Pursuing the Value-Conscious Consumer: Store Brands Versus National Brand Promotions

The objective of this article is to determine whether national brand promotions and store brands attract the same value-conscious consumers, which would aggravate channel conflict between manufacturers and retailers. The authors identify psychographic and demographic traits that potentially drive usage of store brands and national brand promotions. They then develop a framework and structural equation model to study the association of these traits with store brand and national brand promotion usage. The authors find that though demographics do not influence these behaviors directly, they have significant associations with psychographic characteristics and therefore are useful for market targeting. Most important, usage of store brands and usage of promotions, particularly out-of-store promotions, are associated with different psychographics. Store brand use correlates mainly with traits related to economic benefits and costs, whereas the use of out-of-store promotions is associated mainly with traits related to hedonic benefits and costs. These differences result in four well-defined and identifiable consumer segments: deal-focused consumers, store brand-focused consumers, deal and store brand users (use-all), and nonusers of both store brands and deals (use-none). Therefore, manufacturers and retailers have the opportunity to either avoid each other or compete head to head, depending on which segment they target.

Sales promotions accounted for 74% of the marketing budget of U.S. packaged goods firms in 1997 (Cox, Direct 1998), up from 65% in 1984 (Donnelley Marketing Inc. 1995). During this time, the market share of store brands increased in several product categories, accounting for 20% of sales overall in 1998 (Dunne and Narasimhan 1999). Although there are many reasons that manufacturers offer promotions and retailers offer store brands, one common motivation is to provide value to the consumer. The average store brand sells for approximately 30% less than national brands, and national brand promotions typically deliver discounts of 20%–30% (Information Resources Inc. 1998, Sethuraman 1992). Given this common motivation for national brand promotions and store brands, the natural question is whether these offerings attract the same consumers. If they do, there is a tug-of-war between manufacturers and retailers for the same market segment, whereas if not, the partitioning of market segments could reduce competition between them (e.g., Mohrty 1988).

The answer to this question is not readily apparent. The common emphasis on delivering value suggests that store brands and national brand promotions attract the same consumers. Consistent with this belief, some researchers have argued that national brand promotions are an effective way to combat the growth of store brands (e.g., Lai 1990, Queck and Hardin 1996). However, national brand promotions and store brands may satisfy different consumer needs, and consumers may incur different costs in using them. For example, promotions provide not only economic but also hedonic benefits, such as exploration and self-expression (Chandon, Wansink, and Laurent 2000), whereas store brands may not provide hedonic benefits to the same extent. Similarly, making use of promotions can require consumers to plan their shopping or shop at different stores, whereas buying store brands may not entail these costs.

Another factor that makes it difficult to determine whether the same consumers use both national brand promotions and store brands is that previous research has mainly focused on one behavior or the other but rarely on both in the same study. Blattberg and Neslin (1990, Ch. 3) summarize several studies that characterize the deal-prone consumer in terms of demographics and/or psychographics. Other studies do the same for store brand–prone consumers (e.g., Baltas and Doyle 1998; Cunningham, Hardy, and Imperia 1982; Richardson, Jarr, and Dick 1996). However, there is little work that studies both behaviors. Doing so would provide the common basis for comparison, in terms of both the characteristics studied and the method employed, that is necessary for making a definitive judgment on this issue.

The objective of this article is to determine whether deals and store brands attract the same consumers through a study of the demographic and psychographic factors that drive usage of these offerings. Our analysis proceeds in three stages. First, we develop a structural equation model to study the fundamental relationships of psychographics and
demographics with deal and store brand usage. Second, we perform a cluster analysis to uncover the usage segments that emerge from these relationships. Third, we develop a predictive model to classify consumers into these segments. The result is a deeper understanding of the drivers of deal and store brand usage, insight on whether deal and store brand users belong to the same market segment, and guidance for how to target the various segments.

This article is unique in three ways. First, we unify and complement previous work that has examined deal use and store brand use separately. Second, we consider two types of promotion—in-store and out-of-store. The first type includes displays, in-store specials, and so forth that are encountered in the store and used opportunistically or passively, whereas the second type includes coupons, in-store flyers, and the like, which are actively considered before the consumer goes shopping (Bucklin and Lattin 1991, Schnei
der and Currin 1991). Third, we examine both psychographic and demographic characteristics and investigate whether demographics work by determining deal and store brand usage directly or whether they work indirectly through their impact on psychographics (see Mittal 1994; Urban, Dickson, and Kalaparakal 1996).

We find that national brand promotion usage and store brand usage are distinct behaviors, driven by different psychographics. Store brand users are characterized by psychographics linked largely to economic benefits and costs, whereas out-of-store promotion users are characterized by psychographics linked mainly to hedonic benefits and costs. In-store promotion users differ from out-of-store promotion users on some hedonic benefits and cost-related psychographics. However, users of these two types of promotions also have a lot in common. These findings result in a clearly defined store brand user segment, a national brand promotion segment (combining in-store and out-of-store promotions), and two other segments: one partaking in both store brands and national brand promotions and one partaking in neither. We also find that demographics influence these behaviors primarily through their effect on psychographics rather than directly.

The rest of the article is organized as follows: We present our conceptual framework, structural model, and data in the following section. Next, we describe the results of the structural model and the segmentation analysis. We conclude with a summary of findings and their implications for researchers and managers.

Conceptual Framework and Model

Overview of Conceptual Framework

In Figure 1, we provide an overview of our conceptual framework. The solid lines represent the structural equation model to be estimated. Although our overall purpose is to distinguish between store brand and deal users, previous research suggests that deal usage may not be a homogeneous construct (Henderson 1984, Lichtenstein, Netemeyer, and Burton 1995). We therefore build on Schneider and Currin's (1991) distinction between active and passive promo-

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1In the remainder of the article, when we refer to promotion or deal usage, we mean promotions on national brands.
tions and Bucklin and Lattin’s (1991) distinction between planned and opportunistic shopping behavior and divide deal usage into in-store and out-of-store promotions. Thus, the three behaviors we wish to characterize are store brand use, in-store national brand promotion use, and out-of-store national brand promotion use.

Figure 1 proposes that these three behaviors are influenced by consumer psychographic and demographic characteristics. Demographics influence these behaviors not only directly but also indirectly through their effect on psychographics. The motivation for considering this indirect effect is that neither deal proneness nor store brand proneness research has had much success in obtaining consistent and strong associations with demographics. In addition, Mittal’s (1994) and Urbany, Dickson, and Kalaparakal’s (1996) findings suggest that demographics may be better predictors of psychographics than of deal proneness or store brand proneness per se.

Another important element of our framework is that the consumer’s decision whether to use store brands or promotions is driven by economic benefits, hedonic benefits, and costs. This typology has a well-established tradition in the literature on shopping behavior. Researchers such as Blattberg and colleagues (1978), Narasimhan (1984), and Bawa and Shoemaker (1987) have used economic benefits and costs to characterize the deal prone consumer, whereas others, such as Shimp and Kavas (1984), Price, Feick, and Guskey-Federouch (1988), and Schindler (1989), have focused attention on hedonic benefits. Recent research brings together the economic and hedonic attributes in evaluating deals (e.g., Chandon, Wansink, and Laurent 2000) or studying other aspects of shopping (Mittal 1994, Urbany, Dickson, and Kalaparakal 1996).

Figure 1 also proposes that the benefits and costs of using store brands and promotions create associations between psychographics or demographics and these behaviors. The reason is that particular psychographic or demographic groups will be attracted to particular costs and benefits. This suggests an approach for generating the particular psychographics and demographics we study. We first generate a more specific list of benefits and costs. Then we generate the psychographic and demographic characteristics of consumers that would make them most attracted to these benefits and costs. We do this in Figure 2.

The specific benefits and costs we consider are listed on the left-hand side of Figure 2. The economic benefits are savings and product quality (Chandon, Wansink, and Laurent 2000). The hedonic benefits are entertainment, exploration, and self-expression (Belzetti et al. 1981; Chandon, Wansink, and Laurent 2000, Schindler 1989). And the costs are switching, search, thinking, and inventory holding costs (Bawa and Shoemaker 1987, Blattberg et al. 1978, Urbany, Dickson, and Kalaparakal 1996).

The right-hand side of Figure 2 shows the psychographic and demographic characteristics that are particularly suggested by each benefit and cost. We discuss these links and use prior theoretical and empirical research to hypothesize how consumers with each psychographic characteristic vary in their usage of store brands or national brand promotions. As we have noted previously, most prior research examines either promotion use or store brand use, but not both. As a result, there are a few variables for which we can specify directional hypotheses with respect to one behavior but not the other. There are also a few variables for which there is strong theoretical support for some role in deal or store brand usage but where evidence from prior research is mixed with respect to the direction of association. Given the integrative nature of our research, we discuss the evidence to date and include these variables in our empirical model even when prior research does not enable us to state unambiguous, directional hypotheses. We note, however, that results for such hypotheses are in that sense exploratory, and it would be valuable for further research to examine the convergent validity of our findings on these variables.

The Role of Psychographics

Savings

Price savings are relevant to consumers who are price conscious and perceive themselves as having financial constraints. Because both store brands and national brand promotions offer price savings, we expect price consciousness and financial constraints to be positively related to all three behaviors.

Product quality

Product quality is relevant by definition to quality-conscious consumers. Quality consciousness should deter consumers from using store brands, because such brands are perceived to be inferior in quality (Cunningham, Hardy, and Imperia 1982; Richardson, Dick, and Jan 1994). Quality consciousness should not particularly influence use of in-store or out-of-store promotions for national brands, because the consumer can obtain the quality that these brands deliver without being deal prone.

Entertainment

Entertainment is relevant to people who enjoy shopping. Consumers who enjoy shopping have been found to be heavier users of feature advertising and coupons (Kolodinsky 1990), perhaps because they enjoy making use of marketing information. We therefore expect a positive relationship of shopping enjoyment with out-of-store promotion use, as well as with in-store promotion use. The in-store relationship may not be as strong, but in-store promotions also provide marketing information that shopping enthusiasts would enjoy processing. There is no evidence to suggest that using store brands is related to the quest for shopping enjoyment. For example, Belzetti and colleagues (1981) find that store brand buyers are not more likely to enjoy shopping than other consumers.

Exploration

Exploration evokes characteristics such as innovation, variety seeking, and impulsiveness. Innovativeness and variety seeking should be positively associated with deal usage, because deals encourage product trial (e.g., Montgomery 1971). We cannot make a clear prediction for the relationship of innovativeness with store brand use. It

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2Chandon, Wansink, and Laurent (2000) do not examine costs and list convenience as an economic benefit. Our typology includes the specific aspects of convenience in search, switching, thinking, and inventory costs.

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will be positive if innovative consumers view store brands as new and untried (Granzin 1981) or negative if they view them as run-of-the-mill. Variety seekers should be less apt to use store brands, because regular use of store brands does not provide variety. Impulsiveness should be positively associated with in-store deal use but not with out-of-store deal use, because out-of-store deals require preparation before the shopping trip. We also find little reason to expect a relationship between impulsiveness and store brand usage. Store brands can be bought on impulse, but we do not expect store brands to be especially conducive to impulse behavior, as in-store promotions are.
Self-expression. Self-expression is salient to shopping mavens. Mavens are particularly attentive to media as a basis for their expertise (Higie, Fitzek, and Price 1987). They are more likely to read direct mail and local advertising (Higie, Fitzek, and Price 1987) and are heavier users of coupons (Price, Fitzek, and Guskey-Federouch 1988). We therefore expect mavens to be heavier users of out-of-store promotions. They should not be especially apt to use in-store promotions, which require less effort and therefore are less reflective of individual shopping expertise. Mavens attach extra importance to both quality and price (Williams and Slama 1995). Depending on which is stronger, there could be a positive or negative relationship between mavenism and store brand usage.

Self-expression is also related to consumers’ motivation to conform to peer expectations. There is a strong theoretical and empirical basis for including motivation to conform. For example, Shump and Kavas (1984) and Chandron, Wansink, and Laurent (2000) discuss the role of social recognition and conformity in deal usage, and Dick, Jain, and Richardson (1995) discuss the role of social approval in store brand usage. However, it is difficult to formulate directional hypotheses, because it is unclear what relevant others think of deal and store brand use. Both deal and store brand use have become common, and peers may consider them smart, so they may be positively related to motivation to conform. However, peers may look down on these behaviors as cheap, which would lead to a negative relationship.

Switching costs. Switching costs are high for brand-loyal store-loyal consumers. We expect a negative relationship between in-store deal use and national brand loyalty, because in-store deals often require the consumer to switch brands (Bawa and Shoemaker 1987; Webster 1965). However, brand-loyal consumers can seek out coupons and specials for their favorite brands. Thus, out-of-store deal use may be less negatively, or even positively, related to national brand loyalty. Finally, national brand–loyal consumers by definition will be less likely to use store brands.

Store loyalty should be negatively related with out-of-store deals, because these deals often require store switching (Bawa and Shoemaker 1987). There should also be a relationship between store loyalty and in-store promotions, but we are unable to specify the sign. Perceptions of retailer promotion activity have been found to correlate with store loyalty (Sirohi, McLaughlin, and Wittink 1998), which suggests a positive relationship. However, there is evidence that store-loyal people are less price sensitive (Kim, Srinivasan, and Wilcox 1999), which suggests a negative relationship. In contrast, store loyalty should be positively associated with store brand use, because store-loyal consumers trust their chosen store and become familiar with its store brands (Dick, Jain, and Richardson 1995; Richardson, Jain, and Dick 1996). The ability to buy a single brand across a wide range of product categories also facilitates shopping (Balas and Doyle 1998; Steenkamp and Dekimpe 1997).

Search costs. Search costs are related to consumer planning and time pressure. Consumers who plan their shopping will be more apt to consider out-of-store promotions, because these promotions encourage planning. Indeed, there is evidence that consumers use out-of-store promotions to plan their shopping (Henderson 1985; NCH NuWorld 1999, p. 25; Progressive Grocer 1975). We therefore hypothesize a positive relationship between planning and out-of-store promotion use. We also hypothesize a positive relationship, though not as strong, between planning and in-store promotion use. One way to take advantage of in-store promotions is for consumers to be highly conscious both of promotion schedules (Krishna, Currim, and Shoemaker 1991) and of their inventory levels so they know how much to buy to last until the next deal. Planners should be highly conscious of their inventory, and this should facilitate “deal-to-deal” buying. Planning may also play a role in store brand use, but previous research does not point to a clear direction. Omar (1996) finds a positive association, but Cobb and Hoyer (1986) find an ambiguous relationship, in which more extensive planners have less favorable attitudes toward store brands than less extensive planners.

Consumers under time pressure should be deterred from using out-of-store promotions. Bawa and Shoemaker (1987) emphasize that coupons require high effort, and it is likely that scanning and making use of weekly flyers requires the same. But time-pressed consumers may use in-store promotions and store brands to save time, as both provide easily recognizable cues for simplifying the buying process. Store brands provide additional convenience and time saving by facilitating shopping across several categories (Balas and Doyle 1998; Steenkamp and Dekimpe 1997). Therefore, we expect time pressure to be negatively related to out-of-store promotion use and positively related to in-store promotion use and store brand use.

Thinking costs. Thinking costs are related to need-forgiveness (NFC). High NFC has been found to be associated with more extensive information processing in a variety of contexts (Inman, McAlister, and Hoyer 1990, Mantel and Kardes 1999, Zhang 1996). We expect NFC to be positively associated with out-of-store promotion use, because such deals require significant cognitive effort, for example, in selecting, clipping, and organizing coupons. We expect a negative relationship between NFC and in-store deal use, because low-NFC people respond to both signal-only promotions, such as displays, and price-off promotions, such as store specials, whereas high-NFC people respond only to price-off promotions (Inman, McAlister, and Hoyer 1990). The relationship between NFC and store brand use is not clear. It would depend on whether low-NFC people use the store brand label as a cue for good value or as a cue for low quality.

Inventory holding costs. Inventory costs are related to the perceived availability of storage space. Having sufficient storage space makes it easier for consumers to use both in-

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1 Although our hypotheses refer to national brand loyalty, a limitation of our data is that our measurement scale for brand loyalty does not refer specifically to national brands. However, we believe that consumers were thinking of national brands when they responded, because national brands are more salient. As a whole, they have higher market shares and higher loyalty as measured by share of requirements (Information Resources Inc. 1998).
store and out-of-store national brand deals, because they can stock up on the product (Blattberg et al. 1978). In contrast, consumers who perceive storage space constraints may buy store brands because they are always available at a low price and therefore need not be stockpiled. Thus, perceived storage space should have a positive association with the use of both types of national brand promotions and a negative association with store brand use.

In Table 1, we summarize our hypotheses about the relationship between psychographic characteristics and the three behaviors of interest. Viewed holistically, these individual hypotheses enable us to generate expectations about the fundamental question in our research, that is, Are these distinct behaviors or is there a lot of overlap between them? Table 1 suggests substantial overlap between users of in-store and out-of-store promotions. But even these two groups should be distinguishable on the basis of hedonic characteristics, such as impulsiveness and mavenism, and cost-related characteristics, such as time pressure and NFC. In contrast, Table 1 suggests much less overlap between store brand use and promotion use (in-store and out-of-store promotions taken collectively). Promotion users and store brand users should be clearly distinguishable on the basis of quality consciousness and several of the hedonic and cost-related characteristics.

The Role of Demographic Characteristics

Identification of demographic characteristics: The benefits and costs of store brand and deal use suggest seven demographic characteristics: income, employment status, children in the household, type of residence, age, sex, and education. Income is linked to savings benefits, employment status and children in the household are related to search costs, and type of residence is related to inventory holding costs. The remaining three demographics link to multiple benefits and/or costs. Education links not only to thinking costs but also to product quality, experience, and search costs (e.g., Narasimhan 1984; Raju 1980, Urbany, Dickson, and Kalapurakal 1996). Age links not only to entertainment but also to exploration, self-expression, and search costs (e.g., Raju 1980, Urbany, Dickson, and Kalapurakal 1996). Sex links not only to self-expression but also to exploration and search costs (e.g., Feick and Price 1987, Schuder 1989). Because the purpose of Figure 2 is simply to identify the relevant consumer characteristics, we keep it simple by showing only one major link.

Relationship with store brand and deal usage: Much research has hypothesized direct relationships between demographics and store brand or deal promen. However, these hypotheses often rely on the association between demographics and psychographics for theoretical support. For example, income is expected to be negatively related to deal use, because higher-income households are less price conscious. Similarly, full-time employment is expected to be negatively associated with deal use, because people who work full time are more pressed for time (e.g., Blattberg et al. 1978). And when people in a home rather than an apartment is expected to be positively associated with deal use, because homeowners have more storage space for stockpiling products. As a result, it is unclear what the direct relationship of demographic variables is with store brand or deal usage when the indirect influence through psychographics has been accounted for. Therefore, we do not propose a priori hypotheses about the direct relationship between demographics and these behaviors.

Relationship with psychographics: We can propose hypotheses about the relationship of some demographic variables with specific psychographics. First, we expect income to have a negative relationship with price consciousness and financial constraints. Second, we expect full-

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<th>Psychographic Characteristics</th>
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<td>Store Brand Usage</td>
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<td>Related to Economic Benefits:</td>
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<td>Price consciousness</td>
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<td>Financial constraints</td>
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<td>Quality consciousness</td>
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<td>Related to Hedonic Benefits:</td>
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<td>Shopping enjoyment</td>
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<td>Innovativeness</td>
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<td>Variety seeking</td>
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<td>Impulsiveness</td>
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<td>Mavenism</td>
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<td>Motivation to conform</td>
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<td>Brand loyalty</td>
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<td>Store loyalty</td>
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<td>Planning</td>
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<td>Time pressure</td>
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<td>Perceived storage space</td>
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time employment and the presence of children to have positive relationships with time pressure. Third, we expect living in a house rather than an apartment or townhouse to have a positive relationship with storage space.

The remaining three demographic variables—age, education, and sex—can be related to several of the psychographic characteristics in Figure 2. For example, older people may be more likely to enjoy shopping and be mavens (Urbany, Dickson, and Kalaparakal 1996), but they may be less likely to seek variety (Raju 1980) or be pressured for time. More educated people may be less likely to be mavens (Feick and Price 1987), more pressured for time (Narasimhan 1984), and more likely to seek variety (Raju 1980). Women may be more likely to be shopping mavens and planners (Feick and Price 1987). Relationships of these three demographic variables with other psychographics can be conceived of as well. For example, education may be related to quality consciousness or NFC; age may be related to the motivation to conform to the expectations of others or NFC, and sex may be related to shopping enjoyment, innovativeness, impulsiveness, or time pressure. Therefore, we examine the relationship of these three demographic variables with all 15 psychographic variables.

Structural Model

We first specify Model A, in which use of store brands (sbusier) use of in-store promotions on national brands (inuse), and use of out-of-store promotions on national brands (outuse) are each influenced by the 15 psychographic characteristics. The error terms for the three equations are allowed to vary, because we expect that, like the included variables, some of the unobserved variables that influence one behavior may also influence other behaviors

\[ \text{(1) sbusier} = \gamma_{1,0} + \gamma_{1,1}\text{pricecon} + \gamma_{1,2}\text{finconst} + \epsilon_{1}, \]
\[ + \gamma_{1,15}\text{storage} + \epsilon_{15}, \]
\[ \text{inuse} = \gamma_{2,0} + \gamma_{2,1}\text{pricecon} + \gamma_{2,2}\text{finconst} + \epsilon_{2}, \]
\[ + \gamma_{2,15}\text{storage} + \epsilon_{15}, \]
\[ \text{outuse} = \gamma_{3,0} + \gamma_{3,1}\text{pricecon} + \gamma_{3,2}\text{finconst} + \epsilon_{3}, \]
\[ + \gamma_{3,15}\text{storage} + \epsilon_{15}. \]

Next, we add the seven demographic characteristics identified in Figure 2 and obtain three additional model specifications depending on whether demographics have only a direct effect on the three behaviors, only an indirect effect through psychographics, or both a direct and an indirect effect. Model B, containing direct effects of demographics, is obtained by adding the demographic variables to each equation in Equation 1.  

\[ \text{(2) sbusier} = \gamma_{1,0} + \gamma_{1,1}\text{age} + \gamma_{1,2}\text{income} + \epsilon_{1}, \]
\[ + \gamma_{1,16}\text{employ} + \mu_{16}, \]
\[ \text{inuse} = \gamma_{2,0} + \gamma_{2,1}\text{age} + \gamma_{2,2}\text{income} + \epsilon_{2}, \]
\[ + \gamma_{2,22}\text{employ} + \mu_{22}, \]
\[ \text{outuse} = \gamma_{3,0} + \gamma_{3,1}\text{age} + \gamma_{3,2}\text{income} + \epsilon_{3}, \]
\[ + \gamma_{3,22}\text{employ} + \mu_{32}. \]

We incorporate the indirect effects of demographics by specifying equations for each of the psychographics as a function of demographics. As discussed previously, we model relationships of income, employment status, children in the family, and residence type with specific psychographics, but allow age, education, and sex to affect all 15 psychographics. Thus, Model C, with indirect effects of demographics, is obtained by adding the following 15 equations for psychographics to Equation 1 and allowing covariation between their error terms.

\[ \text{(3) pricecon} = \gamma_{4,0} + \gamma_{4,1}\text{age} + \gamma_{4,2}\text{educ} + \gamma_{4,3}\text{sex} + \epsilon_{4}, \]
\[ + \gamma_{4,4}\text{income} + \epsilon_{4}. \]
\[ \text{finconst} = \gamma_{5,0} + \gamma_{5,1}\text{age} + \gamma_{5,2}\text{educ} + \gamma_{5,3}\text{sex} + \epsilon_{5}, \]
\[ + \gamma_{5,4}\text{income} + \epsilon_{5}, \]
\[ \text{timepers} = \gamma_{6,0} + \gamma_{6,1}\text{age} + \gamma_{6,2}\text{educ} + \gamma_{6,3}\text{sex} + \epsilon_{6}, \]
\[ + \gamma_{6,4}\text{income} + \epsilon_{6}, \]
\[ \text{storage} = \gamma_{7,0} + \gamma_{7,1}\text{age} + \gamma_{7,2}\text{educ} + \gamma_{7,3}\text{sex} + \epsilon_{7}, \]
\[ + \gamma_{7,4}\text{income} + \epsilon_{7}, \]
\[ \text{quality} = \gamma_{8,0} + \gamma_{8,1}\text{age} + \gamma_{8,2}\text{educ} + \gamma_{8,3}\text{sex} + \epsilon_{8}, \]
\[ + \gamma_{8,4}\text{income} + \epsilon_{8}, \]

Finally, Model D, with both direct and indirect effects of demographics, is obtained by combining Equations 2 and 3. Note that Models A and B are not nested within Model D even though Model D is the most general. This is because the psychographic variables are exogenous in Models A and B, whereas they are endogenous in Models C and D. Model A, however, is nested within Model B, and Model C is nested within Model D.

Data

We obtain data from a mall intercept consumer survey. The survey consisted of personal interviews with 319 adults who were intercepted at four shopping malls in Massachusetts at various times of day and on different days of the week. A professional market research firm conducted the interviews over a four-week period in the summer of 1998. Each interview lasted approximately 30 minutes, and respondents were given three scratch-and-win lottery tickets, each costing $1.00, as an incentive for participation. The conditions for inclusion in the survey were that the respondent must be

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4Some of the demographic characteristics—for example, employment status—are operationalized as a set of dummy variables in the empirical analysis. For simplicity of exposition at this stage, we simply represent each demographic characteristic as a single variable.
at least 18 years of age and must do at least some of the grocery shopping for the household. The demographic profile of the sample is summarized in Table 2.

At the beginning of each interview, the interviewer provided the respondent with definitions and examples of (1) store brands, (2) national brands, (3) in-store promotions on national brands, and (4) out-of-store promotions on national brands. The definitions and examples were printed in bold capital letters on a card, and the card was placed in front of the respondent during the entire length of the interview. The interviewers were instructed to clarify any questions about the definitions of these four terms before proceeding with the interview. This procedure ensured that there was no confusion among respondents about what was meant by these terms.

The Appendix provides the items for all the constructs used in the study as well as all the demographic variables. All constructs except demographic variables are measured on five-point scales. The national brand promotion and store brand usage scales measure frequency of use and are anchored by “never” and “very often,” and all other scales are of the agree/disagree type and are anchored by “strongly disagree” and “strongly agree.”

Note that we need to measure the usage of store brands and the usage of promotions on national brands, not the feelings associated with them. Thus, our scales are fundamentally different from those in the deal proneness studies of researchers such as Lichtenstein, Netemeyer, and Burton (1990). Also, our research calls for consumer-level measures of store brand usage and national brand deal usage. Therefore, our scales are designed to assess a general usage level across product categories, though we recognize that usage also varies by product category, especially for store brands (Sethuraman and Cole 1997).

Items for many of the scales are taken either in part or in their entirety from the literature. Because we created some new scales and did not use some of the other scales in their entirety, we pretested all the scales with 40 respondents. The pretest led us to reword a few items and delete a few others that had low item-to-total correlations. We use EQS software (Bentler 1995) to estimate the structural equation model.

### Structural Model Analysis

#### Measurement Model

We evaluate the reliability and validity of our constructs using confirmatory factor analysis. In Table 3, we list the constructs and reliability statistics. The composite reliability index has been shown to have advantages over Cronbach’s alpha when the measures are not tau-equivalent (Raykov 1997). The table shows that the reliabilities of all the constructs are quite high. Only one Cronbach’s alpha (planning) falls below Nunnally’s (1978) cutoff of .70 for such scales.

To assess the dimensionality and validity of our constructs, we specify two confirmatory factor analysis models, one for the 11 items related to the three behaviors (i.e., store brand use, in-store national brand promotion use, and out-of-store national brand promotion use) and another for the 40 items related to the 15 psychographic constructs. For both models, we do not allow any cross-loadings, and we do not allow measurement errors to covary. Furthermore, all interfactor covariances are freely estimated. Even under the high standards of measurement quality imposed by these conditions and with 15 constructs in the psychographies measurement model, the fit of both models is acceptable. The robust comparative fit index is .914 for the store brand and promotion use measurement model and .916 for the psychographies measurement model. Similarly, the standardized root mean square residual is .094 for the former model and .053 for the latter. The fit of the former model is significantly improved if measurement error covariances between the items related to store flyer use are allowed.

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9 The Appendix lists the psychographic scales in the order in which they were discussed in the previous section. Their order was random in the actual survey.
free up these covariances because doing so makes conceptual sense. As a result, the robust comparative fit index increases from 914 to 964, whereas the standardized root mean squared residual decreases from 0.94 to 0.74. Although model fit could be improved by freeing up some other measurement paths, no modification indices stand out as being substantially bigger than the others. Therefore, we do not make further model modifications simply to boost the fit of the models (see Baumgartner and Homburg 1996).

Loadings of all the items on their factors are strong. The magnitude of their t-statistics ranges from 6.07 to 29.26. On average, 63% of the variation in an item is explained by its factor. The magnitude of interfactor correlations ranges from 0.09 to 0.618, and none of the 90% confidence intervals around the correlations include 1 (or −1), thus supporting the discriminant validity of our constructs (Anderson and Gerbing 1988; Bagozzi 1980).

**Comparison of Competing Models**

In Table 4, we summarize the fit of Models A, B, C, and D. Although the comparative fit indices are not as impressive as those of some other structural equation models, we note that our models contain many more constructs than the typical model (see Baumgartner and Homburg 1996), and many of our hypotheses are new. Some of the structural paths are hypothesized to be insignificant, but we do not constrain them to zero because our purpose is to test the hypotheses not to maximize model fit. We use the fit indices not so

### TABLE 3
**Reliabilities of Constructs**

<table>
<thead>
<tr>
<th>Construct</th>
<th>Relevant Literature for Scale Items</th>
<th>Number of Items</th>
<th>Cronbach’s Alpha</th>
<th>Composite Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Characteristics Associated with Economic/Utilitarian Benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price consciousness</td>
<td>Darden and Perreault (1976)</td>
<td>3</td>
<td>.790</td>
<td>.826</td>
</tr>
<tr>
<td>Financial constraints</td>
<td>Urbany, Dickson, and Kalaparakal (1996)</td>
<td>2</td>
<td>.808</td>
<td>.817</td>
</tr>
<tr>
<td>Quality consciousness</td>
<td></td>
<td>3</td>
<td>.842</td>
<td>.850</td>
</tr>
<tr>
<td><strong>Characteristics Associated with Psychosocial/Hedonic Benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shopping enjoyment</td>
<td>Urbany, Dickson, and Kalaparakal (1996)</td>
<td>3</td>
<td>.768</td>
<td>.812</td>
</tr>
<tr>
<td>Shopping mavenism</td>
<td>Feick and Price (1987); Urbany, Dickson, and Kalaparakal (1996)</td>
<td>3</td>
<td>.852</td>
<td>.876</td>
</tr>
<tr>
<td>Innovativeness</td>
<td>Darden and Perreault (1976)</td>
<td>3</td>
<td>.908</td>
<td>.810</td>
</tr>
<tr>
<td>Impulsiveness</td>
<td>Narasimhan, Neslin, and Sen (1996)</td>
<td>2</td>
<td>.854</td>
<td>.856</td>
</tr>
<tr>
<td>Variety seeking</td>
<td></td>
<td>2</td>
<td>.712</td>
<td>.789</td>
</tr>
<tr>
<td>Motivation to conform</td>
<td>Bearden, Netemeyer, and Teel (1989)</td>
<td>3</td>
<td>.903</td>
<td>.824</td>
</tr>
<tr>
<td><strong>Characteristics Associated with Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planner</td>
<td>Haves and Lumpkin (1984)</td>
<td>2</td>
<td>.610</td>
<td>.616</td>
</tr>
<tr>
<td>Time pressure</td>
<td></td>
<td>3</td>
<td>.861</td>
<td>.870</td>
</tr>
<tr>
<td>Need for cognition</td>
<td>Cacioppo and Petty (1982)</td>
<td>3</td>
<td>.878</td>
<td>.882</td>
</tr>
<tr>
<td>Perceived storage space</td>
<td></td>
<td>2</td>
<td>.921</td>
<td>.933</td>
</tr>
<tr>
<td>Brand loyalty</td>
<td></td>
<td>3</td>
<td>.864</td>
<td>.865</td>
</tr>
<tr>
<td>Store loyalty</td>
<td></td>
<td>3</td>
<td>.875</td>
<td>.876</td>
</tr>
<tr>
<td><strong>Dependent Behaviors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Store brand usage</td>
<td></td>
<td>3</td>
<td>.905</td>
<td>906</td>
</tr>
<tr>
<td>In-store promotion usage</td>
<td></td>
<td>4</td>
<td>.760</td>
<td>767</td>
</tr>
<tr>
<td>Out-of-store promotion usage</td>
<td></td>
<td>4</td>
<td>.861</td>
<td>799</td>
</tr>
</tbody>
</table>

### TABLE 4
**Fit of Four Alternative Model Specifications**

<table>
<thead>
<tr>
<th>Fit Measure</th>
<th>None (Model A)</th>
<th>Direct Only (Model B)</th>
<th>Indirect Only (Model C)</th>
<th>Both (Model D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2$ (d.f.)</td>
<td>2809.64 (1427)</td>
<td>2758.76 (1397)</td>
<td>2974.41 (1523)</td>
<td>2921.708 (1493)</td>
</tr>
<tr>
<td>Robust comparative fit index</td>
<td>.891</td>
<td>.893</td>
<td>.883</td>
<td>.886</td>
</tr>
<tr>
<td>RMSEA [90% confidence interval]</td>
<td>.055</td>
<td>.055</td>
<td>.055</td>
<td>.055</td>
</tr>
<tr>
<td>AIC</td>
<td>−44.359</td>
<td>−35.241</td>
<td>−71.593</td>
<td>−64.292</td>
</tr>
<tr>
<td>CAIC</td>
<td>−844.4286</td>
<td>−6692.212</td>
<td>−7328.979</td>
<td>−7178.72</td>
</tr>
<tr>
<td>ECVI</td>
<td>11.754</td>
<td>11.782</td>
<td>11.666</td>
<td>11.691</td>
</tr>
</tbody>
</table>

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much to evaluate a particular model on an absolute level as to compare the four competing models. Note also that these measures assess covariance fit, whereas variance fit, the percentage of variance in the dependent behaviors explained by the independent constructs, and the meaningfulness of individual structural parameters are important for our study. Baumgartner and Homburg (1996) caution that emphasis on covariance fit can detract from a "proper concern" for variance fit. As we show subsequently, the structural models perform well on the latter dimension.

As mentioned previously, the four models are not nested. Therefore, we provide four measures that can be used to compare and rank-order nonnested models, apart from the $\chi^2$ statistic and the robust comparative fit index. These measures are root mean square error of approximation (RMSEA, Steiger 1990), Akaike information criterion (AIC; Akaike 1987; Joreskog 1993), corrected Akaike information criterion (CAIC; Bozdogan 1987), and the expected cross-validation index (ECVI; Browne and Cudeck 1989). Definitions of these measures are available in recent books on structural equation models (e.g., Maruyama 1998).

A test for the difference in $\chi^2$ statistics between Models A and B concludes that Model B is superior, that is, adding direct effects of demographics improves model fit. However, other measures of fit show that this improvement is not very strong. When we consider measures such as AIC and CAIC, which penalize models with a larger number of parameters more strongly than the $\chi^2$ test does (Hayduk 1996), we conclude that adding direct effects of demographics does not improve the model. However, when we compare Model C with either Model A or Model B, there is a vast improvement in these measures of fit. Thus, demographic variables improve model fit, but modeling indirect effects is much better than modeling direct effects.

To determine whether we should include both direct and indirect effects or only indirect effects, we compare Models C and D. The $\chi^2$ test concludes that Model D is superior. However, the improvement is not much, because Model C has better AIC, CAIC, and ECVI. Also, we find that only 5 of 30 direct demographic effects estimated in Model D are statistically significant. Thus, we conclude that the more parsimonious Model C is a better representation of the effect of demographics. Therefore, we proceed with results from Model C.

**Role of Demographic Characteristics**

In Table 5, we present the standardized parameters and model $R^2$ for the relationship of demographics with each of the 15 psychographic characteristics. Although the $R^2$s are not high, at least one demographic variable has a significant relationship with each of the psychographic variables except brand loyalty. All five of our specific hypotheses about the effect of demographics on psychographics are supported. Consumers with higher incomes are less price conscious and less financially constrained. People who are employed full time and those with children in the household are more pressured for time. And people who live in a house perceive that they have more storage space.

As we expected, age, sex, and education are associated with many psychographic variables. Older consumers are more likely to be shopping mavens, have higher motivation to conform with the expectations of others, are less pressured for time, and have more storage space. Women are

---

6There are no substantive differences in the estimated psychographic coefficients for Model C and Model D. Complete results for Model D are available from the first author on request.

---

**TABLE 5**

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Structural Parameters (Standardized)</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price consciousness</td>
<td>.094 age + .044 sex -.100 education - .172* pclosemone</td>
<td>.051</td>
</tr>
<tr>
<td>Financial constraints</td>
<td>-.045 age + .052 sex -.317*** education - .202*** pclosemone</td>
<td>.184</td>
</tr>
<tr>
<td>Quality consciousness</td>
<td>.070 age + .032 sex + 206*** education + .081 pclosemone</td>
<td>.063</td>
</tr>
<tr>
<td>Shopping enjoyment</td>
<td>-.075 age -.001 sex - .135*** education</td>
<td>.022</td>
</tr>
<tr>
<td>Innovativeness</td>
<td>.064 age + .106* sex + .298*** education</td>
<td>.092</td>
</tr>
<tr>
<td>Variety seeking</td>
<td>.093 age -.044 sex -.068 education</td>
<td>.015</td>
</tr>
<tr>
<td>Impulsiveness</td>
<td>-.005 age + 106*sex + 079 education</td>
<td>.016</td>
</tr>
<tr>
<td>Mavensism</td>
<td>.139** age + .192*** sex + 041 education</td>
<td>.061</td>
</tr>
<tr>
<td>Motivation to conform</td>
<td>.148** age + .073 sex - .002 education</td>
<td>.030</td>
</tr>
<tr>
<td>Brand loyalty</td>
<td>.037 age + .073 sex + .066 education</td>
<td>.010</td>
</tr>
<tr>
<td>Store loyalty</td>
<td>.080 age + .133*** sex - .024 education</td>
<td>.027</td>
</tr>
<tr>
<td>Planning</td>
<td>.035 age + .137**sex + .070 education</td>
<td>.027</td>
</tr>
<tr>
<td>Time pressure</td>
<td>-212*** age + .073 sex + .065 education + .039 kids - .068 homemaker</td>
<td>118</td>
</tr>
<tr>
<td>NFC</td>
<td>-.138** student - .219*** parttime - 103*retired</td>
<td>052</td>
</tr>
<tr>
<td>Perceived storage space</td>
<td>.071 age +.105* sex + 192*** education</td>
<td>096</td>
</tr>
</tbody>
</table>

*p < .10
**p < .05
***p < .01

Notes: pclosemone = per capita income, kids = has kids under 12 years of age, house = lives in a house

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more likely than men to be innovative, impulsive, shopping mavens, and planners. They are also more store loyal and have lower NFC. Finally, more educated consumers are less financially constrained, more quality conscious, more innovative, and have higher NFC. They do not enjoy shopping and have more storage space.

Thus, the relationships between demographic and psychographic characteristics are both significant and intuitively appealing. Although the direct effect of demographic variables on store brand use and in-store and out-of-store promotion use is weak, these significant indirect effects show that demographics play a role in determining shopping behavior.

**Role of Psychographic Characteristics**

In Table 6, we present standardized parameters and model $R^2$ for store brand use, in-store promotion use, and out-of-store promotion use. The models explain approximately 40% of the variation in each behavior. This level of explanatory power compares favorably with other studies of deal proneness or store brand proneness.

In Table 6 we also present $\chi^2$ statistics for each psychographic variable to test whether the coefficient of that psychographic variable is equal for each of the three behaviors. That 11 of the 15 $\chi^2$ statistics are significant shows that most of the psychographic variables have significantly different associations with the three behaviors. Indeed, many of the coefficients have opposite signs for one versus the other behavior.

The first column of coefficients in Table 6 shows that most of our hypotheses about the psychographic correlates of store brand use are supported. There is only one instance in which a coefficient is statistically significant and has the “wrong” sign. Variety seeking is positively associated with store brand use. Perhaps variety seekers use store brands for a change of pace. Where we had directional hypotheses, the coefficient has the right sign and is significant except in one case (impulsiveness). Where we did not have directional hypotheses, the coefficients are insignificant except for NFC, which has a significantly positive coefficient. Overall, economic benefit and cost-related characteristics are the strongest correlates of store brand usage. Store brand users are financially constrained, highly price conscious, and not very quality conscious; they are variety seekers; they have storage and time constraints; high store loyalty, and high NFC.

In-store promotion users have fewer distinguishing characteristics. This is not surprising. Because in-store deals require little effort, they attract a variety of people. All the significant coefficients have the hypothesized sign. However, the coefficients of many characteristics are not significant. Overall, in-store promotion users are financially constrained, are impulsive, enjoy and plan their shopping, and have plenty of storage space.

Several of our hypotheses about characteristics of out-of-store deal users are supported. All significant coefficients except for NFC are of the hypothesized sign. It appears that low-NFC people use out-of-store promotions as decision-simplifying cues (e.g., Henderson 1985). In both cases in which we could not advance a directional hypothesis, the coefficients are significant. Users of out-of-store promotions have low motivation to conform to others’ expectations and are brand loyal. The latter supports our conjecture that users of this type of promotion seek out deals on their favorite brands. Overall, hedonic benefit and cost-related characteristics are the strongest correlates of out-of-store promotion use. Users of these promotions enjoy shopping, are shopping mavens, and do not consider it necessary to conform to the expectations of others; they are brand loyal but not store loyal; they plan their shopping; they have low NFC and plenty of storage space.

This analysis shows that there are distinct differences between the psychographic correlates of store brand use, in-store national brand promotion use, and out-of-store national brand promotion use. As we hypothesized, however, the correlates of in-store and out-of-store deal use are the most similar, whereas the correlates of store brand and out-of-store promotion use are the most dissimilar. Store brand users are the opposite of out-of-store promotion users on many fronts, for example, quality consciousness, store loyalty, NFC, and storage space. In line with these patterns, the correlation between in-store and out-of-store promotion coefficients is $+.64$, that between store brand and in-store promotion coefficients is $-.30$, and that between store brand and out-of-store promotion coefficients is $-.57$.

**Segmentation Analysis**

**Defining the Segments**

The previous analysis shows that store brand use, in-store promotion use, and out-of-store promotion use are driven by different psychographic characteristics. In this section, we determine how these differences produce different market segments. We cluster-analyze the sample using factor scores on store brand use, in-store promotion use, and out-of-store promotion use. We use $K$-means cluster analysis on the basis of Euclidean distances (Anderberg 1973). In Table 7, we summarize the key measures for evaluating the three-, four-, five-, and six-cluster solutions.

Table 7 shows that all measures improve substantially from the three- to the four-cluster solution. However, adding further clusters reduces the pseudo F-statistic (Calinski and Harabasz 1974), which has been shown to be one of the best ways to determine the number of clusters in a data set (Milligan and Cooper 1985). Also, the rate of increase in the other two measures is much lower. Furthermore, our examination of the cluster means shows that the four-cluster solution adds substantial insight over the three-cluster solution by identifying a very different cluster, whereas the fifth and sixth clusters separate out relatively minor gradations of store brand and promotion use. We therefore use the four-cluster solution.

Before going further, we examine the stability of the four-cluster solution in two ways. First, we use several random starting cluster seeds and find that the substantive nature of the clusters is not sensitive to them. Second, we use McIntyre and Blashfield’s (1980) cross-validation procedure, which has been recommended by Punj and Stewart (1983). Specifically, we split our data into two random halves, perform cluster analysis on the first split-half, and use the Euclidean distances from the resulting cluster cen-
TABLE 6
Effects of Psychographic Characteristics (Standardized Coefficient Estimates)

<table>
<thead>
<tr>
<th>Psychographic Characteristic</th>
<th>Store Brand Usage</th>
<th>In-Store Promotion Usage</th>
<th>Out-of-Store Promotion Usage</th>
<th>( \chi^2 ) Statistic(^a) (2 d.f.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economic Benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price consciousness</td>
<td>.211***</td>
<td>.057</td>
<td>-.098</td>
<td>12.06***</td>
</tr>
<tr>
<td></td>
<td>(3.01)</td>
<td>(.68)</td>
<td>(-1.30)</td>
<td></td>
</tr>
<tr>
<td>Financial constraints</td>
<td>121*</td>
<td>356***</td>
<td>115</td>
<td>11.87***</td>
</tr>
<tr>
<td></td>
<td>(1.80)</td>
<td>(3.94)</td>
<td>(1.56)</td>
<td></td>
</tr>
<tr>
<td>Quality consciousness</td>
<td>-.288***</td>
<td>.007</td>
<td>.148</td>
<td>12.30***</td>
</tr>
<tr>
<td></td>
<td>(-3.36)</td>
<td>(.07)</td>
<td>(1.58)</td>
<td></td>
</tr>
<tr>
<td><strong>Hedonic Benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shopping enjoyment</td>
<td>0.08</td>
<td>173*</td>
<td>252***</td>
<td>2.41</td>
</tr>
<tr>
<td></td>
<td>(1.11)</td>
<td>(1.91)</td>
<td>(2.99)</td>
<td></td>
</tr>
<tr>
<td>Innovativeness</td>
<td>.007</td>
<td>.060</td>
<td>-.024</td>
<td>1.03</td>
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<tr>
<td></td>
<td>(.10)</td>
<td>(.72)</td>
<td>(-.33)</td>
<td></td>
</tr>
<tr>
<td>Variety seeking</td>
<td>109*</td>
<td>-.031</td>
<td>.095</td>
<td>2.97</td>
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<tr>
<td></td>
<td>(1.70)</td>
<td>(-.39)</td>
<td>(1.36)</td>
<td></td>
</tr>
<tr>
<td>Impulsiveness</td>
<td>-.988</td>
<td>.363***</td>
<td>.090</td>
<td>15.14***</td>
</tr>
<tr>
<td></td>
<td>(-1.23)</td>
<td>(3.47)</td>
<td>(1.02)</td>
<td></td>
</tr>
<tr>
<td>Mavenism</td>
<td>0.74</td>
<td>-.109</td>
<td>124*</td>
<td>7.89**</td>
</tr>
<tr>
<td></td>
<td>(1.13)</td>
<td>(-1.31)</td>
<td>(1.67)</td>
<td></td>
</tr>
<tr>
<td>Motivation to conform</td>
<td>0.70</td>
<td>-.081</td>
<td>-.169***</td>
<td>5.95*</td>
</tr>
<tr>
<td></td>
<td>(1.19)</td>
<td>(-1.11)</td>
<td>(-2.51)</td>
<td></td>
</tr>
<tr>
<td><strong>Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brand loyalty</td>
<td>-.093</td>
<td>.015</td>
<td>.159*</td>
<td>5.73*</td>
</tr>
<tr>
<td></td>
<td>(-1.29)</td>
<td>(.17)</td>
<td>(1.96)</td>
<td></td>
</tr>
<tr>
<td>Store loyalty</td>
<td>148***</td>
<td>-.123</td>
<td>-.124*</td>
<td>10.02***</td>
</tr>
<tr>
<td></td>
<td>(2.41)</td>
<td>(-1.62)</td>
<td>(-1.82)</td>
<td></td>
</tr>
<tr>
<td>Planning</td>
<td>-.083</td>
<td>492***</td>
<td>412***</td>
<td>14.99***</td>
</tr>
<tr>
<td></td>
<td>(-.96)</td>
<td>(3.86)</td>
<td>(3.58)</td>
<td></td>
</tr>
<tr>
<td>Time pressure</td>
<td>.108*</td>
<td>.041</td>
<td>-.020</td>
<td>3.66</td>
</tr>
<tr>
<td></td>
<td>(1.94)</td>
<td>(6.0)</td>
<td>(-.32)</td>
<td></td>
</tr>
<tr>
<td>NFC</td>
<td>.097*</td>
<td>-.017</td>
<td>-.208***</td>
<td>12.09***</td>
</tr>
<tr>
<td></td>
<td>(1.65)</td>
<td>(-.24)</td>
<td>(-3.04)</td>
<td></td>
</tr>
<tr>
<td>Perceived storage space</td>
<td>-.102*</td>
<td>192***</td>
<td>214***</td>
<td>11.41***</td>
</tr>
<tr>
<td></td>
<td>(-1.84)</td>
<td>(2.74)</td>
<td>(3.30)</td>
<td></td>
</tr>
<tr>
<td>( R^2 )</td>
<td>402</td>
<td>397</td>
<td>448</td>
<td>--</td>
</tr>
</tbody>
</table>

\(^a\)Statistic for testing equality of coefficients across the three equations
\(^*p < .10\)
\(^**p < .05\)
\(^***p < .01\)

Notes: t-statistics are in parentheses under coefficient estimates.
trends to assign respondents to the second half of the clusters. We then examine the agreement between this assignment and a cluster analysis performed on the second split-half sample. We find that there is agreement between the assignments in 86% of the cases. These results provide evidence that our clusters are reliable.

We describe the four clusters in our sample in Table 8. The first and second clusters, comprising more than one-third of the sample, clearly represent separate deal-focused and store brand-focused market segments. The third cluster, consisting of a little less than one-third of the sample, represents a "use-all" market segment. Cluster 4, also almost one-third of the sample, represents a "use-none" market segment.

This segmentation is quite consistent with our structural model results. The specific psychographic associations and the correlation pattern among the coefficients in the structural model suggested a store brand-focused segment. We then regress the four proximity measures on the psychographic variables. Normalization ensures that an observation cannot move closer to (or farther away from) all four clusters simultaneously. For logical consistency, we constrain the coefficients of each psychographic variable to add to zero across the four equations. A significant coefficient shows that the variable is a good predictor of segment membership, and a positive sign increases the likelihood of its being in a given segment relative to the other segments.

Although the results of these segment regressions should be somewhat consistent with the structural model results in Table 6, we also expect some differences. First, the deal-focused and use-all segments in the segmentation analysis combine both in-store and out-of-store deals. Second, the deal-focused and store brand-focused segments contain only hard-core users. Multiple users have been separated out into the use-all segment. Third, the use-all segment should be difficult to predict, because it involves behaviors that have been shown to relate with opposite signs to various psychographics.

In Table 9, we summarize the results. The table shows the psychographics have significant overall discriminatory power for all four clusters, adjusted $R^2$s range from 14 to 31.

Membership in the deal-focused segment can be predicted by most of the characteristics that were significant in the structural equation model for predicting in-store or out-

### Predicting Segment Membership

To predict segment membership, we compute the normalized Euclidean distance of each respondent from each of the four cluster centroids and multiply by $-1$ to obtain proximity rather than distance. We then regress the four proximity measures on the psychographic variables. Normalization ensures that an observation cannot move closer to (or farther away from) all four clusters simultaneously. For logical consistency, we constrain the coefficients of each psychographic variable to add to zero across the four equations. A significant coefficient shows that the variable is a good predictor of segment membership, and a positive sign increases the likelihood of its being in a given segment relative to the other segments.

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Membership in the deal-focused segment can be predicted by most of the characteristics that were significant in the structural equation model for predicting in-store or out-

---

### TABLE 7

**Cluster Analysis Summary**

<table>
<thead>
<tr>
<th>Number of Clusters</th>
<th>Store Brand Usage</th>
<th>In-Store Promotion Usage</th>
<th>Out-of-Store Promotion Usage</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$R^2$</td>
<td>Between/Within Variance</td>
<td>$R^2$</td>
<td>Between/Within Variance</td>
</tr>
<tr>
<td>3</td>
<td>650</td>
<td>1.857</td>
<td>366</td>
<td>.577</td>
</tr>
<tr>
<td>4</td>
<td>703</td>
<td>2.365</td>
<td>544</td>
<td>1.193</td>
</tr>
<tr>
<td>5</td>
<td>775</td>
<td>3.436</td>
<td>617</td>
<td>1.608</td>
</tr>
<tr>
<td>6</td>
<td>812</td>
<td>4.304</td>
<td>633</td>
<td>1.724</td>
</tr>
</tbody>
</table>

### TABLE 8

**Description of Four Clusters**

<table>
<thead>
<tr>
<th>Cluster Number</th>
<th>Store Brand Usage</th>
<th>In-Store Promotion Usage</th>
<th>Out-of-Store Promotion Usage</th>
<th>Number of Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-.958</td>
<td>.440</td>
<td>.443</td>
<td>51</td>
</tr>
<tr>
<td>2</td>
<td>.907</td>
<td>-.340</td>
<td>-.305</td>
<td>68</td>
</tr>
<tr>
<td>3</td>
<td>.393</td>
<td>.412</td>
<td>242</td>
<td>97</td>
</tr>
<tr>
<td>4</td>
<td>-.547</td>
<td>-.362</td>
<td>-.246</td>
<td>103</td>
</tr>
</tbody>
</table>

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7 We also performed four logistic regressions using the dichotomous cluster membership variables, one for distinguishing each cluster from the other three. We did not find any substantive differences in conclusions, though there were fewer significant coefficients in the logistic regressions. We believe that using the continuous proximity variables is preferable, because they retain more information than the dichotomized cluster membership variables. However, results of the logistic regressions are available from the first author on request.
TABLE 9
Psychographic Correlates of Segments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cluster 1 Deal-Focused</th>
<th>Cluster 2 Store Brand-Focused</th>
<th>Cluster 3 Use-All</th>
<th>Cluster 4 Use-None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price consciousness</td>
<td>-0.119***</td>
<td>0.224***</td>
<td>0.028</td>
<td>-0.178***</td>
</tr>
<tr>
<td>Financial constraints</td>
<td>0.055</td>
<td>-0.101*</td>
<td>0.190***</td>
<td>-0.104*</td>
</tr>
<tr>
<td>Quality consciousness</td>
<td>0.270***</td>
<td>-0.229***</td>
<td>0.148*</td>
<td>0.103</td>
</tr>
<tr>
<td>Shopping enjoyment</td>
<td>0.097**</td>
<td>-0.103*</td>
<td>0.123*</td>
<td>-0.095</td>
</tr>
<tr>
<td>Innovativeness</td>
<td>0.018</td>
<td>0.028</td>
<td>-0.089</td>
<td>0.001</td>
</tr>
<tr>
<td>Variety seeking</td>
<td>0.064</td>
<td>0.066</td>
<td>0.108**</td>
<td>-0.081</td>
</tr>
<tr>
<td>Impulsiveness</td>
<td>0.138**</td>
<td>-0.168***</td>
<td>0.166**</td>
<td>-0.098</td>
</tr>
<tr>
<td>Mavensism</td>
<td>-0.034</td>
<td>0.157***</td>
<td>0.007</td>
<td>-0.175***</td>
</tr>
<tr>
<td>Motivation to conform</td>
<td>-0.167***</td>
<td>0.135**</td>
<td>0.120**</td>
<td>-0.081</td>
</tr>
<tr>
<td>Brand loyalty</td>
<td>0.123**</td>
<td>0.120**</td>
<td>-0.048</td>
<td>0.050</td>
</tr>
<tr>
<td>Store loyalty</td>
<td>-0.129***</td>
<td>0.150**</td>
<td>-0.004</td>
<td>0.037</td>
</tr>
<tr>
<td>Planning</td>
<td>0.178***</td>
<td>-0.252***</td>
<td>0.233***</td>
<td>-0.096</td>
</tr>
<tr>
<td>Time pressure</td>
<td>-0.075</td>
<td>0.049</td>
<td>0.152***</td>
<td>-0.109**</td>
</tr>
<tr>
<td>NFC</td>
<td>-0.109**</td>
<td>0.064</td>
<td>0.003</td>
<td>0.046</td>
</tr>
<tr>
<td>Perceived storage space</td>
<td>0.179***</td>
<td>-0.145***</td>
<td>0.062</td>
<td>-0.084</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.309</td>
<td>0.291</td>
<td>0.140</td>
<td>1.68</td>
</tr>
</tbody>
</table>

* p < 0.10
** p < 0.05
*** p < 0.01

of-store promotion usage. These characteristics include impulsiveness, shopping enjoyment, planning, storage availability, motivation to conform, brand loyalty, store loyalty, and NFC. This is intuitively appealing because members of this segment use both in-store and out-of-store promotions and these behaviors are similar enough that the influences of most characteristics do not cancel one another. In addition, consumers who are highly price conscious do not focus exclusively on deals and instead gravitate toward the store brand or use-all segments. However, quality-conscious consumers avoid the store brand and use-all segments and shift their attention to deals. This reinforces the role of deals as a means to deliver a quality benefit (Chandon, Wansink, and Laurent 2000).

It makes sense that the signs of the coefficients for predicting membership in the store brand-focused segment are the same as they are in the structural equation model for 13 of the 15 psychographics. Many of the highly significant variables in the structural equation model—price consciousness, quality consciousness, store loyalty, and storage space—are also highly significant in the prediction equation. In addition, membership in this segment can be predicted on the basis of lower shopping enjoyment, less impulsiveness, more mavenism, more motivation to conform, less brand loyalty, and less planning.

Note that the lowest $R^2$ is for the use-all segment. This is to be expected because this segment is an amalgam of behaviors that the structural model shows are generated by different psychographic factors. Membership in this segment is more likely if the consumer is financially constrained, is not quality conscious, enjoys shopping, is variety seeking and impulsive, is motivated to conform to peer pressure, plans shopping, and feels time pressure. In summary, people in this group want to save money, but they also want to save time and they value hedonic benefits, so they make the best of both store brands and deals.

Finally, the use-none segment is a diverse group and can be distinguished from the rest of the market in only a few ways. Not surprisingly, members of this group are neither price conscious nor financially constrained. They are not shopping mavens either, nor are they pressured for time. Therefore, they are not attracted to either the monetary or time savings promised by promotions and store brands. They are not drawn to these behaviors by the self-expressive desires that shopping mavens have.

Conclusion

Summary of Findings

We have investigated the extent to which store brands and national brand promotions attract the same consumers. To do so, we have employed a structural model to study the characteristics of consumers who buy store brands, national brands on in-store promotions, or national brands on out-of-store promotions. We then clustered consumers into segments on the basis of their use of store brand and national brand promotions and distinguished between the segments using the consumer characteristics from the structural model.

Our structural model analysis shows that the impact of demographics on these behaviors is funneled through psychographics instead of being direct. Furthermore, the psychographic drivers of store brand use, in-store promotion use, and out-of-store promotion use differ substantially. The biggest difference in psychographic drivers is between store-brand and promotion usage, especially out-of-store promotion usage. Store brand use is particularly associated with price consciousness, low quality consciousness, and
store loyalty. Store brand users thus transfer their store loyalty into saving money, even at the expense of quality.

Out-of-store promotion use, in contrast, is associated with higher shopping enjoyment and mavenism and less pressure to conform to the expectations of others. Heavy users of these promotions plan their shopping, are willing to switch stores but not brands, have plenty of storage space, and have low NFC. Thus, the hedonic aspect of promotions is more salient to them than to store brand users, and their costs are low, so they are willing to incur the effort involved in using promotions.

In-store promotion use is driven by psychographics that are similar to those that drive out-of-store promotion use, especially shopping enjoyment, planning, and available storage space. However, in-store deal users differ in that they feel more financially constrained, are impulsive; and are not driven by mavenism, motivation to conform, and NFC. An interesting aspect of in-store promotion usage is that both impulsive and planning orientations lead to the same behavior. This is a sensible result. Consumers can make use of in-store promotions by either buying on impulse or planning to use these promotions.

Overall, our structural equation model shows that store brand usage is quite different from either in-store or out-of-store promotion usage, whereas in-store and out-of-store promotion usage share several similar drivers. It makes sense, then, that our cluster analysis reveals a store-brand focused segment and a general deal-focused segment. In addition, however, there is a well-defined segment that participates in all three behaviors, as well as a segment that participates in none. Membership in the store brand-focused segment is predicted on the basis of many of the psychographics that drive store brand purchasing in general. Membership in the deal-focused segment can be predicted by a combination of the psychographics that predict these behaviors separately. The use-all segment is the least easy to predict, because it combines three behaviors that are driven in opposite directions by some psychographics.

Our analysis provides important insight on whether store-brand users and deal users are different market segments. These behaviors are driven by different psychographics, and there are market segments that focus exclusively on one behavior or the other. In that sense, they are different market segments. However, the delineation is not so sharp that it precludes a market segment that participates in both store brands and national brand promotions. Indeed, we find that a significant portion of the market belongs to this segment.

Implications for Researchers

There are several implications of our work for researchers. First, we have shown that not only deal buying but also store brand buying is driven by the economic/utilitarian returns, psychosocial/hedonic returns, and costs that have been conceptualized by researchers such as Shimp and Kavas (1984), Urbany, Dickson, and Kalapaural (1996), and Chandon, Wansink, and Laurent (2000). Our findings support the use of this framework to study the behavior of consumers who seek better value in the marketplace.

Second, we have shown that though demographics may not be effective for directly predicting these three behaviors, they do have a significant association with psychographic characteristics and are therefore useful in segmentation, targeting, and communication. For example, our findings buttress prior work that shows that women value self-expression and exploration more than men do (e.g., Feick and Price 1987; Urbany, Dickson, and Kalapaural 1996). As might be expected, education is positively related with quality consciousness and NFC, full-time employment and having young children are associated with time pressure, and higher income is associated with lower financial constraints and price consciousness.

A third implication relates to our conceptualization of store brand usage as a consumer-level rather than a category-level characteristic. There are certain differences in the use and perceptions of store brands across categories and retailers (Sethuraman and Cole 1997). However, our success in characterizing store brand users and distinguishing them from deal users on the basis of psychographic characteristics shows that consumers have overarching perceptions about using store brands that generalize across product categories.

Fourth, our work demonstrates the value of jointly examining multiple related behaviors (for other work in this spirit, see Kahn and Raju 1991). Using a common set of variables and one method to study these clearly related behaviors has enabled us to make direct comparisons among these antecedents without being hindered by noncomparable measures or methods.

Finally, we reveal some important specific relationships between consumer psychographics and the use of store brands and/or deals. For example, we show that planning and impulsiveness can go together and that in-store promotion usage is consistent with both tendencies. This dual role warrants further investigation. We find that brand-loyal consumers are more likely to buy national brands using out-of-store promotions. This must be because they selectively seek out and use promotions on the brands they regularly buy. In general, the positive associations between brand loyalty and deal use and between storage availability and deal use suggest that a significant role of out-of-store promotions is to induce loyal users to stock up on the brand. This finding is somewhat at odds with the notion that the predominant effect of promotions is on brand switching (e.g., Gupta 1988). Consistent with our findings, however, recent research has found that stockpiling and stockpiling-related consumption play a more important role than was previously thought, though switching does account for the majority of the promotion’s effect (see Ailawadi and Neslin 1998; Bell, Chun, and Padmanabhan 1999; Bucklin, Gupta, and Siddarth 1998; Dillon and Gupta 1996). Furthermore, the decomposition of the promotion’s effect may differ by type of promotion. Our results suggest that displays and in-store specials may increase brand switching, whereas coupons and other out-of-store promotions may be more likely to attract consumers who are loyal to the brand. In any event, further research is needed to reconcile our findings with the brand switching effect of promotions.

Implications for Managers

The major implication for managers is that manufacturers and retailers have the opportunity either to avoid each other or to compete head to head. Manufacturers can target the deal-focused segment, and retailers can target the store...
brand-focused segment. These strategies could reduce the tug-of-war between manufacturers and retailers. However, if manufacturers and retailers both target the use-all segment, it can exacerbate competition within the channel. Our analysis should help both parties design their programs after they have decided which segments to target. For example, manufacturers can target the deal-focused segment by appealing to quality-conscious consumers who stock up on their favorite brands. This means that the promotion should include a strong advertising message to trigger the quality considerations. If the manufacturer wants to encourage stockpiling—for example, to preempt a competitor—it can do so with this segment by suggesting large purchase quantities (Wansink, Kent, and Hoch 1998). The promotion can be designed as an impulse purchase or a planned purchase. That this target group may already be loyal to the brand means that these promotions should be seen more as customer retention than acquisition tools. This explains why such promotions may not pay off in the short run. That this target group is not store loyal may mean that manufacturers can run cooperative promotions with retailers, the carrot for the retailer being that these promotions will increase store traffic.

The retailer’s store brand-focused segment is quite distinct. It contains store-loyal, price-conscious customers who are not quality conscious and are neither shopping experts nor stockpilers. Retailers can access this group through their frequent shopper programs, which can be used to identify store-loyal customers, thus avoiding the deal-focused and use-all segments. For the store brand-focused group, it would be appropriate to stress the relatively consistently low store brand price, so consumers do not need to stock up. Retailers should stress the simplicity of buying store brands, because consumers in the store brand segment are not expert shoppers and do not plan their shopping or enjoy it.

Another set of implications for managers relates to the desirability of using HI–LO versus everyday low pricing. Our results imply that the best strategy for store brands is to set an everyday low price that is close to the promoted price of national brands. Customers in the store brand-focused segment do not plan or enjoy shopping, so a HI–LO pricing strategy would dissuade them from using store brands. In contrast, national brands would benefit from a HI–LO strategy. Manufacturers can use this strategy to price discriminate and to compete with store brands for the use-all segment. The use-none segment will buy national brands at the regular price, whereas the deal price will enable national brand manufacturers to compete with other national brands for the deal-focused segment and with store brands for the use-all segment.

Therefore, our answer to the question whether manufacturers can combat the store brand threat effectively through promotions is a partial yes. If manufacturers want to battle store brands for market share, they can target the use-all segment. They can do so with price- and convenience-oriented messages and in-store displays designed to encourage impulsive purchases. However, this will work only partially. There is still a segment that exclusively buys store brands and has very different characteristics than promotion users do. These people are not impulsive, do not plan, and do not stockpile. This segment seems inaccessible to the types of promotions commonly used by manufacturers. Our conclusion here is consistent with the mixed view of whether manufacturer promotions reduce store brand share. For example, Blattberg and Wisniewski (1989) find that promotions are effective at combating store brands, whereas Hoch and Banerji (1993) find that they are not.

In conclusion, our results contribute to the study of store brand and promotion usage conceptually, substantively, and managerially. Conceptually, we reinforce the economic benefits/hedonic benefits/costs framework and support the role of demographics as an indirect rather than direct cause of these behaviors. Substantively, we find that store brands and national brand promotions attract consumers with distinctly different psychographic profiles; the national brand promotion user profile relates more to hedonic benefits and costs, whereas the store brand user profile relates more to economic benefits and costs. Store brand and national brand promotion usage are therefore different consumer behaviors. Managerially, we suggest that manufacturers and retailers can avoid or escalate conflict depending on which segments they target; that promotions are only a partial way for manufacturers to address the private label threat; and that the psychographic characteristics of store brand and promotion users make everyday low price a promising strategy for store brands, whereas HI–LO pricing might be better for national brands. There is still much to do in this area, as we pointed out previously. This work is important because the way manufacturers and retailers play out their dual roles as competitors and partners, which includes their promotion and store brand strategies, will define the twenty-first-century marketplace.

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8 We thank an anonymous reviewer for suggesting the insights stated in this paragraph.
APPENDIX
Survey Items

1. Store Brand Usage Scale
I buy store brands.
I look for store brands when I go shopping.
My shopping cart contains store brands for several products.

2. Out-of-Store National Brand Promotion Usage Scale
I clip coupons for national brands from newspapers and magazines.
I take along coupons for national brands and use them when I go shopping.
I scan store flyers for sales on national brands before going shopping.
I use store flyers to decide what to buy and where to shop.

3. In-Store National Brand Promotion Usage Scale
I am influenced by special displays of national brands in the store.
I use a coupon if I see it on a package or in the store.
I pick up and use the store flyer when I am shopping in the store.
I take advantage of specials on national brands in the store.

4. Psychographic Characteristics
Price Consciousness
I compare prices of at least a few brands before I choose one.
I find myself checking the prices even for small items.
It is important to me to get the best price for the products I buy.

Financial Constraints
My household budget is always tight.
My household often has problems making ends meet.

Quality Consciousness
I will not give up high quality for a lower price.
I always buy the best.
It is important to me to buy high-quality products.

Shopping Enjoyment
I think grocery shopping is a chore.
I like to finish my shopping as quickly as possible and get out of the store.
I enjoy grocery shopping.

Innovativeness
When I see a product somewhat different from the usual, I check it out.
I am often among the first people to try a new product.
I like to try new and different things.

Variety Seeking
If I use the same brands over and over again, I get tired of them.
I buy different brands to get some variety.

Impulsiveness
I often find myself buying products on impulse in the grocery store.
I often make an unplanned purchase when the urge strikes me.

Maverick
I am somewhat of an expert when it comes to shopping.
People think of me as a good source of shopping information.
I enjoy giving people tips on shopping.

Motivation to Conform
It bothers me if other people disapprove of my choices.
It is important to me to fit in.

My behavior often depends on how I feel others wish me to behave.

Brand Loyalty
I prefer one brand of most products I buy.
I am willing to make an effort to search for my favorite brand.
Usually, I care a lot about which particular brand I buy.

Store Loyalty
I prefer to always shop at one grocery store.
I am willing to make an effort to shop at my favorite grocery store.
Usually, I care a lot about which particular grocery store I shop at.

Planning
I spend a lot of time planning my grocery shopping trips.
I make a shopping list before I go grocery shopping.

Time Pressure
Most days, I have no time to relax.
I always seem to be in a hurry.
I never seem to have enough time for the things I want to do.

NFC
Thinking is not my idea of fun.
I like tasks that don't require much thinking once I have learned them.
I only think as hard as I have to.

Storage Space
I have plenty of storage space at home.
I have a lot of room at home to stock extra grocery products.

5. Demographic Variables

Age

<table>
<thead>
<tr>
<th>1 = less than 25</th>
<th>3 = 35-44 years</th>
<th>6 = 75 years or older</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 = 25-34 years</td>
<td>4 = 45-59 years</td>
<td></td>
</tr>
</tbody>
</table>

Sex
0 = male
1 = female

Education
1 = high school or less
2 = some college
3 = college
4 = advanced degree

Employment (Dummy Variable Coded from Multicategory Question)
0/1 = homemaker
0/1 = student
0/1 = part time/other
0/1 = full time/
self-employed

Children Under Age 12 (Dummy Variable Coded from Multicategory Question)
0 = no
1 = yes

Live in a House (Dummy Variable Coded from Multicategory Question)
0 = no
1 = yes

Annual Household Income
1 = <30,000
2 = $30,000 to <$45,000
3 = $45,000 to <$60,000
4 = $60,000 to <$75,000
5 = $75,000 to <$100,000
6 = $100,000 to <$150,000
7 = >=$150,000

Per Capita Income (Computed)
Annual household income/number of members in household
REFERENCES


Mills, G. W. and M. C. Cooper (1985), “An Examination of Procedures for Determining the Number of Clusters in a Data Set,” *Psychometrika*, 50 (2), 159–79


