Where the Rubber Meets the Road:
A Model of In-Store Consumer Decision-Making

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Summary

In-store decision-making is an important topic to retailers and product manufacturers seeking to increase category sales. Several billion dollars are spent each year on in-store advertising materials in the hope that consumer choice will be influenced as a result. However, the process by which consumers make such decisions is not well understood.

In this study, professors Jeff Inman and Russ Winer propose and test a model of in-store decision-making. Their model incorporates factors influencing *exposure* to product categories and in-store displays, *motivation* to process in-store stimuli, advance *planning* to purchase particular categories, *need recognition* generated by exposure to product categories and in-store displays, and type of *decision* of the product category (i.e., specifically planned, generally planned, switch, or unplanned). Specifically, they explore the relative effects of situational factors (e.g., shopping pattern, the presence and location of in-store displays, shopping party size) and individual factors (e.g., shopping trips per week, demographics, psychographics) on in-store choice behavior. They estimate their model using data from a large-scale field intercept study. This study represents one of the most comprehensive studies of in-store decision-making to date.

The Study

Type of decision is the dependent variable in the analyses. The examination of in-store decision-making dictated that a field study be employed, as the artificial nature of a laboratory study would make generalizibility of the observed behavior questionable. Fortunately, the Point of Purchase Advertising Institute provided data from a nationwide field intercept study of 4200 consumers across 14 geographically dispersed U.S. cities. Purchase intentions were measured prior to entering the store and the register tapes were collected upon checkout so that types of in-store decision-making could be assessed. Characteristics of the shopping party and the store environment were collected as well. A second survey of over 600 respondents was fielded to gather the psychographic measures not collected by POPAI. The variables measured are shown below along with the factor which they are predicted to influence:

Exposure to Categories and Displays
- Trip type
- Number of aisles shopped
- Display type
- Purchase involvement

Motivation to Process In-Store Stimuli
- Deal proneness
- Age
- Need for Cognition

Ex Ante Planning

Use of a list
Shopping trips per week
Feature proneness

Need Recognition

Compulsiveness
Gender
Household size
Party size
Income

Findings

Results are largely supportive of the framework. While both types of factors emerge as significant drivers of in-store decision-making, situational factors appear to play a greater role than individual-level variables in driving in-store decision-making.

With the exceptions of age and need for cognition, every variable measured was statistically significant. Interestingly, this is driven by variation in the likelihood of specifically planned and generally planned purchases versus unplanned purchases across levels of the variables rather than by variations in brand switching. Brand switching proved to be relatively constant at approximately 3% of purchases.

Far and away the biggest effects on in-store decision-making were exhibited by the exposure-related factors of number of aisles shopped and trip type. In-store decisions were much more likely for major trips and when all aisles were visited. As expected, consumers were more likely to make an in-store decision when the product was displayed at the end of the aisle or at the checkout register than if it was displayed in-aisle. Counter to prediction, consumers with a higher level of purchase involvement were less prone to making in-store decisions.

Motivation-related factors played a significant role in in-store decision-making, with deal proneness exhibiting the fourth largest effect across all factors considered in the analysis. While younger consumers made proportionally more in-store decisions, this factor was not statistically significant. Further, need for cognition exhibited a weak effect on in-store decision-making, with low need for cognition consumers making proportionally more in-store decisions. Not surprisingly, deal prone consumers made more in-store decisions.

In terms of planning-related factors, number of shopping trips per week had the greatest impact on in-store decision-making. Specifically, the incidence of in-store decision-making decreased monotonically with the frequency of shopping. Shoppers who use a list made slightly fewer in-store decisions, as did shoppers who use store ads to decide where to shop.

Several need recognition-related variables demonstrated an impact on in-store decision-making. In-store decision-making was greater for larger households, larger shopping parties, households with greater incomes, and among women. Shoppers who consider themselves more compulsiveness were more likely to make in-store decisions as well.

Two particularly surprising findings were the effects of a shopping list and the similarity between the results of this study and those reported by Kollat and Willett over

30 years ago. First, the use of a shopping list exhibited an intriguing pattern of effects on in-store decision-making. Specifically, the effect appears to be driven by asymmetry in specifically planned and generally planned purchasing rather than differences in unplanned purchasing. Shoppers with a list made more specifically planned purchases than shoppers with no list, but fewer generally planned purchases than shoppers without a list. However, *both groups were equally likely to make unplanned purchases*. This suggests that shoppers with a list tend to plan their purchases down to the brand level, while shoppers without a list tend to only plan their purchases to the category level. Second, the similarity of the pattern of results is quite striking between this study and one performed by Kollat and Willett in the 1960s. For example, they find that 50.5% of decisions were unplanned and 25.9% were specifically planned (a ratio of 1.95), while this study reports that 59.1% of the decisions were unplanned and 29.9% were specifically planned (a ratio of 1.98). Further, both studies find that specifically planned purchases are more prevalent in small shopping baskets and that the proportion of unplanned purchases increases as the shopping basket increases.

Managerial Implications

Several factors identified as drivers of in-store decision-making are under managerial control, particularly those regarding exposure. For instance, strategies designed to increase the number of aisles shopped should increase the incidence of unplanned purchases. Adding displays for high penetration categories should increase the incidence of unplanned purchasing as well.

Our results show that the larger a shopping basket, the greater the ratio of unplanned purchases to planned purchases. Thus, targeting individuals/households with larger baskets will tend to result in disproportionally more unplanned purchases. For instance, larger households, female shoppers, and households with higher incomes tend to have larger baskets. Importantly, becoming recognized as the store of choice for major shopping trips is essential, as shoppers making a major trip make proportionally more unplanned purchases and have larger shopping baskets on average.

Certain segments tend to make more in-store decisions than others. These consumers should be more profitable to target in a direct marketing effort (e.g., deal prone and less frequent shoppers).

According to the Point-of-Purchase Advertising Institute, over two-thirds of purchase decisions are made in the store (1995). Accordingly, manufacturers spend billions of dollars annually on in-store advertising materials. This advertising is assumed to be effective because it occurs at the last stage of the choice process - at the point of purchase. However, little is known about the *process* by which consumers make in-store decisions and about *which consumers* are most likely to make decisions at the point of purchase. For example, what role does location of a display play in in-store choice? Why might household size and gender influence in-store decision-making? Are individuals who shop more aisles likely to make more in-store decisions? Does the use of a shopping list constrain in-store decision-making? In this paper we examine these questions by developing a model of the process whereby individual factors and shopping trip-specific factors affect in-store decisions. We then empirically test the model on a sample of over 50,000 choices by over 4000 consumers.

Kollat and Willett (1967) found several characteristics to be associated with unplanned purchasing: household size, gender of shopper, number of shopping trips per week, number of purchases, use of a shopping list, major shopping trip, and the number of years that the shopper had been married. Park, Iyer, and Smith (1989) studied the shopping behavior of 68 shoppers and found that consumers made more unplanned purchases when they were unfamiliar with the store and were not under any time pressure. Research of shopping party size (see Kahn and McAlister 1997 for a nice summary) suggests that shoppers accompanied by others shop longer and spend more. Research on in-store displays (e.g., Chevalier 1975, 1976; Wilkinson, Mason, and Paksoy 1982) has empirically demonstrated that a display increases sales of the displayed brand. More recently, scanner data-based research has consistently documented the positive effect of display on choice (see Blattberg and Neslin 1989 for a review). Thus, a comprehensive model of in-store decision-making must take into account the effect of shopping trip-specific factors (e.g., aisles visited, in-store displays shopping party size) and individual-level factors (e.g., demographics, psychographics).

Unfortunately, the absence of a theory-based model and limited availability of data have hampered researchers' ability to adequately explore the process by which in-store choice occurs. That is the contribution of this research - to develop a theoretical model of in-store decision making, then test it through a large-scale field study. The paper is laid out as follows. First, we specify our model of in-store decision-making by drawing from the marketing, psychology, and economics literatures. Second, we describe the dataset on which we test the model and the statistical methodology. Third, we present the results, then conclude with a discussion thereof along with interesting directions for future research.

Model Overview

Our proposed in-store decision-making model is shown in Figure 1. The model consists of four stages. In the first stage, consumers are exposed to product categories and in-store displays as they shop the store. We posit that the likelihood of exposure is influenced by several contextual factors (i.e., trip type, number of aisles shopped, display type/location, and purchase involvement). Once exposed to a product category or in-store display, the shopper must be motivated to process the in-store stimuli (Park et al. 1989). We argue that this motivation is influenced by several factors (i.e., deal proneness, age, need for cognition, and time pressure). The third stage may then be triggered wherein a need for the product category is recognized *if the consumer has not planned ex ante to purchase the product category*. Again, several factors are hypothesized to influence the likelihood of purchase planning (i.e., number of shopping trips per week and feature proneness) and in-store need recognition (i.e., compulsiveness, gender, household size, shopping party size, and income). In the fourth stage, consumers execute their decisions and make category purchases - those planned in advance as well as those made in-store.[1] Having overviewed the model, we now discuss each stage of the model in more detail.

[1] We want to emphasize that we are modeling consumer behavior once the consumer arrives at the store. Obviously, consumers come to the store with attitudes and preferences. Thus, our model is conditional on the nature of such prior preferences.

Exposure

Bucklin and Lattin (1991) argue that consumers often behave opportunistically in response to in-store promotions and purchase products that they may not have purchased otherwise.[2] Of course, consumers cannot react to in-store display stimuli without exposure to it. Several factors might be expected to affect the probability of exposure to in-store stimuli – trip type, number of aisles shopped, display type/location, and purchase involvement. In the paragraphs below we discuss each of these factors and the nature of their effects on exposure.

Trip Type

The extent of the shopping trip (i.e., major vs. fill-in) should influence the likelihood of exposure to in-store advertising, particularly for consumers engaged in a major shopping trip versus consumers that are only making a fill-in trip between major trips. Kollat and Willett (1967) report that consumers who are making a fill-in trip make fewer purchases and this, in turn, leads to their making a smaller proportion of unplanned purchases. Kahn and Schmittlein (1992) rationalize this result by arguing that consumers on major shopping trips are likely to spend more time in the market and concomitantly be exposed to more in-store promotional activity. Based on this, we expect that in-store decision-making will be more likely for major trips than for fill-in trips.

Number of Aisles Shopped

Clearly, as consumers shop the store more completely, they will be exposed to a greater number of product categories and in-store displays. One measure of shopping extent is the number of aisles shopped. However, one might argue that whether or not the trip is a major or a minor shopping trip drives the number of aisles shopped. We examined this and found that while the two variables are related (χ^2=1440, p<.001), the effect size is not sufficiently large (ϕ = 0.298) to conclude that the nature of the trip is the sole determining factor of the number of aisles shopped. Thus, we retain number of aisles

[2] While Bucklin and Lattin inferred such behavior, we will know for certain whether or not each purchase was planned.

shopped in the model and leave the exploration of its antecedents for future research.[3] We therefore predict that in-store decision-making will increase as more aisles are shopped.

Display Type/Location

The positive effect of displays on in-store decision-making is well documented (e.g., McClure and West 1969; McKenna 1966). Further, consumers are more likely to pass some store locations than others (e.g., the front of the store versus halfway down an aisle). In other words, a given consumer's probability of exposure to an in-store display should vary as a function of the display's location in the store. Surprisingly, little work has examined the moderating role of display location. Curhan (1974) examines location effects on sales of fruits and vegetables and reports that displays in high traffic areas drew more buyers. He surmises that this effect is observed because "customers attention is drawn to them and increased sales result" (p. 293). Wilkinson et al. (1982) compare sales when a brand was displayed in its regular location to sales when the brand was displayed at its regular location with increased shelf space and to sales when the brand was displayed in a secondary location. Across the four brand/categories studied, sales increased between 19% and 39% with expanded shelf space, but between 77% and 243% when the brand was displayed in a secondary location.

While these studies are suggestive of location effects, they do not control for ex ante planning, nor do they examine different locations. We thus extend their work by examining three different secondary display locations – at the checkout counter, end of the aisle, and in the aisle. Specifically, we predict that end-aisle displays and displays at the checkout counter will generate greater exposure than in-aisle displays, leading to a concomitant increase in in-store decision-making.

Purchase Involvement

Slama and Tashchian (1985) examine the construct of purchasing involvement and find that beyond its influence on attitudes and behaviors toward purchasing in general, it also positively affects consumer search processes. Beatty and Smith (1987) also report

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[3] This approach is vindicated by the analysis, as both factors emerged as statistically significant.

that search is positively associated with purchase involvement. Hence, due to their tendency to engage in greater search, consumers who are more cognitively involved in purchasing might be expected to be more likely to notice a given in-store advertisement than less involved consumers. As a result, more involved consumers should be more likely to make in-store decisions.

Motivation to Process In-Store Stimuli

Exposure to product categories and in-store displays does not guarantee that they will influence in-store decision-making. Shoppers must be able and/or willing to process such information. This variation can arise from external causes such as time pressure, or from internal sources such as age, need for cognition, or deal proneness.

Time Pressure

Stigler (1961) argues that some consumers should be expected to engage in more search than others, as consumers are not homogeneous in terms of their costs of search. In other words, consumers should search to the extent that the cost thereof is equal to its expected marginal return, where "the chief cost is time" (Stigler 1961, p. 217). In their discussion of the allocation of time, Ghez and Becker (1975) also argue that the opportunity cost of search varies across households. Beatty and Smith (1987) and Park, Iyer, and Smith (1989) report that consumers under time pressure tend to engage in less search. Park et al. also find that time-pressured consumers deliberate less and even fail to make some planned purchases. Further, Wright (1974) finds that subjects examined less information about alternatives when faced with time pressure, while Payne, Bettman, and Johnson (1988) report that subjects accelerated processing and became more selective as time pressure increased. Granbois (1968) finds that shoppers who spent less than time in the store were less likely to make unplanned purchases than those who spent a greater amount of time in the store. Time pressure should therefore lead to less in-store decision-making.

Age

The psychological cost of thinking may increase as individuals age, which suggests that older consumers may be less motivated to process in-store information than younger consumers. Consistent with this notion, Zeithaml and Fuerst (1983) find that accuracy of price recall and usage of price information was lower among older consumers and Beatty and Smith (1987) report that price search decreased with age. Due to their greater motivation to process in-store stimuli, we argue that younger consumers will make more decisions at the point of purchase.

Need for Cognition

Prior research has demonstrated that individuals differ in terms of their likelihood to engage in effortful, systematic thinking. Need for cognition is one of the determinants of the motivation to process information content (e.g., Haugtvedt, Petty, and Cacioppo 1992). Specifically, those with a high need for cognition (Cacioppo and Petty 1982) are more likely to use message content as a basis for judgments than are those with a low need for cognition (Haugtvedt et al. 1992; Maheswaran and Chaiken 1991). Thus, high need for cognition shoppers should be less influenced by mere exposure to a product category or in-store display (e.g., Inman, McAlister and Hoyer 1990; Inman and McAlister 1993) than low need for cognition shoppers. If so, we would anticipate that low need for cognition shoppers would make proportionally more in-store decisions.

Deal Proneness

Shoppers who are more deal prone should be more motivated to process in-store stimuli in their quest for good deals. These types of consumers may be accustomed to changing their plans in the store (i.e., the "opportunistic shoppers" referenced by Bucklin and Lattin 1991), or at least leaving their plans open regarding the specific brand to purchase. Bettman (1979) argues that consumers sensitive to the store's promotional environment make more in-store decisions. Measures of deal proneness (e.g., Lichtenstein, Netemeyer, and Burton 1995; Lichtenstein, Ridgway, and Netemeyer 1993) assess respondents' propensity to purchase items on deal. Since many deals are not seen

until the consumer is in the store, *ceteris paribus* some level of in-store decision-making is required to avail oneself of deals. Thus, we expect that deal prone consumers will be more likely to make in-store decisions.

Ex Ante Planning

In this research, we consider four levels of ex ante planning: completely unplanned, category planned, category and brand planned, and another brand planned than the one actually purchased.[4] In terms of sales for the product category, a major source of sales growth is through the generation of unplanned purchases. We also believe that some people are more likely to plan their purchases than others are and that this ex ante planning should make them less likely to engage in in-store decision-making (as a proportion of total purchases). We argue that the ex ante planning is associated with two key factors – shopping trips per week and feature proneness. We discuss each of these factors below.

Number of Trips per Week

In an examination of intershopping times, Kahn and Schmittlein (1989) report that the vast majority of consumers shop at least once per week. Interestingly, their histogram of intershopping times (Kahn and Schmittlein 1989, p. 56) shows two large peaks - one at two-four days and the other at seven days. Consumers who shop more often may be more likely to plan their purchases in advance than consumers who shop less often, as these consumers are probably shopping on a per-meal basis. Thus, we expect that consumers who shop more times per week should plan more of their purchases ex ante and make a lower proportion of in-store decisions.

Feature Proneness

Features are advertisements or flyers in local newspapers and circulars. In order to take advantage of such promotional offers, the shopper must peruse these advertisements in advance. Urbany, Dickson, and Kalapurakal (1996) report that consumers who read flyers tend to use them in planning which store to shop. Further, Kahn and Schmittlein (1992) argue that features "can be used to stimulate planned purchases by forcing the

[4] Forgetting to carry out a planned purchase altogether is not considered.

consumer to think about the brand before entering the store" (Kahn and Schmittlein 1992, p. 299). Thus, all else being equal, consumers who read store flyers should enter the store with a greater proportion of their purchases planned ex ante. Thus, we expect that consumers whose purchases are influenced by such out-of-store tactics will make a smaller proportion of their purchase decisions in the store.

Need Recognition

Need recognition occurs following exposure to (and processing of) in-store stimuli such as product categories and in-store displays. Such stimuli may prompt the consumer to recall that s/he has a need for the product category. The recognized need should then lead to an increase in the consumer's likelihood of purchasing the category. By definition, need recognition only occurs when the consumer has not planned ex ante to purchase the product category. We now discuss several factors that should influence in-store need recognition and two factors which should constrain shoppers' likelihood of acting on recognized needs.

Party Size

The likelihood of an unplanned purchase should tend to be greater if others are present with the consumer. Assume that the ith consumer exposed to a given product category has a probability, u_i, of recognizing a need for this category. Since the probability of need recognition for the shopping party will be the maximum u_i of all consumers in the group, need recognition should increase monotonically with shopping party size. For instance, exposure to the candy category may not trigger need recognition in a given consumer (i.e., u_1 close to 0), but once her 7-year-old son is exposed to the category, the resulting in-store need recognition (e.g., u_2=0.8) should increase the probability of an unplanned purchase.

Compulsiveness

O'Guinn and Faber (1989) characterize compulsive buying behavior as "an inability to control an overpowering impulse to buy" (O'Guinn and Faber 1989, p. 147).

Similarly, Rook (1986) and Rook and Fisher (1995) argue that some consumers are less able to control their purchase urges than other consumers. For such consumers, in-store need recognition is motivated less by the potential utility inherent in the purchased product than by the utility inherent in the transaction itself (Thaler 1985). Thus, we expect these consumers to make more unplanned purchases.

Gender

On average, responsibility for shopping still falls primarily upon the woman of the household (e.g., Bielby and Bielby 1988; Chebat and Zuccaro 1995; Crosby 1991; Hochschild 1989; Perkins and Demeis 1994). This role puts women in a better position than men to recognize household needs that might be fulfilled by a particular category purchase. In a study of gender roles, Thompson (1996) reports that the women interviewed described themselves as being more aware of household needs than their spouses. Further, Meyers-Levy (1989) finds that women process information in a much more context-dependent fashion than men and are more likely to attend to contextual information and multiple cues in the environment. Based on these factors, we expect women to make more in-store decisions than men.[5]

Household Size

Consumers who are shopping for a larger household have the opportunity to recognize more needs than consumers who are shopping for themselves. The same logic that we used in the context of shopping party size applies to the context of household size, except that the other members of the household are in absentia and therefore are dependent on the shopper to recognize their needs. In other words, large households have more potential needs to be recognized than smaller households.

Constraints on Acting on Need Recognition

[5] We checked for the relationship between trip type and gender and between shopping pattern and gender. While women were more likely to engage in major shopping trips than men, the two variables are not overly correlated. That all three displayed significant effects on in-store decision-making further mitigates concerns about multicollinearity.

Income. This variable is included not because we feel that it influences need recognition but rather because we expect it to act as a constraint on the likelihood of acting on the recognized need. In other words, shoppers with higher incomes are free to make purchases as a result of need recognition, while shoppers with a lower income are less able to do so due to budget constraints. As a result, we expect higher income shoppers to make proportionally more unplanned purchases.

Use of a shopping list. One behavior that is clearly associated with ex ante planning is the use of a shopping list (Spiggle 1987). While the simple presence of a shopping list doesn't preclude the shopper from making in-store decisions, it does serve as a commitment (Kollat and Willett 1967) by the consumer to a particular course of action. Thus, we expect consumers who use shopping lists to be less likely to make in-store decisions.[6]

System of Equations

Based on our discussion above, we can write the following set of equations:

(1) Probability of exposure = *f*(trip type, aisles shopped, display type, purchase involvement)

(2) Probability of motivation = *g*(deal proneness, age, time pressure, need for cognition)

(3) Probability of processing in-store stimuli = *d*(exposure, motivation)

(4) Probability of ex ante planning = *h*(trips per week, feature proneness)

(5) Probability of need recognition = *k*(compulsiveness, gender, household size, party size, income)

(6) Probability of category purchase type s = *l*(processing stimuli, ex ante planning, need recognition)

We assume that the terms in function *l* above combine linearly. Unfortunately, we do not have measures of the intervening constructs, but we can estimate the reduced form by performing sequential substitution. Specifically, we substitute Equations (1) and (2)

[6] Researchers have found (Thomas and Gardland 1993) that consumers who use shopping lists are more likely to be highly educated, have teenage children at home, and own their home.

into Equation (3), then substitute Equations (3), (4), and (5), into Equation (6). Finally, we assume a multinomial logit model specification for the probability of observing each category purchase type, which results in the specific reduced form of our model:

(7) $$\theta_s = \frac{e^{\alpha_s D_i}}{\sum_{s \in S} e^{\alpha_s D_i}}$$

Where:
θ_s is the probability of category purchase type s
$\mathbf{D}_i$ is a vector of our independent variables (i.e., trip type, aisles shopped, display type, purchase involvement, deal proneness, age, time pressure, need for cognition, trips per week, feature proneness, compulsiveness, gender, household size, party size, income) on the shopping trip in which the survey was conducted
α_s is a vector of importance weights for choice type s

Based on our earlier discussion, Table 1 shows the hypothesized sign of the coefficient for each variable in our model. Having described the model and the theoretical rationale for each component, we now discuss details of a large-scale empirical test. In the following sections we describe the field study, present the results, and explore the implications of our findings.

Data

Data Collection

The Point of Purchase Advertising Institute (POPAI), an association for the point-of-purchase advertising industry, periodically conducts an extensive field study of consumers' purchasing behavior. This widely cited study is used by business managers and academic researchers to examine the extent of in-store decision-making by consumers. POPAI fielded its most recent study in the spring of 1995 at a cost of approximately $400,000. In-store intercept interviews were conducted with 4200 consumers in fourteen geographically dispersed U.S. cities.

Consumers were intercepted randomly as they entered the store and offered a $10 coupon as an inducement to participate in the study. They were asked about the purpose of

their shopping trip (major or fill-in), then information about party size was recorded. The respondent's purchase intentions were then assessed. The grocery respondents were prompted with each major category, while the mass merchandiser respondents were simply asked to divulge all items that they planned to purchase with no category prompts by the researcher. Importantly, the interviewer probed for specific brand purchase intentions. Following this, coupons held by the respondent were recorded and the consumer was sent into the store.[7] The interviewer met each respondent at the cash register, took the register receipt, and asked the respondent several additional questions (e.g., demographics, study sponsor-specific questions). Table 2 summarizes the sample composition. Further, all in-store display activity was captured. The procedure is essentially identical to that used by Kollat and Willett (1967), with the important addition of the in-store display activity.

POPAI generously provided the resulting data (over 30,000 purchases) to us in order to estimate our model. However, psychographic data were not collected to measure purchase involvement, compulsiveness, and need for cognition. Fortunately, each respondent was asked to provide his/her name and complete address for additional follow-up questions. Over 80% of the respondents provided this information. This enabled us to field a follow-up mail survey to 1800 of the respondents to gather the psychographic constructs. These data were then merged with the POPAI data. Of the 1800 surveys sent out, 613 were returned, for a response rate of 34%. This is quite good considering that no additional incentive for participation was given. The measures used for each construct in our model are described below.

Measures

Category purchase type. The dataset provides the resulting type of decision for each purchase. In other words, we know the category purchased and whether the decision was specifically planned, generally planned, a brand switch, or unplanned. As described earlier, this categorical variable is our dependent measure in all of our analyses.

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[7] Kollat and Willett (1967) tested for the presence of demand effects, where inquiring about respondents' purchase intentions may have influenced their subsequent purchasing behavior. They found no such effects.

Trip type. This is a dichotomous variable posed by POPAI based on the respondent's response to the screener question "First, would you say that you are in the store for a major shopping trip, just to pick up a few items, or something in between?" Respondents who said that they just were picking up a few items were terminated.

Number of aisles shopped. This question was asked in the exit interview (after the respondent had completed their shopping trip). Respondents were asked how they went through the store and whether they visited each aisle or section of the store, visited most aisles or sections of the store, or only visited those aisles and sections where they planned to buy something.

Purchasing involvement. We used the scale for measuring purchasing involvement developed by Slama and Tashchian (1985). The original scale consists of 33 six-point Likert items (strongly agree to strongly disagree). From this, we randomly selected eight items and used seven-point Likert items (agree to disagree), as the number of constructs to be measured precluded using all 33 items.

Compulsiveness. We adapted the scale developed by Faber and O'Guinn (1992) to measure compulsive buying. Their scale consists of seven items with 5-point scales. We randomly selected three items and converted them to a 7-point scale (agree to disagree) to maintain a consistent format.

Display type/location. The field interviewer recorded each in-store display and its location. These data were then merged with the purchase data so that each purchase shows the corresponding in-store display activity.

Need for cognition. The eighteen-item scale developed by Cacioppo, Petty and Chuan (1984) was used as the basis of the measure of this construct. The 9-point Likert format (strongly agree to strongly disagree) was changed to the format used on the other items and six of the eighteen items were randomly selected.

Deal proneness. We created this measure by combining two POPAI questions that were posed on the exit interview. The first asked if the shopper took advantage of any in-store specials during that particular shopping trip. If the shopper responded in the

negative, they were asked if they ever take advantages of such specials. Combining these questions results in a measure with three levels.

Feature proneness. We summed two POPAI questions to construct this measure. The first asked respondents if they use mailed circulars or newspaper inserts in planning which store to shop, while the second asked if they use mailed circulars or newspaper inserts in planning what items to buy. Both used a 5-point scale anchored by "always" and "never."

Gender, age and income. These measures were asked by POPAI via direct questions. We performed a median split on the age and income measures.

Household size. This was posed by POPAI as an open-end question, "How many people, including yourself and all teens, children, infants and adults, are currently living in your household?"

Shopping party size. This was recorded (by POPAI) by first asking the respondent whether s/he was shopping alone or was accompanied by others. If accompanied by others, the number of individuals in the shopping party was recorded.

Use of a list. This was a simple dichotomous POPAI question as to whether the respondent had a shopping list on that particular trip or not.

Number of trips/week. This was an open-end POPAI question, "In total, about how many grocery (mass merchandiser) trips do you make in a typical week?"

Time pressure. Unfortunately, this construct was not available. While POPAI measured the amount of time that elapsed between the time the entry interview was completed and the time the respondent returned to the interviewer with the receipt, this measure is much too crude to operationalize time pressure. For instance, time spent in the checkout line would be included in this measure.

Results

Multivariate Analysis

A multivariate analysis is needed to statistically control for concomitant variation among the independent variables. To estimate our reduced form model of the role of the various consumer-based and shopping trip-based factors on in-store decision-making, we use the multinomial logit model (e.g., Maddala 1987) discussed earlier. We estimate the reduced form of the model in two stages. In the first stage, we use all 50,000 purchases. To examine the effect of the psychographic variables measured with the follow-up survey, we only use the purchases of the 613 respondents who returned the survey (representing approximately 9000 purchases).

In the multinomial logit model, choice type is made an explicit function of the variables in our model. Thus, the role of these factors in the determination of in-store decision-making is taken into account via their relative impact (and statistical significance) in the estimation. The multinomial logit formulation used here and the multinomial logit model used in brand choice models (e.g., Guadagni and Little 1983) are quite similar in functional form, but they differ in an important respect. In the brand choice model, the feature levels vary across brands and a common parameter is estimated for each feature relative to the baseline brand. Here, the independent variables (e.g., trip type, party size, feature proneness) are the same for each decision and a separate parameter is estimated for each variable for each choice type relative to a baseline choice type. We use unplanned purchase as the baseline choice type.

Table 3 shows the results of the multivariate analyses. One immediately notes that all of the variables are statistically significant, with the sole exceptions of age and need for cognition. Further, most of the contrasts of the probability of specifically planned purchases to unplanned purchases are significant - sixteen of the twenty parameters for specifically planned are significant. In contrast, ten of the parameters for generally planned purchases are significant and only six of the brand switching parameters are significant. Thus, the effects of the independent variables appear to be driven to a large part by differences in specifically planned vs. unplanned purchases across levels of the independent variables. Finally, every variable with more than two levels (shopping

pattern, party size, number of trips per week, and deal proneness) exhibits a nonlinear relationship with respect to the probability of both specifically and generally planned purchases. Since the univariate results appear robust with respect to the influence of other variables, in the next section we examine the particular relationship between each independent variable and category purchase type.

Detailed Results

Exposure-Related Variables. Tables 4a and 4b show the relationship between each exposure-related factor and in-store decision-making, along with the phi coefficient of each relationship. As expected, each of these factors exerted a statistically significant effect on in-store decision-making. Unplanned purchases were more likely as the number of aisles shopped increased and when the trip was a major shopping trip. Further, displays tended to be associated with greater unplanned purchases and this relationship was moderated by the display's location. Contrary to our expectations, purchase involvement was negatively related to in-store decision-making. While all four variables exerted a statistically significant impact on in-store decision-making, the strongest relationships (in terms of the ϕ coefficient) were for aisles shopped ($\phi = 0.144$) and trip type ($\phi = 0.143$). In fact, these were the strongest variables among all those examined.

Specifically, as the number of aisles visited decreased, the proportion of purchases that were specifically planned increased from 24.7% (when all aisles were visited) to 34.7% (when only some aisles were visited). Likewise, as the number of aisles visited decreased, the proportion of purchases that were generally planned doubled, from 4.9% to 10.7%. Conversely, as the number of aisles visited decreased, the proportion of purchases that were unplanned decreased as well, from 67.7% to 50.8%. A similar pattern is evident for trip type – unplanned purchases were much more likely for major (67.7%) than for fill-in trips (53.7%). Conversely, specifically planned and generally planned decisions were less likely for major than for fill-in trips (24.4% vs. 35.4% and 5.1% vs. 7.4% were specifically planned and generally planned, respectively). This pattern strongly suggests

that as shoppers are exposed to more categories and in-store displays, their probability of unplanned purchases increases.

In-store displays exerted a positive influence on in-store decision-making, making unplanned purchases more likely. Unplanned purchases were more prevalent as a percentage of total purchases (61.4%) when the purchased product was on display than when it was not (58.7%). This empirically replicates the results of Bucklin and Lattin (1991), which were based on a statistical model that only inferred whether the purchase was unplanned or planned. Further, we find that location of the display has a major influence on its ability to drive unplanned purchases (Table 4b). Unplanned purchases were greater when the display was at the end of the aisle (61.2%) or at the checkout counter (63.5%) than when the display was in the aisle (58.0%).

We argued that shoppers with a higher level of purchase involvement (PI) would be more likely to engage in in-store search, be exposed to more product categories and in-store displays, and be more likely to make in-store decisions. This explanation is not supported by our data. Conversely, unplanned purchases were less likely for high PI consumers (61.8%) than for low PI consumers (64.9%), while specifically planned decisions were more likely for high PI than for low PI shoppers (29.3% vs. 25.2%). However, this relationship was relatively weak ($\phi = 0.048$), suggesting that PI is not a particularly strong driver of in-store decision-making.

Motivation-Related Variables. Table 5 shows the relationship between in-store decision-making and the variables predicted to influence the motivation to process in-store stimuli, along with the phi coefficient of each relationship. As with the variables associated with likelihood of exposure, all variables expected to affect in-store decision-making through their affect on processing motivation were significant. Specifically, age and need for cognition were negatively associated with in-store decision-making, while deal proneness was positively associated with in-store decision-making. Among these variables, deal proneness exerted the greatest influence on in-store decision-making ($\phi = 0.091$), followed by age ($\phi = 0.064$), and need for cognition ($\phi = 0.035$).

In-store decision-making was more prevalent among younger consumers. Unplanned purchases (61.8% vs. 56.2%) made up a greater share of total purchases for younger consumers than for older consumers, respectively, while the opposite was the case for specifically planned purchases (27.2% vs. 32.9%). Generally planned purchases and brand switching did not vary as a function of age. This is consistent with our argument that younger consumers are more motivated to process in-store stimuli and make more in-store decisions as a result.

We argued that need for cognition would lead consumers to process the in-store stimuli more thoroughly and make fewer in-store decisions based on mere exposure. This, too, is supported, as specifically planned purchases occurred more often for high need for cognition consumers than for low need for cognition consumers (25.7% vs. 28.6%, respectively), while unplanned purchases occurred less often (64.4% vs. 62.5%, for high and low need for cognition groups, respectively).

As expected, shoppers who were more deal prone made more in-store decisions than less deal prone shoppers. Further, this effect is relatively strong ($\phi = 0.091$). High deal prone shoppers made 64.3% of their purchases on an unplanned basis, while only 56.2% of the purchases of low deal prone shoppers were unplanned. Conversely, 27.7% of the purchases of high deal prone shoppers were specifically planned, versus 30.2% for low deal prone shoppers. Interestingly, low deal prone shoppers were much more likely to make generally planned purchases (10.3%) than high deal prone shoppers (4.4%). This is a bit surprising, as one might expect deal prone shoppers to plan the category in advance, but wait to see which brands had good deals before determining which brand to purchase.

Planning-Related Variables. Table 6 shows the relationship between in-store decision-making and the variables predicted to influence pre-shopping planning, along with the phi coefficient of each relationship. Both variables expected to affect in-store decision-making through their affect on pre-shopping planning were significant. As predicted, the number of shopping trips per week and feature proneness were negatively

associated with in-store decision-making. Of these two variables, the number of shopping trips per week exerts the greatest influence on in-store decision-making ($\phi = 0.076$).

The number of trips per week is monotonically related to in-store decision-making. Specifically planned purchases increased from 25.1% to 32.9% as trips per week increased from once to at least three times per week. In contrast, unplanned purchases declined from 65.9% to 57.0% as a percent of total purchases. These are the two types of decision-making most affected by trips per week, as both generally planned purchasing (5.9% to 6.6%) and brand switching (3.1% to 3.6%) showed only minor increases as the number of trips per week increased.

We argued that consumers who are feature prone would plan their purchases in advance and therefore engage in less in-store decision-making. This appears to be the case, as highly feature prone consumers made more specifically planned purchases (30.3% vs. 27.3%) and fewer unplanned purchases (58.5% vs. 61.3%). Generally planned purchasing and brand switching was not different across feature proneness groups.

Need Recognition-Related Variables. As shown in Table 7, all of the variables that were hypothesized to affect in-store decision-making via their influence on need recognition were significant in the univariate analysis. In-store decision-making increased as household size, shopping party size, compulsiveness, and income increased, and was greater among women and shoppers without a list. Among these variables, the effect size was greatest for household size ($\phi = 0.090$), followed by compulsiveness ($\phi = 0.059$), and shopping party size ($\phi = 0.059$).

As predicted, as household size increased, unplanned purchasing increased monotonically. For households of size one or two, unplanned purchases made up 54.7% of total purchases, while among households of size five or more, unplanned purchases made up 65.7% of total purchases, a 20% increase. Inversely, specifically planned purchases decreased monotonically with household size: 33.0% of total purchases for households of size one or two and 24.7% or households of size five or more. Generally planned purchases showed a similar pattern, decreasing from 8.7% of households of size one or two

to 6.4% for households of size five or more. This pattern supports our notion that larger households have more potential needs to be recognized as a function of exposure to in-store stimuli (categories and/or displays).

As expected, consumers with greater reported compulsiveness were more likely to make in-store decisions. Compulsive consumers made more unplanned purchases (66.4% vs. 61.1% for high vs. low compulsiveness groups, respectively). Conversely, compulsive consumers made fewer specifically planned purchases as a percentage of total purchases (24.3% vs. 29.3% for high vs. low compulsiveness groups, respectively).

The number of people in the shopping party also exhibited a significant relationship with in-store decision-making. As the shopping party increased in size, the proportion of unplanned purchases increased monotonically (from 57.1% to 64.8%), while the proportion of specifically planned purchases decreased monotonically (from 31.7% to 24.2%). Interestingly, the proportion of generally planned purchases was relatively stable as party size increased. This is to be expected, as party size should not be expected to affect the likelihood of category-level planning. In other words, bigger parties should not cause more or less advance planning at the category level. However, as we discussed earlier, the number of people in the party increases the probability of need recognition monotonically.

As predicted, in-store decision-making increased as income increased. Both specifically planned (30.7% vs. 28.2%) and generally planned purchases (8.9% vs. 7.1%) decreased as income increased, while unplanned purchases increased (57.1% vs. 61.6%). This is consistent with our thesis that consumers with higher income have the luxury of making more in-store decisions than do lower income consumers.

Gender emerged as a significant variable in the analysis, with women being more likely to make in-store decisions than men. This effect is relatively strong, as 60.2% of the purchases made by women were unplanned compared to 53.1% of the purchases made by men, while the men made more specifically planned (33.9% vs. 29.2%) and generally planned (9.3% vs. 7.5%) purchases than did the women. As discussed earlier, we believe

that this result is due to women's role as the primary shopper (on average), putting women in the position to better recognize household needs than men. If this explanation is so, women should be more likely than men to make major shopping trips but due to their role, a direct effect of gender on in-store decision-making should remain. We examine this in the following section.

Finally, the use of a shopping list exhibited an intriguing pattern of effects on in-store decision-making. The relatively small effect ($\phi = 0.030$) appears to be driven by asymmetry in specifically planned and generally planned purchasing. Shoppers with a list made more specifically planned purchases (31.5% of their purchases) than shoppers with no list (29.9% of their purchases), but fewer generally planned purchases than shoppers without a list (6.8% vs. 8.3%). This suggests that shoppers with a list are more likely to plan their purchases down to the brand level, while shoppers without a list are more likely to plan their purchases only to the category level. Importantly, *both groups are equally likely to make unplanned purchases*. Unlike the other variables examined, there is almost no difference between those shoppers who used a list and those who did not in terms of unplanned purchasing (58.4% vs. 58.6%). Thus, contrary to our model, use of a shopping list does <u>not</u> seem to influence in-store need recognition.

Discussion

This study represents one of the most comprehensive studies of in-store decision-making to date. Due to its difficult nature (i.e., the need to conduct the research in the field), the process underlying in-store decision-making has not been thoroughly examined by academic researchers. Further, while media advertising (e.g., television, print) have received considerable attention by researchers, the relative effects of in-store stimuli have gone largely unstudied. Our model of in-store decision-making provides the basis for better understanding the underlying process of shopping trip-specific factors, consumer-specific factors, and in-store displays' effect on choice behavior. The research provides

valuable information to both academic researchers interested in decision-making and practitioners employing in-store advertising and micromarketing.

As mentioned earlier, this study is procedurally similar to the one performed by Kollat and Willett over 30 years ago. While their study was performed in a single city on a sample of 596, ours was performed on a national sample in 14 cities on over 4000 consumers. Nevertheless, the similarity of the pattern of results is quite striking. For example, they found that 50.5% of decisions were unplanned and 25.9% were specifically planned (a ratio of 1.95), while we find that 59.1% of the decisions were unplanned and 29.9% were specifically planned (a ratio of 1.98). Kollat and Willett found that the average shopper made 8 unplanned purchases and 2.5 specifically planned purchases, while the average shopper in our data made 9.8 unplanned purchases and 4.2 specifically planned purchases. Comparing the distribution of respondents by the number and proportion of unplanned and specifically planned purchases (See Table 8), one notes how similar shoppers in the 1990s behave compared to those in the 1960s. Kollat and Willett found that specifically planned purchases were more prevalent in small shopping baskets and we find the same. Like Kollat and Willett, we find that unplanned purchases increase as the shopping basket increases. Based on our analysis, this is due in large part to shopping baskets being larger for major shopping trips and number of aisles shopped. Of course, our study goes much further than theirs in that we also consider the effects of in-store displays and analyze our data using a multivariate analysis.

Our research helps to assess the relative impact of situational variables and consumer-specific characteristics on choice. Examining the effect sizes for each variable, the shopping trip-specific variables exert the greatest average effect on in-store decision-making with a mean ϕ coefficient of 0.080, while the consumer-specific variables exert a much smaller average effect on in-store decision-making with a mean ϕ coefficient of 0.059. In terms of ranks of the effect sizes (shown below), the two variables with the greatest effects are trip type and aisles shopped, both of which are shopping trip-specific variables. By contrast, deal proneness and household size, the consumer-specific variables

with the greatest effect sizes, exert somewhat smaller effects on in-store decision-making ($\phi = 0.091$ and 0.090, respectively).

Effect Size by Factor Type

Shopping Trip-Specific Factors	Phi Coefficient	Individual-Level Factors	Phi Coefficient
Number of aisles shopped	0.144	Deal proneness	0.091
Trip type	0.143	HH Size	0.090
Shopping party size	0.059	Trips/week	0.076
Use of a list	0.030	Age	0.064
Display type	0.025	Compulsiveness	0.059
Time pressure	NA	Gender	0.053
		Purchase involvement	0.048
		Income	0.048
		Need for Cognition	0.035
		Feature proneness	0.030
Average	**0.080**		**0.059**

This is good news for retailers and marketers, as shopping trip-specific factors are much more under their control than are consumer-specific variables. These results suggest that consumers be encouraged to shop as many aisles as possible (in general) and be exposed to as many product categories and in-store displays as possible (in particular). Two ways to achieve this are through innovative aisle layout and shelf design. For instance, products which are frequently purchased or "destination" items" (e.g., milk) should be placed in locations which will lead consumers past as many other categories as possible or displayed next to less frequently purchased products. Hoch, Dreze, and Purk (1994) test several innovative ideas in this regard.

Another way to expose consumers to more categories is through the creative use of in-store coupons and non-price promotions. For example, coupons might be offered in such a fashion as to encourage consumers to visit several aisles. Alternatively, periodic "scavenger hunts" might be offered that make participants visit every aisle in the store (and hopefully) make several unplanned purchases as a result. Frequent buyer programs and geodemographics could be used to target consumers with the greatest probability of

making unplanned purchases. Our results suggest that this profile includes younger consumers, larger households, higher income households, and women.

Limitations and Future Research

Our model of in-store decision-making incorporates variables in terms of the intervening constructs which should drive their effect on in-store purchasing. Unfortunately, we were unable to directly test these intervening constructs due to data limitations and were forced to only estimate the reduced form of the model. It is important for future research to test the validity of our model by collecting measures of these constructs to completely test our model. Further, we focused on in-store decision-making insofar as category choice is concerned, but did not explicitly consider brand choice in our model or analysis.[8] Our model might be extended to the area of brand choice and the role of shopping-trip specific and consumer-specific factors thereon.

While we examined characteristics of the store environment and shopping party environment in our model and analysis, we did not include characteristics of the product category in our model. While past research on the category-level factors driving responsiveness to in-store displays has identified several factors, such as category velocity, maturity, advertising to sales ratio, no one has examined which categories are most susceptible to in-store decision-making per se. Our database, coupled with measures of category characteristics from other sources (e.g., the IRI Marketing Fact Book), could be used fruitfully in this regard.

The area of in-store decision-making, heretofore dominated by empirically-driven studies, is in need of a theory-based model that will guide academics performing research in the area and aid practitioners developing strategies employing in-store advertising. This study is a step in that direction.

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[8] Brand choice is implicitly considered since specifically planned purchases are defined as ex ante planning to purchase a specific brand.

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TABLE 1
Hypothesized Signs for Each Coefficient
(Negative Implies In-Store Decision-Making is <u>More</u> Likely)

Trip type (Major vs. Minor)	< 0[a]
Aisles shopped All vs. Few Most vs. Few	 < 0 < 0 All < Most
Display (Present vs. Absent)	< 0
Purchase involvement (High vs. Low)	< 0
Deal proneness (High vs. Low)	< 0
Age (High vs. Low)	> 0
Time pressure (High vs. Low)	> 0
Need for cognition (High vs. Low)	> 0
Trips per week One vs. > 2 Two vs. >2	 < 0 < 0 One < two
Feature proneness (High vs. Low)	> 0
Compulsiveness (High vs. Low)	< 0
Gender (Male vs. female)	> 0
Household size One/two vs. > 4 Three/four vs. > 4	 > 0 > 0 One > Three
Party size One vs. > 2 Two vs. >2	 > 0 > 0 One > two
Income (High vs. Low)	< 0
List use (Yes vs. No)	> 0

a This should be generally interpreted as "all else equal, specifically planned purchases are less likely when all aisles are shopped."

TABLE 2
Summary Sample Statistics

	Percent of Households	Percent of Purchases	Index
Trip Type			
Major	29.8%	44.5%	1.49
Fill-In	70.2%	55.5%	0.79
Shopping Pattern			
All aisles	16.4%	29.2%	1.78
Most aisles	34.3%	36.7%	1.07
Some aisles	49.3%	34.2%	0.69
Deal Proneness			
High	13.6%	20.6%	1.51
Medium	36.0%	41.3%	1.15
Low	50.4%	38.2%	0.76
Trips/week			
One	20.8%	27.1%	1.30
Two	31.8%	31.5%	0.99
Three or more	47.3%	41.4%	0.88
Age			
<45	50.0%	51.9%	1.04
>45	50.0%	48.1%	0.96
Income			
<$45K	52.4%	53.3%	1.02
>$45K	47.6%	46.7%	0.98
List use			
Yes	45.4%	56.5%	1.24
No	54.5%	43.5%	0.80
Feature proneness			
High	64.0%	64.0%	1.00
Low	36.0%	36.0%	1.00
Gender			
Male	19.4%	15.4%	0.79
Female	80.6%	84.6%	1.05
Household size			
One-two	48.3%	44.0%	0.91
Three-Four	37.7%	40.3%	1.07
Five or more	14.0%	15.6%	1.11
Shopping party size			
One	58.9%	60.0%	1.02
Two	29.8%	29.2%	0.98
Three or more	11.3%	10.8%	0.96

TABLE 3
Results of Multivariate Analysis
Of Variable Impact on Choice Type
(Compared to Unplanned Purchase)

n=34314	Overall Effect	Specifically Planned		Generally Planned		Brand Switch	
	Chi Square	Parameter Estimate	p value	Parameter Estimate	p value	Parameter Estimate	p value
Exposure-Related							
Trip type – Major	227*	-0.198	0.000	-0.165	0.000	-0.150	0.000
Shopping pattern	324*						
All aisles		-0.220	0.000	-0.276	0.000	-0.295	0.000
Most aisles		-0.055	0.002	-0.049	NS	-0.045	NS
Display – Yes	23*	-0.075	0.000	-0.086	0.009	0.015	NS
High Purch Inv^	8***	0.073	0.005	0.023	NS	0.002	NS
Motivation-Related							
Deal Proneness	85*						
High		-0.076	0.000	-0.304	0.000	0.052	NS
Medium		0.017	NS	0.026	NS	-0.031	NS
Age - <45	7	-0.033	0.014	0.002	NS	-0.041	NS
High Need for Cognition^	4	0.035	NS	-0.011	NS	-0.083	NS
Planning-Related							
Trips/week	64*						
One		-0.126	0.000	-0.058	NS	-0.029	NS
Two		-0.006	NS	0.001	NS	-0.034	NS
Feature Prone – Hi	14**	0.048	0.000	-0.001	NS	0.017	NS
Used list – Yes	73*	0.108	0.000	0.068	0.004	0.083	0.009
Need Recognition-Related							
High Compulsiveness^	13**	-0.102	0.000	-0.022	NS	-0.058	NS
Gender – Male	52*	0.111	0.000	0.099	0.001	0.128	0.001
HH size	96*						
One or two		0.170	0.000	0.233	0.000	0.089	NS
Three or four		-0.032	NS	0.011	NS	-0.039	NS
Party Size	39*						
One		0.060	0.002	0.151	0.000	0.100	0.044
Two		0.055	0.011	-0.083	0.050	0.104	NS
Income - <$45K	50*	0.074	0.000	0.083	0.001	0.133	0.000

* p<.001
** p<.01
*** p<.05
^ Estimates based on sample of survey respondents (n=9318)

TABLE 4A
Cross-Tabs for
Exposure-Related Factors

	Aisles Shopped			Trip Type		Purchase Involvement	
	All Aisles	Most Aisles	Some Aisles	Major	Fill-In	Low	High
Specifically Planned	3639 *24.7%*	5477 *29.4%*	6050 *34.7%*	4880 *24.4%*	8878 *35.4%*	1266 *25.2%*	1315 *29.3%*
Generally Planned	719 *4.9%*	1369 *7.4%*	1867 *10.7%*	1017 *5.1%*	1854 *7.4%*	343 *6.8%*	262 *5.8%*
Brand Switch	404 *2.7%*	573 *3.1%*	652 *3.7%*	572 *2.9%*	892 *3.6%*	154 *3.1%*	141 *3.1%*
Unplanned	9995 *67.7%*	11199 *60.2%*	8853 *50.8%*	13575 *67.7%*	13491 *53.7%*	3257 *64.9%*	2778 *61.8%*
Chi Square			1049*		918*		22*
Phi Coefficient			0.144		0.143		0.048

TABLE 4B
Cross-Tabs for
In-Store Decision-Making
Variability Across Display Locations

	In-Store Display		Display Location		
	Yes	No	End Aisle	Checkout Counter	In-Aisle
Specifically Planned	2168 *28.8%*	13206 *30.1%*	1166 *28.5%*	267 *27.8%*	767 *31.4%*
Generally Planned	486 *6.5%*	3512 *8.0%*	270 *6.6%*	60 *6.2%*	177 *7.3%*
Brand Switch	257 *3.4%*	1389 *3.2%*	150 *3.7%*	24 *2.5%*	80 *3.3%*
Unplanned	4626 *61.4%*	25748 *58.7%*	2500 *61.2%*	611 *63.5%*	1417 *58.0%*
Chi Square		33*			*
Phi Coefficient		0.025			

Note: Brands purchased on display could be at multiple locations.

* p<.001
** p<.01
*** p<.05

TABLE 5
Cross-Tabs for
Motivation-Related Factors

	Age		Deal Proneness			Need for Cognition	
	<45	>45	High	Medium	Low	Low	High
Specifically Planned	7239 27.2%	8135 32.9%	2523 27.7%	5349 29.3%	5164 30.2%	1238 25.7%	1343 28.6%
Generally Planned	2099 7.9%	1899 7.7%	406 4.4%	1281 7.0	1766 10.3%	317 6.6%	288 6.1%
Brand Switch	832 3.1%	814 3.3%	327 3.6%	582 3.2%	571 3.3%	162 3.4%	133 2.8%
Unplanned	16475 61.8%	13899 56.2%	5864 64.3%	11025 60.4%	9622 56.2%	3100 64.4%	2935 62.5%
Chi Square		211*			370*		12**
Phi Coefficient		0.064			0.091		0.035

TABLE 6
Cross-Tabs for
Planning-Related Factors

	Used a List		Feature Prone		Trips per Week		
	Yes	No	High	Low	One	Two	Three or More
Specifically Planned	7854 *31.5%*	5747 *29.9%*	8670 *30.3%*	4451 *27.3%*	2705 *25.1%*	3639 *30.1%*	5293 *32.9%*
Generally Planned	1699 *6.8%*	1585 *8.3%*	2252 *7.9%*	1254 *7.8%*	631 *5.9%*	760 *6.3%*	1054 *6.6%*
Brand Switch	825 *3.3%*	623 *3.2%*	956 *3.3%*	532 *3.3%*	337 *3.1%*	411 *3.4%*	570 *3.6%*
Unplanned	14548 *58.4%*	11258 *58.6%*	16731 *58.5%*	9876 *61.3%*	7096 *65.9%*	7256 *60.1%*	9157 *57.0%*
Chi Square		39*		39*			225*
Phi Coefficient		0.030		0.030			0.076

* p<.001
** p<.01
*** p<.05

TABLE 7
Cross-Tabs for
Need Recognition-Related Factors

	Income		Compulsiveness		Household Size			Party Size			Gender	
	<$45K	>$45K	Low	High	One-Two	Three-Four	Five or More	One	Two	Three or More	Female	Male
Specifically Planned	6421 *30.7%*	6700 *28.2%*	1576 *29.3%*	1005 *24.3%*	6393 *33.0%*	4945 *27.3%*	1783 *24.7%*	9769 *31.7%*	4263 *28.5%*	1344 *24.2%*	12695 *29.2%*	2681 *33.9%*
Generally Planned	1810 *8.9%*	1696 *7.1%*	340 *6.3%*	265 *6.4%*	1689 *8.7%*	1356 *7.5%*	461 *6.4%*	2465 *8.0%*	1075 *7.2%*	458 *8.2%*	3263 *7.5%*	735 *9.3%*
Brand Switch	754 *3.6%*	734 *3.1%*	174 *3.2%*	121 *2.9%*	691 *3.6%*	563 *3.1%*	234 *3.2%*	1007 *3.3%*	485 *3.2%*	154 *2.8%*	1352 *3.1%*	294 *3.7%*
Unplanned	11949 *57.1%*	14658 *61.6%*	3285 *61.1%*	2750 *66.4%*	10592 *54.7%*	11276 *62.2%*	4739 *65.7%*	17621 *57.1%*	9154 *61.1%*	3603 *64.8%*	26184 *60.2%*	4194 *53.1%*
Chi Square		104*		33*			359*			179*		143*
Phi Coefficient		0.048		0.059			0.090			0.059		0.053

* p<.001
** p<.01
*** p<.05

TABLE 8
Comparison of Our Results to Kollat and Willett (1967)

	Specifically Planned Purchases		**Unplanned Purchases**	
	Our Data	*Kollat & Willett*	*Our Data*	*Kollat & Willett*
0-7	85.7%[a]	93.8%	55.8%	66.0%
8-15	13.5%	5.7%	21.6%	16.4%
16-23	0.5%	0.5%	12.0%	10.0%
24-31	0.2%	0.0%	5.5%	4.7%
32-40	0.2%	0.0%	3.2%	1.9%
41+	0.0%	0.0%	1.8%	0.0%
Total	**100%**	**100%**	**100%**	**100%**

a. This should be read as 85.7% of the households surveyed made 0-7 specifically planned purchases.

FIGURE 1
Model of In-Store Decision-Making