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# An Attitude Model for the Study of Brand Preference

FRANK M. BASS and W. WAYNE TALARZYK\*

Prediction of individual preference is a difficult and elusive task; it is an important task, however, since it represents a fundamental step in understanding consumer choice. Asking whether or not preference can be predicted on the basis of knowledge of the consumer and his characteristics is a prelude to identifying the causes of preference and the means by which it can be influenced.

This study of consumer brand preference was an application of a model of consumer attitudes; the basic hypothesis was that measures specific to the preference alternatives, rather than more general measures such as those of socioeconomic and personality characteristics, would lead to successful predictions. While the approach is intuitively appealing and seemingly obvious, this study is the first to publicly present results from testing the hypothesis.

## PREVIOUS STUDIES

Much research in the area of market segmentation has used measures of consumer behavior which are not product- or brand-specific. The results have been less than encouraging in understanding or predicting brand preference. Studies of segmentation on the basis of personality characteristics have had negative or inconclusive results [2, 8, 12]. Virtually no association between personality, socioeconomic variables, and the household brand loyalty was found in a study of toilet tissue purchases [6]; a similar conclusion resulted from research on household purchases of beer, coffee, and tea [9].

If brand preference is explained by attitudes—made up of perceptions of and values for product attributes—the distribution of these variables among socioeconomic and personality segments is not necessarily systematic or regular. While socioeconomic variables may be related to brand preferences in an aggregate sense (in fact, we have found such relationships for some product categories), and while these relationships may be useful for some

managerial purposes [1], they are not sufficiently strong to predict individual preference.

## The Computational Model

None of the numerous definitions of attitude and attitude models in the social psychology literature apply directly to the issue of brand preference, since researchers have apparently been reluctant to compare a person's relative attitude about one object with his attitude about another. Social psychologists have been concerned with evaluating attitudes toward an object, rather than with relative attitudes toward a group of objects.

This study extended an attitude model to the comparison of individuals' preference ordering of brands. Since previous studies have demonstrated that demographic, personality, and general attitude variables do not predict individual brand preference well, it is important to ascertain whether or not attitudes, as measured by beliefs about specific attributes of brands, predict individual preference.

The computational model applied, whose two components are beliefs about attributes and evaluative aspects of the beliefs, was developed by Fishbein [4]. Belief about a concept is defined as the probability that a specific relation exists between the concept and an object (e.g., toothpaste prevents decay and whitens teeth). The evaluative aspects of a belief reflect the importance assigned to the concepts in forming an attitude toward an object.

For the purposes of this research, Fishbein's model is represented quantitatively as:

$$A_b = \sum_{i=1}^N W_i B_{ib}$$

where:

$A_b$  = the attitude toward a particular brand  $b$

$W_i$  = the weight or importance of attribute  $i$

$B_{ib}$  = the evaluative aspect or belief toward attribute  $i$  for brand  $b$

$N$  = the number of attributes important in the selection of a given brand in the given product category.

A consumer's attitude toward a particular brand is hypothesized to be a function of the relative importance of

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**Table 1**  
**PRODUCT ATTRIBUTES AND BRANDS**

<i>Frozen orange juice</i>	<i>Mouthwash</i>	<i>Toothpaste</i>
Taste/flavor	Kills germs	Decay prevention
Price	Taste/flavor	Taste/flavor
Texture	Price	Freshens mouth
Nutritional value	Color	Whitens teeth
Packaging	Effectiveness	Price
Minute Maid	Micrin	Pepsodent
Snow Crop	Cepacol	Crest
Birds Eye	Listerine	Gleem
A & P	Lavoris	Colgate
Sunkist	Colgate 100	Macleans
<i>Toilet tissue</i>	<i>Lipstick</i>	<i>Brassieres</i>
Texture	Color	Style
Color	Taste/flavor	Price
Price	Prestige factor	Comfort
Package size	Container	Fit
Strength	Creaminess	Life
Aurora	Hazel Bishop	Penney's
Delsey	Max Factor	Playtex
Northern	Avon	Lovable
Scott	Coty	Maidenform
Charmin	Revlon	Sears

each of the product attributes and the beliefs about the brand on each attribute.

### METHODOLOGY

Consumers were asked directly about specific attributes of products and beliefs about brands, and this information was used to predict the preference order for the brands. Five attributes were specified for each of six product categories studied, on the basis of informal interviews. Weights for the evaluative component were determined from each respondent's forced ranking of the importance of the attributes in the selection of a brand. Beliefs about the attributes for individual brands were measured by having respondents provide a scaled value from 1 to 6 from "very satisfactory" to "very unsatisfactory" on each attribute for each brand.

An alternative methodology is suggested by the emerging literature on nonmetric multidimensional scaling. Some exploratory examples of this approach have used a basic hypothesis similar to ours [5, 7]. However, we believe our direct approach provides a stronger initial test of the underlying hypothesis.

Ideally, it would have been desirable to study the relationship between attitudes and brand purchasing behavior, but this posed methodological and financial difficulties. Preference clearly does not convert directly into purchasing behavior, but the two are related [1]. Furthermore, since attitudes should be a weaker predictor of purchase than preference, the result is conclusive with respect to actual behavior if the hypothesis that attitudes predict preference is rejected.

### DATA

A national sample of 2,000 female heads of households from the Consumer Mail Panel of Market Facts, Inc., was used to provide a balanced sample parallel to census data for geographic divisions and within each division by total household income, population density and degree of urbanization, and age. Preferences and attitudes toward individual brands were measured for six product categories: frozen orange juice, mouthwash, toothpaste, toilet tissue, lipstick, and brassieres. Five attributes were specified for each product category on the basis of informal interviews (Table 1); preferences were measured for the five leading brands in each category. Respondents were also asked whether or not their favorite brand was included in the set of five brands and to specify their usage rate for each product. Standard socioeconomic data were also available for each household surveyed [11].

Of the total sample, 78.5% responded to the questionnaire; 63.6% returned questionnaires usable for the entire analysis. Socioeconomic segments were represented in the final sample in approximately the same proportions as represented in the panel. The prediction test of the model focused upon the subset of respondents for each product category who were users of the product category and whose favorite brand was included in the set of five brands studied.

### PREDICTION RESULTS

Individuals' preference orderings of the brands were predicted using relative attitude scores derived by the Fishbein model. In cases of distinct attitude scores for each brand, the predicted preference ordering was unique. Ties were resolved by randomization or market share. Table 2 is a sample confusion matrix which shows the conditional probability of actual rank given predicted rank for mouthwash. Equally successful predictions were obtained for the other five product categories.

While the market share scheme for ties produced somewhat better predictive results than the random scheme, prediction was quite good in both instances.

**Table 2**  
**CONDITIONAL PROBABILITY OF ACTUAL RANK GIVEN PREDICTED RANK FOR MOUTHWASH\***

Predicted rank	Actual rank				
	1	2	3	4	5
1	.687	.174	.084	.035	.021
2	.177	.472	.206	.097	.048
3	.082	.210	.387	.205	.116
4	.038	.105	.217	.419	.221
5	.015	.040	.106	.244	.595

\* Users whose favorite brands were included. Ties were allocated on a market share basis

**Table 3**  
**PROBABILITY OF CORRECTLY PREDICTING MOST PREFERRED BRANDS FOR VARIOUS MODELS**

<i>Model</i>	<i>Product</i>					
	<i>Frozen orange juice</i>	<i>Mouthwash</i>	<i>Toothpaste</i>	<i>Toilet tissue</i>	<i>Lipstick</i>	<i>Brassieres</i>
Attitudes	.67 <sup>a</sup>	.69 <sup>a</sup>	.75 <sup>a</sup>	.63 <sup>a</sup>	.70 <sup>a</sup>	.72 <sup>a</sup>
Multiple discriminant analysis (using beliefs)	.58	.58	.63	.56	.63	.58
Multiple discriminant analysis (using demographics)	.52	.49	.57	.42	.53	.56
Market share	.53	.44	.46	.36	.46	.39
Random	.20	.20	.20	.20	.20	.20

<sup>a</sup> Significant at the .01 level when compared to all of the other models.

Notice that in Table 2 the main diagonal is dominant, indicating an ability to predict the entire preference order. Also, there was a greater chance for successful prediction of the most and least preferred positions than for brands in between: a predicted first-choice brand would actually be ranked first or second with probabilities varying from .75 to .90, depending on the product category and the tie rule. Furthermore, although not broken out separately here, predictions for low market share brands were about as good as for high market share brands. There is, therefore, substantial support for the basic hypothesis. Consumers' beliefs and values for product attributes, measured for individual brands, do substantially explain brand preference. (Confusion matrices for all product categories and brands are in [11].)

### ADDITIONAL FINDINGS

Two additional questions were explored in the analysis: how did the attitude model developed here compare with other models in predicting individual brand preference? Are there certain consumer characteristics associated with the ability of the attitude model to predict preference?

Table 3 compares the predictive results of the attitude model with two multiple discriminant analysis models, a model based on market shares, and preference predicted on a random basis. The first MDA model utilized the same information as incorporated in the attitude model, while the second one focused on standard demographic characteristics. The naive market share model simply implied that the brand with the largest market share would be preferred by all consumers. With five brands in the analysis, the random basis model had a .20 probability of correctly predicting the individual's most preferred brand. For all product categories the attitude model was significantly better than the other models in predicting the most preferred brand.

The following generalizations from contingency table analysis can be made regarding the predictive ability of the attitude model as compared to that of consumer

characteristics:

1. A respondent who perceived several brands as similar (equal attitude scores) in one product category was likely to perceive several brands as similar for the other product categories.
2. If a respondent's preferred brand for one product category was incorrectly predicted the model was also likely to make incorrect predictions for the other product categories.
3. Age (older respondents) and education (less educated respondents) were found to be positively correlated with the probability of an incorrect preference prediction for some product categories.
4. There appeared to be no relationship between a respondent's usage rate of a product category and the ability of the model to predict preference.

### CONCLUSIONS

The research and results reported here strongly support the hypothesis that brand preference is related to attitude measurements based upon beliefs about and relative importance of product-specific attributes. The attitude model was shown to result in a greater percentage of correct brand preference predictions than other models tested. While much work needs to be done before it will be possible to make strong statements about the implications of this study, attitude theory does appear to offer considerable potential as a basis for studies of consumer choice behavior.

This research has not dealt with the cause-and-effect relationship between attitude change and change in preference. Festinger and others have raised questions concerning the nature and direction of causation in relations between attitudes and behavior [3]; our view is that each probably influences the other. While such conclusions about directional causality must await studies of the dynamic process, we do think that these results are sufficiently strong, particularly in comparison with other reported studies based on socioeconomic and personality variables, to suggest a basis for a study of dynamics.

## REFERENCES

1. Bass, Frank M., Douglas J. Tigert, and Ronald T. Lonsdale. "Market Segmentation: Group Versus Individual Behavior," *Journal of Marketing Research*, 4 (August 1968), 264-70.
2. Evans, Franklin B. "Psychological and Objective Factors in the Prediction of Brand Choice: Ford versus Chevrolet," *Journal of Business*, 32 (October 1959), 340-69.
3. Festinger, Leon. "Behavioral Support for Opinion Change," *Public Opinion Quarterly*, 28 (Fall 1964), 404-17.
4. Fishbein, Martin. "A Consideration of Beliefs and Their Role in Attitude Measurement," and "A Behavior Theory Approach to the Relations between Beliefs about an Object and the Attitude toward the Object," in Martin Fishbein, ed., *Readings in Attitude Theory and Measurement*. New York: John Wiley & Sons, 1967, 257-66, 389-400.
5. Green, Paul E., Frank J. Carmone, and Patrick J. Robinson. *Analysis of Marketing Behavior Using Nonmetric Scaling and Related Techniques*. Cambridge: Marketing Science Institute, 1968.
6. Kildegaard, Ingrid and Lester Krueger. *Are There Consumer Types?* New York: Advertising Research Foundation, 1964.
7. Klahr, David. "Decision Making in a Complex Environment: The Use of Similarity Judgments to Predict Preferences," Report No. 6806, Center for Mathematical Studies in Business and Economics, University of Chicago, January 1968.
8. Koponen, Arthur. "Personality Characteristics of Purchasers," *Journal of Advertising Research*, 1 (September 1960), 6-12.
9. Massy, William F., Ronald E. Frank, and Thomas Lodahl. "Buying Behavior and Personality," working paper, Graduate School of Business, Stanford University, June 1966.
10. Pessemier, Edgar A., Philip C. Burger, Richard D. Teach, and Douglas J. Tigert. "Using Laboratory Brand Preference Scales to Predict Consumer Brand Purchases," Institute Paper No. 221, Institute for Research in the Behavioral, Economic and Management Sciences, Krannert Graduate School of Industrial Administration, Purdue University, October 1968.
11. Talarzyk, W. Wayne. "An Empirical Study of an Attitude Model for the Prediction of Individual Brand Preference for Consumer Products," unpublished doctoral dissertation, Purdue University, 1969.
12. Tucker, W. T. and John J. Painter. "Personality and Product Use," *Journal of Applied Psychology*, 45 (October 1961), 325-9.
13. Westfall, Ralph. "Psychological Factors in Predicting Product Choice," *Journal of Marketing*, 26 (April 1962), 34-40.