

Reverse Pricing and Online Price Elicitation Strategies in Consumer Choice

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This research examines consumers' willingness to pay in an online environment. Specifically, I compare two price-elicitation strategies: price generation (i.e., "name your price") and price selection (i.e., "select your price"). Contrary to the common assumption that naming a price will be preferred by consumers because it offers the most flexibility in articulating one's willingness to pay, this research demonstrates that consumers often prefer to select rather than to generate a price. In a series of three experiments, I show that the potential unfavorable effects of the price-generation task are associated with the absence of a readily available reference price range. I further demonstrate that the reference price range also has to be externally provided and that internally generated reference prices can as well eliminate the potential negative effect of the price-generation task and strengthen consumer preferences. These findings support the proposition advanced in this research that a pre-choice articulation of reference prices can simplify consumer choice by imposing a structure consistent with the nature of the decision task.

Price perception has been a focus of consumer researchers for several decades. Most of this research has employed a stimulus–response (S–R) model, which interprets the actual prices that consumers encounter as stimuli activating the perception process (Berkowitz & Walton, 1980; Lichtenstein, Bloch, & Black, 1988; Monroe & Lee, 1999). On being presented with a given price, consumers encode, evaluate, and store this price while integrating it with the other nonprice information. The outcome of processing the price information is a behavioral response—for example, purchasing or not purchasing the particular offering. Thus, the S–R framework reflects the traditional marketing paradigm in which prices are the stimuli presented to consumers who, in turn, process the available information and act on it.

With the development of the Internet and the increasing popularity of online marketplaces, however, consumers are offered more choices not only in terms of the product assortment but also in terms of product pricing. One such pricing strategy, most prominently popularized by the reverse auction pioneer Priceline, asks consumers to name their own price for various products and services (e.g., air tickets, hotels, rental cars). If a consumer's price matches or exceeds the price set by the merchant, the consumer's price is accepted and the transaction is completed; otherwise, the consumer's bid is rejected. Unlike

traditional pricing—where the merchant sets the price and consumers indicate their acceptance of this price by either purchasing or not purchasing the product—in the Priceline scenario consumers themselves have to set the price and the merchant indicates its evaluation of this price by either accepting or not accepting a consumer's offer. Because the price-setting functions of the consumer and the merchant are reversed in this case, I refer to this scenario as reverse pricing.

As a marketing phenomenon, reverse pricing is similar to auction pricing in that consumers must explicitly state their willingness to pay for a given product (e.g., Sinha & Greenleaf, 2000). What makes the reverse pricing scenario analyzed in this article different from auction pricing is that (a) there is no apparent product scarcity, products are commodities (e.g., airline tickets), and multiple items are readily available, and (b) reference prices are often not readily available. Because the number of products is not visibly constrained, consumers bid against the merchant, not against one another. Furthermore, because there is no scarcity, consumers always have the option of walking away and purchasing the product elsewhere. Finally, in auctions there often is a clearly defined reference price—such as an opening bid, appraised value, asking price, etc.—whereas in the reverse pricing scenario consumers are often asked to name their price without an explicitly available reference point.

This research examines how consumers articulate prices in the context of an online reverse pricing scenario. In this context, I compare two elicitation procedures: price generation

(i.e., “name your price”) and price selection (i.e., “select your price”). The former approach, advanced by Priceline, simply asks consumers to state the price they are willing to pay for the product under consideration. In the latter approach, presented in this research, consumers are presented with a set of possible prices and asked to select the price they find most acceptable.

The price-generation scenario is clearly more flexible than the selection scenario because it allows consumers to precisely articulate their willingness to pay. Indeed, in the generation scenario consumers have virtually unlimited degrees of freedom to state their price, whereas in the selection scenario they are restricted by the set of prices presented to them. Viewed from an economics standpoint, this flexibility is one of the reasons why the “name your price” strategy would be considered superior to the selection strategy, assuming that consumers have established preferences that can easily be translated into monetary terms (e.g., Varian, 1999). In fact, the limited selection constrains consumers’ ability to adequately express their willingness to pay and, as with any constrained optimization, would be considered inferior to an unconstrained optimization such as the price generation scenario.

Yet, because price generation assumes established preferences and predetermined willingness to pay, it can be argued that its impact on the consumer decision process will depend on the degree to which consumers are able to articulate their product utility in monetary terms. Building on this notion, I propose that in the absence of a readily available task-specific context (e.g., reference price range), the generation strategy is likely to be associated with a greater degree of uncertainty and cognitive effort and, as a result, will be perceived to be inferior to the simpler price selection task. This proposition is also supported by the view of consumers as contingent decision makers who, rather than having a set of predetermined preferences, form their preferences in the context of the specific decision task (Bettman, Luce, & Payne, 1998).

In the remainder of this article, I develop the conceptual framework and derive specific predictions regarding the effects of the generation and selection tasks on the consumer decision process. Next, I describe and report the results of three experiments that test these predictions. I conclude by discussing the implications of the findings and providing directions for further research.

PRICE ARTICULATION IN CONSUMER CHOICE

To set the optimal price for a given product, consumers must express their overall evaluation as a monetary amount. Recent research has proposed that consumers do this by a process of subjective interpolation, whereby they search for a point on the monetary scale that corresponds to their expected utility from the product (Goldstein & Einhorn, 1987; Janiszewski & Lichtenstein, 1999; see also Lynch,

Chakravarti, & Mitra, 1991). To illustrate, consider Figure 1 depicting a monetary scale with endpoints P_{MIN} and P_{MAX} , where P_{MIN} is a consumer’s perception of the lowest price for the given product and P_{MAX} is the highest expected price. This monetary scale is linked to a utility scale with endpoints $U(P_{\text{MIN}})$ and $U(P_{\text{MAX}})$, where $U(P_{\text{MIN}})$ is the utility at the lowest price and $U(P_{\text{MAX}})$ is the utility at the highest expected price.

In this context, the consumers’ task is to determine the price (P) that corresponds to the utility that they expect to receive from the product $U(P)$. To express their utility in monetary terms, consumers are assumed to establish a correspondence between the endpoints of the utility scale and the endpoints of the monetary scale. Consequently, their willingness to pay, stated in monetary terms, is calculated to correspond to the proportional relations between $U(P_{\text{MIN}})$, $U(P_{\text{MAX}})$, and $U(P)$. In other words, consumers elicit their willingness to pay by equating the endpoints and matching the proportional change in the utility scale with a proportional change on the monetary scale.

To illustrate, consider a consumer who believes that the lowest airfare for a flight between Chicago and San Francisco is \$189 and the regular fare is \$459. Based on the utility derived from purchasing a ticket at these fares, the consumer determines the utility from the particular offering under consideration, which is then expressed in monetary terms (say, \$260) to correspond to relations between $U(\$189)$, $U(\$459)$, and $U(\$260)$. Note that this subjective interpolation process hinges on the availability of a reference price range (e.g., P_{MAX} and P_{MIN}), which is used as a benchmark in the price articulation process. The importance of reference points in price perception and evaluation has been underscored by numerous researchers in the field (Alba, Broniarczyk, Shimp, & Urbany, 1994; Heath, Chatterjee, & France, 1995; Herr, 1989; Lichtenstein et al., 1988; Mayhew & Winer, 1992; Urbany & Dickson, 1991).

Yet, on many occasions consumers do not have readily available reference prices, and as a result, they lack benchmarks needed to indicate their willingness to pay for a given product. In this case, consumers must first evoke the relevant reference prices and then use these prices as benchmarks in eliciting their willingness to pay. To illustrate

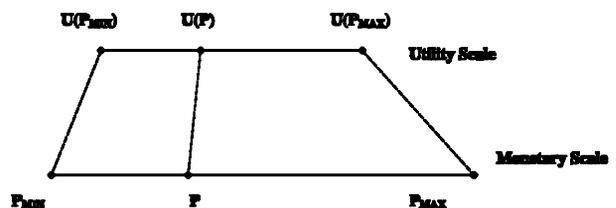


FIGURE 1 Reverse pricing as a subjective interpolation process.

using the example presented in Figure 1, when P_{MIN} and/or P_{MAX} are not present, consumers first have to estimate the likely values of P_{MIN} and/or P_{MAX} . After the range of possible prices has been established, consumers can assess the utility associated with these values [$U(P_{\text{MIN}})$ and $U(P_{\text{MAX}})$] and determine the price they are willing to pay (P) based on the utility derived from this price [$U(P)$]. As a result, when reference prices are not readily available, price articulation can be represented as a two-stage process, whereby consumers first need to evoke the range of possible values and then, using utilities of these values as benchmarks, determine their utility for the product and articulate this utility on a monetary scale.

Following this line of reasoning, for consumers without readily available reference price ranges, price elicitation will be associated with substantial effort because of the complex nature of the decision task involving reference price estimation in addition to the price-generation. As a result, price-generation tasks presented in a context where a reference price range is not readily present are likely to be relatively more difficult compared to elicitation tasks with a salient range of possible prices. Building on this argument, I propose that when a reference price range is not readily available, consumers faced with the more complex price-generation task are likely to be less confident in their decisions compared to consumers who are presented with the relatively simpler selection task. Indeed, the selection task inherently presents consumers with a range of reference prices, and a consumer's decision in this case is reduced to selecting one of the available price options. This perceived simplicity of the decision task will also lead to an overall preference for the selection task, despite the fact that it is more restrictive and, hence, less accurate. This preference for the selection-based price elicitation can be viewed as an effort-accuracy tradeoff, whereby consumers give up accuracy in expressing their willingness to pay in favor of making a less effortful decision (Payne, Bettman, & Johnson, 1993; Simon, 1955).

In sum, I propose that the availability of salient reference prices moderates the impact of the price-elicitation task on consumer preferences. Specifically, in the absence of a readily available reference price range, consumers will likely trade off the accuracy in expressing their willingness to pay that the price-generation task offers for the simpler, although less flexible, selection task. In contrast, in contexts where reference prices are readily available, consumers will be less likely to discount the price-generation task on the basis of its relative complexity and, consequently, will be less likely to display a stronger preference for the price-selection task.

These predictions are tested in a series of experiments that compare the two price-elicitation scenarios, generation versus selection, and examine consumer preferences for these pricing strategies as a function of reference price availability.

EXPERIMENT 1

This experiment investigates the impact of the availability of a reference price on consumer preferences for a price-elicitation task. The goal is to offer preliminary evidence that in the absence of established reference prices, consumers will prefer to express their willingness to pay using a selection rather than a generation task. Thirty-two respondents were presented with a hypothetical scenario in which they were asked to purchase airline tickets from two online agencies. Both agencies employed reverse pricing but used different price-elicitation strategies: One agency asked consumers to generate (name) a price, whereas the other asked consumers to select from a list of 10 available prices (from \$169 to \$439, in ascending order, increasing at \$30 increments). This price-elicitation manipulation was conducted within subjects. In addition, respondents in the reference price condition were given a reference price—they were told that the regular airfare is \$439—whereas the others were not given any price information.

Participants were randomly assigned to the conditions of a 2 (price-elicitation task: generation vs. selection) \times 2 (reference price: available vs. not available) mixed factorial design. They were asked to indicate the price they were willing to pay for the tickets and were told that if their bids were not successful they would have the option to purchase the ticket at the regular price. Participants were asked to indicate their confidence in the decision as well as their expectations of the likelihood of success of their bid using a 150-mm nongraded scale with endpoints: *Not confident* versus *Very confident* and *Not likely* versus *Very likely* (see Bettman, John, & Scott, 1986, for details on the measurement procedure). Participants' responses were recorded by measuring the distance from the left end of the scale, and these responses were standardized to correspond to a 100-point scale.

The data show that in the absence of a reference price, individuals were more confident in the context of a selection task ($M = 41.1$) than in the context of a generation task ($M = 27.5$). The direction of the effect remained the same even when a reference price was present, although respondents in this condition were more confident compared to respondents in the condition where a reference price was not available ($M = 51.4$ for the selection task vs. $M = 39.7$ for the generation task). The data show a significant main effect of the price-articulation task on decision confidence, whereby the generation task was associated with lower confidence compared to the selection task, $F(1, 30) = 33.48, p < .001$. There was also a marginally significant main effect of the availability of reference price; participants were more confident in conditions where a reference price was readily available, $F(1, 30) = 3.77, p < .10$. Participants' evaluations of the likelihood of success of their bid followed a similar pattern: Respondents expected prices derived from the selection task to have a higher probability of being accepted compared to prices elic-

ited through the generation task ($M = 50.6$ vs. $M = 32.7$), $F(1, 30) = 43.01$, $p < .001$. They also predicted a higher success probability in conditions where a reference price was present compared to conditions where a reference price was not readily available ($M = 46.1$ vs. $M = 37.2$), $F(1, 30) = 4.23$, $p < .05$.

The data from this experiment suggest that consumers feel more confident in the outcome of a selection rather than a generation task. This effect was also significant, although less pronounced, in the presence of a readily available reference price. Furthermore, consumers perceived the selection task to have a higher likelihood of success compared to the generation task, an effect more pronounced when a reference price was not readily available.

Note that in Experiment 1 the potential effect of availability of a reference price range is confounded with the effects associated with the nature of the elicitation task. Indeed, consumer preference for a selection price mode can be the result of an attempt to simplify the pricing decision by selecting a pricing strategy with fewer possible alternatives. Thus, consistent with the effort–accuracy framework (Payne et al., 1993), one can argue that consumers will prefer the selection task because it offers a simpler (although less accurate) decision and not necessarily because in this case a reference price point is readily available. This potential confound is addressed in Experiment 2 by introducing an experimental condition (referred to as augmented generation) designed to disentangle the effects of reference price range availability and decision effort associated with generating a precise price point.

EXPERIMENT 2

Building on Experiment 1 findings, Experiment 2 examines the impact of the price-elicitation task on the strength of consumer preferences and how the availability of a reference price range moderates this impact. This experiment investigates three scenarios: price generation, price selection, and a third scenario referred to as augmented generation. Participants in the generation scenario were asked to name their own price and were not provided with a specific price range. Respondents in the selection condition were given a set of 10 alternative prices to choose from. Finally, in the augmented generation scenario (discussed in more detail later) participants were asked to name their own price and were provided with a price range.

Method

Respondents were presented with the following scenario:

Imagine that three of your classmates had to fly to San Francisco for a high-tech job fair. They all decided to buy their air tickets through a reverse pricing Web

travel agency that allows travelers to name their own price.

Reverse pricing works as follows: You tell the travel agency where and when you want to go and how much you are willing to pay. The agency then searches for an airline willing to release seats at your price. If the agency finds tickets at your price, it will immediately purchase those tickets for you. Because you get to name your own price, tickets purchased through reverse pricing Internet agencies cannot be changed, transferred or cancelled.

The travel agency will make the best effort to make the booking. It will submit your and other customers' requests to its airline partners, who will then decide on the lowest price to accept. Everyone whose bid is higher or equal to that price or higher will be granted a ticket at the stated price. Everyone else will have to make their bookings directly and pay the regular price.

Next, participants were told that Students A, B, and C are using different reverse pricing travel agencies that employ different procedures to allow customers to name their price. Student A was asked to name the price he or she is willing to pay (generation task), Student B was given a list of 10 prices and asked to choose among them (selection task), and Student C was shown a scale that depicts the typical price range and asked to indicate the price he or she is willing to pay by positioning a slider on the scale (augmented generation task). These price-generation tasks are presented in more detail in the Appendix.

Note that respondents in both generation and augmented generation conditions were offered a greater degree of flexibility in eliciting their willingness to pay, whereas participants in the selection condition were limited to a list of 10 available prices. In addition, respondents in the selection and the augmented generation conditions were implicitly provided with a price range (determined by the highest and the lowest prices available for selection), whereas participants in the generation scenario were not given a specific price range. All respondents were also informed that the regular airfare is \$459—a manipulation designed to provide a more stringent test of the observed effects (recall that the data from Experiment 1 indicate that the availability of a reference price point is likely to mitigate the observed reference price range effects).

The range of prices in the selection and the augmented generation conditions was identical and was designed to be of negligible diagnostic value to consumers. For that purpose, a pretest was conducted in which 24 participants from the same population were presented with the experimental scenario and were asked to indicate the lowest price at which they would expect to find tickets for the specified route. The average of the lowest available prices suggested by the pretest sample was \$184. Based on these data, the lower end of the range of available prices in the selection and augmented generation tasks was set at \$189—in line with respondents'

expectations. The upper end of the price range was set to equal the regular airfare (\$459), which was provided to participants in all experimental conditions.

When presented with the experimental scenario, respondents were asked to evaluate the relative difficulty of students' decisions by positioning Students A, B, and C along a 150-mm line with endpoints "Very easy" and "Very difficult." This procedure yielded two measures of decision difficulty: a ranking of the relative difficulty of the pricing decisions based on their ordering on the scale, and a more precise metric measure of the decision difficulty obtained by measuring the absolute distance from the left end of the scale (Very easy) to the marks corresponding to the perceived decision difficulty of each of the three pricing scenarios.

Next, participants were asked to evaluate each student's confidence in their decision, as well as their perception of the probability of each student getting a ticket at their stated price. Participant responses were measured on the same type of scale as the decision difficulty scale described previously (endpoints: *Not confident at all* and *Very confident* for the decision-confidence scale, and *Low probability* and *High probability* for the probability of a successful bid). Finally, respondents were asked to indicate their preference for each of these pricing methods ("If you have to use one of these agencies, which one would you use?").

Participants were tested in groups, following their regular class meetings. They worked at their own pace and were debriefed on completion of the experiment. As an incentive for their participation, several drawings were conducted for cash prizes of \$50.

Results

The data show a preference for price-elicitation tasks that offer a readily available price range. The generation task was associated with the lowest confidence. Sixty-eight percent of the responses pointed to the generation task as instilling the least confidence, compared to 22% for the selection task and 10% for the augmented generation task, $\chi^2(2) = 55.2, p < .001$. The difference between the generation and both the selection and augmented generation was significant at the .001 level, $\chi^2(1) = 27.2, \chi^2(1) = 54.6$, and the difference between the selection and the augmented generation tasks was marginally significant, $\chi^2(1) = 2.75, p < .10$. The confidence evaluations revealed through the metric measure of scale distances were consistent with the rankings data. The generation task was associated with the lowest confidence ($M = 41.6$ on a 100-point scale), and the selection and the augmented generation tasks were associated with higher confidence ($M = 56.1$ and $M = 56.7$, respectively). The difference between the generation and the selection task was significant, $F(1, 48) = 8.73, p < .01$, as was the difference between the generation and the augmented generation task, $F(1, 48) = 11.25, p < .005$. The difference

between the selection and the augmented generation task was non-significant, $F(1, 48) < 1$.

Decision-difficulty data displayed a pattern similar to the decision confidence evaluations, whereby higher levels of confidence were associated with easier decisions. Specifically, 62% of the respondents found the generation task to be the most difficult, 24% considered the selection task to be the most difficult, and only 6% viewed the augmented generation as the most difficult, $\chi^2(2) = 61.48, p < .001$. The difference between the generation and the selection task was significant, $\chi^2(1) = 19.02, p < .001$, as were the differences between the generation versus the augmented generation, $\chi^2(1) = 60.71, p < .001$ and the augmented generation versus the selection tasks, $\chi^2(1) = 6.94, p < .01$. Metric measures of decision difficulty also show a significant decrease in the perceived decision difficulty in conditions where reference prices were present. Once again, the generation task was perceived the most difficult ($M = 60.3$) compared to the selection and the augmented generation tasks ($M = 43.1$ and $M = 41.1$, respectively). The difference between the generation and the selection task was significant, $F(1, 44) = 16.21, p < .001$, as was the difference between the generation and the augmented generation task, $F(1, 44) = 19.16, p < .001$. The difference between the selection and the augmented generation tasks was nonsignificant, $F(1, 44) < 1$.

With respect to evaluating the success probability of their bid, participants ranked the generation task as having the lowest probability of yielding a successful outcome (Figure 2). The selection task was perceived as most likely to yield a successful bid (70% of the responses), followed by the augmented generation task (26%). Only 4% of the respondents perceived the generation task to have the highest probability of yielding a successful outcome. The difference in rankings between the selection and the augmented generation task (70% vs. 26%)

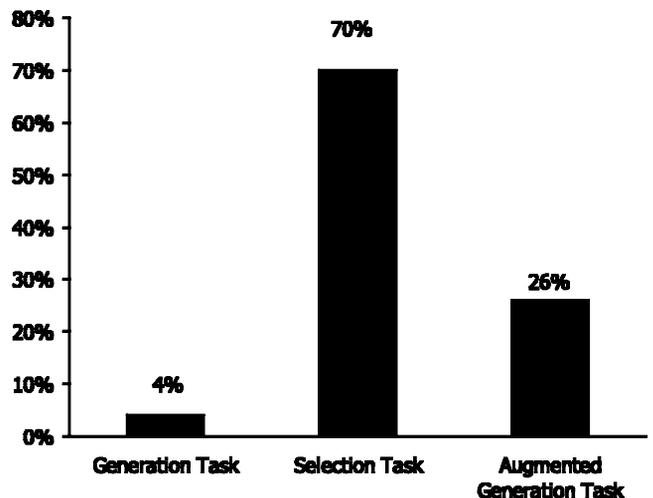


FIGURE 2 Predicted success of the different price elicitation tasks (Experiment 2).

was significant, $\chi^2(1) = 24.06, p < .001$, as was the difference between the generation and the augmented generation task, $\chi^2(1) = 10.49, p < .005$. The metric distance measures revealed similar distribution of participants' evaluations of the probability of a successful outcome. The average rating of the likelihood of a successful bid through a generation task was $M = 33.7$, compared to $M = 64.2$ for the selection task, $F(1, 48) = 81.22, p < .001$ and $M = 57.8$ for the augmented generation task, $F(1, 48) = 48.23, p < .001$. The difference between the selection and the augmented generation task was significant as well, $F(1, 48) = 4.27, p < .05$.

In addition to the projective measures of generation, participants were asked to indicate their own preference for the price-elicitation task. The majority of the respondents (56%) chose the augmented generation task, 36% indicated a preference for the selection task, and only 16% indicated that they would prefer the generation task (Figure 3). The difference between the augmented generation and the selection task was significant, $\chi^2(1) = 4.19, p < .05$, and the difference between the selection and the augmented generation was also significant, $\chi^2(1) = 5.48, p < .05$.

DISCUSSION

Experiments 1 and 2 document that the impact of the nature of the price-articulation task is moderated by the reference price availability. In Experiment 1, participants were presented with an external reference price representing the higher end of the price range (P_{MAX}), and in Experiment 2 respondents were given the lower end of the price range (P_{MIN}) as well. In both experiments, providing participants with reference price information had a significant effect on their decision process. Specifically, respondents' responses indicated higher levels of confidence associated with the se-

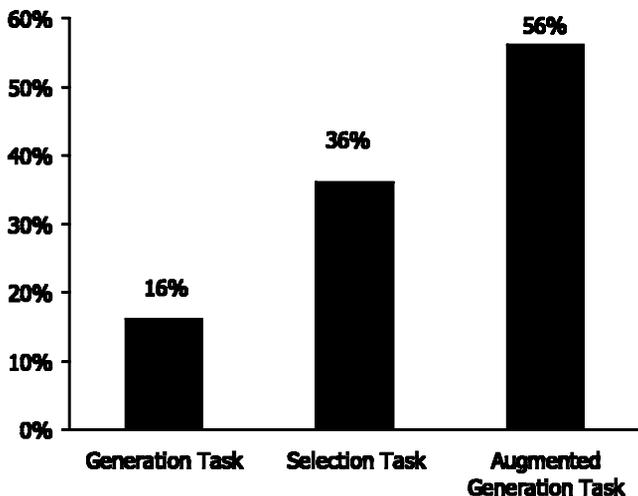


FIGURE 3 Price elicitation task preferences (Experiment 2).

lection compared to the generation task. The selection task was also rated higher in terms of its predicted likelihood of success; this task was preferred by consumers as well. These data also demonstrate the robustness of the observed preference for the selection task. Recall that all participants were already given a reference price (P_{MAX}) and yet they still indicated stronger preference for the elicitation tasks when the entire price range was readily available.

The augmented generation task was introduced in this experiment to test the proposition that the hypothesized effect of the nature of the decision task on consumer preferences is a function of reference price availability. In fact, if the presence of a readily available price range is the factor driving consumer preference for the selection task, then making the price range readily available in the augmented generation condition should also increase consumer preference for the generation task. Moreover, because respondents in both generation and augmented generation conditions were offered the same flexibility in expressing their willingness to pay, the observed effects could not be directly attributed to the difference in elicitation flexibility between the generation and the selection tasks.

The data from the selection and the augmented generation tasks offer further insights into the nature of price articulation. Because the price ranges and mid-range values in the selection and the augmented generation tasks were identical, the only difference between these tasks was the elicitation flexibility—the degree of freedom consumers have to select the price that most adequately reflects their willingness to pay. These tasks, however, were ranked as markedly different in terms of the probability of success, whereby nearly three times as many of the respondents indicated their expectation that the selection task would likely lead to a more successful outcome compared to the augmented generation task. Interesting though, when indicating their own preference for a price-elicitation mechanism, participants showed a significantly stronger preference for the augmented generation task (56% vs. 36%). These data essentially suggest a reversal of preferences: Although consumers evaluated the selection task as having the highest likelihood of resulting in a successful bid, when given a choice, they preferred the augmented generation task. In fact, of all respondents who indicated that the selection task is likely to be the most successful, 46% indicated that if given a choice they would prefer the augmented generation task, thus effectively reversing their preferences.

One possible explanation for the observed data is that when presented with the choice of a price-generation method, consumers were not willing to sacrifice the elicitation accuracy associated with the augmented generation task for the simplicity associated with the selection task; yet when presented with a scenario in which the price-generation mode has already been selected, they evaluated it as having a higher probability of success. This finding implies that when forecasting their own ability to articulate a suc-

successful bid, consumers essentially have overweighed their own ability to generate a successful bid. This data pattern is consistent with the research on decision confidence indicating that in many scenarios individuals are likely to display a tendency toward overconfidence in their decisions (Allwood & Montgomery, 1987; Griffin & Tversky, 1992; Kahneman & Tversky, 1973; Mahajan, 1992).

Conceptually, this article argues that the observed preference for the selection task is driven to a large degree by the complex, two-stage nature of the decision task, which involves (a) eliciting a readily available price range, and then (b) generating a price reflecting consumers' willingness to pay. As a result, consumers are likely to discount the preference-articulation flexibility offered by the generation task and prefer the simpler, although more restrictive, selection task. This prediction was tested by introducing the augmented generation condition, which simplified the decision task by offering consumers a readily available price range. Consistent with this proposition, the data show that the advantage of the selection task is eliminated by making the price range readily available. Participants in the augmented generation condition were more confident in their decisions, predicted that prices generated through the augmented generation task would most likely result in a successful bid, and indicated a higher overall preference for this task as well.

Note that so far, the impact of the availability of reference price range was tested by giving respondents a range of possible values in the augmented generation task. This range was set in a way that minimizes its diagnostic value, specifically by a pretest asking participants to generate the lowest expected price and then setting the experimental range consistent with respondents' expectations. Nevertheless, one can argue that providing an external price range helped participants validate their initial price range expectations, raising consumer confidence in their intuitive price range estimates. This increased confidence in the validity of their intuitive estimates of the lower end of the price range could, in turn, have confounded the results, contributing to the increase in respondents' decision confidence.

To address this possible confound, in Experiment 3 the availability of a reference price range is manipulated by asking participants, prior to the choice task, to indicate their expectation of the lowest possible prices. Thus, unlike in Experiment 2 where the reference price range was provided by the experimental stimuli, in Experiment 3 this range is internally generated by respondents. This manipulation offers an alternative strategy to test the theory advanced in this research by varying the source of the reference price range. If the theory is valid, its predictions should hold when the reference price ranges are internally generated as well. The specifics of Experiment 3 and the experimental results are presented in more detail in the following section.

EXPERIMENT 3

Experiment 3 aims to provide further evidence that the perceived advantage of the selection over the generation task is caused by the complexity of the decision process associated with the absence of readily available reference prices. In this experiment, participants were asked to generate price ranges *before* articulating their willingness to pay. This manipulation allows respondents to have reference prices readily available for use as benchmarks in the price-elicitation process. Thus, the goal is to show that a simple restructuring of the decision task in a generation-ready format can affect consumer preferences for the price-articulation strategy even in the absence of externally provided reference price information.

Method

Participants were asked to imagine that they must fly to San Francisco for a high-tech job fair and were asked to book air, car, and hotel through an online reverse pricing travel agency. Overall, the initial scenario was similar to the one used in Experiment 2, except that (a) Experiment 3 respondents had to make decisions for themselves (rather than in the context of a projective task) and (b) participants had to make three decisions in each of three product categories (air, car, hotel).

Prior to stating their price, some of the respondents were asked to indicate the lowest possible price available for booking in each of the three categories. For example, participants were told "The regular price for an airline ticket to San Francisco is \$459. What do you think is the lowest price that a travel agency could possibly negotiate with an airline for a flight to San Francisco at any time (regularly priced at \$459)?" The purpose of this manipulation was for respondents to articulate a reference point that would be readily available for the price-generation task. This was the pre-choice articulation condition. In contrast, participants in the control condition were informed of the regular price but were not asked to indicate their expectation of the lowest available price. Thus, the only difference between the two conditions was that respondents in the pre-choice articulation condition were asked to indicate their expectation of the lowest available price in each of the three product categories. Note that participants in the pre-choice articulation condition did not receive any additional information compared to the respondents in the control condition.

The experimental design was 2 (reference price availability: pre-choice articulation vs. control) \times 3 (price elicitation task: generation vs. selection vs. augmented generation). The pre-choice articulation manipulation was conducted between participants' and the price-elicitation task was conducted within-subjects. Each participant had to elicit three prices, one in each product category (air, car, and hotel). To avoid possible confounds between the product categories used in

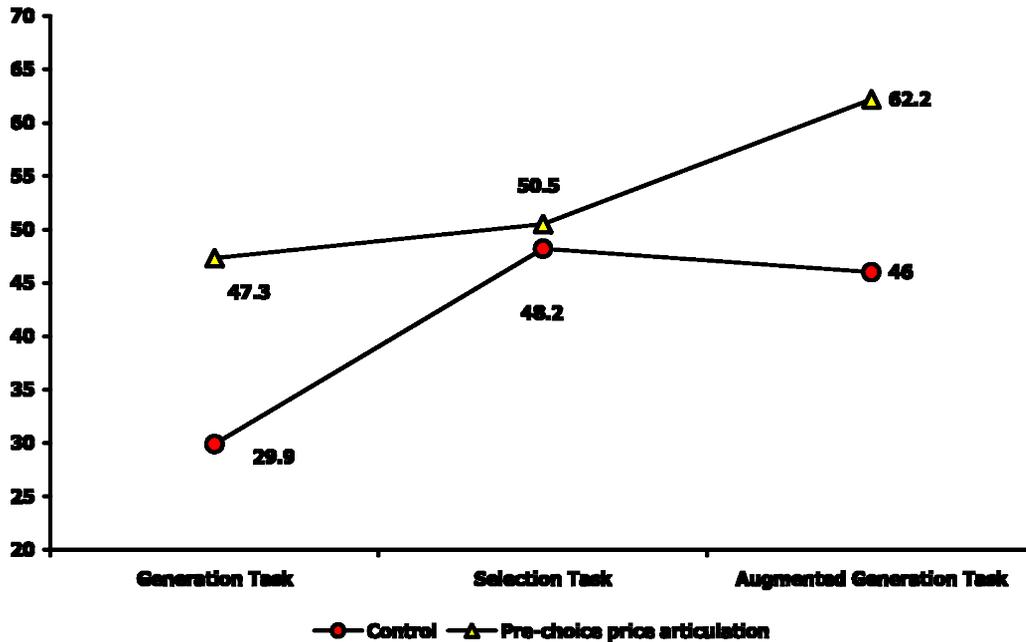


FIGURE 4 Decision confidence data (Experiment 3).

the experiment and the price-elicitation tasks, their combinations were counterbalanced across respondents.

The generation and selection manipulations were similar to those in the first two experiments: Participants were asked to either name their own price or to select their price from a set of 10 available prices. The augmented generation condition was somewhat different: Respondents were given a scale of values (identical to the values of the options in the selection condition) and were asked to (a) mark on the scale the price they were willing to pay, and then (b) write the exact price they were willing to pay. Thus, from a purely cognitive perspective, participants in the augmented generation condition had the most effortful task because they had to express their willingness to pay twice: once using a scale and once by writing down the exact amount they were willing to pay.

After stating their willingness to pay, respondents were asked to indicate their confidence in the decision they just made, their perceived decision difficulty, and their perceived likelihood of getting a booking at the stated price. Participants were tested in groups, following their regular class meetings. They worked at their own pace and were debriefed upon completion of the experiment. As an incentive for their participation, several drawings for cash prizes of \$50 were conducted.

Results

This research argues that when a reference price range is not readily available, consumers prefer the simpler but more constraining selection task to the more flexible yet more complex generation task. I also proposed that the presence of a pre-choice articulation task, in which consumers were asked

to elicit a reference price, would moderate this effect. The data from the generation and selection tasks are consistent with the theoretical predictions: Respondents were less confident in their decisions and expected them to have a lower likelihood of success in the context of a generation rather than a selection task. These data are presented next.

The data show that the prechoice price articulation had a significant impact on how the nature of the price elicitation task affected the strength of consumer preferences (Figure 4). Participants in the control condition were less confident when naming their own price ($M = 29.9$) than when choosing a price in the context of a selection task ($M = 48.2$), $F(1, 66) = 17.58, p < .001$ ¹. In contrast, respondents who were asked to articulate a price range prior to the choice task indicated no difference in their confidence between the generation and selection conditions ($M = 47.3$ vs. $M = 50.5$), $F(1, 66) < 1$. This interaction effect was significant, $F(1, 66) = 6.47, p < .05$, indicating that the prechoice articulation was indeed moderating the effect of the price-elicitation task on consumer preferences.

Participants in the control condition also perceived the generation task as more difficult than the selection task ($M = 47.1$ vs. $M = 30.5$), $F(1, 66) = 13.9, p < .001$, see Figure 5. This pattern of results was significantly different, $F(1, 66) = 10.1, p < .005$ for respondents in the prechoice articulation condition, who perceived the selection and the

¹Note that although in Experiment 2 participants were asked to make comparative judgments yielding relative measures, in Experiment 3 respondents were asked to provide their responses on separate scales. For that reason, in Experiment 3 rank-order data were not readily available and only participants' metric scale responses were analyzed.

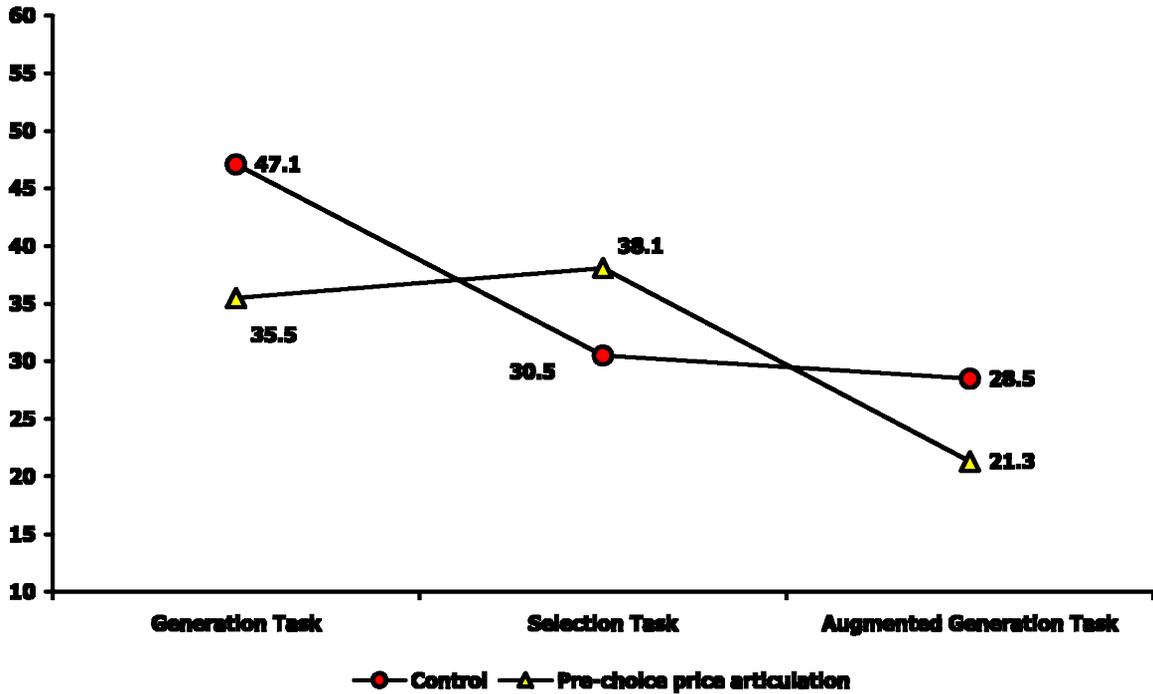


FIGURE 5 Decision difficulty data (Experiment 3).

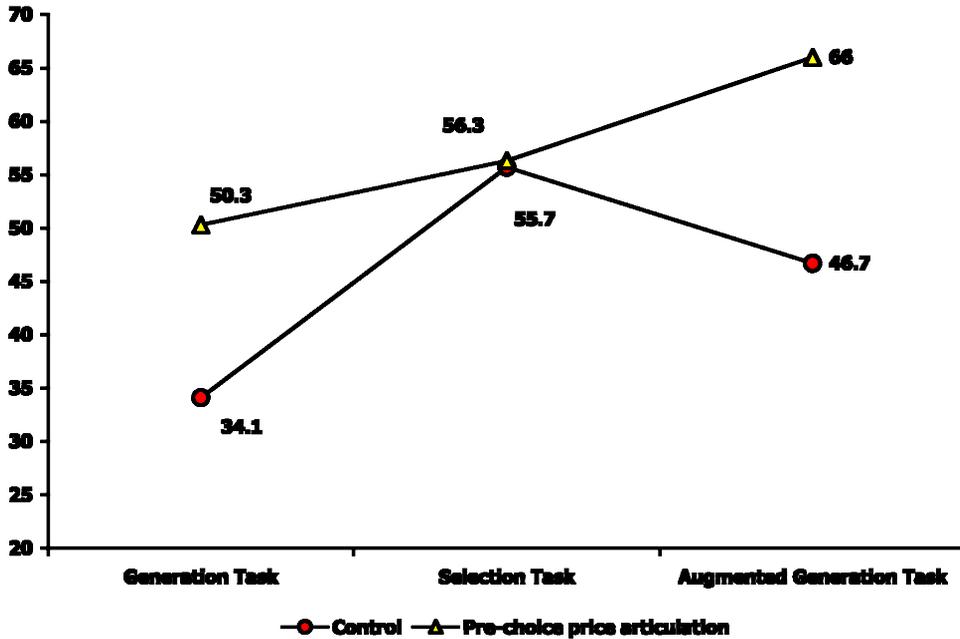


FIGURE 6 Predicted success likelihood data (Experiment 3).

generation task to be similarly difficult ($M = 47.1$ vs. $M = 30.5$), $F(1, 66) < 1$.

Finally, there was a significant difference in participants' predictions of the likelihood of success of the two price elicitation tasks, $F(1, 66) = 7.12, p < .01$, see Figure 6. Specifically, respondents in the control condition rated the generation task

as significantly less likely to lead to a successful outcome as the selection task, $F(1, 66) = 25.13, p < .001$. In contrast, the corresponding difference for participants in the pre-choice articulation condition was non-significant, $F(1, 66) = 2.3, p > .10$.

With respect to the augmented-generation task, it was predicted that, similar to the selection task, respondents in the

augmented generation task would not be affected by the pre-choice articulation manipulation because an external price range was readily available to participants in both conditions. Yet, the data displayed a pattern that was significantly different from the pattern displayed in the selection task. Specifically, respondents in the control condition reported being equally confident in their decisions in the selection and the augmented generation tasks ($M = 46$ vs. $M = 48.2$), $F(1, 66) < 1$. They perceived these tasks to be equally difficult ($M = 28.5$ vs. $M = 30.5$), $F(1, 66) < 1$, and the augmented generation task to have a lower success probability compared to the selection task ($M = 46.7$ vs. $M = 55.7$), $F(1, 66) = 4.35, p < .05$. The associated interactions were significant as follows: $F(2, 66) = 4.01, p < .05$ for the confidence data, $F(2, 66) = 5.87, p < .001$ for the success likelihood data, and $F(2, 66) = 5.56, p < .01$ for the decision difficulty data.

In contrast, participants in the prechoice articulation condition indicated higher confidence in the context of an augmented generation task ($M = 62.2$ vs. $M = 50.5$), $F(1, 66) = 8.57, p < .005$. This task was also associated with higher success likelihood ($M = 66$ vs. $M = 56.3$), $F(1, 66) = 6.03, p < .05$ and was perceived to be less difficult as well ($M = 21.3$ vs. $M = 38.1$), $F(1, 66) = 16.27, p < .001$. The associated interactions were significant as follows: $F(1, 66) = 5.50, p < .05$ for the confidence data, $F(1, 66) = 10.22, p < .005$ for the success likelihood data, and $F(1, 66) = 6.02, p < .05$ for the decision difficulty data.

Discussion

The pattern of the data in the control condition of Experiment 3 is similar to the data from the first two experiments: Respondents were less confident in decisions made in the context of a price-generation task compared to the selection and the augmented generation conditions; they expected the generation task to have the lowest probability of yielding a successful outcome and also rated the generation task as relatively the most difficult. In contrast, participants in the pre-choice articulation condition displayed a distinctly different pattern of responses, whereby the relative disadvantage of the generation task, observed in the control condition, was less pronounced. These findings are consistent with the experimental hypothesis that the availability of a reference price range plays an important role in the price elicitation process.

Experiment 3 also documents that to have an effect on the preference elicitation process, the source of the reference price range does not necessarily need to be external; internally generated reference prices can facilitate the price-elicitation process as well. This finding is especially important in light of the argument advanced in the discussion following Experiment 2. The data from Experiment 3 clearly show that even when respondents are not provided with any additional information regarding the reference price ranges, availability of these price

ranges at the time of the price-elicitation task can have a significant impact on consumers' decision processes.

An unpredicted, yet interesting finding of this experiment is that the prechoice articulation condition participants were more confident when presented with the augmented generation task compared to both the selection and generation tasks. Respondents in this condition also perceived the augmented generation task to be less difficult and to have the highest likelihood of success compared to the participants in the control condition. There are at least two factors that make this finding noteworthy. First, recall that the augmented generation task required the most effort from respondents, who were asked to elicit their price twice. At the same time, participants in this condition were provided with an external price range; as a result, generating an internal reference price should have had no effect. Yet, the data revealed a significant increase in the strength of respondent preference for this condition.

One possible explanation for these data is that the very process of thinking about the lowest possible price refined participants' preferences about their willingness to pay. Thus, it is possible that the prechoice price-elicitation process resulted in a reference point that was very precise (e.g., \$391 as opposed to \$390) and respondents were searching for the same level of accuracy in the price-elicitation task that followed. To illustrate, a consumer who otherwise might be willing to pay somewhere around \$280 for an airline ticket, when asked to generate the lowest possible price will indicate a specific number, say \$267, because she is seeking to express her willingness to pay with the same degree of precision. In this context, the difference between the selection and the augmented generation task can be attributed to the greater elicitation accuracy associated with the augmented generation task. More general, these data suggest that the price-elicitation task can be beneficial when there is a compatibility between the degree to which consumers have articulated willingness to pay and the elicitation accuracy offered by the pricing task.

GENERAL DISCUSSION

This research examines how consumers generate prices and, specifically, the role of the price-elicitation task and reference price availability in the price-elicitation process. Contrary to popular belief that more choice is always better, this research demonstrates that consumers often prefer a price-elicitation task that offers less flexibility and is more restrictive in allowing consumers to express their willingness to pay. More important, this research identifies preconditions that moderate the impact of the price-elicitation task on consumer preferences. Specifically, I show that consumer price-generation processes are moderated by the presence of a readily available reference price. This reference price can be either externally provided (Experiment 2) or internally generated (Experiment

3), which points to a more general construct underlying the differential impact of the selection and generation tasks.

Data reported in this research are consistent with the view that consumers are often uncertain about the specific values of product attributes but are more certain about how their preferences tend to compare with other consumers in the population (Prelec, Wernerfelt, & Zettelmeyer, 1997; Wernerfelt, 1995). Following this line of reasoning, it is possible that when a price range is readily available, consumers who do not know their absolute preferences use their relative preferences to determine the price they are willing to pay. For example, when presented with a range of prices from P_{MIN} to P_{MAX} , in addition to estimating their utility for paying these prices, as suggested by the subjective interpolation model depicted in Figure 1, consumers might suggest a price that is reflective of their perception of how their individual characteristics (risk profile, expertise, deal proneness) compared to those of the other individuals, thus using the available price range as a proxy for the distribution of preferences in the population.

Data presented in this research can also be linked to the notion that consumers derive informational input from the experienced ease or difficulty with which relevant material comes to mind (Wänke, Bless, & Biller, 1996; Wänke, Bohner, & Jurkowsch, 1997). Thus, when reference prices are not readily available, the consumer decision process is rather complex and price articulation is likely to be perceived as more difficult, consequently leading to lower decision confidence. The price-generation task could also have a negative affect that impacts an individual's evaluation of the alternatives under consideration (Garbarino & Edell, 1997). Thus, as the complexity of the decision task increases, so does the negative affect associated with the task, lowering the overall attractiveness of the alternative under consideration.

Research presented here has important managerial implications. First, it demonstrates that giving consumers more choice in setting their own price might not always be the best strategy, and that on many occasions the method of naming one's own price is perceived as suboptimal. More important, this research shows that consumer preference for a price-elicitation method is a function of the degree to which reference prices are readily available. This finding implies that firms can benefit from offering customers reference price points (e.g., minimal bidding price) to use as benchmarks in the price-elicitation process. Alternatively, firms can benefit from asking consumers to articulate a price range prior to the price-generation task. Finally, firms can offer customers a choice of several price-elicitation strategies, letting consumers self-select the one they feel most comfortable with. A likely result of implementing such strategy is that consumers who perceive themselves as experts in a given product category will end up naming their own prices whereas nonexperts might prefer the simpler price-selection task.

ACKNOWLEDGMENTS

I thank Dawn Iacobucci, Angela Lee, Vincent Nijs, and Brian Sternthal for their constructive comments. This research was partially funded by the McManus Research Chair that I received.

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Accepted by Dawn Iacobucci.

APPENDIX

An Overview of Price-Elicitation Strategies in Experiment 2

Student A is asked to name the price he is willing to pay as follows:

Please state your price: \$

Student B is given a set of fixed prices and is asked to choose among them:

Please select the price you are willing to pay:

\$189	\$249	\$309	\$369	\$429
\$219	\$279	\$339	\$399	\$459

Finally, **Student C** is shown a scale that depicts the typical price range and is asked to indicate the price he is willing to pay by positioning the slider on the scale as follows:

Please position the slider on the screen so that it indicates the price you are willing to pay. The actual price will appear in the box below the slider

