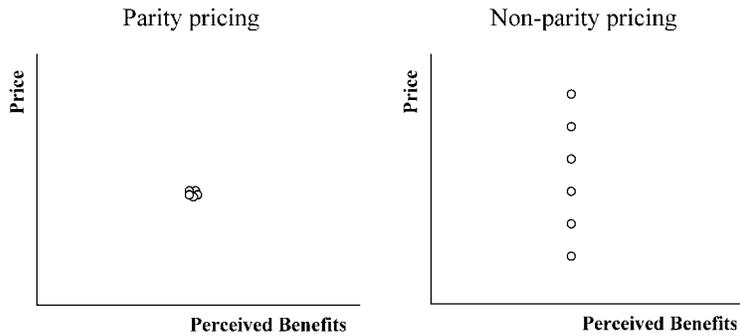
Dawn Iacobucci served as editor and Joseph Priester served as associate editor for this article.

Electronically published July 31, 2006

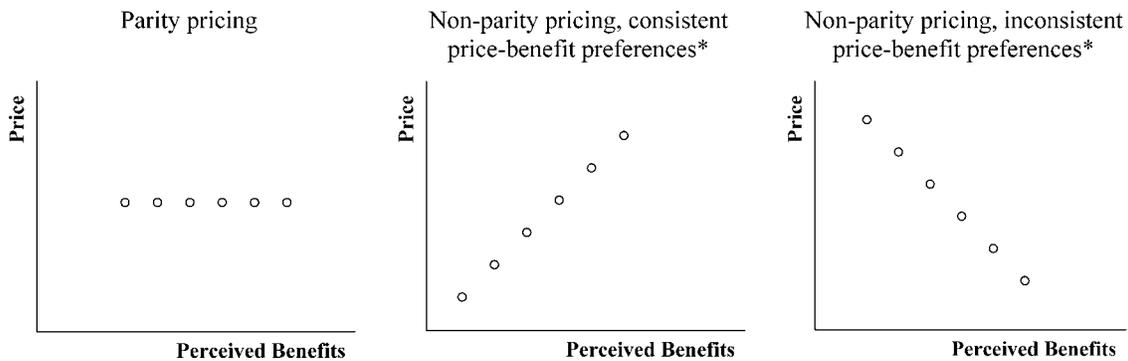
FIGURE 1

DISPERSION OF CONSUMER PREFERENCES AS A FUNCTION OF PREFERENCE UNCERTAINTY, PRICING STRATEGY, AND PREFERENCE CONSISTENCY

A. High consumption preference uncertainty



B. Low consumption preference uncertainty



NOTE.—The vertical axis in scenarios marked with an asterisk reflects the utility from price rather than the actual price. In this context, for indulgence-oriented consumers higher scale values correspond to higher prices, whereas for frugality-oriented consumers higher scale values reflect lower prices.

scribing choice alternatives, and the term “resource-allocation preferences” is used in reference to the expected (dis)utility from price. In this context, choice can be viewed as a function of the degree to which individuals have readily formed consumption preferences, as well as the degree to which these consumption preferences are consistent with their resource-allocation preferences. The issue of articulation and consistency of consumption and resource-allocation preferences is addressed in more detail below.

Consider a scenario in which consumers are uncertain about their preference ordering of choice alternatives on nonprice attributes. In this context, this research predicts that price-based differentiation is likely to decrease the overall preference uncertainty by offering price as a diagnostic criterion for making a choice. This prediction is based on the notion that, because price information implies a natural ordering of choice alternatives, consumers can readily form price-based evaluations of the alternatives and use these

evaluations to order the alternatives in terms of their relative attractiveness and make a choice (fig. 1, panel A).

To illustrate, consider a consumer who intends to indulge herself after a work-related success by splurging on a delicious dessert. Imagine also that she is not certain of her consumption preferences and finds several options to be very attractive but is unsure which of the available desserts she would enjoy most. It is proposed that in this case she might find it easier to make a choice when options vary in price, since in the absence of readily formed consumption preferences the dispersion of options’ prices can serve as a reference point for choice. Thus, consistent with her intent to splurge, she might simply choose the highest-priced option.

In contrast, when options are priced at parity, the choice becomes more complicated because of the uncertainty associated with identifying an option that best matches the consumer’s preferences. This rationale can also be applied to a scenario in which a consumer’s resource-allocation pref-

erence is to save rather than spend money. Thus, in the presence of preference uncertainty, differential pricing is more likely (relative to equal pricing) to facilitate choice by identifying the option that best matches the consumer's desire to save money.

Now consider a scenario in which consumers' preference uncertainty is low and individuals can readily identify their most preferred option. In this case, the impact of differential pricing on choice is likely to be a function of the degree to which the dispersion of options' prices match individual consumption preferences. Thus, when consumption and resource-allocation preferences favor the same alternative, differential pricing is likely to facilitate choice. In contrast, when resource-allocation and consumption preferences favor different alternatives, differential pricing is likely to decrease the overall choice probability.

To illustrate, consider the earlier example of a consumer who intends to indulge herself after a work-related success. Imagine that she finds one of the desserts, say, *crème brûlée*, to be more attractive than the other available options. It is proposed that in this case her choice is likely to be influenced by the dispersion of prices across different options. This scenario implies three different price-benefit patterns (fig. 1, panel B). First, when options are priced at parity, this consumer's decision will be guided by her consumption preferences and she can readily choose her favorite, *crème brûlée*. When options' prices vary, however, her decision will be influenced by the price of her most preferred option relative to the other options in the set. Thus, when *crème brûlée* is the most expensive dessert on the menu, she is likely to choose that option not only because it is her ideal dessert but also because it satisfies her desire to splurge. Therefore, it is proposed that in this case, differential pricing is more likely to facilitate choice than when options are priced at parity. In contrast, when the *crème brûlée* is the least expensive dessert, the consumer is likely to experience a decision conflict because the option favored by the consumption preferences (*crème brûlée*) is inconsistent with the resource-allocation preference. Consequently, this consumer will be less likely to identify a single most attractive option and will be more likely to defer choice than when options are priced at parity.

The above rationale can also be applied to a scenario in which a consumer's resource-allocation preference is to save rather than spend money. Thus, when this consumer has readily formed consumption preferences, differential pricing will help choice when the most preferred option is also the least expensive and will hurt choice when the most preferred option is the most expensive.

To summarize, this research posits that the impact of pricing strategy (differentiation vs. parity) on choice is a function of the uncertainty associated with individuals' consumption preferences and the degree to which these consumption preferences are consistent with their resource-allocation preferences. Thus, when consumption preference uncertainty is high, differentially priced assortments will lead to higher purchase probability than equally priced as-

sortments. In contrast, when consumption preference uncertainty is low, the overall purchase probability is a function of the consistency of the consumption and resource-allocation preferences. In particular, consistent consumption and resource-allocation preferences will lead to higher purchase probability than equally priced assortments, whereas inconsistent consumption and resource-allocation preferences will result in a lower choice probability than equally priced assortments. These predictions are tested in the following three experiments.

EXPERIMENT 1

The goal of this experiment was to empirically test the prediction that the impact of pricing strategy on choice is a function of the uncertainty associated with buyers' consumption preferences and the consistency of their consumption and resource-allocation preferences. In particular, this experiment examined the impact of consumption preference uncertainty (high vs. low), pricing strategy (price parity vs. price differentiation), and preference consistency (high vs. low) on choice likelihood. Preference uncertainty was manipulated by varying individuals' ability to order choice alternatives in terms of their attractiveness. Thus, in the low-uncertainty condition, options' values on nonprice attributes were set in a way that facilitates preference ordering of the alternatives, whereas in the high-uncertainty condition, attribute values were nondiagnostic with respect to their relative attractiveness.

To validate the research hypotheses across different resource-allocation scenarios, this experiment used two types of resource-allocation preferences: frugality, aimed at minimizing monetary expenditures, and indulgence, aimed at maximizing monetary expenditures. Because the impact of pricing strategy on choice is not contingent on the type of resource-allocation preferences, these effects were expected to be consistent across both frugality and indulgence conditions. The specifics of the experimental stimuli and the research design are presented in more detail in the following sections.

Method

One hundred fifty-three Northwestern University undergraduates were recruited to participate in an online experiment. Respondents were told that the choice task involved making hypothetical decisions in which they should rely on their own preferences. They were randomly assigned to the conditions of a 2 (consumption preference uncertainty: high vs. low) \times 2 (assortment pricing: equal vs. different) \times 2 (preference consistency: high vs. low) \times 2 (resource-allocation preference: frugality vs. indulgence) nested between-subjects factorial design. Choice decisions involved choosing a backpack—a product category used in prior assortment-related research (Chernev 2003b).

Respondents were given a choice set comprising four backpacks, each described on four attributes: brand name, type, rating, and price (see appendix, table A1). Preference

uncertainty was manipulated by varying the diagnosticity of the non-price information describing choice alternatives, whereby lower levels of diagnosticity of the available information were expected to lead to higher levels of preference uncertainty. In particular, options in the high-preference-uncertainty condition had equal star ratings, whereas options in the low-preference-uncertainty condition were naturally ordered based on their ratings, which varied from two to five stars.

Resource-allocation preferences were manipulated by asking some of the respondents to imagine that they were on a budget (frugality condition), whereas others were asked to imagine that they were buying the backpack after a major accomplishment (indulgence condition). Prices of individual options were set as a function of the type of assortment pricing (equal vs. different), resource-allocation preference (frugality vs. indulgence), and preference consistency (high vs. low). Thus, options in the price-differentiated scenario were priced between \$16.99 and \$22.99, so that for frugality-focused respondents in the preference-consistency scenario the option with the highest ratings was also the lowest priced; in the preference-inconsistency condition the highest-rated option was also the highest priced. For indulgence-focused respondents, options' pricing was reversed so that in the preference-consistent scenario the highest-rated option was also the highest priced; in contrast, in the preference-inconsistent scenario the highest-rated option was the lowest priced. Options in the price-parity scenario were priced at \$16.99 in the frugality condition and at \$22.99 in the indulgence condition.

After being presented with the product information, respondents were asked to indicate which option they would like to purchase. Following the choice question, respondents were asked to state their confidence in their choice (nine-point scale: 1 = not confident at all, 9 = very confident). Next, respondents were given the option of either (1) staying with the original selection or (2) making no choice and looking for other options (Dhar 1997; Dhar and Simonson 2003).

Results

Price-differentiation effects with high consumption preference uncertainty. This research argues that the impact of pricing strategy (differentiation vs. parity) on choice is a function of the degree of preference uncertainty associated with options' performance on nonprice attributes. In particular, it is argued that under high preference uncertainty, differentially priced assortments will lead to greater choice likelihood than would equally priced assortments. This proposition is tested by examining respondents' strength of preferences across the experimental conditions measured through the likelihood of choice deferral and respondents' confidence in their decisions.

The choice-deferral data, summarized in table 1, show that respondents who were given equally rated products were more likely to defer choice when options were equally priced than when they varied in price. Thus, 83.3% of respondents

TABLE 1
CHOICE DEFERRAL AS A FUNCTION OF PREFERENCE UNCERTAINTY, PRICING STRATEGY, AND PREFERENCE CONSISTENCY

Preference uncertainty	Pricing	Resource-allocation preferences (%)		
		Frugality	Indulgence	Combined
High	Equal	80.0 (15)	86.7 (15)	83.3 (30)
	Different	25.0 (16)	37.5 (16)	31.3 (32)
Low	Equal	33.3 (15)	40.0 (15)	36.7 (30)
	Preference consistent	25.0 (16)	21.4 (14)	23.3 (30)
	Preference inconsistent	80.0 (15)	62.5 (16)	71.0 (31)

NOTE.—Cell sizes are given in parentheses.

deferred their choice among equally priced options, compared with only 31.3% of those choosing among differentially priced options ($\chi^2(1) = 14.87, p < .001$)—a finding consistent with the experimental predictions.

The observed effect was consistent across the two resource-allocation conditions. To illustrate, 80% of respondents in the frugality condition deferred their choice among equally priced options, compared with 25% of those choosing among differentially priced options. Similarly, 86.7% of respondents in the indulgence condition deferred their choice when choosing among equally priced options, compared with 37.5% of those choosing among differentially priced options. The difference in the impact of pricing on choice deferral across the two resource-allocation conditions (frugality vs. indulgence) was nonsignificant ($\chi^2(1) < 1$), indicating that, consistent with the experimental predictions, the observed effect of price on choice was not contingent on the type of resource-allocation preferences.

A further test of the research propositions involved analyzing the decision confidence of respondents across the two pricing conditions. The theory advanced in this article predicts that choosing among equally priced options will lead to lower choice likelihood than choosing among differentially priced options. With respect to decision confidence, this prediction implies that respondents should be more confident in their choices in the differential-price condition than in the equal-price condition.

The data summarized in table 2 show that decision confidence was higher in the differential-price condition than in the equal-price condition ($M = 3.75$ vs. $M = 7.25$; ($F(1, 123) = 23.37, p < .001$)—a finding consistent with the experimental predictions. This effect was also consistent across the two resource-allocation conditions ($F(1, 123) < 1$)—a finding implying that the impact of assortment pricing on choice was not a function of the specific nature of resource-allocation preferences.

Price-differentiation effects with low consumption preference uncertainty. This research argued that when preference rankings of choice options are readily available, purchase probability is a function of the consistency of a

TABLE 2

DECISION CONFIDENCE AS A FUNCTION OF PREFERENCE UNCERTAINTY, PRICING STRATEGY, AND PREFERENCE CONSISTENCY

Preference uncertainty	Pricing	Resource-allocation goal		
		Frugality	Indulgence	Combined
High	Equal	3.75 (12)	3.75 (12)	3.75 (24)
	Different	7.42 (12)	7.08 (12)	7.25 (24)
Low	Equal	8.17 (12)	7.13 (15)	7.59 (27)
	Preference consistent	8.33 (12)	7.85 (13)	8.08 (25)
	Preference inconsistent	4.67 (15)	4.5 (12)	4.59 (27)

NOTE.—Cell sizes are given in parentheses.

consumer's consumption and resource-allocation preferences. In particular, price-differentiated assortments in which consumption and resource-allocation preferences are consistent were predicted to lead to greater choice likelihood than would equally priced assortments. In contrast, price-differentiated assortments in which consumption and resource-allocation preferences are inconsistent were predicted to lead to lower purchase probability than equally priced assortments.

The data show that only 23.3% of respondents in the preference-consistent condition opted to defer their choice, compared with 36.7% of the respondents in the equal-price condition. In contrast, when pricing was inconsistent with respondents' consumption preferences, 71% of the respondents opted to defer their choice ($\chi^2(2) = 13.78, p < .001$). In particular, the difference in the likelihood of choice deferral between the preference-inconsistent and equal-price conditions was significant (71% vs. 36.7%; $\chi^2(1) = 7.12, p < .01$). The difference in the likelihood of choice deferral between the preference-consistent and equal-price conditions was directionally consistent although nonsignificant (23.3% vs. 36.7%; $\chi^2(1) = 1.26$). This data pattern was consistent across the frugality and indulgence conditions, indicating convergence of the experimental data across these conditions.

Analysis of the dispersion of decision confidence data reveals a similar data pattern (table 2). Thus, the mean decision confidence of respondents in the preference-inconsistent condition was $M = 4.59$, significantly lower than $M = 7.59$, the corresponding confidence rating in the equal-price condition ($F(1, 121) = 24.02, p < .001$). In contrast, in the preference-consistent condition, the mean decision confidence rating was higher than that in the equal-price condition, although not statistically significant ($M = 8.08$ vs. $M = 7.59; F(1, 121) < 1$). The combined effect across all three conditions was significant as well ($F(2, 121) = 18.35, p < .001$), whereas the impact of resource-allocation preferences (frugality vs. indulgence) was nonsignificant ($F(2, 121) = 1.18, NS$). The convergence of the choice deferral and decision confidence data lends further support to the experimental predictions.

Discussion

The data furnished by experiment 1 support the proposition that the impact of pricing on choice is a function of preference uncertainty and the consistency of consumption and resource-allocation preferences. In particular, the data show that when choice options were not differentiated on nonprice attributes, differentially priced assortments led to higher purchase probability than parity-priced assortments. In the presence of diagnostic nonprice information, however, purchase probability was a function of the consistency of a consumer's consumption and resource-allocation preferences. Thus, price-differentiated assortments yielding consistent consumption and resource-allocation preferences were associated with a greater purchase probability than equally priced assortments, whereas price-differentiated assortments yielding inconsistent consumption and resource-allocation preferences were associated with lower choice likelihood than were equally priced assortments.

This data pattern was consistent across the two resource-allocation preferences (frugality and indulgence), which suggests that these effects are not contingent on a specific resource-allocation preference but rather are a function of the consistency of the consumption and resource-allocation preferences. This finding also suggests that the observed effects cannot be accounted for by calibration issues such as the particular price levels used in the experiment.

In general, preference uncertainty in this experiment was manipulated by varying the diagnosticity of the nonprice information describing choice alternatives. An alternative approach to manipulate preference uncertainty is to vary the degree to which individuals have readily articulated consumption preferences, while holding constant the available product information. This approach is based on the notion that preference uncertainty is a function of both the diagnosticity of the available information and the individual's ability to translate the observed differences between alternatives into expected utilities. In this context, varying the degree to which buyers have articulated preferences should yield similar results as varying the diagnosticity of the nonprice information. This prediction is tested in the following experiment.

EXPERIMENT 2

Building on the findings reported by the first experiment, experiment 2 examined the role of parity-pricing and differentiation-pricing strategies in choice by varying the degree to which respondents have articulated consumption preferences. In particular, this experiment examined the impact of the degree to which individuals had articulated consumption preferences (high vs. low), pricing strategy (price parity vs. price differentiation), and preference consistency (high vs. low) on choice likelihood. Similar to the first experiment, these effects were tested across the two types of resource-allocation preferences (frugality vs. indulgence). The specifics of the experimental stimuli, the research de-

sign, and the data analyses are presented in more detail in the following sections.

Method

Four hundred thirty-three Northwestern University undergraduates were recruited to participate in an online experiment. Respondents were told that the choice task involved making hypothetical decisions and that they should rely on their own preferences. Choice decisions involved wine selection—a product category used in prior research on preference formation and choice (Lynch and Ariely 2000). Respondents were randomly assigned to the conditions of a 2 (preference uncertainty: high vs. low) \times 2 (assortment pricing: equal vs. different) \times 2 (preference consistency: high vs. low) \times 2 (resource-allocation preference: frugality vs. indulgence) nested between-subjects factorial design.

Respondents were asked to read the descriptions of four different wines. Those assigned to the low-preference-uncertainty condition were then asked to articulate their preferences by indicating the wine that best matched their preferences and ordering these wines by their overall attractiveness. In contrast, respondents assigned to the high-uncertainty condition were only asked to read the wine descriptions without being asked to evaluate the wines. This preference-uncertainty manipulation is consistent with similar methods used in prior research (Chernev 2003b).

Next, respondents were given a choice set comprising four options that were identical to those in the first task (except that price information was now available) and were asked to imagine that they had to buy a bottle of wine. Some of the respondents were asked to imagine that they were on a budget (frugality condition), whereas the others were asked to imagine that they were buying the wine for a very special occasion (indulgence condition). Furthermore, some of the respondents were given a scenario in which options were equally priced, whereas others were given a scenario in which options varied in price. Option descriptions and the different price levels are given in the appendix, table A2.

The experiment was conducted online, and the allocation of prices to different options in the differential-pricing scenario was done in real time, using the following algorithm: In the high uncertainty condition, prices were randomly assigned to the four choice options. In contrast, in the low-uncertainty condition, prices were assigned to different options based on respondents' preferences elicited in the preference-articulation task, their resource-allocation preference, and preference consistency. For that purpose, respondents were randomly assigned to one of the two preference-consistency conditions as follows. Respondents in the high preference-consistency condition were shown a scenario in which the pricing of their most preferred option was consistent with their resource-allocation preference. To illustrate, respondents in the frugality condition were given a choice set in which their most preferred option was the cheapest, whereas respondents in the indulgence condition were given a choice set in which their most preferred option

was the most expensive. For respondents in the preference-inconsistent condition, the pricing was reversed, so that in the frugality condition the most preferred option was the most expensive and in the indulgence condition it was the cheapest.

When presented with the wine selection, all respondents were asked to indicate which option they would like to purchase. Following the choice question, respondents were given the option of either staying with their original selection or making no choice and looking for other options. Respondents were also asked to allocate 100 points among these products so that the higher number of points corresponded to a higher likelihood of their choosing that option.

Results

Price-differentiation effects with high consumption preference uncertainty. This research argues that, in the absence of articulated consumption preferences, differentially priced assortments will lead to greater choice likelihood than equally priced assortments. This proposition was tested by examining respondents' strength of preferences across the experimental conditions as measured by the likelihood of choice deferral and the dispersion of choice likelihood ratings across different options (based on the 100-point allocation task).

The choice deferral data summarized in table 3 show that respondents who were not asked to articulate their consumption preferences were more likely to defer choice when options were equally priced than when options varied in price. This effect was consistent across the two resource-allocation conditions. To illustrate, 39.5% of respondents in the frugality condition deferred their choice among equally priced options, compared with 32.7% of those choosing among differentially priced options. Similarly, 47.7% of respondents in the indulgence condition deferred their choice when choosing among equally priced options, compared with 25.0% of those choosing among differentially priced options. Statistical analysis of these data across the two resource-allocation conditions shows that the impact of pricing on choice deferral was significant ($\chi^2(1) = 4.64, p < .05$)—a finding

TABLE 3

CHOICE DEFERRAL AS A FUNCTION OF PREFERENCE UNCERTAINTY, PRICING STRATEGY, AND PREFERENCE CONSISTENCY

Preference uncertainty	Pricing	Resource-allocation preferences (%)		
		Frugality	Indulgence	Combined
High	Equal	39.5 (43)	47.7 (44)	43.7
	Different	32.7 (55)	25.0 (56)	28.8
Low	Equal	27.5 (40)	30.8 (39)	29.1
	Preference consistent	18.4 (38)	12.2 (41)	15.2
	Preference inconsistent	44.7 (38)	53.8 (39)	49.4

NOTE.—Cell sizes are given in parentheses.

consistent with the experimental predictions. This pattern was consistent across the two resource-allocation conditions (frugality vs. indulgence), suggesting that the observed effect of price equivalence on choice deferral was not a function of the specifics of the resource-allocation task.

A further test of the research propositions involved analyzing the dispersion of the purchase-likelihood ratings across different options. One strategy to test the proposition that in the presence of high consumption-preference uncertainty, differentially priced assortments will lead to higher purchase probability than equally priced assortments is to compare the dispersion of purchase probabilities of the choice options across the two pricing conditions. Experimental hypotheses advanced in this article predict that choosing among equally priced options is likely to lead to lower choice likelihood than choosing among differentially priced options. With respect to the relative purchase probabilities, this prediction implies that the stated purchase probability of the most attractive option (relative to the other options in the set) will be greater in the differential-price condition than in the equal-price condition.

The data summarized in table 4 show that the stated purchase likelihood of the most preferred option was higher in the differential-price condition than in the equal-price condition ($M = 51.4$ vs. $M = 44.7$; $(F(1, 194) = 10.68, p < .005)$ —a finding consistent with the experimental predictions. The (price) \times (resource-allocation preference) interaction was nonsignificant ($F < 1$), indicating that the observed effect was consistent across the two resource-allocation conditions.

An alternative and more precise approach to test the dispersion of purchase-likelihood ratings among the choice alternatives is to compare the differences in stated purchase probabilities between the two options most likely to be purchased. Accordingly, a differentiation score for each respondent was calculated based on the difference between the highest rated option and the next highest one. To illustrate, the differentiation score for the response pattern 70-10-10-10 was 60, whereas the response pattern 40-10-40-10 was quantified with a differentiation coefficient of zero.

Thus, the differentiation score for each attribute potentially varied between zero and 96. The data show that the pattern of the differentiation scores was directionally consistent with the experimental predictions and significant ($F(1, 194) = 7.93, p < .01$; mean differentiation scores are given in table 4). These data lend further support to theoretical predictions.

Price-differentiation effects with low consumption preference uncertainty. This research argued that, in the presence of articulated consumption preferences, strength of preferences is a function of the consistency of a consumer's consumption and resource-allocation preferences. In particular, it was predicted that price-differentiated assortments in which consumption and resource-allocation preferences are consistent will lead to greater choice likelihood than will equally priced assortments. In contrast, price-differentiated assortments in which consumption and resource-allocation preferences are inconsistent were predicted to lead to lower purchase probability than equally priced assortments. These predictions were validated by examining the likelihood of choice deferral and the dispersion of choice likelihood ratings across different options.

The choice deferral data show that only 15.2% of respondents in the preference-consistent condition opted to defer their choice and look for other options, compared with 29.1% of the respondents in the equal-price condition. In contrast, when pricing was inconsistent with respondents' consumption preferences, 49.4% of the respondents opted to defer their choice. Statistical analyses of these data show that the overall effect of preference consistency on choice deferral was significant ($\chi^2(2) = 19.74, p < .001$), lending support to the theoretical predictions. In particular, the difference in the likelihood of choice deferral between the preference-consistent and equal-price conditions was significant (15.2% vs. 29.1%; $\chi^2(1) = 4.36, p < .05$). The difference in the likelihood of choice deferral between the preference-inconsistent and equal-price conditions was significant, as well (49.4% vs. 29.1%; $\chi^2(1) = 6.52, p < .05$). This data pattern was consistent across the two resource-allocation

TABLE 4

PURCHASE LIKELIHOOD AS A FUNCTION OF PREFERENCE UNCERTAINTY, PRICING STRATEGY, AND PREFERENCE CONSISTENCY

Preference uncertainty	Pricing	Purchase-likelihood rating of the most preferred option	Difference in the purchase-likelihood ratings between the two most preferred options
High	Equal ($N = 87$)	44.7 (13.7)	19.3 (16.2)
	Different ($N = 111$)	51.4 (14.8)	27.2 (22.0)
Low	Equal ($N = 79$)	53.5 (12.8)	29.9 (17.6)
	Preference consistent ($N = 79$)	59.3 (15.9)	39.1 (23.1)
	Preference inconsistent ($N = 77$)	46.9 (11.7)	21.8 (15.3)

NOTE.—Standard deviations are given in parentheses. Data are aggregated across the two resource-allocation conditions.

preferences, indicating that the observed effects were not a function of the type of resource-allocation preference (see table 3 for details). These findings support the experimental hypotheses.

Analysis of the dispersion of the purchase-likelihood ratings among the choice options reveals a similar data pattern (table 4). To illustrate, the average purchase-likelihood rating of the most preferred option in the preference-consistent condition was $M = 59.3$, significantly higher than $M = 53.5$, the corresponding purchase-likelihood rating in the equal-price condition ($F(1, 229) = 7.28, p < .01$). In contrast, in the preference-inconsistent condition, the mean purchase-likelihood rating was significantly lower than that in the equal-price condition ($M = 46.9$ vs. $M = 53.5$; $F(1, 229) = 9.00, p < .005$). The combined effect across all three conditions was also consistent ($F(2, 229) = 16.14, p < .001$), whereas the impact of resource-allocation preferences was nonsignificant ($F(2, 229) = 1.04, p > .20$). A further test of the dispersion of purchase-likelihood ratings between the two options most likely to be purchased replicated the above data pattern, lending converging evidence for the experimental predictions.

Discussion

The data furnished by experiment 2 support the proposition that the impact of pricing on choice is a function of the degree to which individuals have readily available consumption preferences and their consistency with resource-allocation preferences. In particular, the data show that in the absence of readily available consumption preferences, differentially priced assortments lead to higher purchase probability than equally priced assortments. In the presence of readily available consumption preferences, however, purchase probability was a function of the consistency of a consumer's consumption and resource-allocation preferences. In particular, price-differentiated assortments in which consumption and resource-allocation preferences are consistent were associated with greater purchase probability than equally priced assortments; in contrast, price-differentiated assortments in which consumption and resource-allocation preferences are inconsistent were associated with lower choice likelihood than were equally priced assortments. As in the first experiment, the data pattern was consistent across the two resource-allocation preferences (frugality and indulgence), indicating that these effects are not an artifact of the specific prices used in the experiment but rather are a function of the assortment-pricing strategy and its consistency with respondents' consumption preferences.

Considered together, the data from the two experiments lend support to the proposition that the impact of pricing on choice is a function of the uncertainty associated with individuals' consumption preferences and the consistency of these preferences with resource-allocation preferences. This proposition was supported in two different contexts: when preference uncertainty was manipulated by varying the diagnosticity of the nonprice attributes (experiment 1) and when it was manipulated by varying the degree to which

individuals had readily available consumption preferences (experiment 2).

From a conceptual standpoint, the observed effects of pricing on purchase likelihood were attributed to the consistency of a consumer's consumption and resource-allocation preferences. This proposition can be further tested in the context of the reason-based choice paradigm, which posits that choice can be represented in terms of reasons for and against each of the alternatives (Shafir, Simonson, and Tversky 1993; Simonson 1989). Reason-based analysis predicts that consumers can use their consumption and resource-allocation preferences as reasons for choice. Thus, when options are priced at parity, resource-allocation preferences do not favor any particular option and, as a result, consumer choice will be guided by reasons derived from their consumption preferences. In contrast, when consumption and resource-allocation preferences favor different alternatives, consumers have conflicting reasons for choosing each of the alternatives; hence, choice probability is likely to be lower than in the price-parity scenario. Finally, when consumption and resource-allocation preferences favor the same alternative, individuals have multiple reasons for choosing that alternative, suggesting that choice probability is likely to be higher than in the price-parity scenario.

This reason-based account for the observed effects can be tested using the choice-justification paradigm (Simonson 1989; Simonson and Nowlis 2000), which predicts that asking consumers to justify their decision will facilitate generating reasons for and against each alternative. Thus, if the observed preference-consistency effects are indeed driven by reason-based decision making, then these effects should be greater when consumers are asked to justify their choices. This argument leads to the prediction that the impact of the consistency of consumption and resource-allocation preferences on overall purchase probability is a function of the need to generate reasons to justify choice, such that it will be more pronounced when consumers have to explicitly articulate their reasons for choice. This prediction is tested in the following experiment.

EXPERIMENT 3

The goal of this experiment was to test the proposition that the impact of pricing strategy (differentiation vs. parity) and preference consistency on choice is a function of decision accountability, such that the effects observed in the first two experiments will be greater for consumers who expect to justify their choices. To test this proposition, experiment 3 compared the likelihood of choice deferral as a function of the need for justification across conditions that vary in terms of consistency of consumption and resource-allocation preferences. The experimental stimuli and research design are outlined in more detail in the following section.

Method

Two hundred six Northwestern University undergraduates were recruited to participate in an online experiment. They

were randomly assigned to the conditions of a 2 (preference-consistency: high vs. low) \times 2 (justification: yes vs. no) \times 2 (resource-allocation preference: frugality vs. indulgence) factorial design. Respondents were initially presented with a descriptive list of six desserts (shown in appendix, table A3) and were asked to select the one they liked the most. Next, they were asked to imagine that they were having dinner in a restaurant and were considering having a dessert. Respondents in the indulgence condition were further told that it was a very special occasion and they had decided to treat themselves to a nice dinner; in contrast, respondents in the frugality condition were told that they were on a budget. In addition, respondents in the justification condition were told that they would be asked to explain the rationale for their decision. This justification manipulation is similar to the ones used in prior research (Simonson 1989).

Next, respondents were shown the dessert menu, comprising six items identical to those initially rated by the respondents except that price information was now available. Respondents were asked to allocate 100 points among these desserts, so that a higher number corresponded to a higher likelihood of choosing that dessert. Following the rating task, respondents were given the option of selecting one of the available desserts or not ordering a dessert. Similar to experiment 2, prices were assigned to different desserts based on the pattern of responses to the initial preference-elicitation task. In particular, indulgence-oriented respondents in the preference-consistent condition were presented with a menu in which their most preferred option was also the highest priced. In contrast, indulgence-oriented respondents in the preference-inconsistent condition were given a menu in which their most preferred option was the least expensive one. Similarly, frugality-oriented respondents in the preference-consistent condition were shown a menu in which their most preferred option was the least expensive, whereas in the preference-inconsistent condition the most preferred option was also the most expensive one.

Upon indicating their choice, respondents were asked to rate their satisfaction with the available dessert assortment (nine-point scale: 1 = very unsatisfied; 9 = very satisfied), a variety-satisfaction measure adopted from prior research (Hoch et al. 1999). Respondents in the justification condition were also asked to write down the rationale for their decisions.

Results

This research argued that the impact of consistent consumption and resource-allocation preferences on choice likelihood is a function of the need for justification and that this impact will be greater when consumers expect to be asked to justify their choices. The choice deferral data, summarized in table 5, show that respondents in the preference-consistent condition were less likely to defer choice when asked to justify their decisions (10.7% vs. 3.9%). In contrast, for respondents in the preference-inconsistent condition, the effect of justification on choice deferral was reversed, whereby choice deferral was greater among the respondents

TABLE 5
CHOICE DEFERRAL AS A FUNCTION OF PREFERENCE CONSISTENCY AND THE NEED FOR JUSTIFICATION

Preference consistency	Justification	Resource-allocation preferences (%)		
		Frugality	Indulgence	Combined
High	No	15.4 (26)	6.7 (30)	10.7
	Yes	3.8 (26)	4.0 (25)	3.9
Low	No	32.1 (28)	20.8 (24)	26.9
	Yes	56.0 (25)	40.9 (22)	48.9

NOTE.—Cell sizes are given in parentheses.

who were not asked to justify their decisions (48.9% vs. 26.9%).

Statistical analysis of these data shows that the impact of preference consistency on choice deferral was indeed moderated by the need for justification ($\chi^2(1) = 4.37, p < .05$). The effect of preference consistency on choice deferral was significant for both respondents who were not asked to justify their choices ($\chi^2(1) = 4.10, p < .05$) and for those in the justification condition ($\chi^2(1) = 16.17, p < .001$)—a finding lending support to the theoretical predictions. The effect of justification on choice deferral was consistent for both the frugality and indulgence conditions—a finding suggesting that the impact of justification and preference consistency on choice deferral is not contingent on the specific nature of the resource-allocation preferences.

Further evidence supporting the proposition that the impact of consistency of respondents' consumption and resource-allocation preferences is a function of decision accountability stems from analyzing respondents' satisfaction with the assortment. The data show that the differences in satisfaction ratings as a function of preference consistency were more pronounced for respondents who were asked to justify their decisions. Thus, in the preference-inconsistent condition, respondents who expected to have to justify their decisions rated the assortment as less attractive than respondents who were not asked to provide the rationale for their choice ($M = 5.1$ vs. $M = 5.7$). In contrast, for respondents in the preference-consistent condition, this effect was reversed: respondents who were asked to justify their choice were more satisfied with the assortment than those in the no-justification condition ($M = 6.8$ vs. $M = 6.1$). Analysis of these data (ANOVA) shows that the main effect of preference consistency on assortment satisfaction was significant ($F(1, 196) = 11.12, p < .005$). More important, the moderating effect of justification and preference consistency on choice was also significant ($F(1, 196) = 4.53, p < .05$), supporting the choice-justification hypothesis. These findings support the experimental propositions advanced in this research by demonstrating that the likelihood of choice deferral is associated with significant differences in assortment satisfaction.

Discussion

The data reported in this experiment lend further support to the proposition that the impact of assortment pricing on

choice is a function of the consistency of individuals' consumption and resource-allocation preferences. More important, the data support the proposition that the impact of the consistency of consumption and resource-allocation preferences on choice likelihood is a function of the need for justification. In particular, the data show that, relative to assortments yielding consistent consumption and resource-allocation preferences, assortments yielding inconsistent consumption and resource-allocation preferences were more likely to result in choice deferral when respondents were explicitly asked to generate reasons to support their decisions. This data pattern was consistent across the two resource-allocation preferences (frugality and indulgence), which implies that these effects are not a function of a specific resource-allocation preference or the specific prices used in the experiment but rather stem from the consistency of the consumption and resource-allocation preferences.

GENERAL DISCUSSION

This research examines the role of parity-pricing and differentiation-pricing strategies in consumer choice. In particular, this research identifies conditions in which parity pricing facilitates choice, as well as conditions in which choice is facilitated by differential pricing. In this context, the impact of assortment pricing on choice is shown to be a function of the degree of uncertainty associated with options' performance on nonprice attributes. Thus, when consumers were uncertain about the relative attractiveness of choice alternatives on nonprice attributes, price-based differentiation reduced this uncertainty by offering price as a diagnostic criterion for making a choice, thus increasing the likelihood of making a choice from the available assortment. In contrast, when uncertainty about the preference ordering of choice options on nonprice attributes was low, the impact of price differentiation on choice was found to be a function of the degree of consistency of consumers' preferences on price and nonprice attributes. Thus, price-differentiated assortments in which consumers' preferences on price and nonprice attributes were consistent resulted in greater choice likelihood than did equally priced assortments. In contrast, price-differentiated assortments in which consumers' preferences on price and nonprice attributes were inconsistent resulted in lower choice likelihood than did equally priced assortments. This data pattern was documented in two different contexts: when preference uncertainty was manipulated by varying the diagnosticity of the nonprice attributes (experiment 1), as well as by varying the degree to which individuals had readily available consumption preferences (experiment 2).

The impact of consistency of consumption and resource-allocation preferences on choice likelihood was further shown to be a function of decision accountability (experiment 3). Thus, price-differentiated assortments with inconsistent consumption and resource-allocation preferences were shown to be more likely (relative to preference-consistent assortments) to result in choice deferral when re-

spondents were explicitly asked to justify their decisions. These findings lend support to the notion that consumers use the consistency of their consumption and resource-allocation preferences as reasons for making a choice.

The impact of pricing strategy on choice was tested in the context of two types of resource-allocation preferences: frugality, aimed at minimizing monetary expenditures, and indulgence, aimed at maximizing monetary expenditures. The three experiments reported in this research validate the experimental hypotheses in both frugality and indulgence contexts, thus demonstrating the robustness of the observed effects across these two types of resource-allocation preferences.

The observed effect could be further generalized beyond assortment pricing to understand the impact of attribute variability and attribute diagnosticity on choice (Feldman and Lynch 1988; Nisbett, Zukier, and Lemley 1981; Tversky 1977). In this context, one can argue that effects similar to the ones reported in this research can also be achieved by varying the diagnosticity of nonprice attributes. Thus, in the case of nondifferentiated options, introducing an attribute that leads to preference-ordering of the available alternatives is likely to facilitate choice by offering a simple decision criterion. In contrast, when the available attributes readily imply preference ordering, the choice is a function of the consistency of the newly introduced and existing attributes, such that preference-consistent information increases choice likelihood and preference-inconsistent information decreases it. Investigating the attribute variability-diagnosticity effects on choice is a fruitful venue for further research.

In addition to its theoretical contribution, this research has important managerial implications. From a practical standpoint, the research question addressed in this article can be related to horizontal and vertical differentiation strategies. Thus, vertical product lines are typically associated with a scenario in which options are differentiated based on both benefits and price, such that options offering more benefits are also higher priced. In contrast, options in horizontal product lines are typically differentiated mainly by benefits, such that potential differences in price are not the key differentiating factor. The data furnished by this research imply that pricing horizontally differentiated assortments must take into account the degree of uncertainty associated with buyers' consumption preferences. Thus, for consumers who are uncertain about the relative attractiveness of options comprising a horizontal product line, nonparity pricing can help by effectively transforming the horizontal product line into a vertical one. In contrast, for consumers with readily formed preferences, the impact of nonparity pricing on choice is a function of the dispersion of their preferences: preference-consistent pricing can facilitate their decision process and increase the overall choice likelihood, whereas preference-inconsistent pricing might complicate their decision process and lower the overall choice probability. Investigating the impact of price-differentiation and price-parity on product line management strategies is a promising area for further research.

APPENDIX**TABLE A1**

OVERVIEW OF THE STIMULI (EXPERIMENT 1)

	Option A	Option B	Option C	Option D
Brand:	Sumdex	Gravis	Kelty	Marmot
Type:	Utility Backpack	Utility Backpack	Utility Backpack	Utility Backpack
Rating:	★★	★★★	★★★★	★★★★★
Price:	\$16.99	\$18.99	\$20.99	\$22.99

NOTE.—The scenario given in this table is low preference uncertainty (varied ratings) in which the consumption and resource-allocation preferences are consistent for respondents in the frugality condition and inconsistent for respondents in the indulgence condition. In the price-parity condition, all prices were set at either \$16.99 (frugality condition) or \$22.99 (indulgence condition). The four brand names (Sumdex, Gravis, Kelty, and Marmot) were selected to be relatively unfamiliar to respondents.

TABLE A2

OVERVIEW OF THE STIMULI (EXPERIMENT 2)

Wine	Brand A	Brand B	Brand C	Brand D
Description:	Full-bodied with rich currant flavors, but can be somewhat rough (tannic) when young	Similar to Cabernet, but softer and fruitier, with cherrylike flavors and hints of spice and mint	More delicate than Cabernet or Merlot, with strawberry and tea-leaf aromas and flavors	Full-bodied and potent, with the burly quality of a full basket of raspberries, blackberries, dark cherries, and plums
Price:	\$6.99	\$8.99	\$10.99	\$12.99

NOTE.—Wine prices were not shown during the initial option-rating task and were assigned to different brands according to respondents' answers to the preference-articulation task, resource-allocation-preference condition, and the preference-consistency condition. The scenario given in this table was shown to respondents who selected wine D as most attractive and were either in the indulgence + preference-consistent condition or in the saving + preference-inconsistent condition. For respondents in the not-articulated-preference condition, prices were randomly assigned to different wines. In the equal-price condition all prices were set at \$9.99.

TABLE A3

OVERVIEW OF THE STIMULI (EXPERIMENT 3)

Recipe	Description	Price (\$)
Banana bread pudding	Classic pudding made from bread, eggs, bananas, sweet spices, raisins, and milk	4.95
Peanut butter pie	A rich mixture of crunchy peanut butter and cream cheese swirled with chocolate in a roasted peanut crust	7.95
Chocolate truffle cake	A dense truffle-like cake made from Belgian chocolate and topped with whipped cream and floated in a raspberry sauce	8.95
White chocolate almond cheesecake	A creamy baked preparation using white chocolate, cream cheese, and roasted almonds	7.95
Crème brûlée	Classic egg custard made with Madagascar Bourbon, vanilla bean, and Turbinado sugar	6.95
Lemon Napoleon	Filo dough crust, lemon custard, and raspberry coulis. Served with a caramelized espresso-bourbon sauce and Chantilly cream	7.65

NOTE.—Dessert prices were not shown during the initial option-rating task and were generated during the choice task based on the option ratings in the preference-articulation task and the experimental condition. The scenario given in this table was shown to respondents who selected the chocolate truffle cake as most attractive and were either in the indulgence + preference-consistent condition or in the saving + preference-inconsistent condition.

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