Involvement and the Price Cue[1]

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Abstract

This study empirically investigates the weight given to the price cue by consumers in their evaluation of alternatives. Consumers who were highly involved with the product category of red wine placed less emphasis on the price cue than consumers who had low involvement with the product category. Awareness of prices or ability to recall prices was not related to level of involvement in the product class.

Introduction

The segmentation literature suggests managers expect consumers to vary on their use of the price cue in making product evaluations (Frank, Massey and Wind 1972). That is, some consumers are thought to place heavier emphasis on the price cue than other consumers. For example, Etgar and Malhotra (1981) found that anywhere from 10 to 61% of the overall product evaluation was due to the price cue. The question is, what way do the people who use the price cue only 10% in their evaluation differ from those who use it 60% in evaluation of alternatives?

Recently it has been proposed that the consumer's use of price in product evaluation is related to the level of involvement with the product class (Rothschild 1979; Engel and Blackwell 1982). It is thought that consumers who are highly involved with a product class should place less emphasis on the price cue than consumers who have low levels of involvement in the product category. This is partly because price is a readily available product attribute and perhaps requires less effort by the consumer to judge alternatives. And, although price would seem to be a universally important attribute, the importance of price might be overshadowed by other equally important attributes under high involvement. Since high involvement implies use of more complex informational cues that pertain to the physical product characteristics, some importance might be diverted from price to the importance of an intrinsic product cue. Therefore, as involvement with the product class decreases, price should become a more salient consideration. Although this is an intuitively reasonable proposition, no empirical evidence exists to substantiate the claim.

While the previous argument has merit, one might equally argue that low involved consumers will tend to purchase for convenience and be low in price consciousness and low in the importance of price as a decision variable. In other words, in the low involved case all attributes might be less important, even price. In this scenario, price would be just as unimportant as other attributes and the consumer would not be expected to be aware of price or really use that cue in their decision.

Even if highly involved individuals place less emphasis in price, this does not mean that highly involved individuals are less aware of prices than low involved individuals or even think price is less important. The price awareness refers to the individual's ability to remember prices in the marketplace (Monroe 1979). Both groups may equally remember prices but differentially emphasize the price cue in their evaluation of the product. It is important theoretically, to investigate the distinction between the emphasis or weight given to the price cue in brand evaluation and the consumers' simple awareness of prices.

In consumer research, the assumption is made that consumers would more likely attend to information that is useful to them in making a judgement (Lynch and Srull 1982). If consumers only focus on information relevant for choice, then that information should be recalled with the best accuracy. Therefore, if low involved customers consider price unimportant in their evaluation, then that information should not be recalled with great accuracy.

It is the purpose of this study to empirically investigate if the consumers' level of involvement is related to their use of the price cue in evaluating alternatives. Specifically, do individuals who have less involvement with the product category emphasize the price cue more than those consumers who are highly involved? Secondly, are both high and low involved consumers equally aware of prices in the choice environment? The methodology used to test this premise was a conjoint design in a laboratory setting.

Method

Subjects

Subjects for this study were 22 clerical and administrative staff (21 females and 1 male) at the Graduate School of Management, UCLA. Their median education level was some college and their median age level was 34-44. These subjects were a subset of the participants in the development of a measure of involvement (Zaichkowsky 1985) who indicated they would be willing to donate further time for a future study.

Materials

The product category used as a stimulus for judgement was red wine. Reasons for selecting red wine were: a) the involvement level of red wine on the Personal Involvement Inventory (PII) shows it to be of average involvement (m=84) with a normal distribution of scores, therefore finding subjects with high and low levels of involvement would not be difficult; and b) there are many small private vineyards producing wine, this enabled use of real but relatively unknown brands to control for familiarity of brand name.

Several pretests were carried out to select the specific stimuli used in this study. The first step involved eliciting information from 12 adult men and women about what product attributes were important in purchasing wine. From these open-ended responses, questionnaires about purchasing wine were designed and administered to 32 men and women. The subjects indicated the importance they give to various product attributes when selecting wine in two ways; first the absolute level of attribute importance, and second, the relative attribute importance. These results are listed in Table 1. Subjects were also asked how much they usually spend for a bottle of wine for everyday consumption and, on average, they would spend $5.00 (range $3-$15).

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TABLE 1
Pretest of Importance of Wine Attributes

Attribute	Absolute Importance*		Relative Importance**	
	Mean	(SD)	Mean	(SD)
Type of grape	4.53	(2.0)	17.2	(17.9)
Year of harvest	4.47	(2.0)	11.6	(13)
Brand name	4.94	(1.9)	21.4	(14.6)
County of origin	4.78	(1.9)	12.6	(9.1)
Price	4.66	(1.9)	27	(19)
Other			9	(23)
		(Total	100)	

* measured on a seven-point scale (1) extremely unimportant to (7) extremely important.
** measured by allocating 100 points among the various attributes (32 subjects were used for this analysis).

Pretest subjects were given a list of 30 brands of wine to rate on their familiarity with the brands to determine which brands of wine were relatively unknown. Based on the information derived from the pretest, the attributes year, grape and price were selected for use in a factorial design. Country of origin had to be controlled for by using all California Napa Valley wineries because one could not obtain real brands from different countries to cross with grape variety in a design. The attempt was made to control for brand name by using different brands which pretest subjects had not heard of because one could not realistically cross brand and price with grape variety or year in an orthogonal design.

A pilot study (eight subjects) was then carried out using three product attributes in a full factorial design. Two levels of price, grape and year were selected over eight relatively unknown brands from the same area. This design was unacceptable as subjects were suspicious of the investigation surrounding price since only two levels of price made the price cue very salient and unrepresentative of selections found in stores. Two levels of grape (Cabernet and Zinfandel) did not allow for enough variation on preferences and the two levels of year (1978 and 1980) were perceived to be similar and the differences between them unimportant. Based on the pilot study, only two attributes were selected, grape and price, each with three levels.

Factorial Design for Red Wine

Following Olson and Jacoby (1972), the study involved a major intrinsic product cue and price (major extrinsic cue) for counterbalancing the focus on price. Three types of grape varieties were then selected to represent the *intrinsic* cue: Cabernet Sauvignon, Merlot and Zinfandel. The *extrinsic* cue was price. Three bottles of each type of wine were priced at $4.99, $6.99 and $8.99. These price levels were reflective of the actual list price for these wines and represent the price levels usually paid by the subjects.

In total, nine wines were selected. Each was a different brand from a small winery in Napa Valley. All were harvested and bottled in 1980. The labels on the bottles were mostly off-white with brown or black lettering. An attempt was made to avoid labels with any bright coloring. In addition, each bottle was of the same shape. The prices were attached to the front of the bottle above the label with small price stickers as found in retail stores. Therefore a full factorial design was used with three levels of price and three levels of grape yielding nine choice alternatives. The attempt was made to control other major attributes by the use of unknown brands, similar labels, same shaped bottles, same year and same growing area.

Procedure

Subjects were contacted by phone and asked if they would participate in a consumer choice study. They did not know, a priori, what the study was about or that it involved red wine. These subjects were selected based on their involvement level with red wine, which was measured at an earlier time, and all had previously purchased red wine.

Individually, in a small room, each subject received the following instructions:

> "All the wines you are to judge are real brands of wine. They represent a selection one may encounter in a wine store. Your task is to evaluate the wines and make a selection based on how you would normally select a bottle of wine as if you were purchasing it with no special occasion in mind. For example, to drink with dinner at home with family or casual friends."

The nine bottles of wine were arranged on a table. The subjects selected their most preferred brand, then rated the likelihood to purchase each wine on a five point scale (extremely unlikely (1) to extremely likely (5)) as well as rank ordering their purchase preference. Then the subject was instructed to move away from the wine. Evaluation questions about the importance of each attribute over all nine brands were administered as a distractor task before measuring price awareness. Price awareness was then measured. Subjects were given the nine brand names and instructed to recall the specific grape varieties and prices for each of the nine brands. The average time for completion of the whole questionnaire was 15-20 minutes.

Independent Measure - Involvement: The scale range for measuring involvement goes from 20 (low) to 140 (high) (Zaichkowsky 1985). The involvement scores for red wine for the sample ranged from a low of 20 to a high of 134, indicating some people were low involved with the product category of red wine and some subjects were highly involved with red wine. Ten subjects scored below the mean level of involvement for the product category (84) and twelve subjects scored above the mean.

Dependent Measures

Relative Emphasis of Price: The measure to test the hypothesis about relative emphasis of price was the utility weight of price derived from rating data of the factorial design. To derive this measure, the part-worth utility for each level of the two attributes (price and grape) was estimated through OLS regression analyses (Green and Wind 1975). The regression equation was

$$\text{Brand Evaluation} = B0 + B1D1 + B2D2 + B3D3 + B4D4.$$

Brand evaluation was measured on a five point scale (1) extremely unlikely to purchase to (5) extremely likely to purchase. The dummy coding for the price and grape attributes was as follows:

Price	D1	D2	Grape	D3	D4
$4.99	1	0	Cabernet	1	0
$6.99	0	1	Merlot	0	1
$8.99	0	0	Zinfandel	0	0

The importance weight for each attribute was found by first taking the largest *absolute* value of the difference among B0, B1, B2 for price and B0, B3, B4 for grape (i.e., |B0-B1|; |B2-B1|; etc.). Then the largest absolute value for each attribute was divided by the sum of the largest absolute values for the two attributes. These numbers were then given as a percent weight so the sum of the utility for price and the utility for grape is, therefore, one. This utility measure does not tell you whether a high or low price brand was the most preferred, but rather what the relative use of the price cue was in relation to the grape cue in the evaluation of the alternatives.

Awareness of Price: To measure consumers' awareness of price, subjects were given an aided recall task at the end of the study. This question consisted of listing the nine brand names and asking subjects to write the correct price and grape variety next to the brand name. To assist in the recall, subjects were given five prices to choose from: $4.99, $5.99, $6.99, $7.99 and $8.99 and five grape varieties: Beaujolais, Cabernet Sauvignon, Merlot, Pinot Noir, and Zinfandel. (More categories were given to choose from than were used in the experiment to cut down on correct answers obtained by guessing.)

Results

As a check that the subjects were unfamiliar with the brands of wine they were asked to rate each brand on the following scale: 1) never heard of this winery before; 2) heard of this winery, but have never seen any of its wine; 3) seen wine from this winery, but have never tried it; and 4) have tried this brand before. On average, across all nine brands, the low involvement group rated the brands a 1.5 and the high involvement group rated the brands a 1.6. These results indicate the subjects had never heard of the brands or had never previously seen bottles of wine from the chosen wineries before.

As a first insight to the decisions, the subjects were asked to select one brand from the available alternatives and after they selected the brand they were asked why they selected that brand. Examples of the responses were as follows:

1. High Involvement
   a) Subj 1: I like cabernet sauvignon. I also like trying wines from different vineyards. This particular one seems interesting. I like the label too.
   b) Subj 3: I selected this product for its name and for its price. It would be practical for everyday use.

2. Low Involvement
   a) Subj 4: Medium price, alcohol content.
   b) Subj 8: I liked the label.

From these responses, subjects' references to the product attributes were classified by involvement level and shown in Table 2.

TABLE 2
Product Attributes Mentioned as Reasons for Selection

	Price	Grape	Label	Name	Other
Low Involvement (N=10)	8	1	5	1	1
High Involvement (N=12)	8	8	3	4	1

Relative Emphasis of Price: It was hypothesized individuals highly involved in a product category would place less emphasis on price than low involved individuals. To test this, the dependent measure complied from the factorial design was the utility weight of price based on a rating of the alternatives. A total of nineteen subjects were used for this analyses, nine representing low involvement (scores < 84) and ten representing high involvement[2] (scores > 84). The results showed that the low involved group gave a greater weight to the price attribute in making their evaluations than the high involved group (73 vs. 44) $t(17)=3.57$, $p<.01$. Viewing involvement as a continuous variable, the correlation between the involvement scores and the rating utility of price was -.47 ($p<.05$). Regression of involvement as the dependent variable and the rating as independent resulted in $F(1,18)=6.96$, $p<.01$, $R^2=.29$.

Subjects were also asked to assign 100 points among various attributes (price, grape, brand name, label and other) according to how important the attribute was in making their evaluation of the nine brands. The distribution of the 100 points among the major attributes is in Table 3.

TABLE 3
Means and Standard Deviations of Point Distribution

	Involvement Level			
Product Attribute	Low	N=10	High	N=12
Label	19	(15)	18	(14)
Brand name	5	(17)	12	(17)
Grape variety	9	(18)	26	(18)**
Price	49	(24)	30	(22)*
Other	8		14	
Total Points	100		100	

** $p<.05$
* $p<.1$

The results showed a difference between the two groups on grape importance $t=2.09$, $p<.05$ and a difference on price importance $t=1.85$, at the $p<.1$ level. These results are presented in order to give the reader a simple measure of the importance of the price and grape cue as reported overtly by the subjects. These self-

[2] Three subjects were deleted from this analyses: one high involved (104) due to missing data; one high involved (134) and one low involved (20) due to inability to compute utility weights from rating data. The high involved individual rated each brand a five, extremely likely to purchase, while the low involved individual rated each brand one, extremely unlikely to purchase. Since there was no variation in this data, one could not infer any part-worth utility measure for each attribute.

reports are reflective of the actual weighting of the attributes derived from the part-worth utility measures.

Therefore, the results suggest the low involved individuals placed more emphasis on price in their evaluation of the alternatives than the high involved individuals. In other words, as involvement goes up relative weight given to the price cue goes down in evaluating alternatives for probability of purchase.

Price Awareness

It was hypothesized that both low and high involved individuals would recall the same number of price cues but the high involved individuals would correctly recall more grape cues than low involved subjects due to the intrinsic nature of the attribute. The recall measure was the number of price and grape cues correctly matched to the nine brand names. Therefore the maximum number of each type of cue possibly recalled was nine. The results of the aided recall are in Table 4[3].

TABLE 4
Number of Price and Grape Cues Recalled: Means and Standard Deviations

		Price Cues	Grape Cues
Personal Involvement Inventory Scores	Low (N=9)	5.00 (1.9)	2.44 (2.3)
	High (N=11)	4.82 (1.7)	4.55 (2.0)

Individuals scoring relatively high in involvement with red wine recalled about the same amount of price cues than individuals scoring relatively low on involvement (4.82 vs. 5.00) (t(18)=.22, not significant). Analysis of the number of correctly recalled grape varieties showed the high involvement group recalling more cues (m=4.55) than the low involvement group (m=2.44), t(18)=2.2, p<.05. Therefore, based on the results of these analyses, the conclusion is *both* high and low involved subjects pay attention to and therefore remember the price cue, but only high involved subjects remember the intrinsic cue of grape.

These results suggest there is no difference in price *awareness* between high and low involved individuals as both groups recalled equal number of price cues. It is comforting to note the consistency in results between the first and second hypotheses. For the high involvement group there was no difference in type of information recalled, price (m=4.82) or grape (m=4.55), and there was no difference given to the emphasis of that information in rating the available alternatives (44 vs. 56). For the low involvement group we observed a difference in the recall of the information, price = 5.00 and grape = 2.44 cues, and a difference in the emphasis given to that information in evaluating the alternatives, price = 73 and grape = 27.

A Test of Alternative Variables

Questions designed to measure expertise with wines (Reizenstein and Barnaby, 1980) were administered to the subjects as a possible covariate to the effect of involvement. No relationship was found between expertise and involvement (r=-.08). However, this may be due to the low range of responses on this test. It does not seem to be a reliable tool for measuring knowledge of wine to average consumers.

The demographic characteristic of education was found to be significantly related to recall of the price cue (F=6.63, p<.01) but not recall of the grape cue. Those subjects with a higher educational level were more accurate in their recall of prices but not grape varieties. No data was collected on family income levels, therefore its effect on price emphasis could not be determined.

Summary and Conclusions

This study empirically supports what other researchers have proposed, namely that the weight given to the price cue is related to the level of involvement the consumer has for the product (e.g., Rothschild 1979). The results of this study are very consistent and, as one reviewer suggested, this consistency can be illustrated even more by converting the t statistics to r effect sizes using $r^2=t^2/[t^2+(N-2)]$ (Harris 1975). Using this formula, the effects are large and more dramatic than the significance tests suggest. For example, the difference in weight given to the price attribute by the two groups, t(17)=3.57, translates to R^2 of .43. However this study also shows that price awareness is unrelated to the consumers' level of involvement with a product category. Therefore recall may not be a good measure of importance. It may be that when we ask consumers if price is important they will all say yes. In addition to price, however, highly involved individuals might emphasize other attributes they consider important in evaluating alternatives. In this modest study of only two product attributes, high involved individuals were found to consider grape varieties in addition to price. Other studies need to be carried out which consider more than two attributes to see if high involved individuals consider, on average, more attributes than those low involved. When more product attributes are considered, the weight given to price may certainly change.

It is equally important to mention that this study was not designed to measure the price sensitivity or price consciousness of consumers. Another study should be designed to measure price elasticities rather than utility weights in order to investigate if involvement is related to sensitivity to price differences.

[3] Two subjects were dropped from analyses of these hypotheses, one low involvement (score 80) and one high involvement (score 104), due to missing data.

Reference

Engel, James F. and Roger D. Blackwell (1982), *Consumer Behavior*, 4th edition, New York: The Dryden Press.

Etgar, Michael and Naresh K. Malhotra (1981), "Determinants of Price Dependency: Personal and Perceptual Factors," *Journal of Consumer Research*, 8(September), 217-222.

Frank, Ronald E., William F. Massy and Yoram Wind (1972), *Market Segmentation*, Prentice Hall, Englewood, Cliffs, N.J.

Green, Paul and Jerry Wind (1975), "New Way to Measure Consumers' Judgments," *Harvard Business Review*, 53(July), 107-117.

Harris, Richard I. (1975), *A Primer of Multivariate Statistics*, Academic Press, New York.

Lynch, John G., Jr. and Thomas K. Srull (1982), "Memory and Attentional Factors in Consumer Choice: Concepts and Research Methods," *Journal of Consumer Research*, 9(June), 18-37.

Monroe, Kent B. (1979), *Pricing: Making Profitable Decisions*, McGraw-Hill Series in Marketing.

Olson, Jerry C. and Jacob Jacoby (1972), "Cue Utilization in the Quality Perception Process," *Proceedings, 3rd Annual Conference on Consumer Research*, 167-179.

Reizenstein, Richard C. and David J. Barnaby (1980), "Assessing Consumer and Retailer Perception of Table Wine Store Attributes," in *Advances in Consumer Research*, Vol. 7, ed., Jerry C. Olson, Association for Consumer Research, Ann Arbor, 95-100.

Rothschild, Michael L. (1979), "Advertising Strategies for High and Low Involvement Situations," in *Advertising Research Plays for High Stakes*, eds., John C. Maloney and Bernard Silverman, Chicago: American Marketing Association, 95-98.

Zaichkowsky, Judith Lynne (1985), "Measuring the Involvement Construct," *Journal of Consumer Research*, 12(December), 341-352.