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# Measuring the Hedonic and Utilitarian Dimensions of Attitudes Toward Product Categories

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***Abstract***

A bidimensional (hedonic/utilitarian) approach to understanding consumer attitudes was recently introduced by Batra and Ahtola (1991); they reported three construct validation studies and proposed a set of items to measure the construct(s). In the present paper, the Batra and Ahtola (1991) scales are applied to a wide variety of product categories. Results of the present series of measure validation studies suggest that there are hedonic and utilitarian elements comprising attitudes toward product categories and that, although problematic, the Batra and Ahtola (1991) scale items are a useful first step in measuring these components.

For decades, marketers have searched for ways to decompose consumers' attitudes into meaningful components. One such decompositional approach recently proposed by Batra and Ahtola (1991) is based upon hedonic and utilitarian sources of consumer attitudes; this approach is conceptually rooted in the experiential consumption work of Holbrook and Hirschman (1982). The hedonic/utilitarian (hereinafter H/U) approach suggests that consumer attitudes toward product categories are inherently bidimensional. The hedonic component is related to sensory attributes, and focuses on consummatory affective gratification; the utilitarian component is related to functional and non-sensory attributes and focuses on instrumental expectations (Batra and Ahtola 1991).

In their introduction of the H/U constructs, Batra and Ahtola (1991) presented three studies designed to establish the reliability and validity of scales purported to measure these two dimensions. While a dichotomous view of consumer atti-

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tudes toward product categories is intuitively appealing, our research suggests that the scales developed by Batra and Ahtola do not entirely capture the two separate dimensions. Our application focuses on product categories as opposed to the Batra and Ahtola (1991) applications to specific brands and behaviors.

## 1. Background

### *1.1. Initial validation studies*

The initial construct validation studies conducted by Batra and Ahtola (1991) used factor analyses of several semantic differential (SD) items selected judgmentally from the evaluation items used by Osgood, Suci, and Tannenbaum (1957). In Study 1, respondents rated four brands from different product categories on 16 SD items. In "almost all cases" a two-factor structure emerged.

In Study 2, subjects rated a new toothpaste brand on nine evaluative SD items. Again, a two-factor solution emerged from orthogonally-rotated principal components analysis. The factors were interpreted as representing separate hedonic and utilitarian dimensions. This analysis, in conjunction with analyses using adequacy-importance evaluations, was interpreted as evidence of the convergent, discriminant, and nomological validity of the two attitude components.

The third study reported involved subjects rating behaviors (e.g., going to a bar or doing laundry) rather than brands (on 23 evaluative SD items). Subsequently, an orthogonally-rotated, *forced,* two-factor solution was generated for each behavior. Items that loaded most often on the hedonic (utilitarian) factor were interpreted as best representing the hedonic (utilitarian) construct.

Based upon the results of these three studies, Batra and Ahtola (1991) suggested scales that "can be used to measure the hedonic and utilitarian components reliably and validly." The SD items selected to measure the utilitarian component of brand attitudes were useful/useless, valuable/worthless, beneficial/harmful, wise/foolish; items selected to measure the hedonic component of brand attitudes were pleasant/unpleasant, nice/awful, happy/sad and agreeable/disagreeable.

### *1.2. Rationale for the present study*

The idea of distinct hedonic and utilitarian components within consumers' overall attitudes toward product categories is plausible and appears to hold much potential for advancing knowledge about consumer behavior. Although Batra and Ahtola proposed to measure the H/U components of consumer attitudes toward product categories, attitudes toward specific brands, *not* product categories, were used in the scale development process. Therefore, we set out to examine the

scales' properties with regard to product categories; no specific brands were included in our study. This approach measures some macro-level attitudes, thus minimizing the potential demand effect of preexisting, brand-specific, positive or negative attitudes that may not be representative of consumer attitudes toward overall product categories.

While the aforementioned eight SD items were suggested for measuring the H/U constructs, no analyses using *only* these items were reported by Batra and Ahtola (1991). Thus, it is not clear whether or not the use of these items in isolation reliably and validly captures the hedonic and utilitarian components of consumer attitudes toward product categories. Our study tested the structure of the proposed scales using *only* the eight items suggested by Batra and Ahtola (1991).

Batra and Ahtola (1991) acknowledged that future research is needed to resolve interpretational ambiguities associated with the H/U scales. Our study was therefore designed to more rigorously test the factor structures presented by Batra and Ahtola (1991) using product categories rather than brands, to provide additional information regarding the reliability and validity of the H/U scales presented in their paper, and to suggest future directions for refining the measures of the hedonic and utilitarian constructs.

## 2. The study

### *2.1. Subjects and procedure*

Subjects were 151 students in an introductory business course participating in the study in return for course credit. Subjects were asked to rate product categories on the eight items suggested by Batra and Ahtola (1991). Twenty-four product categories were included in the study; each subject was randomly assigned to a total of six product categories (counterbalanced across subjects).

### *2.2. Analyses*

Data for each of the 24 product categories were factor analyzed separately using both orthogonal (varimax) and oblique (factor pattern) rotation procedures. Oblique rotation was included to allow for the possibility that the components of consumer attitudes measured by these items are correlated. In all cases, the number of factors to be extracted was not specified; rather, the best fitting factor solution for each product was reported. The composite scores across products for the H/U scales were also calculated and the factor structures are presented. For all factor analyses conducted, only factors with eigenvalues greater than one were retained in final solutions. Maximum likelihood factor extraction was employed.

## 3. Results

### 3.1. Factor analyses

A summary of the factor analyses results is presented in table 1. Shown across product categories are number of factors extracted, number of items (out of 8 total) loading as expected [i.e., Batra and Ahtola (1991) would predict the four "hedonic" items loading together on a predominantly hedonic factor and the four "utilitarian" items loading together on a predominantly utilitarian factor], and the

*Table 1.* Summary of factor analysis results

| Product category | Number of factors extracted by principal components analysis | Number of items loading as expected | | Percent of variance explained |
|---|---|---|---|---|
| | | Orthogonal rotation | Oblique rotation | |
| Chewing gum | 1 | * | * | 52.6 |
| Microwave popcorn | 1 | * | * | 62.3 |
| Peanut butter | 1 | * | * | 67.4 |
| Jeans | 1 | * | * | 54.5 |
| Inexpensive pens | 1 | * | * | 52.4 |
| Jewelry stores | 1 | * | * | 68.2 |
| Stereos | 1 | * | * | 56.0 |
| Soft drinks | 2[a] | 8 | 8 | 56.7 |
| Potato chips | 2 | 7 | 8 | 61.7 |
| Cooking oil | 2 | 6 | 5 | 58.3 |
| Athletic shoes | 2[a] | 6 | 5 | 64.4 |
| Calculators | 2 | 3 | 3 | 64.8 |
| Kitchen utensils | 2[a] | 7 | 6 | 51.7 |
| Cold weather jackets | 2[a] | 5 | 5 | 47.2 |
| Luggage | 2 | 6 | 6 | 53.9 |
| Cars | 2 | 4 | 4 | 57.3 |
| Personal computers | 2 | 6 | 0 | 61.3 |
| 35-mm cameras | 2 | 7 | 7 | 59.4 |
| Expensive restaurants | 2[a] | 7 | 5 | 58.5 |
| Ice cream | 3 | 2 | 3 | 66.4 |
| Chocolate candy bars[b] | 3 | – | – | – |
| Dish detergent | 3 | 4 | 3 | 58.6 |
| Paper towels | 3 | 5 | 5 | 62.4 |
| Vacation resorts | 3 | 4 | 4 | 61.0 |
| 24 products combined | 2 | 8 | 8 | 65.1 |

**None* of these items loaded "as expected" – a one-factor solution best described the data when "expecting" a two-factor solution.

[a]Using maximum likelihood procedure, a one-factor solution better described the data for these products.

[b]Factor extraction was terminated for chocolate candy bars because no local minimum could be found with the maximum likelihood algorithm.

percent of variance explained by each factor solution. A variable was considered to load on a factor if the loading was ≥.5 following Batra and Ahtola (1991, p. 163). When the data are pooled across the 24 categories, two factors emerge and all eight items load as expected. When the data for each product category are analyzed separately, however, the results are less consistent.

As shown in table 1, one-factor was extracted from the data for seven out of the 24 products. For twelve product categories, two-factor solutions emerged. [It is worth noting however, that for maximum likelihood (instead of principal component) factor loading estimates, the eigenvalue for the second factor for five of these twelve product categories dropped below one in the estimation of the final factor matrix.] Three-factor solutions best described the data for the remaining five product categories.

The results indicate that the items *did not* load as expected based on Batra and Ahtola's (1991) suggested two-component model of consumer attitudes toward product categories for a majority of the categories tested. For *only* two product categories—soft drinks (both orthogonal and oblique rotations) and potato chips (oblique rotation only)—did the expected factor solution emerge.

Correlation between factors was examined for the twelve product categories which were best described by a two-factor solution using oblique rotation. All correlations either equalled or exceeded .37 in absolute value, ranging from .59 (kitchen utensils) to −.53 (35mm cameras). Ten of these twelve correlations were positive. Oblique factor rotation with all 24 products combined yielded a two-factor solution with a factor correlation of .51.

Confirmatory factory analysis on all 24 product categories combined was conducted, in which forced single- and two-factor solutions were extracted using both orthogonal and oblique rotation through a maximum likelihood estimation procedure (see table 2). A total of 65.1% of the variance was explained by the two-factor solution (51.7% by factor 1 and 13.4% by factor 2); and a total of 49.6% of the variance was explained by the single-factor solution. By comparison, Batra and Ahtola (1991), reported 91.8% of the variance explained by a two-factor model (75.4% by factor 1, 16.4% by factor 2). Using the conventional cutoff of .5 for an acceptable percentage of variance extracted by the factor solution, results for only two of the 24 product categories (cold weather jackets and chocolate candy bars) showed unacceptable levels of variance extracted.

Table 3 shows results of analyses conducted to examine the behavior of each item across the set of factor analyses. Items could load in ways other than expected because of split loadings, loading on the "wrong" factor (e.g., a utilitarian item loading on a predominantly hedonic factor), or not loading at .5 or greater on any factor. These results identify certain items which were especially problematic across several of the product categories and common to both methods of factor rotation. Specifically, the nice/awful item (hedonic) and the wise/foolish item (utilitarian) did not load as expected in most cases. The nice/awful item often loaded most heavily on a predominantly utilitarian factor, while the wise/foolish item sometimes loaded on a predominantly hedonic factor and sometimes did not have a loading of .5 or greater on any factor.

*Table 2.* H/U factor structure (all 24 products combined) with one- and two-factor solutions.[a]

| | Two-factor solution | | | | Single factor solution |
|---|---|---|---|---|---|
| | Orthogonal (varimax) | | Oblique (factor pattern) | | |
| | Factor #1 | Factor #2 | Factor #1 | Factor #2 | Factor structure |
| Unrotated variance explained % | 51.7 | 13.4 | | | 49.6[b] |
| Item: | | | | | |
| Beneficial/Harmful | .810 | .235 | .840 | .006 | .674 |
| Useful/Useless | .871 | .188 | .922 | −.066 | .695 |
| Nice/Awful | .443 | .640 | .307 | .576 | .471 |
| Happy/Sad | .084 | .787 | −.140 | .854 | .187 |
| Agreeable/Disagreeable | .426 | .626 | .292 | .566 | .442 |
| Wise/Foolish | .723 | .269 | .732 | .072 | .559 |
| Pleasant/Unpleasant | .222 | .798 | .012 | .822 | .306 |
| Valuable/Worthless | .751 | .231 | .775 | .020 | .592 |

[a]Common factor, total variance; maximum likelihood estimation procedure.
[b]It is possible for less variance to be explained by a single-factor solution than by the first factor of a two-factor solution when maximum likelihood estimation is employed. ML estimation extracts factors that are most likely to represent the observed data structure rather than those that maximize the percent of variance explained as occurs in principal component factor extraction.

*Table 3.* Analysis of individual items[a]

| | Number of times item loaded as expected:[b] | |
|---|---|---|
| Item | Orthogonal rotation | Oblique rotation |
| Hedonic: | | |
| nice/awful | 8 | 4 |
| happy/sad | 9 | 8 |
| agreeable/disagreeable | 11 | 10 |
| pleasant/unpleasant | 11 | 11 |
| Utilitarian: | | |
| beneficial/harmful | 11 | 12 |
| useful/useless | 14 | 12 |
| wise/foolish | 4 | 5 |
| valuable/worthless | 11 | 9 |

[a]Based on maximum likelihood estimation procedure.
[b]Based upon 16 product categories; does not include results for the one-factor solutions, for which zero out of 56 items loaded as expected.

### *3.2. Reliabilities*

Reliability of all eight H/U scale items together across products was indicated by an alpha (Cronbach's) of .89. Examined separately, the four "hedonic" items had an alpha level of .85, and the four "utilitarian" items had an alpha level of .89. Note that these alpha values are not directly comparable due to the fact that alpha is biased upward as the number of items in a scale increases (John and Roedder 1981). The average inter-item correlation (not subject to this upward bias) for the eight item H/U scale was .50; for the four "hedonic" items this correlation was .58, and for the four "utilitarian" items it was .67.

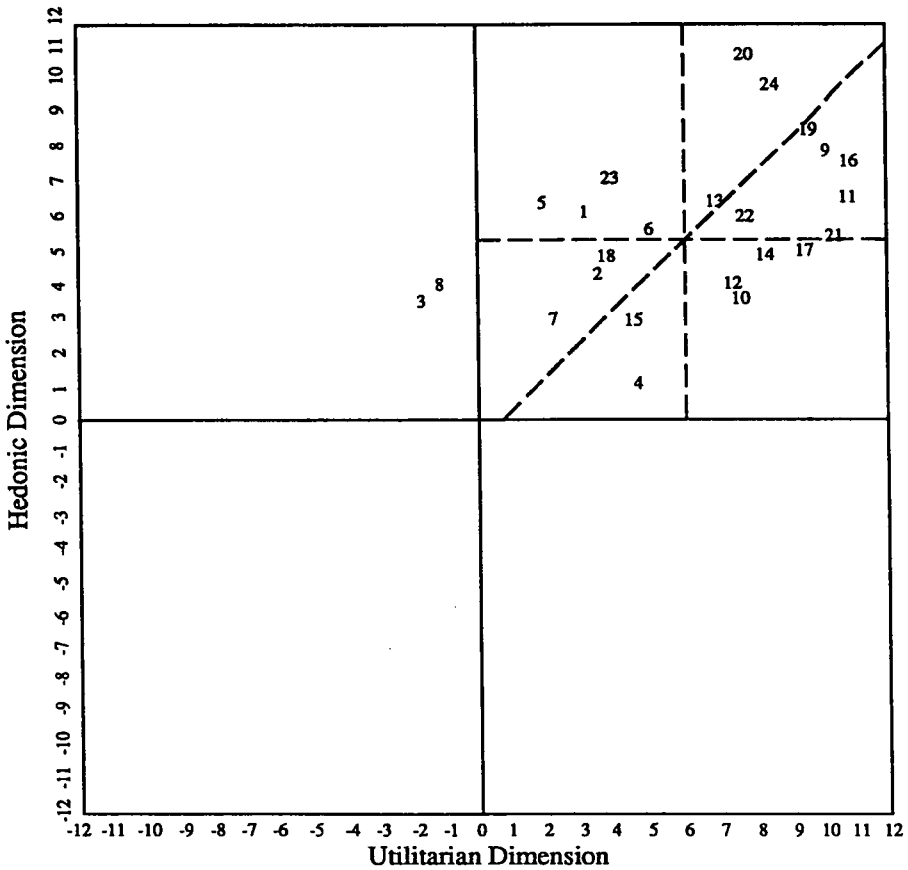
To further examine the correlation of these measures of the H/U attitudinal components, the correlation between the summated hedonic scale and the summated utilitarian scale was calculated for each of the 24 products. These correlations averaged .81 and all 24 correlations were found to be significant at the 0.001 level.

### *3.3. Hedonic-Utilitarian categorization of products using the Batra and Ahtola scale*

The potential usefulness of the proposed H/U measures depends, in part, on the ability of the measures to capture differences across various product categories on the two dimensions. In other words, the measures should highlight hedonic and utilitarian differences in consumers' perceptions of diverse product categories. To examine the adequacy of the measures in this regard, summated ratings were calculated for the four items comprising each scale for each product. The one-to-seven ratings from the semantic differential scales were converted to a scale ranging from $-3$ to $+3$ (i.e., a "1" rating was transformed to a "$-3$" rating, a "7" to a "$+3$" and so on). These ratings were then mapped onto a two-dimensional space presented in figure 1. Although the dimensions (axes) are presented orthogonally in Figure 1, the oblique factor rotation results reported above indicate that these dimensions are not strictly orthogonal.

Surprisingly, 22 out of the 24 product categories fell into a single quadrant representing both hedonic and utilitarian ratings above the midpoint on the summated scales. Only potato chips and chocolate candy bars were rated slightly below the midpoint on the utilitarian scale, while none of the 24 products were rated below the midpoint for the hedonic scale. Given the diversity of product categories included in our study, one might expect far greater variation in ratings (e.g., kitchen utensils are positioned very close to vacation resorts).

On the other hand, consumers may have a positive bias for all 24 product categories, as evidenced by the fact that they have survived as a category from which consumers continually purchase, indicating that there is some benefit (either hedonic, utilitarian, or both) associated with each category. Thus, if most categories




1 = soft drinks
2 = chewing gum
3 = potato chips
4 = cooking oil
5 = ice cream
6 = microwave popcorn
7 = peanut butter
8 = chocolate candy bar
9 = athletic shoes
10 = dish detergent
11 = calculators
12 = paper towels
13 = jeans
14 = kitchen utensils
15 = inexpensive pen
16 = cold weather jacket
17 = luggage
18 = jewelry store
19 = cars
20 = vacation resorts
21 = personal computers
22 = 35 mm camera
23 = expensive restaurants
24 = stereo

*Dashed line axes based on means of each scale.

*Figure 1.* Two-dimensional, hedonic/utilitarian product map*

examined arguably possess both hedonic and utilitarian aspects, we would expect most of them to land (as they do) in the quadrant with high ratings on both H/U dimensions. We can therefore look not at the "absolute" quadrant that the categories land in, but the relative position for each product category within the quadrant combining both H/U dimensions. This conceptualization is shown by the dashed line superimposed on the upper right quadrant of Figure 1. These axes have been centered at the mean of the H/U scales across the 24 product categories. Not surprisingly, the product categories rating highest on the (sub)hedonic dimension are vacation resorts and stereos (intuitively most hedonic of the product categories to student subjects) and the product categories rating highest on the (sub)utilitarian dimension are calculators and cold weather jackets (intuitively most utilitarian to students).

The results shown in Figure 1 may also be interpreted by superimposing a 45 degree line from the origin of the x-y axes. Deviations from this 45 degree slope may be related to the utilitarian vs. hedonic "balance" of products. Products lying near this line may possess a fairly equal "balance" of hedonic and utilitarian benefits. The distance of product categories from the origin may represent an overall "halo" toward a category, perhaps analogous to consumers' involvement with the category. Viewed in this way, products such as cars and jeans are relatively balanced in their hedonic and utilitarian composition, whereas cooking oil and dish detergent are utilitarian "outliers." Hedonic "outliers" in this sense are ice cream, expensive restaurants, and vacation resorts. This interpretation offers strong face validity, and the relationship between involvement and H/U ratings represents a promising area for substantive future research.

## 4. Discussion and future research directions

The present study, along with the work of Batra and Ahtola (1991), provides encouraging evidence that the H/U dimensions of consumer attitudes are separate and measurable. However, we conclude that the eight items proposed by Batra and Ahtola (1991) *do not* adequately capture the H/U components of attitude. Specifically, difficulties were encountered in applying these scales to product categories. If we accept the intuitively appealing notion that product category attitudes possess hedonic and utilitarian components, further work in developing reliable and valid scales to measure these constructs is necessary.

Because two-factor solutions were not forced, the solutions obtained in our study better indicate the natural structure of data obtained using these scales. The fact that a two-factor solution naturally emerged from only twelve (or seven using maximum likelihood extraction) out of 24 products indicates that the Batra and Ahtola (1991) scale items do not reliably and validly measure the hedonic and utilitarian components as separate constructs for product categories; and, for

some product categories, it appears as if the H/U scales represent a single construct (single-factor solutions). Further, the eight items loaded "as expected" for only two products. It is interesting to note that one of the two products for which the expected two-factor solution emerged from our data was a soft drink, as was one of the four brands tested by Batra and Ahtola (1991) (namely Pepsi). This indicates that the Batra and Ahtola results are perhaps *product specific* and therefore not generalizable to product categories.

Perhaps the differences between the present validation studies and the results reported by Batra and Ahtola (1991) are due to inherent differences between consumer attitudes toward *brands* versus *product categories*. It is possible that brand-specific advertising emphasizes either hedonic or utilitarian product benefits. This may strengthen the H/U dichotomy in the consumer's image of the brand. Additionally, more general or global attitudes toward product *categories* may have less distinct hedonic and utilitarian components. This notion has interesting implications for future research regarding advertising effectiveness.

Rescaling ($-3$ to $+3$) and mapping products onto a two-dimensional space as represented by Figure 1 also calls into question the validity of the H/U scale items. If, as Batra and Ahtola (1991) contend, "Consumer attitudes have distinct hedonic and utilitarian components" (p. 168), product categories should have been more widely distributed across the two-dimensional hedonic-utilitarian map. However, if existing product categories possess both hedonic and utilitarian components in consumers' minds, the lines superimposed on the upper right-hand quadrant of Figure 1 may be a more accurate description of the two dimensions. Perhaps these two components of consumer attitudes are highly correlated in many cases. On the other hand, the correlation may be due to a scaling artifact. Thus, a goal of future research could be development of scales that provide more differentiation between the hedonic and utilitarian components of attitudes. Further research on measurement of the H/U constructs should also focus on developing measures which may be applied to a wide spectrum of consumer attitudes—beyond brand attitudes alone. In addition, the interaction between involvement and H/U ratings merits exploration in future research.

Our research suggests that measure development efforts for the H/U constructs should continue. While our results could be interpreted as supporting the use of three-item scales to measure the H/U constructs (eliminating the nice/awful and wise/foolish items), we are concerned that these three items do not fully capture the domain of the H/U constructs. Thus, a larger sample of items which may capture these constructs should be generated and tested across a variety of attitudinal contexts. As discussed above, these refined measures should be versatile (applicable across several relevant contexts) and should focus on capturing the unique aspects of the H/U constructs. Clearly, the hedonic and utilitarian components of attitude hold much potential for advancing the understanding of consumer attitudes. Scale development efforts addressing these constructs should therefore be vigorously pursued.

## References

Batra, Rajeev, and Olli T. Ahtola. (1991). "Measuring the Hedonic and Utilitarian Sources of Consumer Attitudes," *Marketing Letters*, 2 (April), 159–170.

Churchill, Gilbert A. (1979). "A Paradigm for Developing Better Measures of Marketing Constructs," *Journal of Marketing Research* 16 (February), 64–73.

Holbrook, Morris B., and Elizabeth C. Hirschman. (1982). "The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun," *Journal of Consumer Research* 9 (September), 132–140.

John, George, and Deborah L. Roedder. (1981). "Reliability Assessment: Coefficients Alpha and Beta," *AMA Educators' Conference Proceedings*, 354–357.

Osgood, Charles E., George J. Suci, and Percy H. Tannenbaum. (1957). *The Measurement of Meaning*. Urbana, IL: University of Illinois Press.

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