EXPECTATIONS AND DISCONFIRMATION BELIEFS AS PREDICTORS OF CONSUMER SATISFACTION, REPURCHASE INTENTION, AND COMPLAINING BEHAVIOR: AN EMPIRICAL STUDY

Diane Halstead, Michigan State University

ABSTRACT

This study assesses the ability of consumer expectations and disconfirmation beliefs to classify individuals into groups based on three postpurchase processes: consumer satisfaction judgments, repeat purchase intentions, and complaint incidence. Three two-group discriminant analyses were performed on a national sample of over 400 new carpet owners using prior expectations and subjective disconfirmation beliefs as independent variables and the three postpurchase behaviors as dependent variables. The results indicate that expectations and disconfirmation beliefs are not only strong predictors of consumer satisfaction, but can also be used to classify consumers into other postpurchase behavioral groups. The hit ratios of the satisfaction and complaining behavior classifications were most favorable when compared to proportional chance criteria.

INTRODUCTION

Early research on the antecedents of consumer satisfaction tended to focus on prepurchase expectations and the disconfirmation process as predictors of satisfaction judgments. Subsequent research has supported empirically both the expectation and disconfirmation paradigms. Consumer satisfaction formation is just one of several postpurchase processes of interest to researchers and managers, however. Purchase intentions, complaining behavior, and word-of-mouth are also of significant interest to marketers due to their direct impact on future sales and implications for customer service strategy. Yet relationships between some of these postpurchase behaviors and the cognitive antecedents of satisfaction have not been clearly established. This study therefore examines the links between expectations and disconfirmation beliefs and three postpurchase variables of primary importance to managers and researchers: satisfaction, repurchase intention, and complaining behavior.

First, a review of consumer satisfaction research is presented and the expectations and disconfirmation paradigms discussed. Next, the results of three two-group discriminant analyses performed on a national sample of over 400 new carpet owners are provided. Each analysis classifies the consumers into one of two groups for each dependent variable: satisfied versus dissatisfied, repeat purchaser versus brand switcher, and complainer versus noncomplainer. Finally, implications for consumer satisfaction researchers and marketing managers are presented.

CONSUMER SATISFACTION THEORY

Determinants of Satisfaction

1. Expectations. The expectations-based approach to consumer satisfaction posits that satisfaction judgments are a positive function of a consumer's prepurchase beliefs about the overall performance or attribute levels of a product (LaTour and Peat 1979, Olson and Dover 1976). Consumer satisfaction has been found to be significantly positively related to expectations by several researchers (Bearden and Teel 1983, Churchill and Suprenant 1982, Oliver 1980 and 1987, Oliver and DeSarbo 1988, Tse and Wilton 1988, Westbrook 1987). Oliver used Helson's (1948) adaptation level theory to explain how expectations impact satisfaction judgments independent of other cognitive variables such as disconfirmation. Expectations provide a standard or frame of reference against which satisfaction judgments are made. Applied to consumer satisfaction judgments, adaptation theory posits that high (low) expectations would lead to high (low) satisfaction levels unless product performance deviates significantly from initial expectations.

A positive satisfaction/expectations relationship is also supported theoretically by Anderson (1973). Anderson cited assimilation theory (Sherif and Hovland 1961) to explain how consumers report satisfaction even when prior expectations are not met. Under assimilation theory, consumers' satisfaction judgments will tend to assimilate or move toward their original expectation level if the discrepancy between expectations and product performance is not extreme. Thus, both assimilation and adaptation level theory support a positive relationship between satisfaction levels and consumer expectations.

2. Disconfirmation. The disconfirmation approach to consumer satisfaction argues that satisfaction formation is a function of the size and direction of disconfirmation beliefs (Cardozo 1965). Confirmation/disconfirmation is a result of a person's comparison between initial product expectations and actual product performance. Consumers form expectations of product performance prior to purchase. Subsequent purchase and usage reveal actual performance levels that the consumer compares to expectation levels. An individual's expectations are confirmed when product performance meets expectations and disconfirmed when discrepancies between expectations and performance occur. Positive disconfirmation results when product performance exceeds prior expectations. Negative disconfirmation occurs when expectations exceed performance (Oliver 1980). Confirmation and positive disconfirmation are considered to bring about states of satisfaction, while negative disconfirmation leads to dissatisfaction (Swan and Combs 1976).

Disconfirmation and satisfaction have been found to be significantly positively related by many consumer satisfaction researchers for a variety of products including a flu inoculation program (Oliver 1980), auto repair services (Bearden and Teel 1983), stock market purchases (Oliver and DeSarbo 1988), miniature record players (Tse and Wilton 1988), and plants (Churchill and Suprenant 1982). Given the considerable theoretical and empirical support for disconfirmation beliefs and expectations as determinants of consumer satisfaction, both variables

should correctly classify consumers into one of two groups: satisfied or dissatisfied.

Consequences of Satisfaction

In addition to research focusing on the theoretical antecedents of consumer satisfaction, several researchers have investigated the consequences of consumer satisfaction judgments (Bearden and Teel 1983, LaBarbera and Mazursky 1983, Oliver 1980 and 1987, Westbrook 1987). Specifically, repeat purchase intention (LaBarbera and Mazursky 1983, Oliver 1980 and 1987), complaint activity (Bearden and Teel 1983, Oliver 1987, Westbrook 1987), and word-of-mouth transmissions (Westbrook 1987) have all been investigated as responses to consumer satisfaction decisions. Yet these postpurchase processes may not be simply functions of satisfaction/dissatisfaction. They may be directly affected by consumer expectations and disconfirmation beliefs. Oliver (1980), for example, found that the effect of disconfirmation was not unique to satisfaction but affected other postpurchase phenomena such as attitude and purchase intention. An examination of the ability of expectations and disconfirmation beliefs to predict consumers' repurchase intentions and complaining behavior as well as their satisfaction levels is therefore needed. Thus, expectations and disconfirmation will be used to classify consumers into one of two groups: repeat purchasers versus brand switchers and complainers versus noncomplainers.

METHOD

Sample

The sampling frame consisted of new owners of a nationally advertised carpet brand who had purchased their carpeting prior to June 1987. The household members most responsible for selecting carpet for their homes were interviewed via telephone by an independent marketing research firm. Of the 405 interviews conducted nationwide, 404 were acceptable and used in the data analysis. Males comprised 22.5 percent of the sample; females comprised 77.5 percent. The total sample was split randomly into an analysis (N=201) and a holdout (N=203) sample in order to perform and test the discriminant functions. The validation sample was selected using a proportional stratified sampling procedure.

Procedure

Three two-group discriminant analyses were performed to classify subjects into the following categories based on their expectation and disconfirmation belief levels: satisfied versus dissatisfied, repeat purchasers versus brand switchers, and complainers versus noncomplainers. The null hypothesis tested in each case was that the mean level of the dependent variable was equal for the two groups.

The analysis sample was used to develop estimates of the discriminant coefficients. These coefficients were then applied to the observations in a holdout sample for classification purposes. This is an appropriate validation method for large data bases when classification is the primary research objective (Crask and Perreault 1977). It also prevents the upward bias that would occur in the prediction accuracy of the discriminant function if the individuals used in developing the classification matrix were the same as those used to compute the function (Hair, Anderson, and Tatham 1987). The construction of classification matrices is particularly important with large sample sizes since statistical significance tests of a discriminant function may be poor indicators of the function's ability to discriminate between groups (Hair, Anderson, and Tatham 1987).

Measures

1. Expectations. The expectations variable was operationalized as the sum of a 3-item, attribute-based measure of expectations on a 4-point scale from "definitely would not expect" to "definitely would expect". The attributes measured were carpet appearance, durability, and stain resistance. These attributes were selected based on focus group results and previous proprietary research which indicated that consumers consider these attributes most important when selecting carpet. Support for an attribute-based measure of expectations can be found in Bearden and Teel (1983), Oliver (1987), and Tse and Wilton (1988).

2. Disconfirmation Beliefs. Disconfirmation beliefs were measured as the sum of a 3-item, attribute-based measure of disconfirmation on a 3-point "not as good as expected" to "better than expected" scale. The attributes used were the same as those in the expectation measure: carpet appearance, durability, and stain resistance. This kind of subjective measure (as compared to a subtractive measure which is the algebraic difference between perceived performance and consumer expectations) is favored by Bearden and Teel (1983), Churchill and Suprenant (1982), Oliver (1980), and Tse and Wilton (1988).

3. Satisfaction. Customer satisfaction was measured using a 4-point bipolar scale ranging from "very dissatisfied" to "very satisfied". Support for this kind of unidimensional measure of satisfaction is found in Churchill and Suprenant (1982), LaBarbera and Mazursky (1983), and Westbrook (1987). While some researchers prefer that satisfaction be measured by a combination of attributes (Westbrook and Oliver 1980), others argue that a single overall summary measure is justified (Czepiel and Rosenberg 1976, Day 1977, LaBarbera and Mazursky 1983, Tse and Wilton 1988). Ease of use and empirical support for a summary measure of satisfaction led to the use of this operationalization. For analysis purposes, satisfaction was transformed into a two-level categorical variable indicating either satisfaction (very and somewhat satisfied) or dissatisfaction (very and somewhat dissatisfied).

4. Repurchase Intention. Repeat purchase intention was measured on a 4-point scale ranging from "definitely will not buy again" to "definitely will buy again". This operationalization follows that of LaBarbera and Mazursky (1983). Like satisfaction, this variable was dichotomized

into repeat purchasers (definitely and probably will buy again) and brand switchers (definitely and probably will not buy again).

5. Complaint Incidence. Company records indicating customer complaint activity served as the basis for grouping the subjects into one of two groups: complainers (customers who had contacted the manufacturer via telephone or letter regarding a problem with their carpet since purchase) and noncomplainers (customers with no manufacturer-directed complaints on file).

RESULTS

Descriptive statistics are presented for the analysis sample in Table 1. Since complaint incidence is a categorical variable, the number and percentage of consumers who complained are reported.

Table 1
Descriptive Statistics

Variable	Mean	Std. Dev.
Expectations	10.37	1.46
Disconfirmation	05.62	2.01
Satisfaction	03.01	1.24
Repurchase Intention	02.89	1.17
Variable	**Number**	**Percent**
Complaint Incidence	95	47.26

Results of the two-group discriminant analyses classifying subjects into satisfaction, repurchase intention, and complaint activity groups are shown in Tables 2, 3, and 4, respectively. The rows of the classification tables relate to the actual group membership, whereas the columns give the predicted group membership. Thus, "hits" (i.e., correct classifications) appear on the main diagonal and "misses" (i.e., incorrect classifications) appear off the diagonal.

Table 2
Classification Results - Satisfaction

		Predicted Group Membership	
Actual Group	Number of Cases	SATISFIED	DISSATISFIED
SATISFIED	136	99 (72.8)	37 (27.2)
DISSATISFIED	67	12 (17.9)	55 (82.1)

Percentage of cases correctly classified = 75.87
(weighted to reflect unequal group sizes)

As seen in Table 2, the "hit ratio" for satisfaction is almost 76 percent. When group sizes are unequal, the acceptability of a hit ratio can be assessed two ways. The maximum chance criterion is determined by computing the percentage of the total sample represented by the largest of the two groups (136/203 = 67 percent). If the hit ratio for the discriminant function did not exceed 67 percent, it has not helped in prediction since arbitrary assignment of all subjects to the largest group would achieve a 67 percent classification accuracy. Since a hit ratio of 76 percent exceeds this criterion, the function has improved prediction beyond what would occur by chance.

It should be noted, however, that correctly identifying members of both groups is a more common and useful goal. Therefore, a proportional chance criterion is recommended in most situations (Hair, Anderson, and Tatham 1987). The formula for this is:

$$C = p^2 + (1 - p)^2, \text{ where}$$

p = proportion of individuals in group 1

$1 - p$ = proportion of individuals in group 2.

Thus, the proportional chance criterion for satisfaction is 55.8 percent. The hit ratio of 76 percent greatly exceeds this criterion, indicating that expectations and disconfirmation beliefs are accurate predictors of satisfaction/dissatisfaction.

The classification matrix for repurchase intention is given in Table 3 below.

Table 3
Classification Results - Repurchase Intention

		Predicted Group Membership	
Actual Group	Number of Cases	REPEAT BUYERS	SWITCHERS
REPEAT BUYERS	152	99 (65.1)	53 (34.9)
SWITCHERS	51	10 (19.6)	41 (80.4)

Percentage of cases correctly classified = 68.94
(weighted to reflect unequal group sizes)

The hit ratio for repeat purchase intention is about 69 percent. When compared to the repurchase intention proportional chance criterion of 62.4 percent, it is seen that the discriminant function does classify subjects as either repeat purchasers or brand switchers fairly well, though not as accurately as it predicted satisfied and dissatisfied consumers. Only a modest improvement in classification (6.5 percent) was provided by the discriminant function. Table 4 provides classification results for complaint incidence.

Table 4
Classification Results - Complaining

Actual Group	Number of Cases	Predicted Group Membership: NONCOMP-LAINERS	Predicted Group Membership: COMP-LAINERS
NONCOMP-LAINERS	102	71 (69.6)	31 (30.4)
COMPLAINERS	101	23 (22.8)	78 (77.2)

Percentage of cases correctly classified = 73.4

As Table 4 indicates, the hit ratio for complaining behavior is over 73 percent. Since the group sizes of complainers and noncomplainers are essentially equal, the maximum chance criterion and the proportional chance criterion are also equal at 50 percent. The discriminant function using expectations and disconfirmation beliefs to classify consumers as complainers versus noncomplainers is therefore quite accurate. A hit ratio of 73.4 percent is a 46.8 percent improvement over the chance probability of 50 percent (over 23 percent additional correct classifications).

DISCUSSION

The discriminant analysis results reveal that expectations and subjective disconfirmation beliefs are good predictors of consumers' satisfaction judgments, repurchase intentions, and complaint activities. The classification hit ratios exceeded both the maximum chance criterion and the proportional chance criterion for each dependent variable. The hit ratios were not equally high for all three variables, however. Classification of subjects into satisfaction groups was most accurate (76 percent), followed by complaint classification (73 percent). Subjects were classified correctly as either repeat purchasers or brand switchers 69 percent of the time.

These findings confirm previous research on the theoretical determinants of consumer satisfaction, but also show that the impact of expectations and disconfirmation beliefs extends beyond consumers' initial satisfaction judgments to include other postpurchase processes. For satisfaction researchers, this implies that the inclusion of other postpurchase variables (e.g., complaining, word-of-mouth, intentions) in satisfaction models may be needed. In addition, longitudinal research which captures subjects' pre and postpurchase behaviors over relevant time intervals is needed. As noted by Oliver (1987) and others, measuring prepurchase expectations after purchase can be problematic due to possible memory loss or perceptual distortion by consumers. Measurement of various postpurchase constructs might also be improved with a longitudinal research design since consumers would be relatively unaffected by their prepurchase responses.

For marketing managers, the findings imply that knowledge of consumer expectation and disconfirmation levels will help them understand and predict other consumer responses which significantly impact their future sales and customer service policies. For example, managers might work toward reducing consumers' negative disconfirmation through product quality control programs which ensure that product performance meets or exceeds consumer expectations. These practices may then result in higher satisfaction levels, less complaining, and higher repurchase intentions (and eventually, more repeat purchases).

Limitations

As mentioned previously, measuring prepurchase expectations in a postpurchase context is a limiting factor in cross-sectional research. At the same time, the costs and difficulties associated with longitudinal research must be considered. One alternative is to manipulate expectations experimentally, but this may lead to less generalizable results since consumers would be unable to use a product in its natural environment. For a product like carpeting this is particularly important since long-term, in-home use is critical for achieving realistic consumer evaluations.

The dichotomization of the satisfaction and repurchase intention variables for discriminant classification may have led to slightly higher hit ratios than if three or four levels were selected for categorization. At the same time, the complaint incidence variable was dichotomized as well, yet had a higher hit ratio than repurchase intention. In addition, it is unlikely that marketing managers would need more than a two-level categorization for customer service planning purposes. Thus, the number of groups selected for classification may not have been problematic.

Future Research

Future research should address more fully the exact nature of the relationships between expectations/disconfirmation and consumer postpurchase processes (i.e., beyond classification). In addition, postpurchase variables such as word-of-mouth behavior, merchandise returns, and product disposal should also be examined as functions of expectations and disconfirmation beliefs. Finally, the role of affective variables in determining consumer postpurchase responses should be examined. With the exception of Westbrook (1987), the inclusion of affect as a determinant of postpurchase behaviors such as complaining and word-of-mouth has been ignored.

CONCLUSION

Overall, the findings indicate that consumers can be accurately classified into satisfaction, repurchase intention, and complaining behavior groups by examining their initial expectations and disconfirmation beliefs. Thus, postpurchase responses beyond satisfaction can be affected by the theoretical antecedents of satisfaction. The inclusion of other postpurchase variables such as complaining behavior, word-of-mouth, purchase intentions, and post-consumption affective responses in traditional

satisfaction models may be necessary for a complete understanding of the consumer satisfaction/dissatisfaction process.

REFERENCES

Anderson, Rolph E. (1973), "Consumer Dissatisfaction: The Effect of Disconfirmed Expectancy on Perceived Product Performance," *Journal of Marketing Research*, 19 (February), 38-44.

Bearden, William O. and Jesse E. Teel (1983), "Selected Determinants of Consumer Satisfaction and Complaint Reports," *Journal of Marketing Research*, 20 (February), 21-8.

Cardozo, Richard N. (1965), "An Experimental Study of Customer Effort, Expectation and Satisfaction," *Journal of Marketing Research*, 2 (August), 244-9.

Churchill, Gilbert A., Jr. and Carol Suprenant (1982), "An Investigation into the Determinants of Customer Satisfaction," *Journal of Marketing Research*, 19 (November), 491-504.

Crask, Melvin R. and William D. Perreault, Jr. (1977), "Validation of Discriminant Analysis in Marketing Research," *Journal of Marketing Research*, 14 (February), 60-8.

Czepiel, John A. and Larry L. Rosenberg (1976), "Consumer Satisfaction: Toward an Integrative Framework," *Proceedings of the Southern Marketing Association*, 169-71.

Day, Ralph L. (1977), "Alternative Definitions and Designs for Measuring Satisfaction," in *The Conceptualization and Measurement of Consumer Satisfaction and Dissatisfaction*, H.K. Hunt, ed., Cambridge: Marketing Science Institute.

Hair, Joseph F., Jr., Rolph E. Anderson, and Ronald L. Tatham (1987), *Multivariate Data Analysis with Readings*, New York: Macmillan Publishing Company.

Helson, Harry (1948), "Adaptation-Level as a Basis for a Quantitative Theory of Frames of Reference," *Psychological Review*, 55 (November), 297-313.

LaBarbera, Priscilla A. and David Mazursky (1983), "A Longitudinal Assessment of Consumer Satisfaction/Dissatisfaction: The Dynamic Aspect of the Cognitive Process," *Journal of Marketing Research*, 20 (November), 393-404.

LaTour, Stephen A. and Nancy C. Peat (1979), "Conceptual and Methodological Issues in Consumer Satisfaction Research," in *Advances in Consumer Research*, 6, William L. Wilkie, ed., Ann Arbor: Association for Consumer Research, 431-7.

Oliver, Richard L. (1980), "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions," *Journal of Marketing Research*, 17 (November), 460-9.

_____ (1987), "An Investigation of the Interrelationship Between Consumer Dis(satisfaction) and Complaint Reports," in *Advances in Consumer Research*, 14, Melanie Wallendorf and Paul Anderson eds., Ann Arbor: Association for Consumer Research, 218-22.

Oliver, Richard L. and Wayne S. DeSarbo (1988), "Response Determinants in Satisfaction Judgments," *Journal of Consumer Research*, 14 (March), 495-507.

Olson, Jerry C. and Philip Dover (1976), "Effects of Expectation Creation and Disconfirmation on Belief Elements of Cognitive Structure," in *Advances in Consumer Research*, 3, B.B. Anderson, ed., Chicago: Association for Consumer Research, 168-75.

Sherif, Muzafer and Carl I. Hovland (1961), *"Social Judgments: Assimilation and Contrast Effects in Communication and Attitude Change*, New Haven: Yale University Press.

Swan, John E. and Linda Jones Combs (1976), "Product Performance and Consumer Satisfaction: A New Concept," *Journal of Marketing*, 40 (April), 25-33.

Tse, David K. and Peter C. Wilton (1988), "Models of Consumer Satisfaction: An Extension," *Journal of Marketing Research*, 25 (May), 204-12.

Westbrook, Robert A. (1987), "Product/Consumption-Based Affective Responses and Postpurchase Processes," *Journal of Marketing Research*, 24 (August), 258-70.

Westbrook, Robert A. and Richard L. Oliver (1980), "Developing Better Measures of Consumer Satisfaction: Some Preliminary Results," in *Advances in Consumer Research*, 7, Kent B. Monroe, ed., Ann Arbor: Association for Consumer Research, 94-9.