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Seven price-related constructs—five consistent with a perception of price in its "negative role" and two consistent with a perception of price in its "positive role"—are used as independent variables to predict marketplace responses/behaviors in five domains: price search, generic product purchases, price recall, sale responsiveness, and coupon redemption. The price-related constructs explain a significant amount of variance in all five domains, providing evidence of predictive validity. Results of a higher order factor analysis are also reported, which provide some support for the positive-negative perception of price taxonomy.

# Price Perceptions and Consumer Shopping Behavior: A Field Study

Price is unquestionably one of the most important marketplace cues. The pervasive influence of price is due, in part, to the fact that the price cue is present in all purchase situations and, at a minimum, represents to all consumers the amount of economic outlay that must be sacrificed in order to engage in a given purchase transaction. Perceived strictly in this way, price represents the amount of money that must be given up, and therefore higher prices *negatively* affect purchase probabilities. However, several researchers have noted that price is a complex stimulus and many consumers perceive price more broadly than strictly in its "*negative role*" as an outlay of economic resources. For example, numerous studies have provided evidence that many consumers use the price cue as a signal to indicate product quality. To the degree price is perceived in this "*positive role*," higher prices *positively* affect purchase probabilities (Erickson and Johansson 1985; Lichtenstein, Bloch, and Black 1988; Tellis and Gaeth 1990; Zeithaml 1988). Erickson and Johansson (1985) modeled the dual role of the price cue within a single study and found that price-level perceptions had a direct negative effect on purchase intentions and an indirect positive effect on purchase intentions via product quality perceptions.

Our premise is that if the price cue is indeed a complex stimulus, finer discriminations in consumer perceptions of both the positive and negative roles of price appear plausible. As recently noted by Dickson and Sawyer (1990, p. 51), "what is clear is that shoppers are very heterogeneous in terms of their attention and reaction to price and price promotions." The purpose of our study is to explain some of this heterogeneity by offering further delineations of the perception of price in its positive and negative roles. In addressing this objective, we begin by providing conceptualizations of seven different price-related constructs—five constructs consistent with a perception of price in its negative role and two constructs consistent with a perception of price in its positive role. We then use established scale development procedures to create multi-item scales based on the conceptual definitions of each of the seven price-related constructs. We assess the predictive validity of the seven price-related constructs by relating them to five categories of marketplace responses and behaviors in a natural field setting. Results of a higher order factor analysis designed to assess the validity of the positive-negative perception of price taxonomy are then reported. Finally, we discuss results, limitations, and implications for future research.

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### *PRICE PERCEPTION CONSTRUCTS*

To identify the number of ways consumers may attend and react to price and price promotions, we performed an extensive review of the pricing and sales promotion literature. Additionally, a pilot study was conducted in a classroom setting in which 94 students majoring in business responded to open-ended questions about how they perceive, and may be influenced by, price information in the marketplace. Five constructs consistent with a perception of price in its negative role and two constructs consistent with a perception of price in its positive role were identified. These constructs are discussed next.

#### *Negative Role of Price*

*Value consciousness.* Perception of the price cue for some consumers can be characterized by a concern with the ratio of quality received to price paid in a purchase transaction. Several researchers have defined the concept of "value" in terms consistent with this perspective (e.g., Lichtenstein, Netemeyer, and Burton 1990; Tellis and Gaeth 1990; Thaler 1985; Zeithaml 1988). Consequently, value consciousness is conceptualized here as reflecting *a concern for price paid relative to quality received.*

*Price consciousness.* Perception of the price cue for some consumers can be characterized more narrowly as reflecting price consciousness. Though the term "price consciousness" has been used by different researchers to refer to a variety of price-related cognitions (cf. Zeithaml 1984), we use the term in a very narrow sense to refer to *the degree to which the consumer focuses exclusively on paying low prices.* This definition is also consistent with those employed by several researchers (e.g., Erickson and Johansson 1985; Lichtenstein, Bloch, and Black 1988; Monroe and Petroshius 1981; Tellis and Gaeth 1990).

*Coupon proneness.* Perception of the price cue in its negative role may also be related to the *form* in which the price cue is presented. Consistent with this perspective, several researchers have argued that a price reduction in coupon form may produce an increase in consumer response beyond that which would result from an equivalent lower noncoupon price (cf. Lichtenstein, Netemeyer, and Burton 1990). Cotton and Babb (1978) and Schindler (1990) found empirical support for this notion. These findings imply that the increase in sales resulting from a price offered in coupon form over the increase that would result from an equivalent lower noncoupon price seemingly must be due to an increased sensitivity to price in its negative role when it is offered in coupon form. Lichtenstein, Netemeyer, and Burton (1990, p. 56) referred to this heightened sensitivity as reflecting "coupon proneness" and defined the construct as "*an increased propensity to respond to a purchase offer because the coupon form of the purchase offer positively affects purchase evaluations.*" The same conceptualization appears appropriate for the present study and is employed here.

*Sale proneness.* A rationale very similar to that for coupon proneness suggests that for some consumers, an increased sensitivity to price in its negative role is related to the price being in sale form, that is, a discount from the regular selling price (e.g., "regular price $1.99, sale price $1.29"). Advertising a sale price with an accompanying reference price (i.e., a comparative price advertisement) has been found to increase perceptions of value over the level that would result from an equivalent purchase price not presented in sale form (cf. Monroe and Chapman 1987). Because of the more favorable price evaluations caused by a purchase price being in sale form, we characterize such consumers' perception of price in its negative role as reflecting sale proneness. Consequently, on the basis of the deal proneness conceptualization of Lichtenstein, Netemeyer, and Burton (1990), we define sale proneness as "*an increased propensity to respond to a purchase offer because the sale form in which the price is presented positively affects purchase evaluations.*"

*Price mavenism.* The perception of price in its negative role may be related to a desire to be informed about marketplace prices in order to transmit such information to other people. Support for this notion is provided by Feick and Price (1987), who show that some consumers can be described as "market mavens" because of their desire to be informed about the marketplace so that they can transmit information to others. Because of the general salience of price information in the marketplace, and consistent with the focus of the present study, we take a narrower perspective of the market maven by considering only one piece of marketplace information, price. That is, a sensitivity to price in its negative role for some consumers may reflect a desire to be a "price maven," a source of low price information for other people. By modifying the definition of the market maven provided by Feick and Price (1987, p. 85), we define price mavenism as *the degree to which an individual is a source for price information for many kinds of products and places to shop for the lowest prices, initiates discussions with consumers, and responds to requests from consumers for marketplace price information.*

#### *Positive Role of Price*

*Price-quality schema.* For some consumers, the price cue may be perceived in a positive role because of an inference that the level of the price cue is related positively to the level of product quality (cf. Erickson and Johansson 1985). To the degree consumers perceive price in this way, they view higher prices more favorably because of perceptions of increases in product quality for additional monetary outlays (cf. Lichtenstein, Bloch, and Black 1988). In fact, because consumers who perceive price in this way actually prefer paying higher prices, their behavior has been referred to as "price seeking" (Tellis and Gaeth 1990).

Though evidence suggests that the use of price as a surrogate indicator of product quality varies across situations and products being evaluated (cf. Monroe and

Krishnan 1985), findings from several studies also support the notion that some consumers are simply more likely than others to use price as a general indicator of quality across situations and products (e.g., Lichtenstein and Burton 1989; Peterson and Wilson 1985). Consequently, in this study we focus on the *generalizable* construct of a positive association between price and perceived quality and define price-quality schema as the *generalized belief across product categories that the level of the price cue is related positively to the quality level of the product.*

*Prestige sensitivity.* Similar to perceptions of the price cue based on what it signals *to the purchaser about product quality* (i.e., a price-quality schema) are perceptions of the price cue due to inferences about what it signals *to other people about the purchaser.* For example, to the degree a consumer purchases an expensive wine not because of quality perceptions *per se,* but because of his or her perception that others will perceive the high price as reflective of internal traits of the purchaser (e.g., being a "big spender")—that is, a correspondent inference attribution (cf. Calder and Burnkrant 1977; Jones and Davis 1965)—the positive perception of the price cue is based on perceptions of what it signals to others in a social sense. Therefore, we define prestige sensitivity as *favorable perceptions of the price cue based on feelings of prominence and status that higher prices signal to other people about the purchaser.*

## HYPOTHESES

To assess the predictive validity of the price-related constructs, we offer and test hypotheses about the seven constructs and marketplace responses/behaviors in five different domains: (1) low price search outside the store, (2) generic product purchases, (3) price recall, (4) sale-responsive behavior, and (5) coupon-redemption behavior. These responses/behaviors were selected because they represent a broad range of marketplace behaviors that should be related differentially to the seven price-related constructs. These responses/behaviors are also central to pricing and sales promotion research, and multiple and objective behavioral measures are available for most of them.

### *Low Price Search Outside the Store*

To the degree consumers perceive price in its negative role, they seek to pay lower prices; to the degree consumers perceive price in its positive role, prices at lower levels are more likely to be unacceptable (cf. Lichtenstein, Bloch, and Black 1988). This rationale suggests that the perception of price in its negative role should be related positively to active search for low price information outside the store, whereas the perception of price in its positive role should be related negatively to such search.

### *Generic Product Purchase*

Because generic products are the lowest priced alternatives in product categories, a perception of price in its negative role should be related positively to the purchase of generic products. Because the low price associated with generic products will be taken as indicative of product quality (price-quality schema) or seen as reflective of internal traits of the purchaser (prestige sensitivity), a perception of price in its positive role should be related negatively to the purchase of generic products.

### *Price Recall*

Both theoretical and empirical evidence suggests that the perception of price in its positive role should be related negatively to price recall accuracy and the perception of price in its negative role should be related positively to price recall accuracy. For the former prediction, Lichtenstein, Bloch, and Black (1988) found that the propensity to make price-quality inferences was related negatively to price consciousness, suggesting less accurate price recall for persons who perceive price in its positive role. Also supportive of this prediction is their finding that price-quality inferences had an indirect (via price acceptability level) positive effect on the width of the latitude of price acceptance, suggesting less involvement with price and thus less price recall ability (Sherif, Sherif, and Nebergall 1965). For perception of price in its negative role, Lichtenstein, Bloch, and Black found that price consciousness had both a direct and indirect (via price acceptability level) negative effect on the width of the latitude of price acceptance, suggesting greater involvement with price and thus greater price recall ability (Sherif, Sherif, and Nebergall 1965).

### *Sale and Coupon Responsive Behavior*

Differences in the way consumers perceive price are also hypothesized to result in differences in responsiveness to advertised sales and coupon offers. Because sales and coupons represent opportunities to obtain products at reduced prices, we hypothesize a positive relationship between a perception of price in its negative role and behavioral response to these two types of price promotions. Conversely, because consumers who operate on a price-quality schema or who are prestige sensitive do not seek to pay reduced prices, we hypothesize a negative relationship between a perception of price in its positive role and response to these two types of price promotions.

## METHOD

Multi-item scales for each of the seven price-related constructs were either developed in our study or borrowed in original or modified form from previous research. For price mavenism, price consciousness, prestige sensitivity, and sale proneness, we developed measures by using scale development procedures similar to those recommended by Churchill (1979). For coupon proneness and value consciousness, we used the measures of Lichtenstein, Netemeyer, and Burton (1990), who followed similar scale development procedures. For price-quality schema, we employed measures found in the literature (cf. Lichtenstein and Burton 1989; Moschis and Churchill 1978; Peterson and Wilson 1985).

*Generation of Scale Items*

An initial pool of items for the price mavenism, price consciousness, prestige sensitivity, and sale proneness constructs was generated. For price mavenism, the 6-item market mavenism scale of Feick and Price (1987) was modified to focus more narrowly on price information. Then, two marketing faculty members and one marketing doctoral student were given the conceptual definition of price mavenism and asked to generate additional scale items. This process resulted in eight additional items, for a total of 14 price mavenism items. For price consciousness, four measures found in the literature that were consistent with the conceptual definition of the construct were employed (cf. Lichtenstein, Bloch, and Black 1988; Moschis and Churchill 1978). This set was augmented by 14 additional items generated by the two marketing faculty members and one doctoral student for a total of 18 items. For prestige sensitivity, we found one item in the literature that appeared consistent with the conceptual definition (cf. Moschis and Churchill 1978) and augmented it with 18 additional items thought to cover the domain of the construct that were generated by the same three individuals. Finally, on the premise that sale proneness is a price-oriented dimension of deal proneness and differs from coupon proneness in the form of the price discount, we developed 18 items to cover the domain of sale proneness by first modifying the eight items of the coupon proneness scale (Lichtenstein, Netemeyer, and Burton 1990) to reflect the construct of sale proneness. In addition to these eight items, one item found in the literature that appeared consistent with the conceptual definition of sale proneness was used (cf. Craig, Engel, and Talarzyk 1971), and nine additional items thought to cover the domain of sale proneness, generated by the same three individuals, were employed.

The 69 items thought to cover the domain of the constructs were interspersed throughout a questionnaire and administered to a convenience sample of 341 nonstudent adult consumers who had primary responsibility for the grocery shopping in their respective households. The items representing the four respective constructs were then purified on the basis of factor analysis and coefficient alpha, which resulted in 10 items for the price mavenism scale ($\alpha = .90$), 13 items for the price consciousness scale ($\alpha = .84$), 11 items for the prestige sensitivity scale ($\alpha = .89$), and 16 items for the sale proneness scale ($\alpha = .90$).[1] Consequently, these 50 items, along with the 7-item value consciousness scale, the 8-item coupon proneness scale, and the 6-item price-quality schema scale, were included in the main study.

*Main Study*

The main study was conducted in a field setting at two different grocery stores in a western SMSA. Nine marketing students were recruited and trained to serve as data collectors in the study. After receiving training on how they were to engage shoppers and collect data from them, shifts of four students at a time (two per store) were positioned inside the exits of two large supermarkets (same chain) from 10:00 A.M. to 8:00 P.M. over a five-day period (Wednesday through Sunday). As shoppers exited the supermarket, they were approached by one of the students and asked whether they would participate in a study sponsored by the local university on how people shop. Shoppers were told that it would take between 3 and 5 minutes of their present time and an additional 20 to 25 minutes of their time at home to complete a survey and return it in a postage-paid envelope. As compensation, they were told they would receive some valuable coupons (described subsequently).

If the shopper agreed to participate, the interviewer asked the shopper for his or her cash register receipt. The particular chain of supermarkets was selected because it printed brand names on the receipts as well as individual coupons redeemed. Upon obtaining the receipt, the interviewer located the first four nonmeat or nonproduce items and asked the shopper to recall the price paid.[2] For shoppers who had purchased fewer than four items, price recall consisted of only the number of nonmeat and nonproduce items purchased. We attempted to obtain price recall estimates from all shoppers. However, because previous research has found that some shoppers lack the ability to recall even an approximate price estimate (cf. Dickson and Sawyer 1990; Gabor and Granger 1961), we anticipated that several of the shoppers in our sample would likewise be unable to offer an estimate. Our interviewers were instructed to query respondents until either an approximate price was provided or the respondent stated that he or she was unable to recall even an approximate price. After providing price recall information, respondents were asked whether they had looked at the weekly grocery advertisement before making their purchases.

After recording these responses, the interviewers gave respondents eight coupons to a local "high profile" bakery (provided in advance as compensation for survey completion), a take-home survey, and a postage paid return envelope addressed to the university.[3] One of the

[1]For these four scales, the number of items reported as resulting from the purification analysis warrants qualification. The item analysis indicated that between one and three additional items should be dropped from each of the four scales. However, in an attempt to carry forth enough items to the main study to ensure valid construct measurement, and because items would be subjected to additional purification analyses in the main study, we reworded several problematic scale items to better reflect their respective conceptual definitions and carried them forward to the main study. Consequently, alpha values are based on numbers of scale items from one to three less than the number of items reported as comprising the scale.

[2]We decided not to use meat and produce items because they are often priced on a per-pound rather than per-unit basis and hence price recall scores would not be comparable to those of nonmeat and nonproduce items.

[3]Responses on the returned surveys indicated that 83.3% of the respondents had heard of the bakery and 44.5% had shopped there before.

coupons was for a free loaf of bread (a $2.65 value) and an additional three coupons were for 40% off on muffins, dinner rolls, and cookies. The remaining four coupons were for 20% off on bread, muffins, dinner rolls, and cookies. The first four coupons had an expiration date two weeks after the supermarket encounter; the second four coupons were also valid for two weeks, beginning when the first set of coupons expired.

The take-home questionnaire contained measures of each of the seven price-related constructs, measures of socioeconomic and demographic variables, and some self-report items. The self-report items included a single-item measure of the respondent's perception of the usefulness of the information provided by *Consumer Reports* magazine ("The information provided in *Consumer Reports* magazine is useful," strongly agree/strongly disagree; cf. Lichtenstein, Netemeyer, and Burton 1990), a single-item scale for the frequency of grocery store coupon-redemption behavior ("Approximately how often do you use coupons in the grocery store?", very frequently/very infrequently; cf. Lichtenstein, Netemeyer, and Burton 1990), and three single-item scales designed to assess behavioral intention to redeem any one of the coupons in each of the three categories of coupons provided as study compensation (e.g., "How likely is it that you will redeem any of the three attached 40%-off coupons at the Great Harvest Bread Company?", very likely/very unlikely).

Coupons redeemed at the bakery were retained by management and returned to the researchers. The data collected at the supermarket (including the grocery receipt), the returned questionnaire, and the coupons from the bakery were all cross-coded. Consequently, the bakery coupons served a dual role as incentives for respondents to return their take-home questionnaires and as dependent variables (did redeem vs. did not redeem).

Beyond price recall accuracy for each respondent, additional data were coded from the retained grocery receipt. The number of generic products purchased and the total number of grocery items purchased (including meat, produce, etc.) were recorded for each shopper. The number of coupons redeemed and the amount of each were also recorded. Because the supermarket chain begins its weekly advertised sales on Wednesday, our data collection period coincided with only one sale period. Therefore, we were able to compare purchased brands printed on each cash register receipt with the weekly newspaper advertisement and to record the number of products purchased that were in the weekly sale advertisement, the amount of money spent purchasing items that were in the weekly ad, and the amount of money saved from purchasing items in the weekly ad (calculated as the sum of the savings across all products from their nonsale prices).

Of the 1000 surveys distributed at the supermarket, 582 (58.2%) usable ones were returned through the mail. Redemption levels for the eight bakery coupons distributed to the 1000 shoppers varied, up to 334 (for the free loaf of bread). Also, of the 1000 supermarket shoppers who agreed to participate in the study, 68.1% were women and the median estimated average age category was 35 to 44 years (cf. Gabor and Granger 1961). Of the 582 subjects who returned their questionnaire, 75.9% were women, 58.6% were married, the median age category was 35 to 44 years, the median annual household income category was $35,000 to $49,999, and the median number of people for whom the respondents shopped (including themselves) was two.

*Measures of the price constructs.* The seven multi-item scales were subjected to further item analysis and purification. First, each of the seven scales was submitted individually to a confirmatory factor analysis using LISREL VII and items with low standardized factor loadings were deleted (Jöreskog and Sörbom 1989). The fit of each of the seven models (i.e., scales) was then assessed on four indices: the goodness-of-fit index (GFI), the adjusted-goodness-of-fit index (AGFI), the Tucker-Lewis index (TLI), and Bentler's (1990) corrected fit index (CFI). Across all four indices, the .90 threshold commonly recommended for adequate fit (e.g., Bentler 1990; Marsh, Balla, and McDonald 1988) was generally met for all seven scales.

The scales were next examined for internal consistency on several criteria. Both the coefficient alpha and composite reliability estimates (Fornell and Larcker 1981) suggested strong internal consistency (.78 to .90 for alpha and .79 to .90 for composite reliability). The variance extracted estimates reflect the amount of variance captured by a measure relative to random measurement error, and a level of .50 or above has been advocated (Fornell and Larcker 1981). For five of the seven measures, this level was achieved. Last, the $t$-values for all loadings across the seven scales were significant ($p < .01$) and item-to-total correlations were generally above .50. In fact, of the 42 items across the seven scales, only two had item-to-total correlations less than .50 (one at .49 and one at .42).

Discriminant validity among the seven scales was assessed by comparing the fit of correlated two-factor models with that of one-factor models for each possible pair of scales (21 combinations in all) (cf. Anderson and Gerbing 1988), by comparing the variance extracted estimates for each of the two constructs with the square of the parameter estimate between them ($\phi^2$) (Fornell and Larcker 1981), and by examining whether the correlation between the two constructs ($\phi$) was significantly less than one (cf. Anderson and Gerbing 1988). Without exception, all three assessments supported the discriminant validity of the seven constructs.[4]

The totality of these results was taken to support the internal consistency and discriminant validity of each of

[4]We also conducted the second and third discriminant validity tests estimating a model in which all seven constructs were included (i.e., a confirmatory factor model with seven correlated factors, d.f. = 798). For all phi correlations (21 total), the variance extracted estimates for any given pair was greater than $\phi^2$, and all phi correlations were significantly less than one.

the seven scales, and consequently the individual scale items were combined into multi-item scales to reflect operationalizations of their respective theoretical constructs. The individual items in each of the price-related scales (all 7-place) are provided in the Appendix and scale intercorrelations, means, and standard deviations are reported in Table 1.

*Measures of marketplace responses/behaviors.* Low price search was operationalized as two dependent variables: (1) the subject's response to the question asking whether he or she had looked at the weekly store ad prior to the shopping visit (1 = no, 2 = yes) and (2) the subject's response to the 7-place scale item assessing the perceived usefulness of information provided by *Consumer Reports* magazine. Generic product purchases were operationalized by the total number of generic products purchased as indicated from the subject's grocery receipt.

We used two operationalizations of price recall. The first, labeled "price recall accuracy," was calculated on a percentage basis as the absolute value of the difference between the recalled price and the actual price, divided by the actual price (cf. Dickson and Sawyer 1990; Zeithaml 1982). (This measure was recoded so that higher scores reflect higher price recall accuracy.) The second measure of price recall, price recall ability, was operationalized as a dichotomous variable assessing whether the consumer could recall any price at all (1 = no, 2 = yes) (cf. Dickson and Sawyer 1990; Gabor and Granger 1961). For the price recall accuracy measure, scores were averaged across the number of products (up to four) for which the consumer was asked to recall a price and a price was recalled. For the price recall ability measure, scores were averaged across the number of products for which the respondent was asked to recall a price (up to four).[5]

Sale responsive behavior was operationalized by three measures that were coded directly from the grocery receipt: (1) the quantity of items purchased that were advertised as "on sale" in the weekly newspaper advertisement, (2) the total amount of money spent purchasing sale items, and (3) the amount of money "saved" by purchasing sale items. Coupon-redemption behavior was operationalized by four dissimilar methods. The first method entailed having subjects respond to the single self-report coupon-redemption scale included in the take-home survey by reporting the frequency with which they redeem coupons at the grocery store (cf. Lichtenstein, Netemeyer, and Burton 1990). The second method entailed coding the number and total dollar amount of coupons redeemed at the grocery store in the particular supermarket encounter (taken directly from the grocery receipt).

The final two coupon-redemption measurement methods relate to the bakery coupons provided as incentives to participate in the study. Specifically, the third method of measuring coupon redemption behavior entailed having subjects respond to two single-item measures about their behavioral intentions toward redeeming the coupon for the free loaf of bread and their intention to redeem any of the three 40%-off coupons.[6] The final measure assessed actual redemptions of the bakery coupons for the free bread and for the three 40%-off items.

## *RESULTS*

To test hypothesized relationships, we regressed the marketplace response/behavior measures in each of the five domains on all seven price-related constructs. Results of this analysis are reported in Table 2. As can be seen, some support for the predictive validity of the price-related constructs is found. That is, when any of the five

[5]Because it seems plausible to suggest that, *ceteris paribus*, price recall accuracy and ability should be related inversely to the total number of distinct grocery items purchased (cf. Gabor and Granger 1961), we assessed this variable for possible use as a covariate. The covariance analysis showed this variable had little effect on price recall accuracy scores and therefore is not reported.

[6]Though enough of the 40%-off coupons were redeemed to use redemption of these coupons as a criterion variable to assess the predictive validity of the price-related constructs (redemptions ranged from 111 to 149 across the three products), such was not the case for the 20%-off coupons (highest redemption for any of the four products was 33). Therefore, a decision was made not to use the 20%-off coupons to evaluate the predictive validity of the price-related constructs.

**Table 1**

**CORRELATIONS, MEANS, AND STANDARD DEVIATIONS FOR PRICE-RELATED CONSTRUCTS**

| | *Value consciousness* | *Price mavenism* | *Price consciousness* | *Sale proneness* | *Coupon proneness* | *Price-quality schema* | *Prestige sensitivity* |
|---|---|---|---|---|---|---|---|
| Value consciousness | 1.00 | | | | | | |
| Price mavenism | .492 | 1.00 | | | | | |
| Price consciousness | .578 | .551 | 1.00 | | | | |
| Sale proneness | .442 | .404 | .390 | 1.00 | | | |
| Coupon proneness | .318 | .412 | .378 | .409 | 1.00 | | |
| Price-quality schema | −.196 | −.130 | −.282 | −.049 | −.060 | 1.00 | |
| Prestige sensitivity | −.033 | .164 | −.094 | .106 | .093 | .434 | 1.00 |
| $\bar{X}$ | 39.00 | 18.12 | 21.96 | 23.55 | 19.18 | 14.97 | 19.11 |
| SD | 7.34 | 8.29 | 7.64 | 8.26 | 7.78 | 5.21 | 8.73 |

## Table 2
## REGRESSION ANALYSIS STANDARDIZED BETA COEFFICIENTS FOR THE EFFECT OF THE PRICE-RELATED CONSTRUCTS ON MARKETING BEHAVIOR/RESPONSE VARIABLES

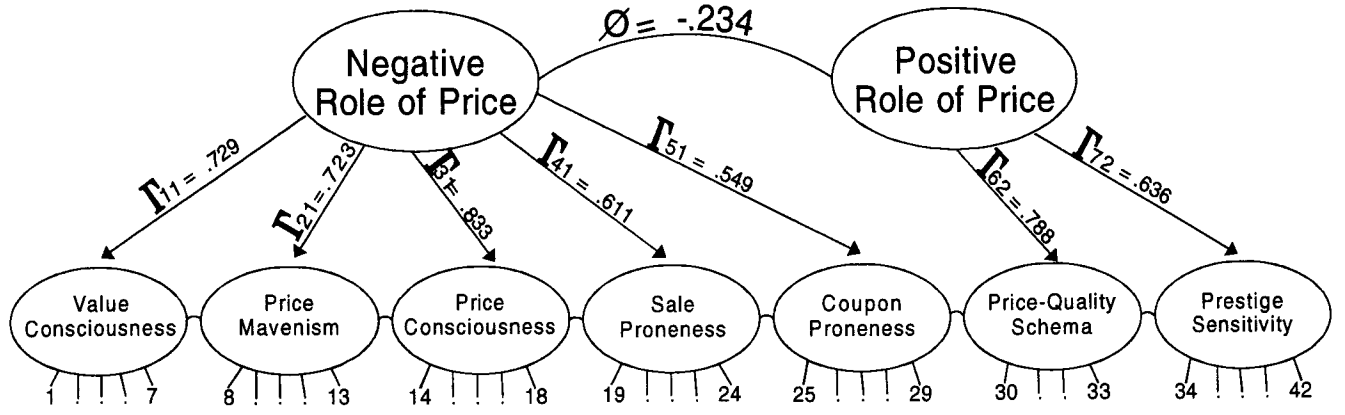
| *Marketplace behavior/response dependent variable* | *d.f.* | *Independent variables*[a] | | | | | | | *Overall* $R^2$ |
|---|---|---|---|---|---|---|---|---|---|
| | | *Value consciousness* | *Price mavenism* | *Price consciousness* | *Sale proneness* | *Coupon proneness* | *Price-quality schema* | *Prestige sensitivity* | |
| *Low price search* | | | | | | | | | |
| Looked at store ad | 7/499 | .034 | −.016 | .213[b] | .089 | .123[c] | .022 | −.088 | .12[b] |
| *Consumer Reports* perceived useful | 7/508 | .175[b] | .046 | .053 | −.060 | −.028 | .058 | −.042 | .04[b] |
| *Generic product purchase quantity* | 7/514 | .086 | .003 | −.042 | .131[c] | .089 | −.036 | −.094 | .06[b] |
| *Price recall* | | | | | | | | | |
| Accuracy | 7/374 | .259[b] | .039 | .067 | (−.118[c]) | .127[c] | −.082 | (.119[c]) | .13[b] |
| Ability | 7/509 | .239[b] | .006 | .044 | −.097 | .079 | −.115[c] | .087 | .10[b] |
| *Sales responsiveness* | | | | | | | | | |
| Quantity of sale products purchased | 7/514 | (−.114[c]) | .005 | .127[c] | .168[b] | .081 | −.067 | −.085 | .08[b] |
| Amount spent on sale products | 7/514 | −.094 | .012 | .137[c] | .112[c] | .136[b] | −.008 | −.060 | .07[b] |
| Amount saved on sale products | 7/514 | −.102 | .010 | .181[b] | .138[b] | .131[b] | −.035 | −.081 | .10[b] |
| *Coupon redemption* | | | | | | | | | |
| Grocery | | | | | | | | | |
| Self-report redemption frequency | 7/511 | .076 | −.019 | .081 | .001 | .640[b] | −.009 | −.136[b] | .50[b] |
| Number of coupons redeemed | 7/514 | −.095 | .062 | −.046 | .082 | .223[b] | .033 | −.088 | .07[b] |
| Total value of coupons redeemed | 7/514 | −.087 | .073 | −.036 | .117[c] | .211[b] | .028 | −.092 | .07[b] |
| Bakery | | | | | | | | | |
| Intention to redeem for free bread | 7/510 | .236[b] | (−.119[c]) | .043 | .002 | .211[b] | −.031 | .021 | .12[b] |
| Intention to redeem any of the 40%-off coupons | 7/509 | .193[b] | −.042 | .029 | −.097 | .217[b] | −.027 | .079 | .09[b] |
| Redemption for free bread | 7/514 | .113[c] | −.065 | .028 | −.044 | .090 | −.056 | .001 | .03 |
| Redemption for 40%-off cookies | 7/514 | .070 | −.068 | .051 | −.063 | .031 | −.066 | .072 | .01 |
| Redemption for 40%-off rolls | 7/514 | .051 | −.090 | .010 | −.010 | .038 | −.059 | −.053 | .02 |
| Redemption for 40%-off muffins | 7/514 | .115[c] | −.009 | −.044 | −.102 | .032 | −.020 | −.013 | .01 |

[a]Significant values whose bivariate relationship with the dependent variable is of the opposite sign are in parentheses.
[b]$p < .01$.
[c]$p < .05$.

constructs consistent with a perception of price in its negative role is significant, the coefficient is usually positive; in two of the three cases in which a construct consistent with a perception of price in its positive role is significant, the sign of the coefficient is negative. In all four cases in which the coefficient for a construct is opposite that hypothesized, the bivariate relationship between the respective price-related construct and marketplace response/behavior variable is in the hypothesized direction (indicated by beta coefficients in parentheses). With the exception of the coupon-redemption self-report dependent variable (which has method in common with the independent variables), the variance explained in the marketplace behavior/response variables ranges from a low of .01 to a high of .13.

Because of the theoretical positioning of the seven constructs as being consistent with a perception of price in either its positive or negative role, a higher order factor analysis was performed to assess whether the seven price-related constructs could be modeled as two correlated higher order factors. This model, depicted in Figure 1, was compared along several criteria with a model

Figure 1
POSITIVE AND NEGATIVE ROLE OF PRICE: HIGHER ORDER FACTOR MODEL[a]




[a]$t$-values for gammas are significant ($p < .01$). All item loadings are significant ($p < .01$).

consisting of the seven individual constructs as correlated first-order factors. The chi square goodness-of-fit values for the higher order factor and first-order factor models are 1940.6 (d.f. = 811) and 1861.96 (d.f. = 798), respectively. Though the chi square difference between these two models is significant (chi square difference = 78.64, d.f. = 13, $p < 0.01$), their fit statistic values are virtually identical[7] and all higher order factor loadings (i.e., $\Gamma_{11}$, $\Gamma_{21}$, $\Gamma_{31}$, $\Gamma_{41}$, $\Gamma_{51}$, $\Gamma_{62}$, and $\Gamma_{72}$) are high and statistically significant. Consequently, though the chi square fit statistic supports modeling the constructs as seven first-order factors, a case apparently can also be made for conceptualizing the seven constructs as indicators of two higher order factors (cf. Marsh 1985). Implications of these results are discussed in the following section.

## *DISCUSSION*

The objective of our study was to identify differences in the ways consumers perceive and react to the price cue. Results of the study seemingly have implications for both measurement and theory. In relation to the former, Zeithaml (1984) has criticized price perception research for a lack of attention to construct validity issues. She states that "many concepts are defined only by their operationalizations or measures, and are not developed in a definitional or theoretical manner" (1984, p. 615). Further, she has called for pricing researchers to offer conceptual bases for their construct definitions and to employ established scale development procedures that help ensure the psychometric properties of their measures.

Toward this end, we identified and conceptually defined seven related, but distinct, price perception constructs. We developed psychometrically acceptable multi-item scales for several of these constructs that may be of use in future pricing research. In developing the scales, we systematically investigated differences between the seven constructs within a single study and found support for their discriminant validity. We found support for the predictive validity of the seven constructs in a natural field setting by regressing five categories of marketplace responses/behaviors (low price search, generic product purchases, price recall, sale responsiveness, and coupon redemption) against the seven constructs.

Evidence of the value of developing scales reflecting finer delineations of the perception of price in its positive and negative roles can be found by examining the psychometric properties of scales from previous research. For example, Zeithaml (1982, p. 363) operationalized "degree of semantic encoding" with three items: "I buy the lowest priced product in the product category," "I make price comparisons between different forms of a product (canned vs. frozen green beans, for example)," and "I use unit pricing to compare the prices of products." Though all three scale items appear consistent with a perception of price in its negative role, the first item appears more specifically to reflect price consciousness and the latter two appear more reflective of value con-

[7]The goodness-of-fit index, the adjusted goodness-of-fit index, the Tucker-Lewis index, and the corrected fit index values for the higher order factor model are .843, .826, .889, and .889, respectively, and these same values for the seven-factor first-order model are .849, .829, .894, and .895, respectively.

sciousness. This observation may partially explain this scale's reliability estimates of .54 and .42 in Zeithaml's pretest and main study, respectively. Similarly, Lichtenstein, Bloch, and Black (1988, p. 247) operationalized price consciousness for running shoes by the three items "I usually buy running shoes when they are on sale," "I buy the lowest priced running shoes that will suit my needs," and "When it comes to choosing a pair of running shoes for me, I rely heavily on price." The reliability estimate for this scale was only .66. Again, though these items seem consistent with a perception of price in its negative role, at a more specific level they may represent a confound of sale proneness, value consciousness, and price consciousness. By making finer delineations in the negative (and positive) role of price, we can conceptualize theoretical constructs more concisely and develop more reliable scales for theory testing.

Also relevant to the measurement domain is the finding that many of the marketplace behaviors have multiple significant predictor variables. This finding supports the position of Lichtenstein, Netemeyer, and Burton (1990), who argue that because behaviors have multiple motivations, the common practice of treating a behavior (e.g., deal-responsive behavior) as isomorphic with a psychological construct (e.g., deal proneness) compromises construct validity.

Some of the results from the regression analysis provide a basis for making inferences about theoretical relationships among the study constructs. One body of theories often cited as holding much potential for explaining price perceptions is attribution theory (cf. Sawyer and Dickson 1984). For price-quality schema and prestige sensitivity, our results appear interpretable in terms of attribution theory. Consistent with principles from person perception, prestige sensitivity can be viewed as a consumer's propensity to make attributions about other consumers, or a consumer's propensity to be sensitive to attributions that other consumers may make about him or her, on the basis of the price level of purchases (cf. Calder and Burnkrant 1977). Consistent with principles from object perception, a price-quality schema can be viewed as the consumer's propensity to use price to make generalized attributions about product (object) quality. Thus, prestige sensitivity would be expected to be related to marketplace behaviors that are more socially visible, whereas price-quality schema would be expected to be less sensitive to the issue of social visibility but more sensitive to contextual cues that reinforce the perceived validity of using price to infer quality. Results reported in Table 2 appear consistent with these expectations. For example, there is a negative relationship between prestige sensitivity and grocery store coupon redemptions (as opposed to price-quality schema and coupon redemptions). These results suggest that coupon-redemption behavior may be affected more by a fear that other people will make person-based correspondent inference attributions (e.g., "cheap") to one's behavior than by attributions of inferior product quality to account for the coupon promotion (cf. Calder and Burnkrant 1977; Jones and Davis 1965). Because coupons are redeemed in a checkout line, the behavior is a socially visible one. Conversely, because many national brand manufacturers offer coupons on a frequent basis, an object attribution of inferior quality, in retrospect, appears less likely.

Future research aimed at providing further insights into prestige sensitivity and price-quality schema should investigate these two constructs within more formal attribution theory frameworks. By investigating consumer price-related attributions within theories that specifically account for the effects of theoretically based categories for contextual variables, researchers may gain insights into categories of contextual variables that affect consumers' propensity to act on their level of prestige sensitivity or price-quality schema. For example, perhaps the presence, number, and/or perceived similarity (e.g., income, age, coupon redeemer or not) of other consumers waiting in a checkout line moderate the relationship between prestige sensitivity and coupon-redemption behavior by making the consumer feel more or less comfortable about redeeming coupons. These issues appear to be closely related to those of "consensus" specifically encompassed in many theories of attribution. Also, maybe the "consistency" with which a sale promotion is offered on a brand moderates the relationship between price-quality schema and sale purchase behavior by affecting the attribution evoked to account for the sale (e.g., "this brand is always on sale; it must not be a high quality one"). Consistency of information is another variable inherent in many theories of attribution (cf. Mizerski, Golden, and Kernan 1979).

The finding that price-quality schema is related negatively to price recall accuracy is very consistent with findings in the price-quality research stream that the use of price to infer quality is moderated by brand name (cf. Monroe and Krishnan 1985). Specifically, consumers operating on a price-quality schema are likely to rely on a well-known (and, hence, more expensive) brand name as an indicator of quality without actually relying directly on price *per se*. Again, investigation within an attribution theory framework may provide theoretical explanations for contexts that moderate the saliency of different categories of cues (e.g., price vs. brand name) for use in making attributions about a target (e.g., brand). In sum, theories of attribution appear to have much potential as theoretical frameworks for predicting effects associated with these two constructs.

A few results pertaining to constructs consistent with a perception of price in its negative role warrant attention. The positive relationship between coupon proneness and price recall accuracy provides some insight into a controversial issue in the price perception research domain. That is, do coupon-prone consumers focus on price information or, alternatively, do they "mindlessly" use coupons as proxies of a good deal (cf. Dickson and Sawyer 1990; Henderson 1988)? The positive relationship found between coupon proneness and price recall ac-

curacy suggests that coupon-prone consumers are likely to focus on price information for products they purchase. However, price knowledge does not necessarily mean that these consumers are able to integrate coupon usage with shelf prices in a way that results in paying lower prices. This issue was investigated by Henderson (1988) with mixed results. Because of the implications this issue has for consumer education and welfare, further research on the efficiency with which consumers use coupons appears warranted.

Price mavenism was not a theory-consistent predictor of any of the marketplace responses/behaviors. However, in regression models with different predictors, price mavenism may explain significant amounts of variance in marketplace responses/behaviors. Consequently, conclusions about the explanatory power of this construct are premature. The frequency with which value consciousness, price consciousness, sale proneness, and coupon proneness entered into the regression models suggests that both economic and noneconomic price-related factors underlie many marketplace behaviors. Further insights into consumer price perceptions and marketplace behaviors may be gained by employing theoretical frameworks capable of accounting for both sets of factors. Acquisition-transaction utility theory (Thaler 1985) appears to be one such theory and should continue to prove useful as a framework for future research in this area. Other theories that have the potential to account for both sets of influences on price perceptions may provide additional insights.

### *Limitations*

A few caveats are in order about the study findings. As bakery coupons were used as incentives for study participation, coupon-prone consumers may have been more willing to participate than other types of consumers. However, we did achieve enough variation in six of the seven price-perception constructs to result in significant relationships in all marketplace behaviors/responses. Also, though several reverse-scored items were developed to measure the price-related constructs, item purification resulted in these items being dropped for all but the price consciousness construct.

We have identified ways in which consumers may perceive the price cue, but we do not claim our list to be exhaustive. There may be other price-related constructs that we failed to identify. Future research should continue to specify and discriminate between the many ways consumers may perceive and respond to the price cue (cf. Zeithaml 1984). Still, beyond the significant effects obtained in our study, results of a recent study appear supportive of our claim that the seven constructs do capture a meaningful degree of variation in the way consumers perceive the price cue. Tellis and Gaeth (1990) manipulated the amount and importance of product quality information, along with the price-quality correlation of the product class, and measured product choice across 135 respondents for 20 time periods. These researchers found that 50% of the product choice patterns across the 20 time periods could be "unambiguously" interpreted as reflecting either a "best value," "price seeking," or "price averse" shopping strategy. Because these three strategies represent manifestations of value consciousness, price-quality schema, and price consciousness, respectively (as conceptualized in our study), there is additional reason to believe that the seven price-related constructs operationalized here explain meaningful amounts of variation in the way consumers perceive the price cue.

## APPENDIX
## *PRICE PERCEPTION CONSTRUCT SCALE ITEMS*

*The Negative Role of Price*

*Value consciousness (Lichtenstein, Netemeyer, and Burton 1990)*

—I am very concerned about low prices, but I am equally concerned about product quality.
—When grocery shopping, I compare the prices of different brands to be sure I get the best value for the money.
—When purchasing a product, I always try to maximize the quality I get for the money I spend.
—When I buy products, I like to be sure that I am getting my money's worth.
—I generally shop around for lower prices on products, but they still must meet certain quality requirements before I buy them.
—When I shop, I usually compare the "price per ounce" information for brands I normally buy.
—I always check prices at the grocery store to be sure I get the best value for the money I spend.

*Price consciousness*

—I am not willing to go to extra effort to find lower prices.*
—I will grocery shop at more than one store to take advantage of low prices.
—The money saved by finding low prices is usually not worth the time and effort.*
—I would never shop at more than one store to find low prices.*
—The time it takes to find low prices is usually not worth the effort.*

*Coupon proneness (Lichtenstein, Netemeyer, and Burton 1990; revised form)*

—Redeeming coupons makes me feel good.
—I enjoy clipping coupons out of the newspapers.
—When I use coupons, I feel that I am getting a good deal.
—I enjoy using coupons, regardless of the amount I save by doing so.
—Beyond the money I save, redeeming coupons gives me a sense of joy.

*Sale proneness*

—If a product is on sale, that can be a reason for me to buy it.

*Reverse scored.

—When I buy a brand that's on sale, I feel that I am getting a good deal.
—I have favorite brands, but most of the time I buy the brand that's on sale.
—One should try to buy the brand that's on sale.
—I am more likely to buy brands that are on sale.
—Compared to most people, I am more likely to buy brands that are on special.

*Price mavenism (Feick and Price 1987; revised form)*

—People ask me for information about prices for different types of products.
—I'm considered somewhat of an expert when it comes to knowing the prices of products.
—For many kinds of products, I would be better able than most people to tell someone where to shop to get the best buy.
—I like helping people by providing them with price information about many types of products.
—My friends think of me as a good source of price information.
—I enjoy telling people how much they might expect to pay for different kinds of products.

*The Positive Role of Price*

*Price-quality schema*

—Generally speaking, the higher the price of a product, the higher the quality.
—The old saying "you get what you pay for" is generally true.
—The price of a product is a good indicator of its quality.
—You always have to pay a bit more for the best.

*Prestige Sensitivity*

—People notice when you buy the most expensive brand of a product.
—Buying a high priced brand makes me feel good about myself.
—Buying the most expensive brand of a product makes me feel classy.
—I enjoy the prestige of buying a high priced brand.
—It says something to people when you buy the high priced version of a product.
—Your friends will think you are cheap if you consistently buy the lowest priced version of a product.
—I have purchased the most expensive brand of a product just because I knew other people would notice.
—I think others make judgments about me by the kinds of products and brands I buy.
—Even for a relatively inexpensive product, I think that buying a costly brand is impressive.

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