A Longitudinal Assessment of Consumer Satisfaction/Dissatisfaction: The Dynamic Aspect of the Cognitive Process
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A simplified cognitive model is proposed to assess the dynamic aspect of consumer satisfaction/dissatisfaction in consecutive purchase behavior. Satisfaction is found to have a significant role in mediating intentions and actual behavior for five product classes that were analyzed in the context of a three-stage longitudinal field study. The asymmetric effect found demonstrates that repurchase of a given brand is affected by lagged intention whereas switching behavior is more sensitive to dissatisfaction with brand consumption. An attempt to predict repurchase behavior on the basis of the investigated cognitive variables yielded weak results. However, repurchase predictions were improved when the model was extended to a multipurchase setting in which prior experience with the brand was taken into account.

A Longitudinal Assessment of Consumer Satisfaction/Dissatisfaction: The Dynamic Aspect of the Cognitive Process

A simple model of satisfaction as a function of expectations and disconfirmation (i.e., the extent to which the expectations are met) was suggested by Oliver (1980a) to summarize the early research on the antecedents of satisfaction (see Anderson 1973, Cardozo 1965, Oliver 1977, Olshavsky and Miller 1972, and Olson and Dover 1979 for representative reports). Oliver (1980b) also proposed a cognitive model to account for the consequences as well as the antecedents of satisfaction in the formation of purchase intentions. This model postulates that satisfaction acts as a mediator between preexposure and postexposure attitudes. In contrast to treating satisfaction as a static dependent variable, the cognitive model recognizes that satisfaction is part of the dynamic purchase process and influences repurchase intentions.

Longitudinal research is needed to test the feedback effects of postpurchase behavior hypothesized by an extended cognitive model (Oliver 1980a). Although a few longitudinal studies of consumer behavior have been reported (see Oliver 1977, automobile purchases; Oliver 1980b, flu vaccination program; Swan 1977, department store shopping; Swan and Trawick 1981, restaurants), the analysis of the purchase process in the consumer satisfaction literature has not progressed much beyond the repurchase and postpurchase conditions pertaining to a single purchase activity. Only in other areas of research, such as job satisfaction, have multiple-exposure studies analyzed the relationship between satisfaction and two or more trials (see Ilen 1971; Ilen and Hamstra 1972; Weaver and Brickman 1974). The purpose of our article is to extend the understanding of consumer satisfaction by examining multiple consecutive product purchases in the context of a field study.

Oliver (1980a) identified adaptation level theory (Helson 1964) as a promising theoretical framework to support several findings of consumer satisfaction studies. This theory seems to be appropriate for explaining how past cognitions, which serve as the adaptation levels, are mediated by present satisfaction in influencing repeat purchase behavior. The theory, which has its roots in physiology, stipulates that previous experience with the phenomenon under study generates an adaptation level or anchor for subsequent judgments. According to Helson (1964, p. 128), “Stimuli above [the] adaptation level

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give rise to positive gradients of excitation and responses of one kind, while stimuli below [the] adaptation level give rise to negative gradients of excitation and responses of an opposite kind." In our study, prior intentions were hypothesized to act as the adaptation level for future intentions (Oliver 1980b, p. 462) and the satisfaction/dissatisfaction from the brand consumption represented the stimulus that mediates the changes. Thibaut and Kelley's (1959) comparison level theory provides another useful framework to explain the role of satisfaction in mediating preconsumption and postconsumption cognitions. The theory predicts that satisfaction develops from an interaction among individuals, and results from the discrepancy between outcomes and a certain comparison level. LaTour and Peat (1979) applied the theory in the context of a product purchase setting. The theory is particularly appealing because it adds a dynamic aspect whereby outcomes from a present experience modify the comparison level for future consideration. According to comparison level theory, a high level of satisfaction results in a greater difference between outcome and the comparison level which yields a higher intention to repurchase the brand.

A COGNITIVE MODEL OF REPEAT PURCHASE BEHAVIOR

Several researchers have examined the dynamic aspect of the purchase-repurchase process in which satisfaction is treated as the feedback of purchase behavior. In the revised Howard and Sheth model (Howard 1974) the consumption of the brand determines the satisfaction level which, in turn, affects the revised attitude as well as the intention to repurchase the brand. In Oliver's (1980b) cognitive model of the purchase process, the revised intention to repurchase the brand is formulated in a way similar to that suggested by Howard (1974):

\[ I_t = f(I_{t-1}, SAT, ATT). \]

The intention \( I_t \) in the present period is determined by three components, (1) the previous intention \( I_{t-1} \), which serves as the adaptation level for the current intention, (2) the satisfaction level \( SAT \) from the brand consumption, which mediates the changes between the prepurchase and postpurchase intentions, and (3) the current attitudinal level \( ATT \). In reviewing the consumer satisfaction literature, LaTour and Peat (1979, p. 434) conclude, "Given that attitude and satisfaction are both evaluative responses to products, it is not clear whether there are any substantive differences between the two." However, Oliver (1981) suggested a conceptual difference between attitude and satisfaction. He defined satisfaction as "an evaluation of the surprise inherent in a product acquisition and/or consumption experience." The surprise or excitement is of finite duration, so that satisfaction soon decays into attitude toward purchase. Because the purpose of our study was to extend the investigation to behavior in a multiple-purchase setting, with short time spans between purchases and cognitive evaluation, we used a measure of satisfaction/dissatisfaction to estimate postpurchase evaluation. In addition to the theoretical problem of differentiating between attitude and satisfaction for an extended experience (i.e., repurchase behavior), Oliver (1980b) confronted practical difficulties in testing this cognitive model due to multicollinearity among both preexposure and postexposure cognitions.

Because of the theoretical and practical issues related to the distinction between satisfaction and attitude, a simplified model is suggested for the investigation of successive purchase-repurchase events. In this model the repurchase is tested as a categorical variable (repeat purchasers versus brand switchers), satisfaction/dissatisfaction estimates postpurchase evaluations, and intention is believed to act as the adaptation variable. This model permits investigation of the adaptation level formation in which satisfaction mediates the adjustments. A high satisfaction level will have a positive impact on the intention level for repeat purchasers, whereas dissatisfaction could have a negative influence on the intention level for brand switchers.

The cognitive process studied is postulated to proceed as follows.

\[ I_{t-1} \rightarrow P_t \rightarrow SAT \rightarrow I_t \rightarrow P_{t+1} \]

This process yields the following general model.

\[ P_{t+1} = f(I_t, SAT, P_t, I_{t-1}). \]

Let \( RP \) denote the repeat brand purchase behavior and \( SW \) be the switching behavior. Because \( P_{t+1} \) is a categorical variable denoting overt behavior (\( P_{t+1} = RP \) for repeat purchasers and \( P_{t+1} = SW \) for switchers) and is a function of \( I_t \) (Howard 1974), a simple path analytical model is suggested:

\[ I_t = g_1(I_{t-1}, SAT) \]

and

\[ SAT = g_2(I_{t-1}). \]

The model should be analyzed separately for repurchasers and switchers because of possible asymmetry in the relationship between the cognitive variables and consumer decision implications. Several hypotheses about the average intensities of satisfaction and intentions across consumers for a given brand are postulated by the model:

\[ I_{t-1} - I_t > I_t - SAT, \]

\[ SAT - I_{t-1} > SAT, \]

and

\[ I_{t-1} - I_t > I_{t-1} - SAT. \]

That is, equations 3 and 4 stipulate that the average revised intention and satisfaction levels are higher for consumers who subsequently repeat the purchase of the same brand than for those who switch. Likewise, hy-
hypothesis 5 implies that the decision to repurchase is preceded by differences in the intention level during the lagged period. This hypothesis is attributed to the fact that a repeat purchase decision (or switch) is generated gradually, and therefore is reflected in higher (lower) expectation and attitudinal favorability which form intentions in the preceding period.

The hypothesized role of satisfaction in mediating the intention level implies that within each group \( P_{t+1} = \text{RP} \) or \( P_{t+1} = \text{SW} \) the postpurchase cognitions will score higher than prepurchase cognitions for repurchasers. In contrast, postpurchase cognitions will be lower than prepurchase cognitions for switchers. Thus, for the repurchasers

\[
I_{t|\text{RP}} > I_{t-1|\text{RP}}
\]

and for the switchers

\[
I_{t|\text{SW}} < I_{t-1|\text{SW}}.
\]

Finally, the satisfaction/dissatisfaction from brand consumption is hypothesized to amplify the differences in the intention levels between the groups over time. This relationship is summarized by

\[
(I_{t|\text{RP}} - I_{t-1|\text{RP}}) - (I_{t|\text{SW}} - I_{t-1|\text{SW}}) > 0.
\]

Figure 1 illustrates the hypothesized cognitive process for the repurchaser and switcher groups for two consecutive brand purchases.

In addition to the bivariate differences, a simultaneous relationship among the three cognitive variables \((I_{t-1}, \text{SAT}, I_t)\) is hypothesized to yield the sequence \( I_{t-1} \rightarrow \text{SAT} \rightarrow I_t \). Satisfaction is predicted to mediate the difference between the intention levels to produce a relationship that is stronger than the direct effect of the lagged intention on revised intention.

Figure 1
A PATH MODEL OF SATISFACTION DECISIONS AND INTENTION LEVEL REVISIONS UNDERLYING OVERT BEHAVIOR

\( I_{t-1} \rightarrow \text{SAT} \rightarrow I_t \)

(b) denotes the indirect effect of prior intention on the revised intention (i.e., the effect on revised intention as mediated by satisfaction with brand consumption).
STUDY OBJECTIVES

To date consumer satisfaction research has concentrated on a single purchase period. We investigated the role of satisfaction in determining repurchase intentions and overt behavior within the context of a longitudinal study. The dual purpose of our study was to (1) investigate the direct and indirect effects of satisfaction/dissatisfaction on the formation of revised intentions and overt behavior and test a simplified cognitive model over two consecutive purchase periods for five different product classes and (2) test the extent to which reported satisfaction/dissatisfaction and the appropriate intention levels directly predict repeat purchase behavior in the context of multiple consecutive purchases in a field study.

METHOD

To obtain a consumer panel, a sample of 500 individuals was selected at random from five randomly selected telephone directories of residential communities in Connecticut. The potential participants received information about the intended study, their responsibilities if they chose to and were qualified to participate, and the reward for their cooperation.1 One hundred and eighty consumers who indicated a willingness to participate were asked to complete several items to determine how often they purchased each of 24 grocery products and to pretest the questionnaire designed for the study. One hundred and twenty-five consumers who purchased and used at least 12 of the 24 products on a biweekly basis were invited to join the panel.2

The research instrument was revised on the basis of the pretest findings. The final questionnaire consisted of three items pertaining to each of 24 grocery products such as tissues, coffee, and dish detergent. Respondents were asked to report the name of the brand currently in use, satisfaction with the current brand, and intention to repeat the purchase of the current brand. In addition, respondents were asked whether they had purchased or used another brand between the current and last questionnaire. Panel members completed questionnaires biweekly over a five-month period.

Although 125 consumers responded to the first questionnaire, 38 panel members dropped out during various stages. The final analysis includes 87 consumers who completed each of the 10 questionnaires. This group represents 70% of the 125 consumers who were eligible to participate and 48% of the 180 consumers who indicated their willingness to participate.

After collection of the data, the product classes were screened to identify those that most closely approximated a two-week interpurchase interval. Consumer recall of repurchase frequency served as the basis for the screening. The purpose was to eliminate bias in the aggregate analysis in which the disconfirmation period is assumed to be equal for all consumers. The five product classes that qualified for the analysis were margarine, coffee, toilet tissue, paper towels, and macaroni.

Purchase behavior was tracked indirectly by pretesting interpurchase frequency and by inserting an additional question about purchases of other brands between periods. This indirect method was used to simplify the respondents’ task, which would otherwise have entailed the completion of a purchase diary in addition to the 10 questionnaires. Though pretest results indicated that most consumers purchased a single item of a certain brand from a specific product category every two weeks (for the five product classes investigated), three exceptions to this pattern might have occurred during the study period. First, an “inventory” of a brand purchased previously could have been in use rather than the purchased brand. Second, two or more purchases could have been made during the two-week period. Third, two or more brands could have been purchased or used concurrently during the period. On the basis of the pretest findings we assumed that such patterns would not seriously affect the results. In addition, in several instances, consumers indicated that other brands were purchased or used between periods. Consecutive purchases that were interrupted by the purchase or consumption of other brands were deleted from the analyzed data files.

Added to the last questionnaire was a section pertaining to respondent demographic characteristics. In many consumer behavior studies a comparison between respondents and nonrespondents indicates whether a response bias is present, but this procedure was determined not to be appropriate in our study because past research demonstrates that purchase satisfaction does not correlate significantly with demographic variables (Westbrook and Newman 1978).

Measures

In measuring satisfaction/dissatisfaction, several researchers prefer an overall summary measure whereas others argue that satisfaction should be measured by a combination of attributes. Day (1977a) claims that there is no difficulty with measuring overall consumer satisfaction. Czepiel and Rosenberg (1976) justify the use of a single-item overall measure because it represents a summary of subjective responses to several different facets. Other researchers use summative scales to measure satisfaction/dissatisfaction (Oliver 1980b; Swan and Trawick 1981; Westbrook and Oliver 1980).

The pretest demonstrated that multiple-item measures designed to obtain information about many product classes substantially limited the number of consumers willing to participate. A poor response due to questionnaire length could have caused a significant nonresponse bias. Moreover, because the questionnaire did not investigate many different issues, the use of several items to measure certain variables (i.e., satisfaction, intention) repeatedly over time might have resulted in artificial answers by re-

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1The reward was five books of S & H Green Stamps.
2Consumers who did not qualify for panel participation received one book of S & H stamps.
CONSUMER SATISFACTION/DISSATISFACTION

respondents. Therefore, the use of summative scales in our research would probably have decreased rather than increased reliability. As suggested by psychometricians (Deutcher 1966; Hirschi and Selvin 1967; Kimberly 1976), a modification of the scales in a longitudinal study is appropriate; in our study this entailed the use of overall satisfaction and intention measures. Accordingly, the intention scale used ranged from "extremely likely" to "not at all likely" and the satisfaction scale ranged from "completely satisfied" to "not at all satisfied." Both variables were measured on 5-point scales.

**ANALYSIS**

To investigate repurchase behavior, lagged variables for brand consumption within each product class were computed (Hull and Nie 1979). After deletion of missing values for consumers who did not purchase any brand within the product class during any of the 10 periods, and deletion of consecutive purchases which were interrupted by the purchase of another brand between periods, 2568 cases of two consecutive purchases of the same brand within the product category were detected and consisted of 1969 repeat purchases and 599 switches. A computed categorical variable called CH, to denote change for repurchase (CH = 0) versus switching behavior (CH = 1), was matched with the intention and satisfaction level of the appropriate periods. Each of the two consecutive purchase periods constituted the unit of analysis (because each consumer had more than one such "unit").

**The Role of Satisfaction as a Mediating Factor**

To test the role of satisfaction in mediating intention, the analysis was performed separately for repeat purchasers and switchers who demonstrated the opposite overt behavior in the next successive period. A just identified general path analytical model (Duncan 1966) was applied to the two groups. The analysis first concentrated on the total population. For purposes of testing the generalizability of the findings, the total population was subsequently split into the five product categories in an individual analysis. The variables were standardized to represent the standardized regression path coefficients. Path analysis observations were analyzed for three points in time. For the first observation, the intention to purchase the previously consumed brand was measured \( I_{t-1} \) in Figure 1). In the next time period the brand purchase observation \( P_t \) was considered as well as the satisfaction (SAT) from the brand consumption and the intention \( I_t \) to repurchase the same brand. For the third observation, the actual repurchase (or switching) observation \( P_{t-1} \) was obtained. In this process, which was applied on the aggregate level for three successive periods, the individual cases were used as input.

Correlational analysis revealed similar patterns of relationships investigated for repeat purchasers and brand switchers among the three variables \( I_{t-1} \), SAT, \( I_t \). For the total population, the strongest relationship is between the two postpurchase variables \( (r = .73 \) for repeat purchasers and \( r = .77 \) for switchers). Simple correlations exceed the \( r = .34 \) level. The mean values of lagged intention, satisfaction from the previous purchase stage, and revised intention are higher for repeat purchasers than for brand switchers (as postulated in equations 2, 3, and 4). Table 1 demonstrates that the differences are significant across four of five product classes.

Two alternative explanations may account for this difference. First, the intuitive explanation is that, in comparison with brand switchers, consumers intending to repurchase the same brand score higher on the revised intention as well as the satisfaction from the previous consumption. Even the previous intention shows significant differences between the two groups. Alternatively, the previous purchase may not necessarily be the first trial of the brand and, by taking consumption experience into account, a longer history might yield a higher level of previous intention. Different purchase histories of the same brand between the two groups could affect the initial investigated intention level. In a subsequent section we demonstrate that such an effect accounted for part of this difference.

Our study concentrated on the deviations of the revised cognitions from the lagged intention (within each of the two groups) with the lagged intention serving as a reference point for the satisfaction mediation. Thus, it emphasized the relative changes of the revised intention from the original level. However, the absolute value of the previous intention (which is different for the two

### Table 1

<table>
<thead>
<tr>
<th>Aggregate</th>
<th>Margarine</th>
<th>Coffee</th>
<th>Toilet tissues</th>
<th>Paper towels</th>
<th>Macaroni</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repurchase Switching</td>
<td>Repurchase Switching</td>
<td>Repurchase Switching</td>
<td>Repurchase Switching</td>
<td>Repurchase Switching</td>
<td>Repurchase Switching</td>
</tr>
<tr>
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<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>( I_{t-1} )</td>
<td>4.41</td>
<td>4.07</td>
<td>0.34*</td>
<td>4.34</td>
<td>4.23</td>
</tr>
<tr>
<td>( SAT )</td>
<td>4.48</td>
<td>4.07</td>
<td>4.41*</td>
<td>4.48</td>
<td>4.12</td>
</tr>
<tr>
<td>( I_t )</td>
<td>4.46</td>
<td>3.91</td>
<td>0.55*</td>
<td>4.42</td>
<td>3.93</td>
</tr>
</tbody>
</table>

* \( p < 0.01 \).

* \( p < 0.05 \).

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groups; see Figure 1) might account for some of the differential changes in the revised intention as affected by the satisfaction intervention. To control for both the absolute level and the relative intention adjustments, a $t$-test was performed on the difference over time in intention levels between the two groups (see equation 8). The test shows that for the two groups the difference in the intention levels increases significantly ($p < .01$) between the two periods.

Table 2 shows the results of the paired $t$-test for the difference between the means of the intention levels within the two groups (see equations 6 and 7). The differences between the previous intentions and the revised adaptation levels support the expected direction in all cases although not all are statistically significant.

Table 3 summarizes the path analysis findings for the effects of prepurchase intention and postpurchase satisfaction on the revised intention to repurchase the brand. In both groups (and across all product classes) the effect of the lagged intention through the intervention of satisfaction is larger than the direct effect of the initial adaptation level on revised intentions. Likewise, the residual path coefficients of the model, in predicting the change in the revised intention, indicate that a relatively large part of the variance is explained by both the prepurchase and postpurchase predictors ($E_3$ in Table 3). Potential multicollinearity among the independent variables ($l_{-1}$, SAT) might influence those effects in an arbitrary direction. The average correlation among the two independent variables is $r = 0.37$. However, in 10 of the 12 simple correlation matrices the correlations among the independent variables are the lowest. This finding might indicate that the chance occurrence of multicollinearity was minimized.

A systematic difference between the two groups is found in the path analysis presented in Table 3. The direct effect of the previous intention on the revised level is higher and more significant for the repeat purchasers than for brand switchers. The opposite dominance appears in the case of brand switchers, for whom the effect of dissatisfaction on the revised intention yields larger path coefficients in all cases, with the exception of one product class. Such an observation was expected because the variability in satisfaction/dissatisfaction scores is larger

c{3}Equation 8 was computed as follows:

$$\Delta l_{-1} = l_{-1} | RP - l_{-1} | SW = 0.338$$

$$\Delta l = l | RP - l | SW = 0.541$$

$$\Delta(l_{-1}) - \Delta(l_{-1}) = 0.204$$

Let $\hat{s}$ denote the pooled standard error; then

$$\hat{s} = \sqrt{\frac{n_1s_1^2 + n_2s_2^2}{n_1 + n_2 - 2}} \frac{n_1 + n_2}{n_1 \cdot n_2} = 0.03,$$

$$t = \frac{\Delta(l_{-1})}{\hat{s}} = 6.8.$$
revised intention. The results of Table 4 support the contention that lagged intention and the mediating effect of satisfaction contribute to the formation of intention levels. The magnitudes of the frequencies in each of the three investigated classes—the cells denoted by footnote b, the cells denoted by footnote c, and the rest of the entries in the matrices—reveal a clear pattern. Both lagged intentions and satisfaction show high frequencies for all the values that coincide with similar values of revised intention. Moreover, between the two cognitions that are postulated to affect the revised intention, the mediating effect of satisfaction appears to be more substantial than the lagged intention.

The total population subsequently was split into repurchaser and switcher categories. One observation from the tables is noteworthy. Although an upward skewness in the satisfaction and intention scales is expected for repeat purchasers, a substantial skewness is also observed for switchers. For example, 261 respondents (43.5% of the switcher group) reported high satisfaction

---

### Table 3

<table>
<thead>
<tr>
<th>Variable</th>
<th>Product class</th>
<th>Direct effect</th>
<th>Indirect Effect</th>
<th>Total Effect</th>
<th>Coefficients' residual path</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>RP</td>
<td>SW</td>
<td>RP</td>
<td>SW</td>
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<tr>
<td></td>
<td>Aggregate</td>
<td>0.19b</td>
<td>0.10b</td>
<td>0.27b</td>
<td>0.25b</td>
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<tr>
<td></td>
<td>Margarine</td>
<td>0.27b</td>
<td>0.07b</td>
<td>0.16b</td>
<td>0.14c</td>
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<tr>
<td></td>
<td>Coffee</td>
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<td>0.01b</td>
<td>0.32b</td>
<td>0.37b</td>
</tr>
<tr>
<td></td>
<td>Toilet tissues</td>
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<td>0.07b</td>
<td>0.23b</td>
<td>0.24b</td>
</tr>
<tr>
<td></td>
<td>Paper towels</td>
<td>0.16b</td>
<td>0.10b</td>
<td>0.31b</td>
<td>0.21b</td>
</tr>
<tr>
<td></td>
<td>Macaroni</td>
<td>0.20b</td>
<td>0.33b</td>
<td>0.33b</td>
<td>0.20b</td>
</tr>
<tr>
<td>SAT</td>
<td>Aggregate</td>
<td>0.65b</td>
<td>0.74b</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Margarine</td>
<td>0.56b</td>
<td>0.73b</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Coffee</td>
<td>0.79b</td>
<td>0.83b</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Toilet tissues</td>
<td>0.62b</td>
<td>0.79b</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>SAT</td>
<td>Paper towels</td>
<td>0.65b</td>
<td>0.71b</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Macaroni</td>
<td>0.68b</td>
<td>0.58b</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

*Standardized regression coefficients ($P_{s}$) were obtained by applying a regression analysis on equations 2a and 2b. Let us denote $I_{-1}$ by $g$, $I$ by $t$, and SAT by $s$. Accordingly, the indirect effect of $g$ on $r$ is equal to $P_{ts} \times P_{ts}$, and the direct effect of $g$ on $r$ is equal to $P_{ts}$, where $P_{g}$ and $P_{s}$ are obtained from equation 2a. The direct effect of $s$ on $r$ is equal to $P_{ts}$, obtained from equation 2b.

1p ≤ 0.01.

2p ≤ 0.05.

---

### Table 4

A CROSS-CLASSIFICATION OF THE COGNITIVE VARIABLES

<table>
<thead>
<tr>
<th>SAT</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>%</td>
<td>Count</td>
</tr>
<tr>
<td>Low</td>
<td>118</td>
<td>60</td>
<td>79</td>
</tr>
<tr>
<td>Med.</td>
<td>23</td>
<td>59</td>
<td>16</td>
</tr>
<tr>
<td>High</td>
<td>19</td>
<td>70</td>
<td>8</td>
</tr>
<tr>
<td>Med.</td>
<td>39</td>
<td>61</td>
<td>25</td>
</tr>
<tr>
<td>High</td>
<td>20</td>
<td>71</td>
<td>8</td>
</tr>
<tr>
<td>High</td>
<td>9</td>
<td>69</td>
<td>4</td>
</tr>
</tbody>
</table>

$x^2$ values are significant at $p \leq 0.01$.

$^a$Equal SAT $\rightarrow I_{-1}$ intensities.

$^c$Equal $I_{-1} \rightarrow I_{-1}$ intensities.

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with the brand although they switched brands in the subsequent period.

The Effects of Satisfaction/Dissatisfaction on Future Behavior

Consumer satisfaction/dissatisfaction research may have substantial marketing implications if postpurchase evaluations largely predict future purchase behavior. The assumption that satisfaction/dissatisfaction meaningfully influences repurchase behavior underlies most of the research in this area of inquiry. However, the extent to which satisfaction/dissatisfaction influences future purchase behavior has not been investigated rigorously. One possible explanation for the lack of research on the link between satisfaction and repeat purchase may be a past concentration on the antecedents of satisfaction and research utilizing social psychological experimentation, which inhibited such investigations (Russo 1979). The purpose of this section is to investigate the degree to which satisfaction/dissatisfaction and intentions (lagged and revised) predict future purchases. Equation 1 is a model demonstrating these relations.

In contrast to the dearth of empirical research on the satisfaction/repeat purchase behavior link, the relationship between intention and repurchase behavior is well established (see Warshaw 1980 for a detailed review).

For the most part these relationships have been found to be poor, particularly in product-related settings. For example, Bonfield (1974) calculated a correlation of 0.44 between intentions and fruit drink choices and Harrell and Bennett (1974) obtained $r = 0.37$ when intentions and physician prescribing behavior were correlated. Thus, in our study a weak relationship between intentions and repurchase behavior was expected. Moreover, because satisfaction was posited in our proposed cognitive process to precede intentions in the sequence of causality, satisfaction/dissatisfaction was expected to yield correlations with purchase that are weaker than the intention/future behavior relationship.

A multiple discriminant analysis was used in which repeat purchase behavior ($P_{t+1}$) was treated as the dependent variable. The dependent variable comprised repurchasers (RP) and switchers (SW). The independent variables were the lagged intention, satisfaction, and revised intention. Similar to the path analysis procedure, the analysis first was performed for the total population and subsequently employed for each of the five product classes.

The results of the discriminant analysis are summarized in Table 5. Column 7 of this table shows the simple correlations of the various cognitive variables and repeat purchase behavior. These correlations reveal that in all

<table>
<thead>
<tr>
<th>Table 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>THE EFFECTS OF LAGGED INTENTION ($I_{t-1}$), SATISFACTION/DISSATISFACTION (SAT), AND REVISED INTENTION ($I_t$) ON BRAND REPURCHASE BEHAVIOR ($P_{t+1}$): A COMPARISON BETWEEN REPURCHASING AND SWITCHING BEHAVIOR</td>
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<td>---------------------------------</td>
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<tr>
<td>(1) Product</td>
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<td>---------------------------------</td>
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<tr>
<td>Aggregate</td>
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<tr>
<td>Margarine</td>
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<tr>
<td>Coffee</td>
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<tr>
<td>Toilet tissues</td>
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<tr>
<td>Paper towels</td>
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<tr>
<td></td>
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<tr>
<td>Macaroni</td>
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</tbody>
</table>

$^*$Significant at $p < 0.01$ level.
$^*$Significant at $p < 0.05$ level.
cases satisfaction/dissatisfaction is significantly correlated with repeat purchase behavior \((p < 0.01)\). Although these correlations are generally poor in magnitude they are stable across all the studied product classes \((r \text{ is between 0.18 and 0.22).} \)

In addition, the simultaneous analysis of all three variables (column 3) shows that the relative contribution of satisfaction/dissatisfaction to the function is low in comparison with that of the revised intention level. This pattern is consistent across all product classes except macaroni, for which the relative importance of satisfaction is the highest among the three cognitions.

Although significant differences appear for most comparisons between the groups (column 5), indicating that switchers and repurchasers differ in their cognitive process, the overall strength of the three investigated cognitions in predicting future purchase behavior appears to be low. This conclusion is based on the high scores of Wilks' lambda (column 4) and the low percentage of cases correctly classified (column 6).

**Extention to a Multiple Repurchase Framework**

We have focused on a model of purchase-repurchase behavior pertaining to two consecutive periods. An interesting issue is the change in satisfaction levels as a function of consumers' experience with the consumed brand. In this section we extend the model to encompass additional consecutive purchase periods. The question addressed is: "To what extent are brand loyal consumers likely to switch brands?" That is, by knowing that the repurchaser group comprises consumers who repurchased the same brand several times successively, can we improve the predictions about repurchase behavior provided by the three-stage model?

Equation 9 specifies the extended model in which PE (denoting prior experience) is believed to affect the intensities of the investigated cognitions, namely, lagged intentions, satisfaction, and revised intention to repurchase. The general extended model is

\[
P_{t+1} = f(I_t, SAT_t, I_{t-1}, PE).
\]

More specifically, in the extended model we add two consecutive periods\(^{10}\) to examine an experience record of at least three repeat purchase occurrences. Equation 10 is the model tested.

\[
P_{t+1} = f(I_t, SAT, P_t, I_{t-1}, P_{t-1}, P_{t-2}).
\]

Consumer cognitions, mediated by additional experience derived from consecutive repurchase behavior, were expected to result in greater discriminating power between repurchase and switching in comparison with the first analysis. In addition, because the repurchaser group (in the previous discriminant analysis) was replaced by brand loyal consumers, the relative importance of satisfaction in predicting repurchase behavior was expected to decrease and the opposite observation was expected for intention levels. The assumption that adaptation levels stabilize over time underlies this proposition.

A computed variable called \(LOY\) to denote the number of successive repurchases of the same brand was computed on the basis of the lagged values of the previously defined \(CH\) variable (i.e., switching versus repurchase behavior). Consumers who repurchased the same brand at least two consecutive times constituted the first discriminant group whereas consumers' overt switching behavior was the criterion for generating the second group.

Table 6 summarizes the results of a discriminant analysis conducted to test the effects of experience and loyalty on consumer satisfaction/dissatisfaction and overt repurchase behavior. A comparison of this analysis (Table 6) with the first discriminant analysis (Table 5) reveals certain patterns. First, predictions of repurchase behavior are improved when experience with consecutive purchase of the same brand is taken into consideration. This finding is derived by comparing columns 4 and 6 of both tables. Both the decrease in Wilks' lambda and the increase in the correctly classified cases demonstrate that such a pattern is consistent across the studied products. The findings indicate that the low probability of brand loyal consumers switching brands is influenced by higher satisfaction and, consequently, higher intentions to repurchase the brand. However, despite this improvement the overall predictions of these cognitions in repurchase decisions are relatively weak.

A second pattern is indicated by changes in the relative importance of the three investigated cognitions. On the aggregate level, the relative contribution of satisfaction and revised intention to the overall function decreases (as shown in column 2 in both tables) and the relative contribution of lagged intentions increases for brand loyal behavior. Whereas the relative importance of revised intentions to repurchase is the highest, as postulated in the assumption that revised intention is the last cognitive stage prior to purchase decisions, it is not enhanced when brand loyal behavior is investigated. However, a comparison of lagged intention contributions between the two analyses reveals that this cognition's relative importance is increasing across four of the five investigated product classes. This finding reinforces the conclusion that intentions to repurchase increase and then gradually stabilize as consumers repeat their purchase of the same brand.

**DISCUSSION**

Our findings strongly support the role of satisfaction in mediating revised intentions and overt behavior. Our study differs from much of the past research in that it is modified for repetitive brand purchases. However, the patterns found support previous theoretical approaches.

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\(^{10}\)The decision to add two periods is a compromise between including more previous purchase experience and a sufficient representation of respondents in the multivariate analysis.
Table 6
THE EFFECTS OF EXPERIENCE WITH BRAND ON BRAND REPURCHASE BEHAVIOR THROUGH COGNITION FORMATION:
A COMPARISON BETWEEN BRAND LOYAL AND SWITCHING BEHAVIOR

<table>
<thead>
<tr>
<th>(1) Product</th>
<th>(2) Variable</th>
<th>(3) Standardized function coefficients</th>
<th>(4) Wilks’ lambda</th>
<th>(5) Univariate F-ratio</th>
<th>(6) Percent of cases correctly classified</th>
<th>(7) Correlation with ( P_{+1} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate</td>
<td>( I_s )</td>
<td>0.727</td>
<td>0.889</td>
<td>238.7</td>
<td>0.001</td>
<td>0.35*</td>
</tr>
<tr>
<td></td>
<td>( SAT )</td>
<td>0.096</td>
<td>0.915</td>
<td>160.3</td>
<td>0.001</td>
<td>0.29*</td>
</tr>
<tr>
<td></td>
<td>( I_{s-1} )</td>
<td>0.336</td>
<td>0.929</td>
<td>131.1</td>
<td>0.001</td>
<td>0.26*</td>
</tr>
<tr>
<td>Margarine</td>
<td>( I_s )</td>
<td>0.638</td>
<td>0.892</td>
<td>35.1</td>
<td>0.001</td>
<td>0.35*</td>
</tr>
<tr>
<td></td>
<td>( SAT )</td>
<td>0.351</td>
<td>0.909</td>
<td>29.2</td>
<td>0.001</td>
<td>0.30*</td>
</tr>
<tr>
<td></td>
<td>( I_{s-1} )</td>
<td>0.194</td>
<td>0.970</td>
<td>9.0</td>
<td>0.01</td>
<td>0.26*</td>
</tr>
<tr>
<td>Coffee</td>
<td>( I_s )</td>
<td>0.611</td>
<td>0.896</td>
<td>38.4</td>
<td>0.001</td>
<td>0.32*</td>
</tr>
<tr>
<td></td>
<td>( SAT )</td>
<td>0.230</td>
<td>0.908</td>
<td>33.4</td>
<td>0.001</td>
<td>0.30*</td>
</tr>
<tr>
<td></td>
<td>( I_{s-1} )</td>
<td>0.306</td>
<td>0.937</td>
<td>22.2</td>
<td>0.001</td>
<td>0.25*</td>
</tr>
<tr>
<td>Toilet tissues</td>
<td>( I_s )</td>
<td>0.784</td>
<td>0.870</td>
<td>55.6</td>
<td>0.001</td>
<td>0.36*</td>
</tr>
<tr>
<td></td>
<td>( SAT )</td>
<td>-0.065</td>
<td>0.919</td>
<td>32.6</td>
<td>0.001</td>
<td>0.28*</td>
</tr>
<tr>
<td></td>
<td>( I_{s-1} )</td>
<td>0.444</td>
<td>0.912</td>
<td>35.9</td>
<td>0.001</td>
<td>0.30*</td>
</tr>
<tr>
<td>Paper towels</td>
<td>( I_s )</td>
<td>0.801</td>
<td>0.802</td>
<td>89.7</td>
<td>0.001</td>
<td>0.44*</td>
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<td>( SAT )</td>
<td>-0.109</td>
<td>0.898</td>
<td>41.3</td>
<td>0.001</td>
<td>0.32*</td>
</tr>
<tr>
<td></td>
<td>( I_{s-1} )</td>
<td>0.444</td>
<td>0.860</td>
<td>59.0</td>
<td>0.001</td>
<td>0.37*</td>
</tr>
<tr>
<td>Macaroni</td>
<td>( I_s )</td>
<td>0.422</td>
<td>0.923</td>
<td>30.2</td>
<td>0.001</td>
<td>0.28*</td>
</tr>
<tr>
<td></td>
<td>( SAT )</td>
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<td>0.925</td>
<td>29.4</td>
<td>0.001</td>
<td>0.27*</td>
</tr>
<tr>
<td></td>
<td>( I_{s-1} )</td>
<td>0.232</td>
<td>0.950</td>
<td>19.3</td>
<td>0.001</td>
<td>0.22*</td>
</tr>
</tbody>
</table>

*Significant at \( p < 0.01 \) level.

addressing the cognitive process underlying purchase behavior. Our study, which examines the cognitive process for more than a single purchase activity, supports an extension of the role of satisfaction in purchase behavior from a static to a longitudinal perspective. The upward and downward shifts of satisfaction, which result in changes of the adaptation level in parallel directions and the dominance of the \( I_{s-1} \) \( \rightarrow \) \( SAT \) \( \rightarrow \) \( I_s \) relationship, demonstrate the importance of satisfaction/dissatisfaction in explaining the behavior of repeat purchasers and brand switchers.

Although the changes in the adaptation level confirm the expected shifts, those changes in most cases are not statistically significant. This finding is consistent with Oliver’s (1980b) observation that “the adaptation level effect is remarkably resistant to extinction.” The statement can be generalized to the three-stage analysis. Although satisfaction affects the intention level, the shifts in the adaptation level for each group are not substantial. It is important to note, however, that the difference between the two groups’ intention levels increased significantly between the two periods. This finding indicates that overall satisfaction has a meaningful role in determining the revised intention to repurchase.

As one might expect, the mean revised intentions are significantly different for consumers who eventually repeated the purchase of the same brand and those who switched. Likewise, the satisfaction level is a significant explanation of intention formation. The mean lagged intention to purchase the brand in the previous period is also different for the two groups. This finding supports the proposition that the underlying beliefs which give rise to the formation of postpurchase cognitions are internalized to the extent that attitude, or perhaps intention, persists over a long period of time (Oliver 1980b). Although lower in magnitude than the difference in the revised intention, a significant difference in lagged intentions is found in four of five product classes between consumers who made a decision to repurchase and those who switched in the following period. This finding indicates that the repeat purchase group comprises mainly brand loyal consumers. It is congruent with Day’s (1969) statement that there is a difference between intentional loyalty and spurious loyalty associated with consistent repurchase of one brand.

When the population was split on the basis of whether or not the brand was repurchased, an asymmetrical relationship among the three variables was revealed for the two groups. The direct relationships between the pre- and postpurchase intention levels are stronger for brand loyal consumers than for brand switchers. This observation was expected because the beliefs about the brand are more stable and internalized for brand loyal consumers. However, the findings suggest that switcher be-
lies are more sensitive to the dissatisfaction from consuming the brand.

Despite the empirical support for the cognitive process underlying repurchase behavior, the strength of the studied cognitions in directly predicting repurchase or switching behavior is not substantial. Only when consumers’ prior experience with the brand was incorporated into the model were predictions somewhat improved. This finding suggests that other situational factors, such as coupons and sales, may influence purchase decisions despite a high satisfaction with the currently consumed brand.

Satisfaction and intention are found to increase as the loyalty to the brand increases (when brand loyalty is measured in a number of successive purchases of the same brand). However, the relative importance of satisfaction in predicting repurchase appears to decrease as loyalty increases. Thus, it is likely that a certain threshold of satisfaction must be met to lead to a repeat purchase of the brand. Moreover, the longer the sequence of repeat purchases, the more the experience with the brand accounts for repurchase behavior. One managerial implication may be that marketing efforts appealing to consumer satisfaction with the brand should be expended in the early stages of consumer brand experience. In later stages of consumers’ experience with the brand a reasonable level of satisfaction should be maintained so that long-run intention levels do not decrease.

A second managerial implication is that reports indicating consumers are “extremely satisfied” with the brand followed by indications of high intention to repurchase do not necessarily indicate that switching behavior will be insignificant. Although the cognitive process is important in predicting repurchase behavior, situational factors must be incorporated into future models to improve predictions.

Finally, an implication for marketing research is that because adaptation levels tend to stabilize as brand loyalty increases, both satisfaction and intention should be measured for those segments (or products) primarily characterized by low brand loyalty. For segments (or products) characterized primarily by brand loyal consumers, intention levels may be sufficient to represent the cognitive influence on repurchase behavior.

LIMITATIONS AND FUTURE DIRECTIONS

Our study tested an abbreviated cognitive model. The goal was to test in a field study situation the dynamic aspect of the role of satisfaction in revising repurchase intentions for several consecutive purchase activities. A limitation of the study is that it did not simultaneously test all the variables involved in the dynamic cognitive model proposed by Oliver (1980b) because of theoretical and practical issues.

The study was based on panel data. Most consumer satisfaction studies are conducted in experimental settings or are field studies investigating a single purchase event. Although a panel study using reported purchase data might be considered more reliable, it could be biased if panel members report a higher satisfaction or intention level to justify their repeat purchases. However, because the study data were not based on recall of previous periods and the time interval between questionnaires was two weeks, we believe such potential bias was minimized.

In addition, frequently purchased goods were the focus of study. Although a relatively large sample of frequently purchased products was included, further research is needed to examine other products, such as high involvement goods. In relation to low involvement goods, Day (1977b) argued that the consumer may not make any evaluation for many simple products. Swan and Traver (1979) found support for the contention that the extent of product evaluation may depend on the product class, each product class representing a different level of involvement.

Despite this criticism, we believe that measuring satisfaction may be appropriate in the context of longitudinal studies even for low involvement products. The first reason for this contention relates to the timing of measurement. Many of the past investigations reported in the consumer satisfaction literature are based on definitions that do not consider the importance of measurement timing. Only recently has Oliver (1981) suggested a definition of satisfaction which stipulates that satisfaction rapidly decays into attitude. According to this view, a measure of immediate past usage satisfaction would yield the highest construct validity of satisfaction measurement. Because of the frequency of reporting used in our study, the measurement timing limitation was probably minimized.

The second reason for believing that measuring satisfaction may be appropriate for low involvement goods relates to the importance of satisfaction in repurchase decisions. Although some consumers may not make any evaluation when satisfaction is measured as a dependent variable, we believe they do think of past satisfaction prior to a repurchase decision. Thus, though consumers might often respond, “I don’t think about it,” when they do not have to confront a repurchase decision, the question, “How satisfied are you?” may be appropriate in a repurchase decision situation.

The order of successive purchases of a brand within the product class was used as the measure of brand loyalty in our study. In reality, however, consumers might be loyal to several brands concurrently. Different measures of brand loyalty might lead to results different from ours.

Finally, a broadening of the consumer satisfaction literature to longitudinal designs should be continued. An extension of the design to encompass a longer sequence of successive purchase behavior would permit further brand experience to be taken into account. In addition, including situational factors, such as company reputation and sales, would probably improve predictions of brand repurchase behavior.
REFERENCES


