# THE RELATIVE INFLUENCE OF AFFECTIVE AND COGNITIVE FACTORS IN DETERMINING SERVICE ENCOUNTER SATISFACTION

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## ABSTRACT

This study reports an empirical examination of the relative influence of affective and cognitive factors in determining service encounter satisfaction. For services characterized by credence qualities, it was suggested that affective responses would dominate the determination of satisfaction. Two groups of subjects were manipulated to receive cues consistent with either a positive affective response or a neutral affective response to a physician. Results suggest that affective responses influence perceptions of performance in both groups, but the satisfaction processes in the cognitive group are driven more by disconfirmation judgements as expected. Theoretical and managerial implications are discussed.


## INTRODUCTION

Research in consumer behavior has traditionally studied satisfaction from an information processing approach as exemplified by the disconfirmation of expectations model. However, recent research has moved beyond a strictly cognitive view of satisfaction to examine the complementary role played by affective responses in satisfaction judgements (Westbrook 1987; Oliver 1993). The emerging literature on the influence of affective responses on consumers' evaluative judgements is not yet integrated into a coherent framework that facilitates systematic investigation of the relative influence of affective versus cognitive factors in determining consumer satisfaction judgements. For instance, the disconfirmation of expectations framework which has enjoyed considerable popularity in modeling satisfaction with goods is used to explain satisfaction judgements with reference to services too, although many researchers have questioned the role played by cognitively driven disconfirmation responses in determining the extent of satisfaction with services, especially services which are high on credence properties (properties that are difficult to judge even after consumption) (Dabholkar 1994; Westbrook 1987).

A systematic investigation of the role of affective responses in determining satisfaction is especially relevant since positive affect not only expedites information processing and reduce choice complexity (Batra and Stayman 1990), but also leads to better recall of products with positive associations (Gardner and Scott 1990). The purpose of this research is to examine the relative emphasis placed on affective versus cognitive variables in determining satisfaction for a service characterized by credence properties.

## THEORETICAL BACKGROUND

The disconfirmation model of satisfaction exemplifies the dominant cognitive approach to modeling satisfaction judgements. The disconfirmation model suggests that satisfaction is a function of the discrepancy between a consumer's expectations and perceptions of performance. This discrepancy is captured by the disconfirmation construct, where positive disconfirmation leads to increased satisfaction and negative disconfirmation results in lowered satisfaction judgments (Churchill and Surprenant 1982; Yi 1990).

The disconfirmation framework may prove problematic in modeling consumer satisfaction processes for credence services for several reasons. High credence services by definition are not amenable to be reduced to attribute-by-attribute cognitions (Iacobucci and Ostrom 1994). Moreover, as perceived risk and uncertainty intensify during an evaluation of a high credence service (Murray and Schlacter 1990), consumers depend more on affect and less on cognition (Taylor 1982).

The influence of affective reactions on satisfaction judgements has received limited attention in the product satisfaction area. In a field setting involving automobile owners and CATV subscribers, Westbrook (1987) provided empirical evidence to support the proposition that consumers' affective reactions explain substantial amount of variation in satisfaction construct over and above cognitively driven disconfirmation beliefs.

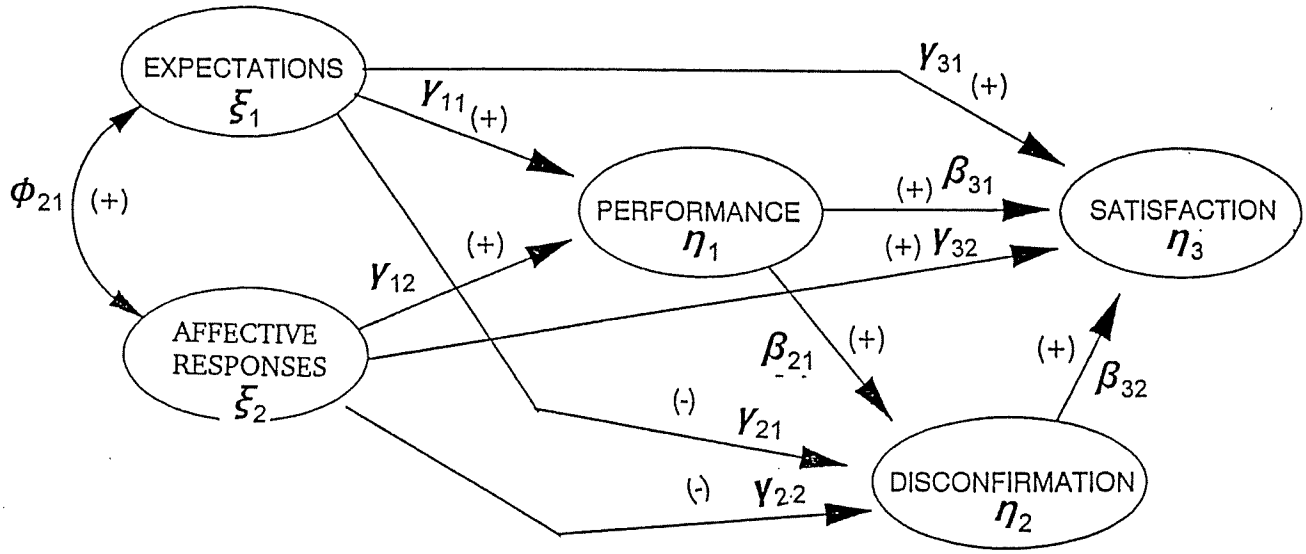
Derbaix and Pham (1991) questioned consumers about the type and level of affect associated with a large number of consumption situations. They found that the greatest number of affective reactions were associated with having a meal in a restaurant, shopping, and driving a car. In a related study dealing with restaurant services, Dube-Rioux (1990) examined the relative importance of cognitive evaluations and affective responses in explaining satisfaction judgements. Results supported the superiority of the affective reports over cognitive evaluations in predicting satisfaction.

Oliver (1993) proposed a model of satisfaction formation in which affect is modeled as a post-consumption process. Specifically, consumer attributions about dis/satisfaction with specific product attributes resulted in positive and negative affective reactions. In two field studies using subject evaluations of automobiles and a marketing course, support was found for the tri-component view of satisfaction as a function of cognition, affect, and direct experience. Measures of disconfirmation, attribute dis/satisfaction and positive and negative affect were significantly related to overall satisfaction for automobiles.

However, investigation of a service (a marketing course), revealed significantly different patterns of influence on satisfaction compared to those for the automobile judgments. Attribute-based satisfaction judgments were weakly related to overall satisfaction, while positive affect displayed path coefficients three times as large.

It may be possible that for service evaluations, informational constraints faced by respondents in generating attribute-level satisfaction judgements weakened their relationship with overall satisfaction. Within the context of service encounter evaluation, we suggest that affective responses may dominate evaluation processes even in situations where more cognitive processes are warranted. The reason is not only the ease with which affective responses are generated compared to cognitive evaluations (Zazonc 1980), but also the automatic accessibility of affective responses (Fazio 1986). In order to facilitate the investigation of the relative influence of affective versus cognitive processes in determining the level

**Figure I**
**A Conceptual Model of Service Encounter Satisfaction**



of subjects' satisfaction, we included a measure of affective responses towards service provider (termed evaluative impression) in the disconfirmation model. The Proposed Model of Service Encounter Satisfaction is presented in Figure I.

An experiment was designed in which two separate groups of subjects were manipulated to receive either the positive evaluative impression measure (the affect group) or the neutral evaluative impression measure (the cognitive group) and the proposed model was estimated for both the groups. We expect to find an uniform effect of evaluative impressions on perceived performance of the service provider in both the groups for reasons discussed above. However, since the neutral evaluative impression group has additional information to generate attribute based disconfirmation beliefs, we hypothesize a stronger effect for disconfirmation in cognitive group than in affect group. Finally, due to the facilitating effect of evaluative impressions, we expect to find a stronger effect of perceived performance on satisfaction in affect group compared to cognitive group. The following hypotheses specify our research expectations:

**H1:** The relationship between evaluative impression and perceived performance is invariant across the two groups.

**H2:** The relationship between expectations and perceived performance is stronger in the Cognitive Group compared to the Affect Group.

**H3:** The relationship between disconfirmation and satisfaction is stronger in the Cognitive Group compared to the Affect Group.

**H4:** The relationship between performance and satisfaction is stronger in the Affect Group compared to the Cognitive Group.

## METHODOLOGY

### Research Design

The proposed model was examined within the context of health care services. This choice was prompted by two considerations. As the theoretical justification for the role of affective responses is couched within the context of credence services, health care was deemed to be an appropriate category. Additionally, health care services involve close interaction between the consumer and service provider, thus creating an opportunity to study affective responses towards service providers within this relational setting.

In order to design an effective manipulation of affective processes versus cognitive processes, guidance was sought from past contributions in the field. Affective processes were ensured through the methodology developed in the categorization literature (Sujan 1985; Neuberg and Fiske 1987). It is well documented in the categorization literature that a perceived match to a preconceived category automatically elicits affect associated with that category whereas a mismatch may switch consumers towards more attribute-based (piece-meal) processing. Categorization theory formed the conceptual foundation for the methodology used in this study. Additionally, two alternative procedures were also used to maximize the possibility that subjects would use cognitive processes as against affective responses. The first involves accuracy driven attention to attribute information. If the subjects are led to believe that it is important to form an accurate impression of the target individual, greater attention will be paid to attribute information (Neuberg and Fiske 1987). The second alternative is derived from the cognitive response literature which ascertains the use of cognitive processes by giving explicit instructions to subjects to think carefully before evaluating the target individual. Both the approaches were used in the present study.

The experimental stimuli were presented through a videotape in an effort to enhance the realism of the experimental setting. An extensive stimulus development procedure was followed which included a series of pretests in order to investigate the valence of affect associated with the schema for physicians. The pretests revealed that

physicians in general enjoy a positive affect. The dimensionality of affect, as a summary feeling comprising of both positive and negative affects, (Oliver 1993; Westbrook 1987) was not supported in this study. Based on the pretests, it was concluded that the valence of affect associated with physician schema is unidimensional and positive. The loss in generalizability by adopting an experimental setting and thus a convenience sample of university students was deemed to be acceptable given the exploratory nature of the research reported as well as the gain in control over necessary manipulations. A computer interface was planned to collect the data.

A spokesperson on a videotape introduced the scenario to the subjects. The spokesperson introduced himself as the marketing director of a hospital located in a nearby town. He informed the subjects that the hospital was seeking help from unbiased consumers in evaluating the performance of its physicians. For the cognitive group, the spokesperson emphasized the importance of subject evaluations to both the individual doctors and the hospital by informing that the hospital was planning to make policy changes in their recruitment efforts, based on the feedback received from subjects.

The affective versus cognitive manipulation was introduced next, by providing a positive (neutral) description of the doctor, pretested to elicit either positive (neutral) affect towards the doctor. The description was immediately followed by a still photograph of the doctor. Following the stimulus presentation, subjects responded to measures of affective responses and expectations. Next, a staged doctor patient interaction was shown to the subjects, following which they were requested to provide their perceptions of physician performance, disconfirmation and satisfaction with the service provided. The videotape was pretested to ensure realism and validity of the scenario to the subjects. 372 subjects ( 201 in affect group and 171 in cognitive group) provided their evaluations of a simulated doctor-patient interaction in separate computer lab sessions. Subjects were undergraduate students in a large Southern University.

**Construct Measurement**

The proposed model includes evaluative impressions and expectations as exogenous variables, whereas perceived performance, disconfirmation and satisfaction served as endogenous variables. Evaluative impressions were measured by a five item scale ( composite reliability .92) developed for the present study. Past contributions in the emotional responses literature (Izard 1977; Westbrook 1987) were utilized to generate a pool of items and established procedures for scale development (Churchill 1979) were followed in the development of evaluative impression scale.

The evaluative impression scale also served as a manipulation check to test the efficacy of the manipulation of positive (neutral) affect manipulation. Subjects in the cognitive group were expected to take more time to provide their evaluative impressions on the above scale compared to those in the affect group (Fiske 1982, Sujan 1985). The measures for expectations, perceived performance, disconfirmation and satisfaction were developed by modifying items from the SERVQUAL scale (Parasuraman, Zeithaml and Berry 1986) and from the patient satisfaction literature (Tucker and Tucker 1985; Smith, Bloom and Davis 1985). Specifically, expectations were measured with a six item scale (composite reliability .92), perceived performance by a four item measure (composite reliability .88), disconfirmation by a four item scale (composite reliability .87) and satisfaction by a five item scale (composite reliability .92).

## ANALYSIS AND RESULTS

LISREL VII (Joreskog and Sorbom 1989) was used to estimate the proposed model in both the groups. The overall fit indices for both the groups were examined first for model parsimony and validity. The cognitive group had a Chi-square of 747.30 with 242 degrees of freedom and was significant at $p < .001$. The normed chi-square of 3.0, the GFI of .723, AGFI of .657 and NFI of .780 were indications that the model had a mediocre fit to the data. The RMSR (.086) and total coefficient of determination for the structural equations (.203) were lower than recommended in

the literature. Comparatively, the Affect group had a better fit with a chi-square of 458.86 with 242 degrees of freedom and was significant ($p < .001$). The Normed chi-square of 1.89, the GFI of .848, AGFI of .812 and NFI of .880 provided a reasonable fit to the data. The Affect group had a RMSR value of .05 and the total coefficient of determination for the structural equations was .186. Based on the overall fit indices, it may be concluded that the data represented the proposed model in the affect group better than in the cognitive group.

**Manipulation Check**

The manipulation of positive (neutral) evaluative impressions was checked using a response time measure. The computerized questionnaire administration facilitated the automatic record of response time for evaluative impression measure for each of the subjects. There was a significant difference in processing time between the affect and cognitive groups ($F [1,195] = 27.55$, $p < .001$). Subjects in the affect group took significantly less time to provide their evaluative impression judgement compared to their counterparts in the cognitive group (mean 1.48 seconds, sd .39 compared to 2.09 seconds, sd .89).

**Tests of Hypotheses**

Tests of hypotheses pertaining to the differences between the affect group and the cognitive group were examined using a two group stacked model approach available as a option in LISREL VII program. First, the Proposed Model (Figure I) was estimated with all the paths set free in both the groups. Next, the relationships to be tested were constrained to be either equal or zero and the model was re-estimated in both the groups. The overall fit of the constrained model was then compared against the fit of the full model with all parameters set free. A statistically significant drop in the fit of the constrained model was taken as evidence of the strength of the relationship tested.

Hypothesis 1 proposed that the relationship between evaluative impression and perceived performance is invariant across two groups. To test this hypothesis, the linkage between evaluative impression and perceived performance was constrained to be equal across the two groups. A nonsignificant drop in the fit of the model would suggest that the relationship is indeed invariant across the two groups. As expected, the results failed to achieve statistical significance, with a difference in Chi-Square of only .50, indicating that the pattern of relationships were similar across the two groups (Table 1). Thus Hypothesis 1 was supported.

Hypothesis 2 proposed that the relationship between expectations and perceived performance would be stronger in the Cognitive Group compared to the Affect Group. As a test of this hypothesis, the relationship between expectations and perceived performance was constrained to be equal across the two groups. The difference in Chi-Square (.69) failed to achieve statistical significance, indicating that there were no statistically significant differences in the two groups with regard to the relationship between expectations and perceived performance. However, examination of the standardized structural parameters suggested that the relationship is stronger in the cognitive group (.30) compared to the affect group (.21). Since the difference failed to achieve statistical significance, Hypothesis 2 was not supported.

Hypothesis 3 proposed that the relationship between disconfirmation and satisfaction would be stronger in the Cognitive Group compared to the Affect Group. This hypothesis was investigated by constraining the relationship between disconfirmation and satisfaction to be equal across the two groups. The difference in Chi-Square was 10.30. The difference was statistically significant indicating that the relationship between disconfirmation and satisfaction were different across the two groups. Inspection of the standardized parameter estimates suggested that the relationship was stronger in the Cognitive Group compared to the Affect Group as hypothesized (.562 versus .093). Thus, Hypothesis 3 was supported.

Hypothesis 4 proposed that the relationship between perceived performance and satisfaction would be stronger in the Affect Group compared to the Cognitive Group. There was a statistically significant difference of 12.64 in the Chi-Square, suggesting that the strength of the relationship

**Table I**
**Stacked Model**
**Overall Model Fit for Constrained Relationships**

| Relationship Tested | Constraint Imposed | Parameters Compared* | $\chi^2$ (df,p <) | $\Delta \chi^2$ ($\Delta$df) |
|---|---|---|---|---|
| Evaluative Impression to Perceived Performance | EQ GA(1,1,1) GA(1,1) | .367 : .184 | 1206.67 (485,.001) | .50 (1) |
| Expectation to Performance | EQ GA(1,1,2) GA(1,2) | .212 : .293 | 1206.86 (485,.001) | .69 (1) |
| Disconfirmation to Satisfaction | EQ BE(1,3,2) BE(3,2) | .093 : .562 | 1216.47 (485,.001) | 10.30** (1) |
| Performance to Satisfaction | EQ BE(1,3,1) BE(3,1) | .806 : .151 | 1218.81 (485,.001) | 12.64** (1) |

* Affect versus Cognitive Groups
** significant at .05

differed across the two groups. Inspection of the standardized parameter estimates indicated that the relationship was stronger in the Affect Group compared to the Cognitive Group (.806 versus .151). Thus, Hypothesis 4 was supported. A summary of results for the stacked model can be found in Table 1.

In summary, three of the four hypotheses proposed to test the differences across models were supported. It was found that the relationship between evaluative impressions and perceived performance was invariant across groups, the relationship between disconfirmation and satisfaction was stronger in the Cognitive Group compared to the Affect Group (it was not even significant in the Affect Group) and the relationship between perceived performance and satisfaction was significantly stronger in the Affect Group compared to the Cognitive Group. However, no significant differences were found among the two groups in the strength of the relationship between expectations and perceived performance, though the standardized parameter estimate, as expected, was stronger in the cognitive group than the affect group.

## DISCUSSION

The purpose of this research was to assess the relative importance of affective responses compared to cognitive judgements in explaining service encounter satisfaction. As suggested earlier, the proposition that affect explains a significant proportion of variance in service encounter satisfaction does not preclude the importance of cognitively driven variables of expectations and disconfirmation. It was argued that consumers generate enough motivation to indulge in cognitive processes only under conditions of neutral affect. As most service encounters are characterized by lack of information and a high level of uncertainty, it is reasonable to propose that affect dominates the processing mode in most situations. To examine this proposition more thoroughly two groups of subjects were chosen to give their evaluations of a simulated service encounter. The evaluation processes used by subjects in determining satisfaction judgements was investigated by experimentally manipulating the valence (positive, neutral) of affective responses. It was expected that the Affect Group would depend heavily on evaluative impression and perceived performance of the physician to

determine their satisfaction level, whereas the Cognitive Group would conform to the predictions made by the disconfirmation framework by discounting affect and using disconfirmation judgements to determine their level of satisfaction.

The results of the present study suggest that evaluative impression of the service provider plays an important role in determining perceived performance of the service provider in both the groups. The influence of evaluative impressions in both the groups attest to the importance of including affective responses in models of service encounter satisfaction. Services characterized by credence qualities are prone to affective evaluation since tangible cues that facilitate multi-attribute evaluations are absent in most credence dominated service encounters. However, cognitively based disconfirmation does play a role in determining satisfaction especially when enough cues are present in the environment to encourage subjects to undertake piecemeal processes. This finding points to the complimentary role played by both cognitive evaluations and affective responses in satisfaction judgements and is consistent with prior literature (Westbrook 1987; Oliver 1993).

The failure of expectations-perceived performance linkage to differ across both the groups points to the possibility that even in service encounters characterized by lack of information, expectations may play a role in driving performance. Once again, this finding points to the complementary nature of affective and cognitive processes based on informational contingencies in satisfaction models.

The limited generalizability both by the use of student samples and the investigation of a single service category have to be overcome by future studies that go beyond the constraints of the present study. Other determinants of satisfaction such as consumer individual difference variables and economic concerns such as utility perceptions warrant additional research efforts.

## Implications

The findings from this study have implications for future research and management strategies. Clearly, much additional research is needed to clarify the causal mechanisms between affective versus cognitive variables in determining satisfaction with services, specifically those services which are high on relational quality. Although we know that both affective evaluations and cognitive processes influence satisfaction judgements, we have yet to establish the exact interplay between these two processes to influence not only satisfaction but also repeat purchase behavior. Future research should address the issue of causal sequence among affect, cognition and satisfaction more thoroughly.

The present research did not deal with the intensity of affective responses. Since affect intensity is shown to be an individual difference characteristic (Larsen and Diener 1987), it is possible that consumers who tend to have intense feelings may differ in their satisfaction judgements compared to more subdued consumers.

The exploratory nature of our research raises additional questions regarding the specification of affective and cognitive measures within the satisfaction framework. It may be useful to propose a dichotomy between the two sets of variables for management strategy purposes. For example, an affect management strategy would entail management to promote emotional responses from consumers by providing a number of intangible cues in the environment and also training of service providers to be sensitive to affective responses from consumers, whereas providing more concrete, equipment based cues may influence consumer expectations. The strength of these different cues in determining satisfaction may depend on both consumer individual difference variables as well as the type of service category chosen. Additional research into the antecedents of affective responses would provide valuable insights for managers of service firms in influencing satisfaction with the service encounter as well as repeat purchase intentions.

## REFERENCES

Batra, Rajeev and Douglas M. Stayman (1990), "The Role of Mood in Advertising Effectiveness," *Journal of Consumer Research*, 17 (Sept), 202-214.

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

Churchill, Gilbert A. and Carol Surprenant (1982), "An Investigation into the Determinants of Consumer Satisfaction," *Journal of Marketing Research*, 19,

(Nov), 491-504.

Dabholkar, Pratibha A. (1994), "A Contingency Framework for predicting Causality between Customer Satisfaction and Service Quality," in *Advances in Consumer Research*, Frank Kardes and Mita Sujan, eds., Association for Consumer Research, forthcoming.

Derbaix, Christian and Michael T. Pham (1991), "Affective Reactions to Consumption Situations: A Pilot Investigation," *Journal of Economic Psychology*, 12 (June), 325-355.

Dube-Rioux, Laurette (1990), "The Power of Affective Reports in Predicting Satisfaction Judgements," in *Advances in Consumer Research*, 17, Michael Houston, ed., New York, Association for Consumer Research, 571-576.

Fazio, Russell H. (1986), "How do Attitudes Guide Behavior?," in *The Handbook of Motivation and Cognition: Foundation of Social Behavior*, Richard M. Sorrentino and E. Tory Higgins, eds., NY. Guilford Press, 204-243.

Fiske, Susan T. (1982), "Schema-Triggered Affect: Applications to Social Perception," *in Affect and Cognition: The 17th Annual Carnegie Symposium on Cognition*, M. S. Clark and S. T. Fiske, eds., Hillsdale, NJ, Erlbaum, 55-78.

Gardner, Meryl Paula and John Scott (1990), "Product Type: A Neglected Moderator of the Effects of Mood," in *Advances in Consumer Research*, 17, Goldberg, Gorn, and Pollay eds., Association for Consumer Research, 585-589.

Iacobucci, Dawn and Amy Ostrom (1994), "Perception of Services'" Paper presented at Association for Consumer Research Conference, Boston, MA.

Izard, Carroll E. (1977), Human Emotions, New York, Plenum Press.

Joreskog, Karl G. and Dag Sorbom (1989), *LISREL: Analysis of Linear Structural Relationships by the Method of Maximum Likelihood*, 1989, Mooresville, IN: Scientific Software.

Larsen, Randy J. and Ed Diener (1987), "Affect Intensity as an Individual Difference Characteristic: A Review," *Journal of Research in Personality*, 21, 1-39.

Murray, Keith B. and John L. Schlacter (1990), "The Impact of Services versus Goods on Consumers' Assessment of Perceived Risk and Variability," *Journal of the Academy of Marketing Science*, 18, 1, 51-65.

Oliver, Richard L. (1993) "Cognitive, Affective, and Attribute Bases of the Satisfaction Response," *Journal of Consumer Research*, 20 (December), 418-430.

Neuberg, Steven L. and Susan T. Fiske (1987), "Motivational Influences on Impression Formation: Outcome Dependency, Accuracy-Driven Attention, and Individuating Processes," *Journal of Personality and Social Psychology*, 53, 3, 431-434.

Parasuraman, A., Valarie Zeithaml and Leonard Berry (1986), "SERVQUAL: A Multiple Item Scale for Measuring Consumer Perceptions of Service Quality," *Journal of Retailing*, 64, 1 (spring), 12-37.

Smith, Ruth Belk, Paul N. Bloom and Kelley Sonon Davis (1985), "Research on Patient Satisfaction: Potential Directions," in *Advances in Consumer Research*, 13, Richard Lutz, ed., Ann Arbor, MI, Association for Consumer Research, 321-326.

Sujan, Mita (1985), "Consumer Knowledge:Effects on Evaluation Strategies Mediating Consumer Judgements," *Journal of Consumer Research*, 12 (June), 31-46.

Taylor, Shelley E. (1982), "The Availability Bias in Social Perception and Interaction," in *Judgement under Uncertainty: Heuristics and Biases*, Daniel Kahneman, Paul Slovic, Amos Tversky, eds., Cambridge University Press, Cambridge, MA, 190-200.

Tucker, F. and J. Tucker (1985), "An Evaluation of Patient Satisfaction and Level of Physician Training," *Journal of Health Care Marketing*, 5 (Summer), 31-38.

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

Yi, Youjae (1990), "A Critical Review of Consumer Satisfaction," in *Review of Marketing*, ed. Valarie A. Zeithaml, Chicago: American Marketing Association, 68-123.

Zazonc, Robert B. (1980), "Feeling and Thinking: Preferences Need No Inferences," *American Psychologist*, 35 (February), 151-75.

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