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# The Effects of Price-Comparison Advertising on Buyers' Perceptions of Acquisition Value, Transaction Value, and Behavioral Intentions

The authors expand and integrate prior price-perceived value models within the context of price comparison advertising. More specifically, the conceptual model explicates the effects of advertised selling and reference prices on buyers' internal reference prices, perceptions of quality, acquisition value, transaction value, and purchase and search intentions. Two experimental studies test the conceptual model. The results across these two studies, both individually and combined, support the hypothesis that buyers' internal reference prices are influenced by both advertised selling and reference prices as well as the buyers' perception of the product's quality. The authors also find that the effect of advertised selling price on buyers' acquisition value was mediated by their perceptions of transaction value. In addition, the effects of perceived transaction value on buyers' behavioral intentions were mediated by their acquisition value perceptions. The authors suggest directions for further research and implications for managers.

To compete successfully in a value-conscious environment, sellers must stress the value of their offerings. One value-based strategy involves emphasizing the value of acquiring the product (i.e., acquisition value) (Monroe and Chapman 1987). Sellers can increase acquisition value perceptions by enhancing buyers' perceptions of the product's quality or benefits relative to the selling price (Bolton and Drew 1991; Dodds, Monroe, and Grewal 1991; Monroe and Krishnan 1985; Zeithaml 1988). Thus, firms might opt for one of three value-based positioning strategies—high quality, low price, or some balance of quality to price.

Sellers also can compare a lower selling price to a higher advertised reference price (e.g., was $200, now $150) to enhance buyers' value perceptions. This value-oriented strategy is aimed at enhancing buyers' deal perceptions (or transaction value). Stressing the price bargain the buyer would be getting by undertaking the transaction can effectively promote the offering (i.e., increasing the salience of the reduction in the selling price). Unfortunately, previous research has not examined the effects of price-comparison

or reference-price advertising on buyers' perceptions of acquisition value, transaction value, or behavioral intentions. There is need for researchers to understand why this price tactic (i.e., price-comparison advertising) seemingly works. From such information, effective value-oriented promotions could be developed. Furthermore, price promotions have become so widespread that several State's Attorneys' General offices (e.g., Maryland, New York, Colorado) have become concerned that some sellers use "value pricing" to deceive buyers (Grewal and Compeau 1992; Kaufmann, Smith, and Ortemeyer 1994).

In this article, we provide an understanding of how price-comparison advertising could influence buyers' perceptions of value and establish a framework for addressing the deception issue. The conceptual argument suggests that advertised reference prices in these deal-oriented advertisements can enhance buyers' internal reference prices (Lichtenstein and Bearden 1989; Urbany, Bearden, and Weilbaker 1988). These enhanced internal reference prices, when compared with the lower selling price, result in higher transaction value perceptions. The increase in perceived transaction value enhances purchases and reduces search behavior for lower prices. If sellers intentionally increase the advertised reference prices above normal retail prices, that is, inflate advertised reference prices, the resulting inflated perceptions of transaction value would be deceptive. Harm to both buyers and competitors could result from the effect of the inflated transaction value on buyers' search and purchase behaviors.

In addition, past research has not addressed the conceptual distinction between acquisition and transaction value, nor whether it is empirically feasible to make this distinction. The research reported in this article addresses this important limitation. We develop a conceptual model that

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outlines how advertised pricing tactics (i.e., comparison price-advertising) affect buyers' purchase decisions. Then we present two tests of the conceptual model and discuss the results and their implications.

# The Conceptual Model

In price-comparison advertising, a higher advertised comparison price (commonly termed *advertised reference price*) is compared with a lower advertised selling price. Buyers' judgments of these advertised prices depend not only on the prices per se, but also on the contextual cues presented within the advertisement, situational influences surrounding buyers, and buyers' internal reference prices (Rajenderan and Tellis 1994). The proposed model has two exogenous constructs (advertised reference price and advertised selling price) and six endogenous constructs (buyers' perceptions of product quality, their internal reference price, perceived transaction value, perceived acquisition value, willingness to buy, and search intentions) (see Figure 1). Each of these constructs and the relationships between them are explained subsequently.

## Perceived Quality

Several past studies have examined the effects of information cues, such as price, on buyers' perceptions of quality (see reviews by Monroe and Krishnan 1985; Rao and Monroe 1989; Zeithaml 1988). *Perceived quality* is defined as a buyer's estimate of a product's cumulative excellence (Zeithaml 1988). The general consensus of these studies is that price is less likely to have a significant effect on buyers' perceptions of quality in the presence of other attributes and when buyers are familiar with the product or product category (Rao and Monroe 1988, 1989). In addition, there is evidence in the domain of comparative price advertising that

these advertised prices (both the reference price and the selling price) do not have an effect on buyers' perceptions of quality (see Grewal 1989; Urbany and Bearden 1990).

Consequently, subjects exposed to a comparative price offer for a well-known brand (Dodds, Monroe, and Grewal 1991), in the presence of several cues (including a picture of the product) (Grewal 1989; Rao and Monroe 1989), and having familiarity and knowledge of the product category (Rao and Monroe 1988) are not likely to use these advertised prices to shift their perceptions of quality. Therefore, in the proposed model, we do not expect the advertised selling price and the advertised reference price to affect buyers' perceptions of quality. However, we test for these paths.

## Internal Reference Price

The concept of internal reference price, while operationally elusive, is an important cornerstone for behavioral price research. In this research, an *internal reference price* is defined as a price (or price scale) in buyers' memories that serves as a basis for judging or comparing actual prices (Monroe 1973; Monroe, Grewal, and Compeau 1991).

Della Bitta, Monroe, and McGinnis (1981) use adaptation-level theory to argue that buyers' internal reference prices are influenced by the key focal cues in an advertisement: the advertised selling price and the advertised reference price. Furthermore, adaptation-level theory suggests that these internal reference prices are influenced by residual cues (e.g., previously acquired information that has been assimilated to form perceptions and/or expectations of the quality of products in a product category or a specific brand). Buyers forming an initial level of perceived quality for the product and/or brand depend on information in the advertisement and on previously acquired information (Herr 1989). Using this level of perceived quality for the product and/or brand and the advertised prices (sales and reference)

## FIGURE 1
### Proposed Model of the Effects of Price Comparison Advertising on Perceptions of Value
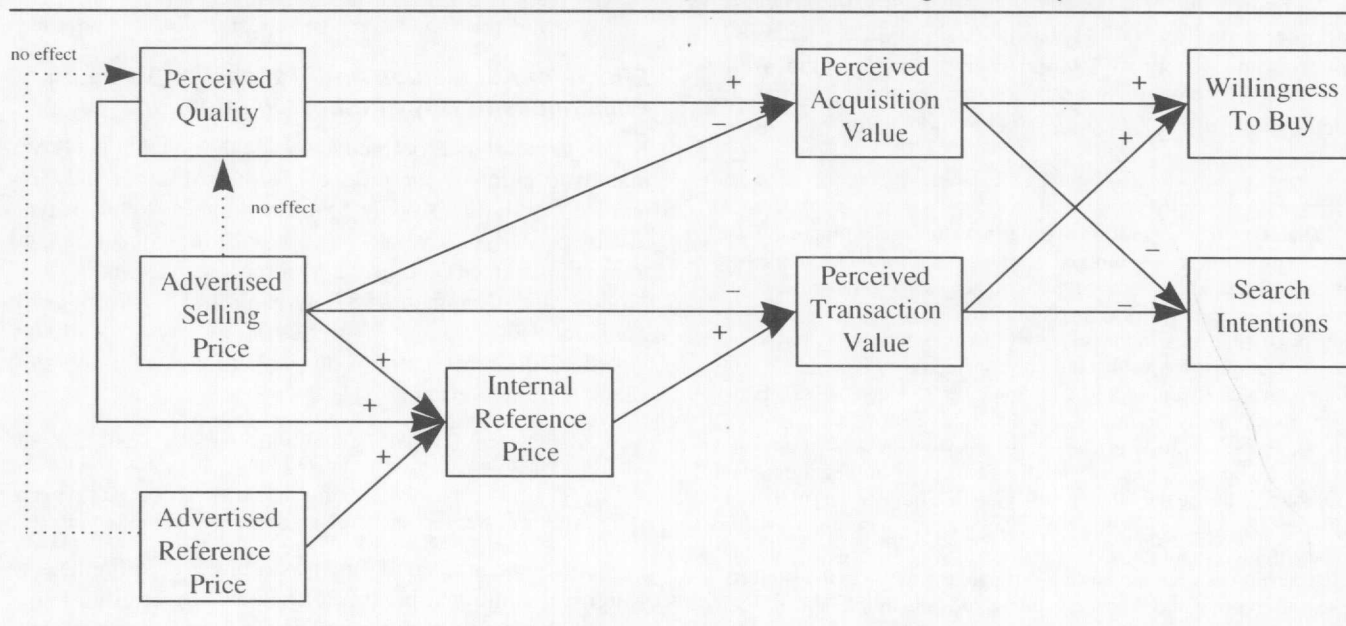
as a basis, buyers develop internal reference prices (or price scales) to be used during subsequent judgments of value. The possibility of a perceived quality to the price mapping phenomenon has been illustrated by Monroe (1973). Consequently, advertised reference price, advertised selling price, and perceived product quality positively influence buyers' internal reference prices (Lichtenstein and Bearden 1989; Urbany, Bearden, and Weilbaker 1988). This conceptualization leads to the following three paths in the conceptual model:

> $H_1$: There is a positive relationship between buyers' perceptions of quality and their internal reference price.
>
> $H_2$: There is a positive relationship between advertised selling price and buyers' internal reference price.
>
> $H_3$: There is a positive relationship between advertised reference price and buyers' internal reference price.

Buyers' internal reference prices adapt to the stimuli prices presented in the advertisement. That is, buyers either adjust their internal reference price or accept the advertised reference price to make judgments about the product's value and the value of the deal. Our conceptual model on how comparison price advertising influences buyers' perceptions of value explicitly recognizes this adaptive nature of buyers' internal reference prices.

### Perceived Acquisition Value

Past acquisition value-based models (e.g., Dodds, Monroe, and Grewal 1991; Zeithaml 1988) have defined this concept as the perceived net gains associated with the products or services acquired. That is, the perceived acquisition value of the product will be positively influenced by the benefits buyers believe they are getting by acquiring and using the product and negatively influenced by the money given up to acquire the product (i.e., the selling price). One important element of this "get" component is product quality or buyers' perceptions of product quality.[1]

Several researchers have conceptualized acquisition value in this manner, though they used different terms such as "bargain value" (Keon 1980), "perceived value" (Dodds, Monroe, and Grewal 1991; Lichtenstein and Bearden 1989; Monroe and Krishnan 1985; Urbany, Bearden, and Weilbaker 1988), "perceived worth" (Szybillo and Jacoby 1974), "acquisition utility" (Thaler 1985), and "value conscious-

ness" (Lichtenstein, Netemeyer, and Burton 1990; Lichtenstein, Ridgeway, and Netemeyer 1993). Therefore, defining perceived acquisition value as the buyers' net gain (or trade-off) from acquiring the product or service represents "a more global and enduring kind of value which takes into account both price and quality" (Urbany and Bearden 1990, p. 4). This conceptualization leads to the following paths in the conceptual model:

> $H_4$: There is a positive relationship between buyers' perceptions of quality and their perceived acquisition value.
>
> $H_5$: There is a negative relationship between the advertised selling price and buyers' perceptions of acquisition value.

### Perceived Transaction Value

Buyers exposed to price-comparison advertisements and similar price promotions are presented with an expressed deal or bargain in terms of a selling price that is explicitly reduced in magnitude. They are likely to assess the merits or value of such a deal by comparing the selling price to their internal reference prices (Monroe and Chapman 1987; Thaler 1985). For example, in a recent interpretive study of buyers' reactions to price-deals, one shopper indicated the following: "Sometimes if I get a good deal at the discount rack, I feel good about that and I'll stroll through the other parts [of the mall or store] and not feel guilty if I buy more expensive, originally priced items" (Grewal and Compeau 1993, p. 11).

Therefore, a buyer, on examining the financial terms of the price offer, might perceive additional value beyond that provided by acquisition value. Thus, *perceived transaction value* is the perception of psychological satisfaction or pleasure obtained from taking advantage of the financial terms of the price deal (Lichtenstein, Netemeyer, and Burton 1990; Monroe and Chapman 1987; Thaler 1985; Urbany and Bearden 1989). This conceptualization leads to the following paths in the conceptual model:

> $H_6$: There is a positive relationship between buyers' internal reference price and their perceived transaction value.
>
> $H_7$: There is a negative relationship between the advertised selling price and buyers' perceptions of transaction value.

### Effects of Acquisition and Transaction Value on Willingness to Buy and Search Intentions

*Willingness to buy* is defined as the likelihood that the buyer intends to purchase the product (Dodds, Monroe, and Grewal 1991). All things being equal, willingness to buy is positively related to overall perceptions of acquisition and transaction value (Della Bitta, Monroe, and McGinnis 1981; Monroe and Chapman 1987; Urbany and Dickson 1990; Zeithaml 1988). Buyers' willingness to buy is positively linked to their perceptions of acquisition and transaction value:

> $H_8$: There is a positive relationship between buyers' perceptions of acquisition value and their willingness to buy.
>
> $H_9$: There is a positive relationship between buyers' perceptions of transaction value and their willingness to buy.

*Search intention* is defined as a buyer's willingness to search for additional price information. Stigler (1961) suggests that because of variations in price in the marketplace

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[1] Thaler (1985) operationally defines this get component (or value equivalent) as the amount of money that would leave the person indifferent about receiving the money or the product as a gift. In economic theory, the value equivalent is similar to the reservation price (the maximum price the buyer is willing to pay), and therefore acquisition value could be considered comparable to consumer surplus (Monroe and Chapman 1987; Thaler 1985). However, operationally defining the value equivalent (get component) simply as a reservation price is a limited view, because it does not include the buyers' quality evaluation, except by indirect inference. Moreover, empirical evidence verifying that buyers use such reservation prices when assessing the value of a product is not available. For example, Bearden and colleagues (1992) find no significant relationship between three price-estimate measures of the subjects' reservation price and their perceptions of acquisition value or their willingness to buy.

buyers generally are uncertain what the lowest available price is. To reduce this uncertainty, buyers must seek information from sellers. Willingness to search for price information is contingent on buyers' trading off the perceived benefits (e.g., money saved) relative to the costs of the search (e.g., time, money, effort spent in conducting the search) (Marmorstein, Grewal, and Fishe 1992). Previous research shows that when buyers are exposed to an advertised regular price coupled with a lower sale price, their willingness to conduct additional search declines because of an increase in their perceptions of value (Della Bitta, Monroe, and McGinnis 1981; Urbany, Bearden, and Weilbaker 1988). Therefore, buyers' intentions to search is linked negatively to their perceptions of acquisition and transaction value:

$H_{10}$: There is a negative relationship between buyers' perceptions of acquisition value and their intentions to search.

$H_{11}$: There is a negative relationship between buyers' perceptions of transaction value and their intentions to search.

### An Alternative Model

A key issue that must be addressed is whether perceived transaction value and perceived acquisition value are interrelated. Similar to Thaler's (1985) conceptualization and Monroe and Chapman's (1987) model, the proposed model (Figure 1) assumes that buyers' perceptions of acquisition and transaction value are independent of each other. However, there are several potential reasons that suggest these two value dimensions are not independent of each other. Conceptually and operationally, the interrelationship between these two value dimensions has not been addressed by previous research (cf. Urbany and Bearden 1990).

It is reasonable to propose that a price promotion that leads to positive perceived transaction value (i.e., greater psychological pleasure associated with obtaining favorable financial terms) would in turn influence buyers' perceptions of the value of acquiring the product or receiving the service (i.e., greater net gain by reducing the financial outlay). It is proposed that positive perceived transaction value enhances buyers' evaluations of the value of acquiring the product. Buyers' perceptions of transaction value are situation specific, and though their assessments of acquisition value are more holistic evaluations of the product's value, it is likely that their transaction value influences their perceptions of acquisition value and not vice versa.

The two constructs have an overlapping antecedent construct, the advertised selling price. Drawing on equity notions from satisfaction research (see Bolton and Drew 1991; Oliver and Swan 1989), transaction value could be considered akin to the fairness construct (i.e., the equity/pleasure associated with getting a fair price) (see also Huppertz, Arenson, and Evans 1978), and acquisition value similar to the overall satisfaction construct (Grewal 1995). Research in this post-purchase domain suggests that buyers' assessment of equity affects their overall evaluations. The parallel in the pre-purchase domain is that perceived transaction value affects perceived acquisition value.[2] This conceptualization leads to the following additional path:

$H_{12}$: There is a positive relationship between buyers' perceptions of transaction value and their perceived acquisition value.

$H_{12}$ suggests that sellers also might influence buyers' evaluations of the value of the product (i.e., acquisition value) indirectly through the effects of comparative advertised reference prices on buyers' perceived transaction value. This suggestion also leads to the possibility that the effect of advertised selling price on buyers' acquisition value might be mediated by their perceptions of transaction

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[2]We thank an anonymous reviewer for this suggestion.

## FIGURE 2
## Alternative Model of the Effects of Price Comparison Advertising on Perceptions of Value
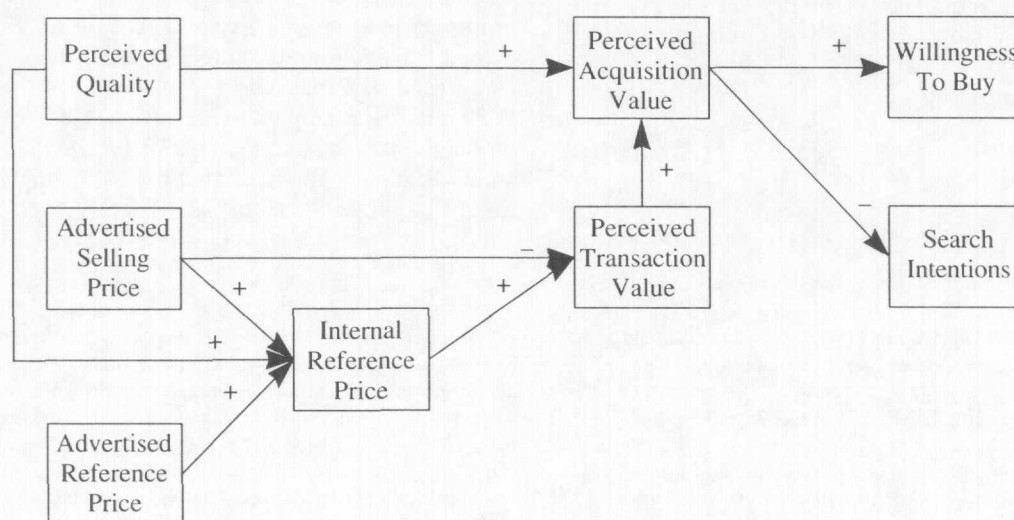
value. It also leads to the possibility that the effect of per-
ceived transaction value on behavioral intentions could be
mediated by perceived acquisition value.

On the basis of these proposed revisions, an alternative
model (Figure 2) also is tested. The alternative model
hypothesizes a link between perceived transaction value and
perceived acquisition value. The effects of advertised selling
price on acquisition value are expected to be mediated by
transaction value (i.e., no significant direct effect of adver-
tised selling price on acquisition value). The revised model
also hypothesizes that the effects of perceived transaction
value on behavioral intentions are mediated by perceived
acquisition value (i.e., no significant direct effects of per-
ceived transaction value on purchase and search intentions).
In addition, the no-effect paths pertaining to advertised sell-
ing price and advertised reference price on buyers' percep-
tions of quality have been dropped.

# Research Method

## Research Plan

These hypotheses (and models) were tested using causal
modeling. Two studies were conducted. Both studies used a
2 × 2 between-subjects experimental design, that is, two
selling price levels ($249.95 and $349.95) and two adver-
tised reference price levels ($400 and $500).[3] In both stud-
ies, the subjects were shown a booklet containing an
advertisement for a bicycle and a questionnaire. The adver-
tisement used a known brand name (Raleigh USA). The
subjects then responded to a set of questions that assessed
the various latent constructs.

In Study 1, a laboratory experiment, the subjects were
361 undergraduate students at a western state university.
The mean age of respondents in Study 1 was 23 years
(range 18–49), 52.9% of the respondents were male, and
76.1% owned a bicycle. In Study 2, an experimental sur-
vey assessing the replicability and the boundary condi-
tions of Study 1's results, the subjects were staff
employees at the same university. Of the 600 employees
surveyed, 328 responded, a 54.6% response rate. To moti-
vate a response, $125 in prizes were awarded by lottery.
The mean age of respondents in Study 2 was 41 years
(range 24–62), median family income was
$40,000–$50,000, 37.6% of the respondents were male,
and 71.6% owned a bicycle.

## Pretests

A series of pretests were conducted. The first provided
information about the subjects' knowledge, involvement,
and acceptable price range for bicycles. The results indicate
that a bicycle was a personally relevant product and thus
was selected as the test product. Because Rao and Monroe
(1988) found that product knowledge affected buyers' sub-
jective product evaluations, another objective of this pretest
was to determine a product about which subjects were
knowledgeable. The results indicate that subjects exhibited
high levels of product familiarity with this specific product
(i.e., a Raleigh USA bicycle). The results and a market sur-
vey of prices suggest that $400 was around the average mar-
ket price and $500 was an above-average market price (i.e.,
an inflated advertised reference price) for this bicycle. Three
additional pretests were used to develop the scales for the
various latent constructs, particularly acquisition value and
transaction value.[4]

## Measures

The scales used to measure the latent constructs are pro-
vided in Table 1. The constructs of buyers' perceptions of
quality, acquisition value, transaction value, willingness to
buy, and search intention were assessed using seven-point
category rating scales. Buyers' internal reference prices
were dollar estimates provided by the subjects.

*Perceived quality.* Buyers' quality perceptions were
measured using three Likert statements (Dodds, Monroe,
and Grewal 1991; Rao and Monroe 1988) that assessed the
product's quality, durability, and reliability.

*Internal reference price.* Buyers' internal reference
price was assessed using two common measures: average
market price estimate and fair price estimate. These two
items were based on scales developed by Lichtenstein and
Bearden (1989) and Urbany, Bearden, and Weilbaker
(1988).

*Perceived acquisition value.* Buyers' acquisition value
was measured using nine Likert statements that built on
past scales of perceived value (e.g., Chapman and Monroe
1990; Dodds, Monroe, and Grewal 1991). However, the
proposed measure of perceived acquisition value is more
comprehensive than the three- or four- item scales previ-
ously used that focused on "good value for the money."
We explicitly attempted to capture the trade-off between a
product's benefits and the cost of its acquisition. For ex-
ample, sample items included the following: "I feel that
acquiring this bicycle meets both my high-quality and

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[3]We do not predict an interaction term between advertised sell-
ing price and advertised reference price, in line with previous mod-
els, such as Monroe and Chapman's (1987). However, we did test
for the interaction term. MANOVA analyses on both data sets indi-
cated that the interactions were not significant in either data set
($p > .05$). Furthermore, using LISREL procedures and modeling an
interaction term, we did not find a significant effect of the interac-
tion on internal reference price, acquisition value, and transaction
value. Furthermore, the results with an interaction term suggest a
worse fit.

[4]One of the pretests' (n = 400) results indicated that scales used
by past research (e.g., Chapman and Monroe 1990) to assess over-
all perceived value did not adequately discriminate acquisition
value from transaction value. The results suggest a two-factor solu-
tion. That is, acquisition value and transaction value load on sepa-
rate factors, but overall value loads on both factors. Thus, this
research explicitly focuses on acquisition and transaction value and
not on overall value.

## TABLE 1
## Scale Items and Measurement Properties

| | Study 1 | | | Study 2 | | |
|---|---|---|---|---|---|---|
| | IR | SR | VE[a] | IR | SR | VE[a] |
| **Internal Reference Price[b]** | | | | | | |
| What is your estimate of the average market price of this bicycle? | .58 | .79 | .66 | .53 | .77 | .62 |
| What do you think would be a fair price for this bicycle? | .69 | | | .65 | | |
| **Perceived Quality[c]** | | | | | | |
| The bicycle appears to be of good quality. | .89 | | | .94 | | |
| The bicycle appears to be durable. | .86 | .94 | .83 | .88 | .95 | .88 |
| The bicycle appears to be reliable. | .75 | | | .81 | | |
| **Perceived Transaction Value[c]** | | | | | | |
| Taking advantage of a price-deal like this makes me feel good. | .52 | | | .61 | | |
| I would get a lot of pleasure knowing that I would save money at this reduced sale price. | .78 | .85 | .66 | .73 | .85 | .65 |
| Beyond the money I save, taking advantage of this price deal will give me a sense of joy. | .67 | | | .57 | | |
| **Perceived Acquisition Value[c]** | | | | | | |
| If I bought this bicycle at (selling price), I feel I would be getting my money's worth. | .72 | | | .84 | | |
| I feel that I am getting a good quality bicycle for a reasonable price. | .76 | | | .87 | | |
| After evaluating the advertised bicycle features, I am confident that I am getting quality features for (selling price). | .70 | | | .80 | | |
| If I acquired this bicycle, I think I would be getting good value for the money I spend. | .81 | | | .88 | | |
| I think that given this bicycle's features, it is good value for the money. | .76 | .95 | .67 | .88 | .97 | .80 |
| I feel that acquiring this bicycle meets both my high quality and low price requirements. | .65 | | | .84 | | |
| Compared to the maximum price I would be willing to pay for this bicycle, the sale price conveys good value. | .49 | | | .70 | | |
| I would value this bicycle as it would meet my needs for a reasonable price. | .50 | | | .70 | | |
| This bicycle would be a worthwhile acquisition because it would help me exercise at a reasonable price. | .39 | | | .61 | | |
| **Search Intentions[c]** | | | | | | |
| Before making a purchase decision, I would visit other stores that sell bicycles to check their prices. | .72 | | | .92 | | |
| Before making a purchase decision, I would need to search for more information about prices of alternative bicycles. | .73 | .88 | .71 | .76 | .95 | .86 |
| Before making a purchase decision, I would visit other stores for a lower price. | .67 | | | .90 | | |
| **Willingness to Buy[d]** | | | | | | |
| If I were going to buy a bicycle, the probability of buying this model is | .72 | | | .84 | | |
| The probability that I would consider buying this bicycle is | .80 | .92 | .79 | .81 | .95 | .86 |
| The likelihood that I would purchase this bicycle is | .89 | | | .92 | | |

[a]For each construct, the item reliability (IR), scale reliability (SR) and Variance Extracted (VE) are provided. Variance extracted was calculated using the formula provided by Fornell and Larcker (1981).
[b]Subjects provided $ estimates.
[c]Seven point scales anchored at "strongly disagree" and "strongly agree".
[d]Seven point scales anchored at "very low" to "very high".

low-price requirements;" "I would value this bicycle as it would meet my needs for a reasonable price;" and "This bicycle would be a worthwhile acquisition because it would help me exercise at a reasonable price."

*Perceived transaction value.* Past research has had considerable problems measuring buyers' perceptions of transaction value and developing a scale that discriminates adequately from perceived acquisition value. On the basis of

our pretests and research by Lichtenstein, Netemeyer, and Burton (1990), we measured perceived transaction value using three Likert statements. These statements seem to capture the essence of transaction value—the pleasure buyers get from finding and taking advantage of a price deal (e.g., "taking advantage of a price deal like this makes me feel good"). Principal component analysis of the acquisition and transaction value scales demonstrates that the two scales discriminate in both studies (see Table 2).

*Willingness to buy.* A three-item scale, based on Dodds, Monroe, and Grewal's (1991) study, measured buyers' willingness to buy. The specific items were anchored from "very low" to "very high."

*Search intentions.* Buyers' intentions to search for additional information (e.g., visit other stores to check their prices) were measured using three Likert statements that were based on prior research by Della Bitta, Monroe, and McGinnis (1981).

# Analysis and Results

## Plan for Data Analysis

The data from the two studies were analyzed in two stages. The measurement model was assessed to confirm that the scales were unidimensional and reliable. When the reliability of the measures had been established, the structural model was tested using LISREL-VII causal modeling procedures (Jöreskog and Sörbom 1989). This testing determined the strength of individual relationships, the model's goodness of fit, and the various hypothesized paths. The two-step procedure followed here reduces the number of

**TABLE 2**
**Factor Analysis (Varimax Rotation) of Acquisition Value and Transaction Value Scale Items**

| | Study 1 | | Study 2 | |
|---|---|---|---|---|
| | Factor 1 | Factor 2 | Factor 1 | Factor 2 |
| AV1 | .82 | .22 | .84 | .35 |
| AV2 | .83 | .25 | .86 | .35 |
| AV3 | .81 | .21 | .88 | .24 |
| AV4 | .86 | .24 | .86 | .37 |
| AV5 | .86 | .20 | .89 | .30 |
| AV6 | .82 | .22 | .87 | .30 |
| AV7 | .71 | .29 | .77 | .42 |
| AV8 | .75 | .19 | .83 | .26 |
| AV9 | .69 | .14 | .78 | .26 |
| TV1 | .16 | .83 | .24 | .84 |
| TV2 | .29 | .85 | .29 | .86 |
| TV3 | .23 | .84 | .37 | .76 |
| Eigen Values | 6.91 | 1.51 | 8.45 | 1.16 |
| Variance Explained | 70.2% | | 80.1% | |

Verbal descriptions of scale items are provided in Table 1. AV1–AV9 represent the nine acquisition value items. TV1–TV3 represent the three transaction value items.

interpretational confounds. PRELIS was used to generate the input matrix.

## Measurement Properties of the Scales

The scales used to measure the latent constructs in the model are provided in Table 1. Item reliability, variance extracted, and construct reliability also are shown. The assessment of the measurement properties of all six scales indicated that the factor loadings (lambdas) were high and significant ($p <$ .001), which satisfies the criteria for convergent validity.

Anderson (1987) suggests the following criterion for assessing discriminant validity between scales: The correlation between two latent constructs plus or minus two standard errors does not include one. All six scales met this criterion in both studies. Furthermore, Fornell and Larcker (1981) suggest that discriminant validity can be assessed by determining whether the variance extracted estimates for two constructs are greater than the square of the parameter estimate between them ($\phi^2$). The six measured constructs met this criterion in both studies. We also assessed the discriminant validity of the scales using confirmatory factor analysis procedures (Anderson and Gerbing 1988). The results of each pairwise construct comparison suggest that the two factor solution was better than the single factor solution (see the Appendix).

Fornell and Larcker (1981) also stress the importance of examining composite reliability and variance extracted. Bagozzi and Yi (1988) suggest two criteria: Composite reliability should be greater than or equal to .60, and variance extracted should be greater than or equal to .50. For both studies, all six composite reliabilities were greater than .75, and all six variances extracted were greater than .55 (see Table 1). Finally, we analyzed the structural model using summated scales and obtained similar results, which suggests that the measurement-structure interaction was minimal.

## Model Fit

The causal models in Figures 1 and 2 were assessed using a full-information method. The causal models were specified as shown in the figures. The PHI, PSI, TD, and TE matrices were diagonal and free. The theta-deltas associated with advertised selling price and advertised reference price were fixed. Errors were treated independently to avoid interpretational confounds. The lambda matrices (both X and Y) were full and fixed. Then the individual items associated with the exogeneous and endogeneous constructs were freed. However, one of the lambdas for each construct was set to 1.0 to properly define the measurement (see Jöreskog and Sörbom 1989).

The overall fit of the structural model was determined initially by examining the $\chi^2$ statistics for each study, which were significant. A significant $\chi^2$ statistic could indicate an inadequate fit, but this statistic is sensitive to sample size and model complexity; therefore, rejection of a model on the basis of this evidence alone is inappropriate (Bagozzi and Yi 1988; Bearden, Sharma, and Teel 1982; Marsh, Balla, and McDonald 1988). Accordingly, other measures of fit compensating for sample size also were applied: Bentler and Bonett's (1980) normed fit index ($\Delta$), Tucker and Lewis's

## TABLE 3
### Testing the Model (Figure 1) Relationships

| Sign | From | To | Study 1 (N = 322) Relationship Estimate | Study 1 Standardized t-value | Study 2 (N = 302) Standardized Estimate | Study 2 t-value |
|---|---|---|---|---|---|---|
| ne | SP —> | PQ | .08 | 1.46 | .03 | .47 |
| ne | RP —> | PQ | −.02 | −.35 | .05 | .80 |
| + | PQ —> | IRP | .25 | 4.31c | .43 | 7.27c |
| + | SP —> | IRP | .46 | 7.38c | .43 | 7.20c |
| + | RP —> | IRP | .15 | 2.62b | .28 | 5.09c |
| + | PQ —> | AV | .54 | 9.96c | .54 | 11.13c |
| − | SP —> | AV | −.22 | −4.55b | −.35 | −7.54c |
| + | IRP —> | TV | .38 | 4.66c | .58 | 7.24c |
| − | SP —> | TV | −.34 | −4.86c | −.70 | −10.13c |
| + | AV —> | WB | .55 | 9.63c | .73 | 14.39c |
| + | TV —> | WB | .16 | 2.88b | .04 | .90 |
| − | AV —> | SI | −.13 | −2.11b | −.29 | 4.85b |
| − | TV —> | SI | .01 | .18 | .14 | 2.26b |

**Goodness-of-Fit Statistics**

| | | | | | | |
|---|---|---|---|---|---|---|
| Chi-Square (df) | | | 701 (264) | | 943 (264) | |
| Goodness-of-Fit Index | | | .86 | | .82 | |
| Deltad | | | .88 | | .89 | |
| Rhod | | | .91 | | .90 | |
| CFId | | | .93 | | .91 | |
| Root Mean Square Residual | | | .12 | | .14 | |
| Coefficient of Determination | | | | | | |
| Structural Equations | | | .36 | | .64 | |

Legend: SP = Selling Price; RP = Advertised Reference Price; PQ = Perceived Quality; AV = Perceived Acquisition Value; IRP = Internal Reference Price; TV = Perceived Transaction Value; WB = Willingness to Buy; SI = Search Intentions, ne = no effect.

aSignificant at $p < .05$ (one-tailed).
bSignificant at $p < .01$ (one-tailed).
cSignificant at $p < .001$ (one-tailed).
dThe causal model is compared with a null model. The null model is a restrictive model hypothesizing total independence among indicators (i.e., no common factors). The null model had a chi-square = 5880.96 with 300 degrees of freedom for Study 1 and a chi-square = 8204.69 with 300 degrees of freedom for Study 2.

(1973) non-normed fit index ($\rho$), and Bentler's (1990) comparative fit index (CFI). Each of these indices showed an adequate fit: $\Delta$ was .88 (Study 1) and .89 (Study 2); $\rho$ was .91 (Study 1) and .90 (Study 2); CFI was .93 and .91 for Study 1 and 2, respectively (see Table 3).

### Hypotheses Tests

The standardized estimates for the various model paths and the associated t-values for the two studies are provided in Table 3. The structural path estimates for the model furnished in Table 3 should be read with the caveat that our data are causal only for the effects of advertised reference price and advertised sale price. For all other relationships, our data are correlational, and the causal direction is based on prior theory.

*Advertised prices and perceived quality.* As expected, advertised selling price and advertised reference price did not affect buyers' perceptions of quality significantly.

*Influences on internal reference price.* These results support $H_1$, $H_2$, and $H_3$, which indicates that buyers' internal reference prices are functions of perceived quality, advertised selling price, and advertised reference price. Previously, Urbany, Bearden, and Weilbaker (1988) demonstrated the capability of advertised reference prices to serve as anchors and to shift internal reference prices in their direction. Finally, Hyun (1993), using Korean subjects, demonstrated a positive relationship between advertised selling prices and subjects' internal reference prices. Thus, our results complement past research and are consistent with predictions based on adaptation-level theory.

*Influences on perceived acquisition value.* In both studies, perceived acquisition value is a positive function of subjects' perceptions of quality ($H_4$ is supported). This relationship has previous empirical support (Dodds, Monroe, and Grewal 1991; Hyun 1993). Therefore, we provide empirical support in a price comparison context for the proposition that perceived acquisition value is influenced, in part, by buyers' perceptions of quality. (Substantively, as mentioned previously, the literature stresses that perceived quality is an important part of the "value equation.")

The hypothesized influence of the advertised selling price on perceptions of acquisition value was supported in both studies ($H_5$ is supported). The overall available evidence presented here supports the theoretical proposition and the lay belief that selling price is a negative element of buyers' perceptions of acquisition value.

*Influences on perceived transaction value.* The model in Figure 1 suggests that perceived transaction value is a function of buyers' internal reference prices and the actual selling price. As is shown in Table 3, these relationships were supported by both studies ($H_6$ and $H_7$ are supported). There is a significant negative relationship between the actual selling price and subjects' perceptions of transaction value. Moreover, there is a positive relationship between subjects' internal reference prices and their perceptions of transaction value. Thus, the theoretical arguments for the influence of selling price and buyers' internal reference prices on buyers' perceptions of transaction value (i.e., the perceived merits of the offer) have empirical support.

*Value perceptions and behavioral intentions.* Della Bitta, Monroe, and McGinnis (1981) observe that buyers' positive perceptions of value were a necessary but insufficient condition to induce willingness to buy. Other research has found a positive relationship between perceptions of value and willingness to buy (Dodds, Monroe, and Grewal 1991; Hyun 1993). However, previous research efforts measured the more global construct—perceived value. In the current empirical effort, we decompose perceived value into two theoretical components: perceived acquisition value and perceived transaction value.

The results shown in Table 3 indicate a significant positive relationship between perceived acquisition value and willingness to buy ($H_8$ is supported). The direct relationship between perceived transaction value and willingness to buy, though positive, is weak overall and not statistically significant in the second study (partial support for $H_9$). Similarly, the negative relationship between perceived acquisition value and search intentions is significant in both studies ($H_{10}$ is supported). The relationship between perceived transaction value and search intentions was not supported (no support for $H_{11}$).

### Test of the Alternative Model, $H_{12}$, and Mediating Hypotheses

*Alternative model.* A key theoretical argument of the alternative model presented in Figure 2 is that perceived transaction value has a positive influence on perceived acquisition value. The empirical relationships provided in Table 4 strongly support this relationship in both studies ($H_{12}$ is supported). Previous efforts to decompose perceived value into its theoretical acquisition value and transaction value components have had measurement flaws. As is demonstrated in Tables 1 and 2, the research reported here has overcome the inherent measurement difficulties presented by these two concepts.

The results of the alternative model also are presented in Table 4. The model hypotheses are supported in both studies. Furthermore, the revised model (with four fewer paths) fits the data as well as the complete model (e.g., the CFI statistic was the same for both models). These results further validate our propositions that the effect of selling price on perceived acquisition value is mediated by perceived transaction value and that the effects of perceived transaction value on purchase and search intentions are mediated by

perceived acquisition value.[5]

# Discussion

### Conceptual Developments

As has been noted, price comparison advertising is a widely used price promotion tactic. Although research investigating issues on the relative effectiveness of this tactic spans nearly 20 years, we are still trying to understand how and why it works. Drawing on prior research (e.g., Monroe and Chapman 1987; Thaler 1985), we provide a theoretical argument

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[5]Three conditions must be met to establish mediation: (1) the independent variable affects the mediator; (2) the independent variable affects the dependent variable; and (3) when both the independent variable and the mediator are regressed on the dependent variable, the mediator is significant, whereas the effect of the independent variable is reduced. ANOVA and ANCOVA procedures suggested by Hastak and Olson (1989) (similar to Baron and Kenny [1986] procedures) were followed and supported the proposition that perceived transaction value mediates the effect of selling price on perceived acquisition value. ANOVA results indicated a significant effect of selling price on perceived transaction value (Study 1: $F_{(1,344)} = 12.10$, $p < .001$; Study 2: $F_{(1,316)} = 48.64$, $p < .001$) and perceived acquisition value (Study 1: $F_{(1,344)} = 7.57$, $p < .01$; Study 2: $F_{(1,316)} = 25.87$, $p < .001$). Furthermore, the effect of selling price on perceived acquisition value was nonsignificant when perceived transaction value was treated as a covariate (Study 1: $F_{(1,343)} = 1.26$, $p > .05$; Study 2: $F_{(1,315)} = .57$, $p > .05$). In addition, the covariate was significant (Study 1: $F_{(1,343)} = 130.16$, $p < .001$; Study 2: $F_{(1,315)} = 273.91$, $p < .001$). Procedures suggested by Baron and Kenny (1986) were followed to assess whether perceived acquisition value mediates the effect of perceived transaction value on buyers' willingness to buy. We find that perceived transaction value significantly enhanced perceived acquisition value (Study 1: $t_{(346)} = 11.43$, $p < .001$; Study 2: $t_{(318)} = 16.59$, $p < .001$) and willingness to buy (Study 1: $t_{(353)} = 7.25$, $p < .001$; Study 2: $t_{(323)} = 9.99$, $p < .001$). Furthermore, when both transaction value and acquisition value were regressed on buyers' willingness to buy, acquisition value significantly affected willingness to buy (Study 1: $t_{(343)} = 10.28$, $p < .001$; Study 2: $t_{(317)} = 12.29$, $p < .001$), while the effect of transaction value was reduced and nonsignificant (Study 1: $t_{(343)} = 1.41$, $p > .05$; Study 2: $t_{(317)} = 1.12$; $p > .05$). Thus, the regression results support the proposition that the effect of perceived transaction value on willingness to buy is mediated by perceived acquisition value. Similarly, we find that perceived transaction value significantly reduced search intentions only in Study 2 (Study 1: $t_{(356)} = -.66$, $p > .05$; Study 2: $t_{(322)} = -3.34$, $p < .001$). Thus, mediation could only be tested in Study 2. When both transaction value and acquisition value were regressed on buyers' search intentions, acquisition value significantly affected search intentions (Study 2: $t_{(316)} = -3.74$, $p < .001$), while the effect of transaction value was reduced and non-significant (Study 2: $t_{(316)} = .09$, $p > .05$). As was found for willingness to buy, acquisition value serves to mediate the relationship between perceived transaction value and search intentions. We also tested the mediation through nested models. We ran the proposed model (Figure 1) with an additional path (transaction value to acquisition value). The results were $\chi^2$ of 630 (Study 1) and 841 (Study 2), both with df = 263. A nested model with the three fewer paths (no linkage between selling price and acquisition value, no linkages from acquisition value to willingness to buy and search intentions) had $\chi^2$ of 644.24 (Study 1) and 846.63 (Study 2), both with df = 266. Similar to the regression results, the nested model approach supports the mediation hypotheses for Study 2.

TABLE 4
Testing the Model (Figure 2) Relationships

| Relationship | | | Study 1 (N = 322) | | Study 2 (N = 302) | |
|---|---|---|---|---|---|---|
| Sign | From | To | Standardized Estimate | t-value | Standardized Estimate | t-value |
| + | PQ —> | IRP | .25 | 4.10c | .42 | 7.13c |
| + | SP —> | IRP | .46 | 7.12c | .43 | 7.20c |
| + | RP —> | IRP | .15 | 2.53b | .28 | 5.09c |
| + | PQ —> | AV | .40 | 7.77c | .31 | 7.39c |
| + | IRP —> | TV | .42 | 4.94c | .68 | 8.30c |
| − | SP —> | TV | −.38 | −5.23c | −.76 | −11.28c |
| + | AV —> | WB | .60 | 10.07c | .74 | 15.25c |
| − | AV —> | SI | −.12 | −1.88a | −.20 | 3.48b |
| + | TV —> | AV | .50 | 8.21c | .66 | 11.78c |

**Goodness-of-Fit Statistics**

| | | |
|---|---|---|
| Chi-Square (df) | 606 (268) | 847 (268) |
| Goodness-of-Fit Index | .86 | .82 |
| Deltad | .90 | .90 |
| Rhod | .93 | .92 |
| CFId | .94 | .92 |
| Root Mean Square Residual | .06 | .06 |
| Coefficient of Determination | | |
| Structural Equations | .51 | .79 |

Legend: SP = Selling Price; RP = Advertised Reference Price; PQ = Perceived Quality; AV = Perceived Acquisition Value; IRP = Internal Reference Price; TV = Perceived Transaction Value; WB = Willingness to Buy; SI = Search Intentions, ne = no effect.
aSignificant at $p < .05$ (one-tailed).
bSignificant at $p < .01$ (one-tailed).
cSignificant at $p < .001$ (one-tailed).
dThe causal model is compared with a null model.

for why such price promotional tactics (and other similar forms) influence buyer behavior.

Previous empirical efforts to decompose the concept of overall perceived value into the two independent constructs of perceived acquisition value and perceived transaction value encountered measurement problems (e.g., Chapman and Monroe 1990; Grewal 1989). Examining prior research efforts (e.g., Chapman and Monroe 1990; Grewal 1989) and comments on Thaler's original conceptualization (Bearden et al. 1992) led to the revised model in Figure 2 and to the stronger measurement model presented here.

Prior research (i.e., Monroe and Chapman 1987; Thaler 1985) typically modeled these two value dimensions as independent of each other. There is the possibility that one of the two value components is actually an antecedent of the other. Because, in the absence of a price promotion, the basic perceived value model (see Dodds, Monroe, and Grewal 1991; Zeithaml 1988) postulates that buyers' perceptions of value are formed from a mental trade-off between perceived quality (or benefits) and price, it seems logical that buyers would perceive a price promotion as enhancing the overall value of an acquisition. Thus, the model in Figure 2 shows the conceptual adjustments, which suggests that perceived acquisition value is a function of perceived quality and perceived transaction value (i.e., assessment of the price offer). The advertised selling price affects perceived acquisition value by its effect on perceived transaction value. As simple as this conceptualization seems, it represents an important addition to the research literature on the

relationship between price and buyers' perceptions of quality and value.

Although this research emphasizes exploration of the relative effects of price comparison advertising on buyers' perceptions of value, important insights also have been found about the internal reference price concept. It has been conceptually argued and empirically confirmed that buyers' internal reference price is influenced by both the seller's advertised (higher) reference price and the advertised (lower) selling price. Previous research demonstrates the influence of the advertised reference price on buyers' internal reference prices (Urbany, Bearden, and Weilbaker 1988). As conceptualized by adaptation-level theory, this research also demonstrates that both prices presented in a price comparison advertisement influence buyers' internal reference prices. Moreover, it has been shown that buyers' internal reference prices are influenced by their relative assessments of product quality. This finding is consistent with the tenets of cognitive reference points and categorization theory (Herr 1989; Monroe, Grewal, and Compeau 1991).

The conceptual argument by Thaler (1985) and Monroe and Chapman (1987) that perceived transaction value is a function of the selling price and buyers' internal reference price has been confirmed empirically. Although Urbany and Bearden (1989) show the positive relationship between buyers' internal reference price and their perceptions of transaction value, this is the first published research effort to demonstrate the apparent implied mental comparison

between the advertised selling price and buyers' internal reference prices.

Also of concern is whether perceived transaction value has a direct or indirect influence on willingness to buy or intentions to search. Previous research offers convincing evidence on the direct relationship between perceived (acquisition) value and measures of behavioral intentions. Our empirical evidence supports the idea that perceived transaction value influences willingness to buy and intentions to search through its effect on perceived acquisition value. This particular finding strengthens the argument that, in comparative price advertising promotions, perceived transaction value enhances buyers' perceptions of acquisition value, and that these two components of perceived value are not independent constructs.

## Measure Development

Operationally, this research develops and validates separate measures of perceived acquisition value and perceived transaction value (Table 1). One aspect of this measure development was to understand the psychological pleasure that buyers might experience when buying a product on deal (i.e., obtaining a bargain). For further discussion on this point, see Schindler (1989). Another contribution of this research is the development of a unidimensional multi-item scale to measure buyers' internal reference price. Past research predominantly used single items that tapped into various aspects of the internal reference price scale (or continuum) (see Monroe, Grewal, and Compeau 1991). In addition, measures for perceived product quality and purchase and search intentions were further refined and validated (see Table 1).

## Managerial Implications

A key managerial implication of this research is the demonstration of how advertised prices (both reference and sale) provided in price comparison advertisements affect buyers' internal reference prices (i.e., higher advertised prices lead to higher internal reference prices). In turn, these internal reference prices are linked to buyers' perceptions of value and behavioral intentions. Focusing on only the final price (or sale price) to the exclusion of the contextual advertised (or display) reference price by advertisers and retailers might be a strategic mistake. This issue could be one of the reasons why the "everyday low price" strategy used by several retailers has not been successful.

The results of our studies, in conjunction with past research (e.g., Lichtenstein and Bearden 1989; Urbany, Bearden, and Weilbaker 1988), suggest that inflated advertised reference prices have the potential to be deceptive (in our studies, the $500 advertised reference price was considerably higher than the average market price). These higher advertised reference prices enhance buyers' perceptions of transaction value, acquisition value, and purchase intentions and reduce buyers likelihood of searching for a lower price. Furthermore, the potential for deception is likely to be more pronounced for buyers who have less price and/or product knowledge. The concerns voiced by several State's Attorneys' General offices that value pricing could be used to

deceive consumers seem to have merit. Consequently, State's Attorneys' General offices and the Federal Trade Commission must monitor such practices. In cases in which retailers and manufacturers use fictitious or inflated advertised reference prices in their advertisements, appropriate action must be taken. Appropriate action by such agencies might include cease and desist orders, fines, and posted notices of how the retailer established the advertised reference price.

The current research findings support the notion that product quality perceptions enhance acquisition value and willingness to buy. Furthermore, past research shows that a high-quality position is important in developing brand equity and leads to higher market share and profitability in the long run (Curry 1985; Jacobson and Aaker 1987; Phillips, Chang, and Buzzell 1983). Our results (cross-sectional study) in conjunction with those based on PIMS databases (i.e., longitudinal) suggest that developing and maintaining a high-quality position is important for short-term adoption and long-term development of market share.

The lack of association between price and quality perceptions in our two studies supports past research findings that a high-quality position is not necessarily incompatible with a low cost (or price) position (Phillips, Chang, and Buzzell 1983). Many manufacturers try to maximize value to buyers by offering above-average quality at reasonable prices (Curry 1985). This positioning can be achieved through well-designed price promotions that emphasize the fairness or reasonableness of their selling prices and thereby enhance buyers' perceptions of transaction value. Our findings suggest that buyers' perceptions of transaction value enhances willingness to buy through their perceptions of acquisition value.

Our study results suggest that acquisition value has considerable influence on buyers' willingness to buy. It must be noted that customers balance the benefits of the purchase against the costs. Benefits can be functional, operational (e.g., durability, reliability), or personal (Shapiro and Jackson 1978). Costs include both financial (sale price) and nonfinancial aspects, such as time and effort (Zeithaml 1988). Today's information technology (e.g., through the Internet, consumer reports) enables buyers to compare benefits and prices with unprecedented ease and accuracy. Managers must understand the variables affecting the acquisition value of the product. They also must understand where their product fits on a continuum ranging from satisfying unique needs (e.g., CAT scanner) to satisfying undifferentiated needs (e.g., corn syrup) (Dolan 1995; Nagle and Holden 1995). Thus, manufacturers can position products that are unique using an acquisition value-enhancing strategy and those that are relatively undifferentiated from competitors using a transaction value-enhancing strategy.

The study results also suggest that the various value strategies (i.e., deal value versus product value) are important predictors of behaviors. In addition, past research suggests that the cost of serving buyers and the effectiveness of value strategies might vary across segments (Lichtenstein, Netemeyer, and Burton 1990; Shapiro et al. 1987). That is, some segments are sensitive toward price, whereas others

are more benefit oriented (in our studies, the relative effect of acquisition value versus transaction value on willingness to buy was greater for the nonstudent sample). Therefore, value perceived by buyers will vary across segments. For some buyers, acquisition value might be more important than transaction value or vice versa. Managers should determine which value strategy is appropriate for their target segments and develop their positioning strategies appropriately.

## Limitations and Avenues for Further Research

Further research should explore this study's limitations. For example, subjects were exposed to one type of semantic cue, the original price and selling price combination. Research using other product and semantic cues, such as "compare at, selling price," "MSLP, selling price," and "total value, selling price" would be worthwhile (see Grewal, Marmorstein, and Sharma 1996).

Another limitation of this research was Thaler's (1985) suggestion that buyers' acquisition utility (or value) should be equivalent to the comparison of their reservation price with the actual selling price. This research, following Monroe and Chapman's (1987) conceptualization, considered perceived acquisition value as a comparison between buyers' perceptions of quality and selling price. Although the approach used here is consistent with the extant marketing practitioner beliefs, the relative role of reservation price (or maximum acceptable price) should be explored as an alternative way to measure the get component of buyers' perceptions of acquisition value. In addition, research must explore whether other factors such as usage flexibility, usage convenience, and need congruence affect buyers' perceptions of acquisition value.

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[6]Acquisition value is conceptualized as a function of perceived quality of the product and the selling price. Monroe (1990) uses a ratio model but points out that this is only a way of illustrating the comparison. Associated literature on price-quality trade-offs have found greater support for a subtractive model (e.g., Levin and Johnson 1984; White and Truly 1989). We conducted two regression analyses:

Model 1: Perceived acquisition value as a function of perceived quality and advertised selling price.
Model 2: Perceived acquisition value as a function of perceived quality, advertised selling price, and an interaction term.

The results of the regression analysis indicate the following:
Model 1: Study 1—$F_{(2,301)}$ = 78.67, adjusted $R^2$ = .34; Study 2—$F_{(2,321)}$ = 63.14, adjusted $R^2$ = .28.
Model 2: Study 1—$F_{(3,300)}$ = 53.11, adjusted $R^2$ = .347; Study 2—$F_{(3,320)}$ = 42.66, adjusted $R^2$ = .28.

Interaction was not significant in either study. The results suggest that acquisition value might be represented best by a subtractive model. Results also suggest that transaction value is represented by a subtractive model.

Model 1: Study 1—$F_{(2,304)}$ = 36.77, adjusted $R^2$ = .19; Study 2—$F_{(2,331)}$ = 12.73, adjusted $R^2$ = .07.
Model 2: Study 1—$F_{(3,303)}$ = 24.451, adjusted $R^2$ = .195; Study 2—$F_{(3,330)}$ = 8.47, adjusted $R^2$ = .07.

Interaction was not significant in either study.

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A related issue pertains to the functional form of perceived acquisition value. Monroe (1990) suggests a ratio (or proportional) model, but points out that this is only one means of illustrating the comparison. Associated research on price-quality and price-warranty trade-offs supports a subtractive model (e.g., Levin and Johnson 1984; White and Truly 1989). Our results also support a subtractive model.[6] However, White and Truly (1989), using some important methodological variations, also show that some of their subjects apparently followed a proportional model of information integration. Therefore, an important research issue is whether the information integration implied by the formation of perceived acquisition value is represented best as a subtractive, ratio, or averaging model or as some other functional form. Finally, there is a need for research that involves examining whether the degree of believability of the advertised reference price, believability of the selling price, believeabilty of the overall price offer, and price consciousness influence buyers' perceptions of transaction value.

Another issue that warrants additional research addresses the distinction between acquisition value and overall value. Overall perceived value can be conceptualized with many distinct components (Forbes and Mehta 1978), which could include the value of the acquisition, the value associated with the start-up (e.g., a cellular phone with a recharger similar to an existing cellular phone will have greater value), and the value associated with reselling the product (e.g., some cars have greater resale value). Thus, research in business-to-business settings might need to distinguish, conceptually and operationally, acquisition value from overall value.

Research also must address how buyers form their internal reference prices. In this research, respondents' internal reference prices were operationalized through point estimates of their expected normal, average, and fair prices. However, Klein and Oglethorpe (1987) suggest that internal reference prices could be operationalized in a variety of other manners, including by expected prices, price last paid, or aspiration price. Furthermore, internal reference prices also may be operationalized as a price range (Monroe, Grewal, and Compeau 1991; Urbany and Dickson 1990). Therefore, further research must address whether these different bases for, and ways of measuring, internal reference prices yield similar results.

Although this study examines the effectiveness of the framework in the context of price-comparison advertisements, further research is needed to test its effectiveness in explaining buyers' behavioral reactions to other price promotions (e.g., coupons, rebates) as well as price changes. The generalizability of the model should be examined by assessing the fit of the model for different samples of buyers. Value-conscious segments, deal-prone segments, and segments that do or do not believe the difference between the advertised selling price and the advertised reference price might vary. Furthermore, the predispositions of the subjects could affect their perceptions. It would be useful to look at the individual characteristics of subjects more closely and assess such variables as involvement, price consciousness, knowledge, and inclination to take risks.

## APPENDIX
## One-Factor Versus Two-Factor Confirmatory Model Comparison Discriminant Validity Analysis

| | Acquisition Value | Transaction Value | Quality | Willingness to Buy | Internal Reference Price | Search Intentions |
|---|---|---|---|---|---|---|
| Acquisition value | — | .57 | .51 | .61 | .35 | −.12 |
| | | 289.19 | 682.70 | 474.64 | 146.57 | 496.93 |
| | | 231.83 | 237.49 | 230.27 | 201.59 | 212.19 |
| Transaction value | .70 | — | .32 | .44 | .17 | −.05 |
| | 193.82 | | 767.01 | 343.72 | 165.04 | 502.03 |
| | 266.87 | | 4.90 | 8.24 | 7.68 | 6.24 |
| Quality | .52 | .35 | — | .31 | .24 | .04 |
| | 858.36 | 805.08 | | 631.98 | 159.17 | 500.71 |
| | 230.57 | 4.97 | | 8.15 | 6.93 | 13.42 |
| Willingness to buy | .74 | .55 | .46 | — | .08 | −.12 |
| | 548.02 | 267.60 | 806.43 | | 167.14 | 497.15 |
| | 248.05 | 29.90 | 23.37 | | 6.66 | 4.74 |
| Internal reference price | .53 | .23 | .39 | .39 | — | −.20 |
| | 110.78 | 148.14 | 132.78 | 132.49 | | 162.18 |
| | 214.73 | 7.69 | 6.09 | 14.18 | | 3.23 |
| Search intentions | −.21 | −.08 | −.02 | −.21 | −.23 | — |
| | 951.67 | 976.76 | 978.92 | 916.96 | 148.58 | |
| | 246.85 | 32.53 | 9.07 | 29.09 | 2.64 | |

Numbers above the diagonal represent the student sample (Study 1); numbers below the diagonal represent the nonstudent sample (Study 2). The first number is the correlation between the latent constructs. The second number is the chi-square differences: $\chi^2$ for the one-factor model, $-\chi^2$ for the two-factor model (all the differences are significant at .05 level). The third number is the $\chi^2$ for the two-factor model.

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