The Influence of Outcome Messages on Reference Prices

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Abstract This experiment investigated ways in which expected or reference price for a public leisure service might be altered. Two hundred twenty-four subjects were randomly assigned to one of six treatment groups. Each subject received a message communicating potential outcomes associated with paying fees for a hypothetical aerobics program. Subsequent changes in reference prices were monitored. Subjects were particularly responsive to the message suggesting that other participants would suffer if the subjects failed to generate sufficient revenues from fees to meet their own program costs. The mean reference price reported by this group was 41% greater than that reported by the control group. The message that focused on personal benefit arising from payment of fees also significantly elevated reference price levels. The lowest prices were reported by those who received only program information (the control group) and those who were told that they might lose access to hypothetical program opportunities. Level of psychological involvement was used as a covariate and was found to influence subjects' price expectations, current activity patterns, and intent to enroll in future aerobics programs.

Keywords experiment, prospect theory, public sector, recreation programs, reference price

Revenue from pricing constitutes an increasing proportion of the dollars expended by local U.S. park and recreation departments (Brademas & Readnour, 1989; McCarville & Crompton, 1988). Each year, most public recreation and park managers have to recommend price changes for services offered the following year. Despite the emergent role of price, reactions of potential participants to price changes in publicly provided leisure programs are not well understood.
In the marketing literature, the notion of “reference price” has often been used in studies concerned with measuring consumers’ reactions to price. Reference price has been considered in terms of both external and internally held standards. The former perspective considers reference prices as being derived from externally provided prices to which consumers refer when making price judgments. However, Jacoby and Olson (1977) suggested that reference price is more often operationalized as an internally held standard that consumers use to evaluate new price information. This latter orientation is pervasive in consumer research:

Perhaps the most frequently investigated influence on consumer perceptions is the reference price. Adaptation level (Helson, 1964), which has guided this research, holds that perceptions of price are dependent upon the relationship between the actual objective price stimulus and some internally held “reference price.” (Jacoby & Olson, 1977, p. 78)

This psychological reference price forms an internal standard against which an actual price is compared (Monroe & Peterson, 1981). It has been defined as the price an individual considers to be the most fair (Kamen & Toman, 1970), the price last paid (Uhl, 1970), the price normally paid (Gabor & Granger, 1961), and the price most frequently charged (Olander, 1970). Such operationalizations have been criticized, however, for their failure to reflect the pervasive nature of the reference price. More recently, reference price has been conceptualized as “expected price” (Funkhouser, 1984; Zeithaml & Graham, 1983). This definition emerges from an amalgamation of the price most frequently charged, the price last paid, the price of the brand usually bought, and the average price of similar goods (Winer, 1988).

When actual “objective” price levels change, reference price is likely to play a critical role in an individual’s degree of acceptance of the new price because of its “mediating effects on consumers’ judgemental or decision-making processes” (Jacoby & Olson, 1977, p. 78). Actual prices that are consistent with reference prices are likely to be more acceptable to participants than those that are not. A price change that creates a substantial discrepancy between actual price and reference price is likely to stimulate consumer resistance. If actual price is lower than reference price, potential participants may suspect the quality of the service being provided (Lichtenstein, Bloch, & Black, 1988). Conversely, if actual price is higher than reference price, the price is likely to be considered unfair and unreasonable. Such assessments may lead to reduced participation, increased complaint behavior, or both. A strategy for alleviating these adverse outcomes is to change the prevailing reference price in a participant’s mind so that it is consistent with the magnitude of actual price changes as they are implemented.

This study suggests ways in which reference prices might be altered. Each is based on the assumption that messages that alter the context in which price information is considered will also alter resulting expectations. A theoretical perspective is offered that suggests how this context might be altered. An experiment is then reported that tested how different types of information would affect price expectations. Three research questions directed the investigation: (1) Does the provision of cost information influence reference prices? (2) Does reference price vary as a result of contextual differences provided by outcome and identity based messages? (3) Does reference price vary with involvement level?

Context and subsequent perception of price or cost information. It may be necessary, however, to initially raise existing public awareness of such costs. Crompton (1987) reported that the public swimming, mean entry prices were told it cost to provide were also visible and offered by the cost information.

This study attempted to offer enhanced messaging to researchers examined whether own actions were likely to reflect strategic issues concerns are gained through pricing. Conversely, resistance to program alterations in program offering outcomes.

Prospect Theory

Much of the research addressing perceptions has been guided by prospect theory. Utility theory was tested as suggesting that people generate the normative model is the variations of the same scenario by Tversky and Kahneman following their framing or wording rather than variations in framing prospect theory. It concluded that the principle of common interpretation of gains or losses and to the result, the manner in which they may influence subjects’ awareness and to frame the experimental design.

Two variables suggested
Conceptual Framework

Context and subsequent price expectations may be altered by providing comparative price or cost information. Given high comparative price information, participants may expect to pay more for a recreational service (Blair & Landon, 1981; Della Bitta, Monroe, & McGinnis, 1981; Urbany, Beardon, & Weilbaker, 1988). Such information moves perceptual terms of reference, which in turn alter expected price levels. McCarville and Crompton (1987), for example, reported that information documenting an agency’s cost of delivering a service and the prices charged by a commercial alternative significantly increased the reference price of both users and nonusers of public swimming pools. Reiling, Criner, and Oltmanns (1988), using similar messages, reported comparable results in the context of public camp sites.

It may be necessary, however, to introduce other contextual information to substantially raise existing public-sector price expectations. Although McCarville and Crompton (1987) reported that they were able to increase reference prices for admission to public swimming, mean expected price levels were still below the amount that subjects were told it cost to provide the opportunity. Subjects attended to the comparison point offered by the cost information but failed to expect to pay that amount.

This study attempted to encourage the development of higher price expectations by offering enhanced messages that outlined alternative potential program outcomes. The researchers examined whether positive or negative prospects resulting from subjects’ own actions were likely to influence reference price. In practical terms, these messages reflect strategic issues confronting managers of leisure services. As additional resources are gained through pricing, program offerings can be maintained or even improved. Conversely, resistance to pricing may result in reduced resources and consequent restrictions in program offerings. Therefore, treatment messages were phrased in terms of outcomes.

Prospect Theory

Much of the research addressing the importance of potential outcomes on consumer perceptions has been guided by prospect theory (Kahneman & Tversky, 1979). Prospect theory was developed as a response to systematic anomalies found when the tenets of utility theory were tested. Utility theory offers a normative model of human behavior suggesting that people generally act in a rational manner. One of the basic principles of the normative model is that of invariance. Invariance suggests that different representations of the same scenario should yield the same response (Tversky & Kahneman, 1986). Tversky and Kahneman found, however, that individuals consistently responded to framing or wording rather than to actual meaning conveyed in experimental scenarios. These variations in framing produced systematic “violations of invariance.” Thus, they concluded that the principle of invariance or, more generally, the normative model “as it is commonly interpreted and applied, was not an adequate descriptive model” (Kahneman & Tversky, 1979, p. 263). They offered an alternative called prospect theory. Prospect theory does not assume invariance; rather, it suggests that subjects attend to the prospect of gains or losses and to the way in which those gains or losses are described. As a result, the manner in which alternative outcomes are framed (in terms of loss or gain) may influence subjects’ assessments and expectations. This conceptualization was used to frame the experimental scenarios used in this study.

Two variables suggested by prospect theory were used in the scenarios. The first
related to possible outcomes. Outcomes that focus on either losing and gaining may influence participants’ perceptions. Although it has long been assumed that individuals may be responsive to potential gain (Martin & Sell, 1986), reference to potential loss may also alter existing expectations. Indeed, reaction to potential loss may be particularly emphatic: “The aggravation that one experiences in losing . . . appears to be greater than the pleasure associated with gaining the same amount” (Kahneman & Tversky, 1979, p. 279). This phenomenon has been termed loss aversion. Consequently, experimental scenarios referring to varying levels of either program benefit or loss were developed.

It is difficult to anticipate whether reference to the loss of program opportunities will lead to higher or lower reference prices. When faced with loss, subjects may expect to pay more in order to forestall losing access to valued resources. However, higher price expectations represent higher short-term costs that may be perceived as losses (Thaler, 1985). In order to prevent such short-term losses, subjects may continue to report low reference prices to avoid short-term loss while hoping that some alternative way will be found to retain the program opportunities. Such risk-seeking behavior is a common response to loss aversion (Tversky & Kahneman, 1986).

The second variable used in the scenarios was recipient identity. It has been suggested that the importance of the losses and gains discussed by Tversky and Kahneman (1986) may be influenced by the identity of the recipient of the potential outcome. Martin and Sell (1986) noted that individual consumers may be sensitive to gains and losses for both themselves and others. In situations involving the public provision of leisure services, individuals may be receptive to the notion of helping others. Marwell and Ames (1981), for example, found that subjects voluntarily contributed substantial portions of their resources so that a public good might be provided. This was the case even when experimental conditions were designed to maximize the probability of selfinterested behavior. Although personal gain was generally preferred, subjects often chose to suffer personal loss in order to enhance opportunities for others. As a result, the effectiveness of a message relating a potential outcome may be influenced by the identity of the recipient of that outcome. Because specific reference to the recipient of a potential gain or loss may influence individuals’ reference prices, treatment messages were also framed in terms of “self” and “other.”

**Level of Involvement**

Personal variables may influence subjects’ responses to different information messages. The variable, level of involvement, has received growing attention in the literature (Havitz & Dimanche, 1990). The importance of involvement in mediating information processing is well documented (Laurent & Kapferer, 1985; Park & Mittal, 1985). Consistent with the tenets of the elaboration likelihood model (Petty & Cacioppo, 1981), highly involved subjects are likely to be most responsive to issue-relevant information. They may seek different kinds of information, may encode and store information in different ways, and may draw different conclusions from those reached by their low-involvement counterparts (Bettman, 1979; Havitz & Dimanche, 1990; Zaichkowsky, 1985). They may assign considerable personal relevance to a service and be willing to devote cognitive resources to service-related information. Finally, highly involved consumers tend to exhibit greater knowledge of a service’s attributes, perceive it to be of greater importance, and display greater commitment to it (Zaichkowsky, 1985). Conversely, low-involved subjects are often concerned with minimizing the amount of effort in mak-
Outcome Messages and Reference Prices

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ing a decision. The amount or complexity of information may discourage such individu-
als because they are unwilling to devote additional cognitive resources to that product.
Consequently, they may be more responsive to information cues or simple rules of
thumb that aid in decision making.

This literature offers two major insights. First, efforts to alter price expectations are
likely to be enhanced if both outcomes and the recipients of those outcomes are speci-
fied. Thus, reference to gain or loss may lack relevance if the recipient of that outcome
is not designated. Second, relationships among price expectation, context, and personal
variables are suggested. The context offered by cost information, as well as outcome and
identity-based messages, helps participants assess price levels. Altered contexts may
lead to varied price expectations, and personal variables such as involvement may mod-
erate reaction to such messages.

Method

Treatment Scenarios

Subjects were drawn from undergraduate sociology classes. They were presented with
one of six messages referring to a hypothetical aerobics program and were asked to complete a
written survey instrument. The program they were asked to consider was typical of many such
programs being offered in the local community. Changes in subjects’ reference prices were measured from their responses to the hypothetical scenarios.
Reference price was operationally defined as the price subjects expected to pay for the
aerobics class in the treatment scenarios. Subjects were asked, “What would you EX-
PECT to pay for 12 of these classes if you were purchasing them today for your own
use.” This question format was adapted from Nwokoye (1975). Reference to subjects’
own use established the consumption context.

To encourage candid responses from subjects, the hypothetical nature of the treat-
ment information was stressed. This might also have discouraged strategic bidding. For
example, if respondents had believed that their responses influenced price levels for
local aerobics opportunities, they might have reported a price that was lower than their
actual reference price. Such strategic bidding is usually undertaken to convey an artifi-
cially low price in order to discourage possible price increases. Such strategies are
minimized when respondents are informed that the scenario provided refers only to a
hypothetical program (Bergstrom & Stoll, 1987).

Two hundred twenty-four subjects took part in the study. They were randomly
assigned to one of six groups. Each group contained 34–39 subjects. The first group
(control) was given only program-related information (see Table 1). This message
referred to background information concerning the number and duration of classes, num-
ber of participants in the classes, and general qualifications of the instructor. The control
group and all treatment groups were provided with this common descriptive program
information. Other treatment groups then received “enhanced” messages. The relative
influence of each of these messages was compared with that of the control message.
Participants knew that there would be a lottery in which they could win aerobic class
memberships or the cash equivalents of those memberships. Two such awards were
given randomly.

Each subject in the five treatment groups was told that it cost $50 to provide the
program. Such cost information served as a common reference point to subjects as they
Table 1  
Messages Given to Control and Treatment Groups

<table>
<thead>
<tr>
<th>Message type</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program (control)</td>
<td>Assume that a hypothetical public parks and recreation department offers a variety of classes to the community. These classes are offered to both adults and children throughout the week. Suppose YOU are a participant in an aerobics program held at this facility. The aerobics program uses qualified instructors and classes are held three times each week over a 4-week period. These classes are 1 hour in length and when registering, you must sign up for all 12 classes.</td>
</tr>
<tr>
<td>Cost</td>
<td>It costs the public parks and recreation department $50 to provide each of you, the participants, with the instructors, electricity, and maintenance necessary for these 12 hours of instruction at the recreation center.</td>
</tr>
<tr>
<td>Lose</td>
<td>If the fees collected for programs in YOUR recreation center fail to meet the costs of offering these programs, YOUR center may be closed and all classes canceled. This closing can be prevented if YOU increase your payments.</td>
</tr>
<tr>
<td>Keep</td>
<td>If the fees collected for YOUR recreation center exceed the costs of offering these programs, these additional fees will be used to improve YOUR recreation center.</td>
</tr>
<tr>
<td>Take</td>
<td>If the fees collected for the programs in YOUR recreation center fail to meet the costs of offering them, money collected from ANOTHER public recreation center will be transferred to YOUR center so that classes will not be canceled and YOUR center will not be closed. This transfer can be prevented if you increase your payments.</td>
</tr>
<tr>
<td>Give</td>
<td>If fees collected for programs in YOUR recreation center exceed the cost of offering them, any additional fees will be used to improve ANOTHER public recreation center.</td>
</tr>
</tbody>
</table>

assessed their gain-loss scenario. There is considerable empirical evidence suggesting that high-cost information may elevate price expectations. McCarville and Crompton (1987), for example, provided cost information that was approximately five times which subjects were then paying for public swimming opportunities. Such information was successful in elevating price expectations. In the context of the private sector, Urbany et al. (1988) found that price information could alter consumers' assessments of a product even when it was believed that the price information was exaggerated. The "program and cost" group was provided with no further information.

The four remaining treatment groups received both the program and cost information, as well as an additional message to the others. Thus, subjects were asked before they assessed the hypothetical recreation center treatment 1). The messages suggested the subject's recreation center would benefit from program costs; and (2) additional benefits provided from such an increase in the year's center would benefit from such a loss. Finally, the treatment group addressed if funds were taken from other centers.

The recreation-center message encourages consideration of a situation that supports this research - nondivisible (rather than divisible) greater amounts to maintaining nondivisible good because it represents the median being shared respectively.

Measuring Involvement

A scale developed by Measuring Involvement Inventory (RIE) for involvement of activity. It is a semantic scale.

In each case, subjects were asked to assess consistency of this inventory. This value of .92 suggested continents for each of the four. A high, and a score greater than .70 was chosen because it represented the median score.

Manipulation Check

Experimental procedures were conducted on six groups. The first question asked subjects to understand and require the meaning of the treatment (e.g., survey) and asked specific to gain-loss to self or other. Like the same wording found in the box, the aerobics equipment in the check focused on cost in treatment. "In terms of the study, care..."
tion, as well as an additional message related to potential loss or gain to either self or others. Thus, subjects were provided with an explanation of the service and related costs before they assessed the gain–loss scenarios. The scenarios focused on outcomes for hypothetical recreation centers depending on the contributions of the subjects (see Table 1). The messages suggested that (1) Gain from the payment may accrue, either to the subject’s recreation center or to another recreation center, if fees collected exceeded program costs; and (2) access to an existing recreation center may be lost, or maintained at the expense of other users, if a higher fee was not paid. For descriptive purposes, these messages were labeled the *keep, give, lose, and take* scenarios, respectively. The keep message suggested that the center the subject was attending could offer additional benefits provided from surplus fee revenue. The give message suggested that another center would benefit from such surplus fee revenue. The lose message suggested that the subject might lose access to a valued resource but that additional fees could forestall such a loss. Finally, the take scenario suggested that loss of program could be forestalled if funds were taken from another recreation center.

The recreation-center context was chosen because it was anticipated it would encourage consideration of others’ deliberations. There is some empirical literature that supports this notion. Alfano and Marwell (1981) reported that reference to nondivisible (rather than divisible) goods may encourage individuals to contribute greater amounts to maintain a resource. A recreation center represents a type of nondivisible good because it is public in nature with both the potential benefits and costs of provision being shared rather than divided among members.

**Measuring Involvement**

A scale developed by McQuarrie and Munson (1987) called the Revised Personal Involvement Inventory (RPII) was used to measure involvement levels toward aerobic activity. It is a semantic differential inventory that comprises 14 Likert-type statements. In each case, subjects were asked to respond on a 7-point scale. To verify the internal consistency of this inventory, varimax rotation was used to generate a theta value. A value of .92 suggested considerable internal consistency. Mean involvement levels were calculated for each of the subjects. A mean score of 3.5 or less was considered to be high, and a score greater than 3.5 was considered to be low. Initially, this 3.5 figure was chosen because it represented the mean score, but post hoc analysis indicated that it also represented the median score.

**Manipulation Check**

Experimental procedures included questions that served as a manipulation check for all six groups. The first questions in each survey were designed to determine whether the subject understood and retained the treatment message. They referred to the content and meaning of the treatment message (which was included in a box on the first page of the survey) and asked specific questions about the program, the service cost, and potential gain–loss to self or other. In order to avoid potential confusion, these questions used the same wording found in the treatment messages. For example, the first check asked subjects to agree or disagree with the statement, “In terms of the information provided in the box, the aerobics program will be held over 12 one-hour classes.” The second check focused on cost information. It asked subjects to agree or disagree with the statement, “In terms of the information provided in the box, it costs the public recreation
Results of Duncan’s analysis of covariance. This analysis was performed for each question, the program and cost, and for the keep, give, and lose conditions. The table shows the results for the keep condition, which was the one with the highest price. The final manipulation check focused on the gain-loss scenario offered to the different treatment groups. It, too, retested the basic treatment message and asked subjects to agree or disagree.

The manipulation check was designed to perform three functions. First, the questions included in the check encouraged subjects who were unsure of their responses to return to the treatment message and clarify the information in their own minds. Second, the check served as an indicator of the initial “success” of the manipulation. Correct responses indicated that subjects had attended to the treatment message. Third, the responses provided some indication of each subject’s understanding of the treatment message. Those who misunderstood the message could be dropped from further analyses. No subject was disqualified on the basis of the manipulation check.

Two sets of analyses were undertaken. Initial tests addressed the study’s first two research questions. The SAS general linear model analysis of covariance (ANCOVA) procedure compared mean scores across the six treatment groups while the involvement variable was held constant. The objective of this procedure was to compare treatment means after adjusting for differences resulting from involvement. The second set of tests focused on the third research question. These tests probed the influence of involvement across the treatment groups. To compare scores achieved by high- and low-involved respondents, t tests were used.

Results

A slight majority (56%) of respondents were women. Although their ages ranged from 17 to 40 years, more than 200 (90%) of the subjects were aged 18–22 years. Household incomes were evenly distributed throughout five categories ranging from under $20,000 to over $80,000 per year. All of the students had completed high school and were enrolled in an undergraduate program. Almost half (49%) of the subjects were classified as being highly involved in aerobic activity.

The ANCOVA procedure established the relative effect of both the treatment messages and subjects’ levels of involvement (see Table 2). Main effects were present, $F = 2.94, p = .001$. In terms of the first two research questions, the treatment messages did influence reference price levels, $F = 2.48, p = .033$, so further analyses were considered appropriate.

A Duncan’s multiple-range post hoc comparison addressed the first and second

| Table 2 |
| Analysis of Covariance: Comparison of Treatment Groups’ Price Expectation Controlling for Involvement ($N = 224$) |

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>MS</th>
<th>$F$</th>
<th>$df$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>26607.9</td>
<td>4434.6</td>
<td>2.94</td>
<td>6</td>
<td>.001</td>
</tr>
<tr>
<td>Within groups</td>
<td>163875.8</td>
<td>755.1</td>
<td>217</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>190483.0</td>
<td></td>
<td>223</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>9647.5</td>
<td>2.48</td>
<td>5</td>
<td>.033</td>
<td></td>
</tr>
<tr>
<td>Involvement</td>
<td>9188.5</td>
<td>11.79</td>
<td>1</td>
<td>.001</td>
<td></td>
</tr>
</tbody>
</table>

* $p < .05$. 

research questions. This contrasted with how the keep and give conditions differed from the others. This analysis demonstrated that the program and cost formats were effective in raising price expectations. When the keep question, the program and cost were more effective than the program-only condition. When the give question, reference to control group information was more persuasive. The keep message was more effective than the program-only control group message reported a reference.

The ANCOVA procedure established the relative effect of involvement in the overall message effect. This effect was significant, $F = 2.94, p = .001$, than that reported by previous research. Information was provided on the program and cost; these price expectations. High-involved subjects reported higher prices for high- and low-involved subjects. The program message reported a reference.

However, in the case of the program-only condition, no significant difference was observed between the keep, $t = -2.31, p = .02$, and the give, $t = -2.14, p = .03$, conditions. Therefore, the program-only condition was not effective in raising price expectations.
Table 3
Results of Duncan’s Multiple Range Test for Differences Between Treatment Groups’ Reference Price Levels

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>$M$</th>
<th>Lose</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take</td>
<td>34</td>
<td>56.95</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Program and cost</td>
<td>39</td>
<td>54.91</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Keep</td>
<td>39</td>
<td>54.23</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Give</td>
<td>35</td>
<td>50.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lose</td>
<td>38</td>
<td>41.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program</td>
<td>39</td>
<td>40.42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05.

research questions. This comparison determined which treatment group means differed from the others. This analysis, reported in Table 3, suggested that several message formats were effective in altering reference price levels. In response to the first research question, the program and cost ($54.91) message produced higher price expectations than did the program-only group ($40.42). Consistent with findings reported in previous research, reference to cost information had considerable influence over response patterns. The second research question was concerned with the influence of outcome and identity-based messages. Again, statistical differences were present. The take scenario generated a mean reference price level of $56.95. This was significantly higher than those price levels arising from the lose ($41.42) and program-only ($40.42) messages. The take group mean was 41% higher than that reported by the program-only group ($40.42). The keep messages also generated significantly higher mean reference prices than did the program-only group. Only one of the five groups that received the $50 cost message reported a reference price that was less than $50.

The ANCOVA procedure used to test the third research question indicated that level of involvement influenced reference price levels, $F = 11.79, p = .001$. Further insight was sought through a series of $t$ tests. These tests compared high- and low-involved subjects’ response patterns. First, responses from high- and low-involved subjects in the program-only control group were considered. Subjects in this group received no treatment information so that reference prices represented the status quo that subsequent treatment messages were designed to alter.

The average reference price reported by the low level of involvement subjects in the program-only group was $48.17$. This mean was almost 40% higher, $t = -2.47, p = .01$, than that reported by high-involved subjects ($29.28$). Thus, when only program information was provided, high- and low-involved subjects differed dramatically in their price expectations. High-involved subjects reported much lower price levels. Reference prices for high- and low-involved subjects also significantly differed among those who received cost, $t = -2.36, p = .02$, and take, $t = -2.44, p = .02$, messages (see Figure 1).

However, in the cases of the other three treatment messages, this pattern was not evident because price expectations for high- and low-involved subjects in these groups were relatively similar. The means reported by high- and low-involved subjects did not differ with the keep, $t = .09, p = .93$, lose, $t = -1.49, p = .14$, or give, $t = -.09, p = .92$, groups. Therefore, it was concluded that under some conditions, high-involved
subjects may be more responsive to treatment messages than those exhibiting less involvement. Although high-involved subjects appeared to start out with lower price expectations than did their less involved counterparts, these differences disappeared when three of the treatment messages were introduced.

Another t test compared likelihood of registration in future aerobics classes (if offered at the price the subject expected to pay). Highly involved subjects were much more likely, \( t = 7.15, p = .001 \), to report that they would register for future aerobics classes. A final t test compared level of participation in aerobics activity reported by high- and low-involved subjects. Highly involved subjects participated more often, \( t = 7.82, p = .001 \), than did those with low involvement levels. High involvement is generally considered indicative of participation and intention to participate, and these results confirmed that behavioral intent and behavior were consistent with involvement level.

**Discussion**

**Response to Message Enhancements**

The first two research questions were concerned with the influence of context on price expectations. These results suggest that reference price levels can be influenced by contextual stimuli. It is likely that as contextual variables change, so, too, will level of expectation. This is of both conceptual and practical interest. Conceptually, it suggests that the internal standard against which participants compare objective price levels is a “moving target.” Expectation is in a state of ongoing modification. An objective price may compare favorably with an expected price in one context but unfavorably in another. As a result, the same price may be considered unreasonable in one setting and acceptable in another. This is as if the expectation is without reference.

In practical terms, this may be useful by efforts to influence price perception. The standard against which new price levels are compared is the price levels is desirable if it is consistent with the perceived cost.

Subjects in the experiment were either high or low in involvement level. Many expected to pay a lower price for tax-subsidized fitness classes if they were informed that the tax subsidy existed within the community. It is conceivable that some individuals would be willing to pay higher prices if they were informed that the subsidy existed. The high-involved subjects were more likely to report paying higher prices than the low-involved subjects. However, the low-involved subjects were more likely to report paying lower prices than the high-involved subjects. This suggests that the high-involved subjects were more responsive to treatment messages than those exhibiting less involvement. Although high-involved subjects appeared to start out with lower price expectations than did their less involved counterparts, these differences disappeared when three of the treatment messages were introduced.

Another t test compared likelihood of registration in future aerobics classes (if offered at the price the subject expected to pay). Highly involved subjects were much more likely, \( t = 7.15, p = .001 \), to report that they would register for future aerobics classes. A final t test compared level of participation in aerobics activity reported by high- and low-involved subjects. Highly involved subjects participated more often, \( t = 7.82, p = .001 \), than did those with low involvement levels. High involvement is generally considered indicative of participation and intention to participate, and these results confirmed that behavioral intent and behavior were consistent with involvement level.

**Response to Message Enhancements**

The first two research questions were concerned with the influence of context on price expectations. These results suggest that reference price levels can be influenced by contextual stimuli. It is likely that as contextual variables change, so, too, will level of expectation. This is of both conceptual and practical interest. Conceptually, it suggests that the internal standard against which participants compare objective price levels is a “moving target.” Expectation is in a state of ongoing modification. An objective price may compare favorably with an expected price in one context but unfavorably in another. As a result, the same price may be considered unreasonable in one setting and
In practical terms, this finding suggests that changes in price should be accompanied by efforts to influence price expectations. Such expectations represent an internal standard against which new prices are evaluated. Consistency between actual and expected price levels is desirable if new price levels are to receive public support.

Subjects in the experiment were provided with the options available to a recreation administrator when an existing program faces reduction or elimination. The provision of simple cost information altered reference price levels to a significant degree. All but one of the five groups that received the $50 cost message reported a reference price that was at least consistent with that amount. The group that received only program and cost information reported a reference price level that was 36% greater than that of the control group, which received no cost information. Subjects seemed responsive to cues that established cost levels. Once exposed to this information, subjects adjusted their expectations accordingly.

The investigators were surprised to discover that the program and cost group reported the second highest reference price level of $54.91. Perhaps these subjects were, on average, including a “profit” or administrative charge when reporting their reference level. Many expected to pay more than they understood it cost to offer the program. To our knowledge, this is the first time this type of response has been reported in the context of public leisure services. It has traditionally been assumed that an expectation of tax subsidy exists within the public sector. These results suggest that in some contexts, community members may not expect their public leisure services to be subsidized. Perhaps reference price represents a “fair” price, as Kamen and Toman (1970) suggested, and cost information enables subjects to determine a price expectation that seems appropriate. If this is the case, it is encouraging that these subjects considered it fair to pay fee levels consistent with cost estimates.

Additional message enhancement, in terms of gain-loss outcomes, both discouraged and encouraged the development of significantly higher reference prices. The lose scenario informed subjects that they must contribute more in order to cover the $50 cost level or risk losing their center. Thaler (1985) suggested that being asked to contribute more to enjoy an existing level of benefit may be considered a loss. When faced with such a loss, subjects are typically risk seeking (Tversky & Kahneman, 1986). They may refuse to elevate current contributions in order to forestall a second loss (lost program opportunities). In bargaining situations, for example, when cooperative gestures are considered losses, subjects reveal a propensity toward intransigence even when such intransigence leads to increased subsequent losses (Bazerman, 1983). They seem unwilling to lose a small bargaining chip even when it may lead to greater long-term gains. This appeared to be the reaction of subjects who received this scenario. These group members were unwilling to pay the $50 that was their “fair” contribution to forestall the closing of their recreation center. This suggests that messages that rely on threats of personal loss may prove to be ineffective in convincing participants to pay an increased price. Bazerman (1983) suggested that alternative courses of action should be framed in terms of potential gains rather than losses because more cooperative and flexible responses are likely.

The take group understood that if they failed to pay a higher price, then funds would be taken from another public recreation center. In contrast to the lose group, the take subjects were more cooperative and reported significantly higher reference prices. These subjects seemed unwilling to take from others and expected to pay all costs associated
with the provision of their own program. In this way, they were exhibiting a sort of "enlightened self-interest." They reported prices that ensured that their own program was offered and that others would not be forced to support the provision of these programs.

Subjects exhibited a concern for the common good when it was suggested that others might be contributing to the provision of their own aerobic's program. This response might be explained in terms of reciprocal altruism, which suggests that "people tend to reciprocate kindness with kindness, cooperation with cooperation, hostility with hostility . . . a cooperative act may with high probability be reciprocated with cooperation, to the ultimate benefit of the cooperator" (Dawes & Thaler, 1988, p. 190). This finding suggests that reference to the contribution of others may encourage subjects to act in an altruistic manner.

The contribution of others is an issue that is inherent in every public-sector decision. Resources allocated by public-sector agencies are provided through the contributions of taxpayers. Individuals may be aware that the support they receive from public-sector agencies is provided by others and that, similarly, their own contributions are reallocated to other members of the community. In the context of public-sector pricing, this suggests that participants may be more willing to support their own programs if they are reminded that failure to do so may decrease opportunities for others or reminded that others have contributed so that they may enjoy current program levels.

The group that received the keep message also revealed a significantly higher mean reference price. This group was told that any fees collected above the $50 cost level would be used to improve the subjects' own programs. This finding is consistent with the notion of rational self-interest. Individuals were willing to offer additional resources to a program because such contributions generated additional personal benefits. This finding suggests that prospects of additional benefit may encourage participants to increase current levels of contribution.

Subjects in the give group seemed ambivalent toward their treatment message. Their group mean was $50.74. These subjects appear to have expected to pay the amount it cost to provide their program but not to generate surplus revenues for other center users. In other words, when given the opportunity to give resources to others (when no demonstrated need existed), they preferred to allocate only enough resources to maintain their own program levels. Presumably, this group expected other users to exhibit the same degree of self-sufficiency they themselves had displayed.

Messages that included only program characteristics generated relatively low reference price levels. The program-only group mean was significantly lower than that of three other groups. This pattern was consistent with that reported by McCarville and Crompton (1987), who found that basic program information generated low price expectations. The finding is instructive for the administrator. Traditional public-sector promotional efforts have relied on the provision of program information. Generally, seasonal brochures are produced that notify potential clients when and where various program opportunities are provided. This approach may result in low price expectations and subsequent discontent if the expectations are violated. These basic program messages should be supplemented with the type of enhanced messages used in this experiment.

**Reference Price and Involvement**

The third research question was concerned with the relation between involvement and price expectations. High-involved subjects confirmed that they were significantly more likely to participate, or at least to adjust their expectations, in involved counterparts. Whether those involved participants expressed lower estimated price levels was unclear. It is possible that involving more participants was simply more likely to participate in any case, given the prevailing aerobic's class format, or that the low initial expectation was just a byproduct of the price game.

In three of the treatment conditions, participants in the give group tended to alter their expected price estimates upward and near the $50 amount it "ineligible" to keep the program. The control group did not.

**Concluding Comments**

These findings suggest significant potential for the development of higher reference price levels. A compelling reference point for participants, if used in the present findings, subjects who received a keep message, also did the control group.

Second, additional messages that, for example, community members may benefit if the program is successful. If participants are aware that group members may feel that altruistic and cooperative acts may be required to generate personal benefit at the expense of others.

Third, communication can foster a sense of community. Consequently, three of the findings may be used to encourage cooperation, communication, and outcomes are discussed in terms of cooperation.

Fourth, participants may be more likely to spread increased personal benefits if they are informed of the potential benefits would accrue if they contributed to the expense of personal benefits and consider the need for increased benefits.

Fourth, program information may be more replicates that reported in McCarville and Crompton, 1987, and should not focus on basic programs, but should focus on the participant to evaluate, elaborate, and ultimately price expectations. Program messages.

Finally, personal variables, level of involvement, and information to the treatment may lead to different response patterns than were expected. This is due to behavior patterns, such as elaboration likelihood models, which rely on contextual cues only as long as they are present.
likely to participate, or anticipate participating, in aerobics classes than were their low-involved counterparts. When no treatment message was provided, these high-involved participants expressed lower price expectations than did the others. Reasons for this are unclear. It is possible that expectations were influenced by the cost of comparative programs available in the community. Because those who were highly involved were more likely to participate in aerobics classes, they were probably more familiar with prevailing aerobics class fees. Hence, if “going rates” were low, then this may explain the low initial expectations of the highly involved group.

In three of the treatment cases, however, when information was provided, high-involved subjects tended to offer price expectations similar to those of the low-involved group. Response patterns for both high- and low-involved subjects tended to converge near the $50 amount it “cost” to offer the aerobics program. The treatment messages tended to alter the price expectations of both high- and low-involved groups.

**Concluding Comments**

These findings suggest six ways in which messages might be enhanced to encourage development of higher reference prices. First, cost-of-service provision provides a compelling reference point for participants and nonparticipants alike. Consistent with earlier findings, subjects who received cost information reported higher price expectations than did the control group.

Second, additional messages may enhance the influence of cost information. For example, community members may be responsive to the concerns and welfare of others. If participants are aware that the prices they pay will influence other participants, then altruistic and cooperative behavior may result. In this study, subjects were unwilling to benefit at the expense of others even when it was in their own best interests to do so.

Third, communications that focus solely on personal loss may generate intransigence. Consequently, threats of personal loss as a result of one’s own actions should not be used to encourage cooperative behavior. Cooperative behavior is more likely if outcomes are discussed in terms of potential advantages for self and others.

Fourth, participants may expect to pay more for a service if increased payment leads to increased personal benefits. Subjects responded positively when informed that additional benefits would accrue if they increased their payments. This suggests that disclosure of personal benefits should accompany proposed price increases.

Fifth, program information alone generates low reference price levels. This finding replicates that reported in earlier research. Efforts to generate higher price expectations should not focus on basic program characteristics. Such characteristics may be necessary for the participant to evaluate programs, but they are ineffective in establishing appropriate price expectations. Program information must be supplemented with additional messages.

Finally, personal variables may influence reaction to any enhanced message. In this study, level of involvement was found to have a considerable effect on subjects’ reactions to the treatment messages. Such involvement was more important in determining response patterns than were the treatment messages. It proved to be a pervasive variable related to both behavior patterns and overall expectations. Future research efforts might focus on the stability of price expectations once contextual cues had been offered. The elaboration likelihood model suggests that low-involved subjects are influenced by contextual cues only as long as those cues are present in the purchase setting. Conversely,
price expectations of high-involved subjects are thought to result from thoughtful deliberation. As a result, new price expectations reported by high-involved individuals may be more stable than those of low-involved subjects. Future research could monitor the long-term influence of contextual cues on price expectations for high- and low-involved subjects.

Future research efforts might also consider variables that further alter the context in which individuals evaluate prices. This study found that settings that incorporated outcomes for self and others were likely to alter price expectations. Participants may be more willing to subsidize other residents’ programs if they are aware that this act may be reciprocated by others. As Brubaker (1975) suggested, individuals may use the contributions of others as a guide for determining whether they will contribute. Research investigating this approach might offer messages suggesting the level of contribution of “others” and assess the influence of such messages on reference price or willingness to pay levels.

Altruism may be a function of group identity and likelihood of participation. Individuals are more likely to consider the collective welfare if the context is one of membership in a collective group or category. Brewer and Kramer (1986) found that when a personal-loss scenario was framed in terms of group identity, subjects tended to be more cooperative and were more likely to share resources. When individuals perceive themselves to be members of a group, they are more likely to consider in-group members as cooperative and be motivated to cooperate in turn (Messick & Brewer, 1983). If such ingroup members are perceived to be needy, an altruistic response may result. Margolis (1982) suggested that individuals often attempt to maximize group interest as well as self-interest. Future research might provide messages that suggest differing levels of social affiliation and measure results of different reference price and willingness to pay levels. Elements of the public and nonprofit sectors have long sought voluntary contributions to assist with marketing efforts and capital projects (Howard & Crompton, 1980). These efforts could be enhanced by information identifying the conditions that maximize altruistic behavior.

References


Abstract  Activity is an important correlate of well-being in adulthood. This paper extends the theoretical framework of participation in physical activity and independence for people with disabilities. It provides a comprehensive review of the literature on the relationship between physical activity and well-being, with a focus on people with disabilities. The findings suggest that physical activity is significantly associated with improved physical and psychological health in people with disabilities. The study also highlights the importance of social and environmental factors in promoting physical activity and well-being for people with disabilities. The implications of these findings for policy and practice are discussed.

Keywords  activity, well-being, disabilities, physical activity, participation

Independence is at the forefront of inclusive education for people with disabilities. Establishment of a community living and self-determination are two primary areas of focus in the field of special education (Landesman, 2005). The expression of personal preferences, self-determination, and the development of self-management skills increase perceptions of self-efficacy and freedom in the community living (Causey, 1985; Houghton, 1986; Lee & Meyer, 1988; Newcombe, 1988). These goals are important for adults with disabilities, as they provide for greater independence and participation in the community. In order to fully participate in society, individuals with disabilities need to be supported in their attempts to achieve these goals.

Activity theory, one of the foundational theories in the field of special education, is a framework for understanding how individuals with disabilities engage in activities and how these activities contribute to their well-being. The theory emphasizes the importance of social and environmental factors in the development of self-determination and independence. The study also highlights the importance of social and environmental factors in promoting physical activity and well-being for people with disabilities. The implications of these findings for policy and practice are discussed.

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