Exploratory Consumer Buying Behavior: Conceptualization and Measurement

Article *in* International Journal of Research in Marketing · April 1996

DOI: 10.1016/0167-8116(95)00037-2

2 authors:

Hans Baumgartner
Pennsylvania State University
113 PUBLICATIONS **16,927** CITATIONS

SEE PROFILE

Jan-Benedict Steenkamp
University of North Carolina at Chapel Hill
267 PUBLICATIONS **36,147** CITATIONS

SEE PROFILE

ELSEVIER

Intern. J. of Research in Marketing 13 (1996) 121–137

International Journal of
Research in Marketing

Exploratory consumer buying behavior: Conceptualization and measurement

Hans Baumgartner [a,*], Jan-Benedict E.M. Steenkamp [b,c]

[a] *BAB 707-K, The Mary Jean and Frank P. Smeal College of Business Administration, The Pennsylvania State University, University Park, PA 16802, USA*

[b] *Catholic University of Leuven, 3000 Leuven, Belgium*

[c] *Wageningen University, 6706 KN Wageningen, The Netherlands*

Received 1 February 1994; accepted 1 September 1995

Abstract

This paper proposes a two-factor conceptualization of exploratory consumer buying behavior in which exploratory acquisition of products is distinguished from exploratory information seeking. A scale for measuring individual differences in consumers' tendencies to engage in exploratory buying behavior is developed based on this conceptualization, and the instrument is related to several other constructs and actual exploratory behaviors. The results of six studies with subjects from two different countries show that the scale has good psychometric properties and that its relationships with other constructs and actual exploratory behaviors conform to theoretical expectations.

Keywords: Exploratory consumer behavior; Optimum stimulation level ; Individual differences in consumer behavior

1. Introduction

Among the many motivating influences on buying behavior that researchers have forwarded over the years, the notion of a *desire for exploration* has been a recurring theme (e.g., Hansen, 1972; Howard and Sheth, 1969; Joachimsthaler and Lastovicka, 1984; Raju, 1980; Sheth et al., 1991; Steenkamp and Baumgartner, 1992; Venkatesan, 1973). Behaviors of consumers that have been hypothesized to contain strong exploratory components include risk taking in making product choices (Cox, 1967), innovativeness in the adoption of new products and retail facilities (Mittelstaedt et al., 1976; Venkatraman and Price, 1990), variety seeking in purchase behavior (McAlister and Pessemier, 1982), browsing, looking at window displays and similar forms of recreational shopping (Bellenger and Korgaonkar, 1980; Westbrook and Black, 1985), and curiosity-motivated information acquisition evidenced in leafing through catalogues or talking to others about purchases (Hirschman, 1980; Price and Ridgway, 1982). All these behaviors have the capacity to lead to exciting and novel purchase experiences, to offer a change of pace and relief from boredom, and to satisfy one's desire for knowledge and the urge of curiosity. The unifying element underlying this otherwise disparate list of activities is that they provide consumers with a means of regulating their exposure to sensory and cognitive stimulation, and the various behaviors are

* Corresponding author. Tel.: (814) 863-3559, Fax: (814) 865-3015, e-mail: JXB14@psuvm.psu.edu.

SSDI 0167-8116(95)00037-2

exploratory in the sense that consumers engage in them primarily for the pleasure inherent in changing the stimulus field and not out of any extrinsic reason (Berlyne, 1963; Fiske and Maddi, 1961; see also White, 1959).

Although the importance of exploratory motives for explaining buyer behavior has been acknowledged (see Steenkamp and Baumgartner, 1992, for a recent review), relatively little empirical research has been devoted to the topic. At least three problems may have hampered progress to date. First, there has been a lack of clear conceptualizations of the construct of exploratory consumer buying behavior. Up to seven facets of exploratory behavior in the consumer context have been distinguished, and few attempts have been made to integrate the evidence and to propose a coherent conceptual framework that could serve as a basis for theory development and empirical research. Second, and possibly as a consequence of the lack of adequate conceptualizations, attempts at measuring individual differences in consumers' tendencies to engage in exploratory buying behavior, despite some early promise (Raju, 1980), have led to disappointing results (Wahlers et al., 1986; Baumgartner and Steenkamp, 1991). Third, apart from its association with optimum stimulation level, relatively little is known about the relationship of exploratory buying tendencies with other constructs and actual exploratory consumer behaviors.

The goal of this paper is to address the aforementioned problems. First, we provide a two-factor conceptualization of exploratory consumer buying behavior in which exploratory acquisition of products is distinguished from exploratory information seeking. We show that this framework is in line with prior theorizing in the area and that it is also consistent with the empirical evidence. Then, an instrument for the measurement of individual differences in exploratory consumer buying behavior is developed which operationalizes our two-factor conceptualization, and the scale is validated with two samples of respondents from two different countries. Finally, we relate exploratory acquisition of products and exploratory information seeking to measures of several important constructs and actualized exploratory consumer behaviors in an effort to provide evidence on the criterion-related and predictive validity of the scale.

2. Conceptualizing exploratory consumer buying behavior

Interest in the phenomenon of exploratory behavior started with the dual realization that people and animals sometimes engage in activities which are not biologically significant but are perceived to be intrinsically rewarding in the absence of external incentives, and that such behavior can be motivated by the prospect of exciting and novel experiences, the desire for variation and change, and the urge to satisfy one's curiosity (Berlyne, 1978). Consumer researchers quickly recognized the applicability of these ideas to important areas of consumer behavior (e.g., Hansen, 1972; Howard and Sheth, 1969; Venkatesan, 1973), and there is now general agreement that such activities as risk taking and innovative behavior in product purchase, variety seeking and brand switching, recreational shopping and information search, and interpersonal communication about purchases may be regarded as manifestations of exploratory tendencies in the consumer buying process (cf. Raju, 1980). Although we do not wish to argue that these activities are solely motivated by consumers' desire for exploration, we posit that they all have strong exploratory components because they share the defining characteristics of exploratory behavior in general (see also McAlister and Pessemier, 1982; Raju, 1980, 1981): consumers engage in them primarily for intrinsic reasons (i.e., the satisfaction is predominantly in the activity itself, not in any eventual outcome; cf. Deci and Ryan, 1985; Csikszentmihalyi, 1975, 1990), and their intrinsic reward value derives from their capacity to provide the consumer with a satisfactory level of external or internal stimulation [1]. As stated by Berlyne (1963, p. 287), exploratory responses "modify stimulation from sources that are already represented in the stimulus field, and they introduce stimulation from sources that were not hitherto represented."

[1] Our conceptualization of exploratory consumer buying behavior deals only with the acquisition of products and information seeking. While exploratory motives may also underlie other types of consumer behavior such as aesthetic reactions and emotional responses, playful leisure activities, and the consumption of entertainment and art objects (cf. Holbrook and Hirschman, 1982), these behaviors, which refer more to consuming rather than buying, are not considered in this paper.

While the range of consumer buying behaviors that contain strong exploratory elements is well circumscribed by the above list of activities, there is less agreement on how many different dimensions of the construct should be distinguished. In this paper, we will argue that a two-dimensional representation of exploratory consumer buying behavior, where exploratory acquisition of products is distinguished from exploratory information seeking, is most consistent with prior theoretical work and the limited empirical evidence. Exploratory acquisition of products (EAP) entails the potential for sensory stimulation in product purchase through risky and innovative product choices and varied and changing purchase experiences, while exploratory information seeking (EIS) satisfies consumers' cognitive stimulation needs through the acquisition of consumption-relevant knowledge out of curiosity.

Our conceptualization has its roots in Pearson's (1970) distinction between sensory and cognitive novelty seeking, Berlyne's (1963) differentiation of specific/diversive exploration from epistemic exploratory behavior, and Zuckerman's (1979) separation of sensation seeking from cognitive curiosity. It is similar to distinctions made in consumer research between adoptive and vicarious innovativeness (Hirschman, 1980), sensory-emotive stimulation seeking and cognitive information seeking (Hirschman and Holbrook, 1982), exploratory purchase behavior and vicarious exploratory behavior (Price and Ridgway, 1982), sensory and cognitive experience seeking (Hirschman, 1984), innovativeness and information seeking (Joachimsthaler and Lastovicka, 1984), sensory and epistemic exploratory behavior (Venkatraman and MacInnis, 1985), and sensory and cognitive innovativeness (Venkatraman and Price, 1990). Although there certainly is no exact one-to-one correspondence between these various classifications, they do point to the usefulness of a distinction between sensory stimulation seeking in product purchase based on novelty, risk, variety, and change and cognitive stimulation seeking motivated by an intrinsic curiosity about consumption-relevant information. The common denominator of the two types of exploratory buying behavior is that consumers engage in them, at least in part, in an effort to regulate their exposure to stimulation and that this stimulation provides intrinsic pleasure.

The major difference between the two dimensions is that, while exploratory information seeking might eventually lead to the purchase of a product, knowledge acquisition is originally not directed at a particular product and, in particular, does not involve direct experience with a product through purchase, as is the case with exploratory acquisition of products (cf. Hirschman, 1980). Furthermore, consumers derive mostly sensory stimulation from the exploratory acquisition of products, whereas exploratory information seeking satisfies their cognitive stimulation needs.

It should be noted that other conceptualizations besides the two-factor framework proposed in this paper have been suggested in prior work on the subject. Raju (1980) distinguished seven aspects of exploratory consumer behavior: risk taking, innovativeness, brand switching, repetitive behavior proneness, information seeking, exploration through shopping, and interpersonal communication. Although these seven facets of exploratory consumer buying behavior nicely circumscribe the domain of the construct, several problems with this classification may be noted.

First, there are conceptual problems with the differentiation into seven factors because some of them are clearly overlapping. For example, repetitive behavior proneness is defined as "the tendency to stick with the same response over time" (Raju, 1980, p. 278), which is closely related in an inverse fashion to brand switching, defined as "switching of brands primarily for change or variety" (Raju, 1980, p. 279). The absence of clear boundaries of the seven facets is also reflected in the fact that in the scale implementing this conceptualization, 16 of 39 items are specified to load on multiple factors.

Second, with a view toward measuring exploratory consumer buying behavior and assessing its relationship with other constructs, a seven-factor structure seems impractical. For example, empirical investigations of the construct validity of Raju's scale have indicated that good psychometric properties (i.e., a well-defined factor structure and high reliabilities) and meaningful associations with related constructs are difficult to obtain (cf. Wahlers et al., 1986; Baumgartner and Steenkamp, 1991).

Besides the seven-factor structure, a three-factor conceptualization consisting of risk taking, variety

seeking, and curiosity-motivated behavior has also been proposed (McAlister and Pessemier, 1982; Raju, 1980). Although this three-factor structure is conceptually more appealing than the seven-factor conceptualization, it too has some problems. The major difficulty is that it is hard to clearly distinguish conceptually between risk taking and variety seeking, particularly in the context of exploratory consumer buying behavior. As discussed by McAlister and Pessemier (1982), desire for the unfamiliar can be theoretically distinguished form alternation among familiar alternatives. However, in practice product familiarity is more a matter of degree than a strict dichotomy. Furthermore, it has been argued in the literature that exploratory purchase tendencies may be most readily expressed in the context of relatively low-risk, frequently purchased products (Hoyer and Ridgway, 1984; Van Trijp et al., 1994; see also Fiske and Maddi, 1961), and in this case the distinction becomes even more tenuous. For example, trying a new brand in a well-known product class involves some amount of risk taking, but it may also satisfy a variety seeking motive. Similarly, a brand that has not been used for some time may have become relatively unfamiliar and its purchase will not only provide a change of pace but may also entail some risk.

In line with this theoretical observation, the three-factor structure has not fared well empirically. For example, when the correlations among the seven dimensions of exploratory consumer behavior as reported in Raju (1977) are factor-analyzed, the results for both the homemaker and student samples show that two factors have eigenvalues greater than one, and the two-factor structure is most readily interpretable, with risk taking, innovativeness, brand switching, and repetitive behavior proneness loading on one factor and information seeking, exploration through shopping, and interpersonal communication loading on the second factor. In a similar way, Baumgartner and Steenkamp (1991), in their investigation of the construct validity of the Raju scale, also found that the subdimensions of risk taking and variety seeking exhibited a lack of discriminant validity.

In sum, both theoretically and empirically the evidence suggests that a two-factor conceptualization of exploratory consumer buying behavior might be most useful. The two facets, which are referred to as exploratory acquisition of products and exploratory information seeking, are consistent with prior distinctions made in both the psychological and consumer behavior literatures, and the empirical evidence also seems to favor it over alternative conceptualizations. In the next three sections, we report the development of an instrument to measure individual differences in consumers' tendencies to engage in the two forms of exploratory consumer buying behavior, and we also investigate the correspondence of the two dimensions with theoretically related constructs and actualized exploratory consumer behavior.

3. Measuring exploratory consumer buying behavior

3.1. Domain specification and item generation

The objective of this section is to describe the development of a scale for the measurement of exploratory buying behavior tendencies (EBBT). Our instrument can be thought of as a trait measure assessing individual differences in people's disposition to engage in the two forms of exploratory buying behavior, exploratory acquisition of products and exploratory information seeking. We characterize the scale as a measure of a consumer's *tendency* to engage in exploratory buying behavior because this concept captures the notion of a general disposition to act in a consistent way across different situations (Shimp and Sharma, 1987). In line with the discussion in the previous section, the domain of exploratory consumer buying behavior is specified as those activities involved in the buying process (in the broadest sense) which are intrinsically motivated and whose primary purpose is to adjust actual stimulation obtained from the environment or through internal means to a satisfactory level. We distinguish two dimensions of exploratory buying behavior, namely *exploratory acquisition of products (EAP)* and *exploratory information seeking (EIS)*. The first dimension, EAP, reflects a consumer's tendency to seek sensory stimulation in product purchase through risky and innovative product choices and varied and changing purchase and consumption experiences. Consumers who are high on EAP enjoy taking

chances in buying unfamiliar products, are willing to try out new and innovative products, value variety in making product choices, and change their purchase behavior in an effort to attain stimulating consumption experiences. The second dimension, EIS, reflects a tendency to obtain cognitive stimulation through the acquisition of consumption-relevant knowledge out of curiosity. Consumers who are high on EIS like to go browsing and window shopping, are interested in ads and other promotional materials that provide marketing information, and enjoy talking to other consumers about their purchases and consumption experiences.

Based on a review of the literature on optimum stimulation level, intrinsic motivation, and exploratory (consumer) behavior (e.g., Berlyne, 1960, 1963, 1978; Deci and Ryan, 1985; Fiske and Maddi, 1961; Fowler, 1965; Foxall, 1986; Hirschman, 1980; Joachimsthaler and Lastovicka, 1984; McAlister and Pessemier, 1982; Mehrabian and Russell, 1974; Mittelstaedt et al., 1976; Price and Ridgway, 1982; Raju, 1977, 1980, 1981; Steenkamp and Baumgartner, 1992; Venkatesan, 1973; Voss and Keller, 1983; Wahlers et al., 1986; Zuckerman, 1979, 1994), as well as our conceptualization of the domain of the construct, a pool of 89 items was developed to operationalize the two dimensions of EBBT. Included in the initial pool were 35 items from Raju's (1980) scale which could be assigned unambiguously to either EAP or EIS, as well as 54 new items written on the basis of our literature review. Care was taken to ensure that the items reflected either exploratory acquisition of products or exploratory information seeking, did not confound these two aspects, and tapped the basic motivations underlying exploratory buying behavior in as many different consumer contexts as possible.

3.2. Development of the EBBT scale

As a first step in developing the scale, a panel of five expert judges (doctoral students in marketing) was given definitions of EAP and EIS and asked to assign each of the 89 potential items to one of the two dimensions of EBBT or to indicate that the item fit neither definition. Only those items which were classified correctly by at least 4 of the 5 judges were considered further. This procedure yielded 41 EAP and 28 EIS items.

A questionnaire containing the EBBT items (as well as some other scales which will be discussed later) was administered to undergraduate students enrolled in marketing classes at a major American university. Participation in the study was voluntary, but a lottery with several cash prizes was used to attract volunteers. EBBT items were scored on 5-point scales, ranging from completely disagree (= 1) to completely agree (= 5). A total of 288 subjects provided usable responses.

Corrected item-total correlations were computed for the 41 EAP and 28 EIS items, and items with item-total correlations below 0.4 on the hypothesized dimension and items that did not correlate significantly more highly with the hypothesized than the non-hypothesized factor were eliminated (cf. Ruekert and Churchill, 1984). This left 14 EAP and 10 EIS items. Since we wanted to have as compact a scale as possible, with an equal number of EAP and EIS items, four more EAP items (those with the lowest item-total correlations) were eliminated, leaving 10 EAP and 10 EIS items in our final scale. [2] The 20-item scale contains 13 of the 39 original Raju items and 7 new items.

Next, principal components factor analysis with PROMAX rotation was applied to the 20 items. The eigenvalues for the first five components were 5.19, 3.04, 1.57, 1.17, and 1.02. There was a distinct scree at two factors, and the two-factor solution accounted for 41 percent of the variance in the measures. Each of the 20 items had a loading exceeding 0.4 on its hypothesized factor, and there was evidence of simple structure in that none of the cross-loadings were greater than 0.2.

Finally, a confirmatory factor analysis using LISREL was performed on the 20-item scale, which yielded a χ^2 of 547.12 with 169 degrees of freedom, a goodness-of-fit index (GFI) of 0.83, and a comparative fit index (CFI, Bentler, 1990) of 0.79. [3]

[2] All analyses reported in this paper were also conducted for the 24-item scale in which EAP was measured with 14 items. The 24-item scale fit worse than the 20-item scale in the calibration and validation samples, and its criterion-related validity was comparable to that of the shorter scale.

[3] The coefficient of relative multivariate kurtosis was 1.14, indicating that the assumption of multivariate normality is tenable.

The fit of the 2-factor model, although unsatisfactory at first sight, can be considered adequate for several reasons. First, fit indices are adversely affected by model complexity (Bollen, 1989; Bone et al., 1989), and our findings are in line with simulation results (e.g., Anderson and Gerbing, 1984) and previous findings for models of similar complexity. For example, recent scale development or validation studies by Boyle et al. (1992), Heide and John (1990), Kumar et al. (1992), and Netemeyer et al. (1991), in which models of similar complexity were investigated, have yielded similar model fits. Moreover, all factor loadings were significant (all t-values were larger than 6.0) and exceeded the 0.4 level commonly considered meaningful in factor-analytic investigations (Ford et al., 1986). These findings support the convergent validity of the items (Anderson and Gerbing, 1988). Further, none of the modification indices for the loading of an item on the non-hypothesized factor was significant at the.01 level, and none of the estimated changes reported by LISREL exceeded.2 (see Kaplan, 1989 for an extensive discussion of the use of estimated change parameters in LISREL). The composite reliabilities (Bagozzi and Yi, 1988) and coefficient alphas of EAP and EIS were 0.85 and 0.83, respectively.

EAP and EIS were correlated 0.30 ($p < 0.001$). Discriminant validity between the two factors was assessed in two ways (Anderson and Gerbing, 1988). First, the difference in χ^2 values between the model which constrains the correlation to be equal to 1.0 and the unconstrained model was highly significant [$\chi^2(1) = 517.93$, $p < 0.001$]. Second, even the 0.1% confidence interval around the correlation estimate of 0.30 did not include 1.0. Both findings support the discriminant validity of the two subfactors of EBBT.

Taken together, item-total correlations, scree test and factor loadings, as well as the LISREL results, provide support for the convergent and discriminant validity of the EBBT scale (Steenkamp and Van Trijp, 1991). The 20 items retained in the final scale and their means, standard deviations, and factor loadings obtained in the confirmatory factor analysis are displayed in the Appendix.

3.3. Validation of the EBBT scale

The results reported for the EBBT scale using the calibration data set may be upwardly biased because they are based on the sample on which the instrument was developed. Therefore, the measure was cross-validated on two separate samples of subjects from two different countries.

Method. The EBBT scale was administered to a sample of 320 undergraduate students in a program in hotel, restaurant, and institutional management at a major American university, and to a sample of 159 undergraduate students at a university in the Netherlands. [4] The items were scored as in the first study.

Results. The same two-factor structure was specified for the validation samples as for the calibration sample, but all parameters were freely estimated (cf. Bagozzi and Yi, 1988). The following model fits were obtained: $\chi^2(169) = 416.53$ ($p < 0.001$), GFI = 0.88, CFI = 0.83 for the American sample; and $\chi^2(169) = 260.15$ ($p < 0.001$), GFI = 0.85, CFI = 0.88 for the Dutch sample. [5] For both samples, GFI and CFI compare favorably with the results obtained in the calibration sample, which supports the cross-sample validity of the scale. Further, for the American cross-validation sample, all factor loadings were significant (all t-values exceed 3.0) and only three did not exceed 0.4, while in the Dutch sample, all loadings were significant (all t-values exceeded 3.5), 15 exceeded 0.4 and all were greater than 0.3 in magnitude. The composite reliabilities of EAP and EIS were 0.81 and 0.78, respectively, in the American sample, and 0.75 and 0.85, respectively, in the Dutch sample. The corresponding coefficient alphas were 0.80, 0.77, 0.74, and 0.85. In neither sample were any modification indices significant, and none of the estimated changes exceeded 0.2.

Discussion. The results of the three scale development and validation studies show that it is possible to construct an internally valid instrument for the measurement of exploratory buying behavior tenden-

[4] The EBBT items were administered in English. Two 7-point self-report measures were included, pertaining to the experienced difficulty in understanding the items and the subject's self-rated knowledge of English. Five subjects were deleted from further analyses because they rated lower than the midpoint on either or both of the two items.

[5] The coefficients of relative multivariate kurtosis were 1.14 and 1.07 for the American and Dutch samples, respectively, indicating again that the assumption of multivariate normality is reasonable.

cies based on our two-factor conceptualization of the construct. The findings from three samples of consumers in two different countries indicate that the scale has good psychometric properties, with a well-defined dimensional structure and adequate reliabilities.

4. Relationships of EBBT with other constructs

In this section we will relate the new scale to several important constructs that theory suggests should be associated with exploratory consumer buying behavior. The purpose is to obtain preliminary insights into the nexus of relationships in which exploratory consumer behavior is embedded.

4.1. Relationships of EBBT with optimum stimulation level

The most important criterion-related validity test for any scale purporting to assess exploratory behavior tendencies is that it correlate significantly with measures of optimum stimulation level. A substantial body of literature has shown that there are reliable individual differences in the amount of stimulation considered most comfortable by a given person, and that people with higher stimulation needs engage in exploratory behavior to a greater extent than people with lower optimum stimulation levels in order to adjust actual stimulation to their higher optimal levels (see Zuckerman, 1979 for a review). Since all types of exploratory buying behavior provide consumers with a means of regulating their exposure to

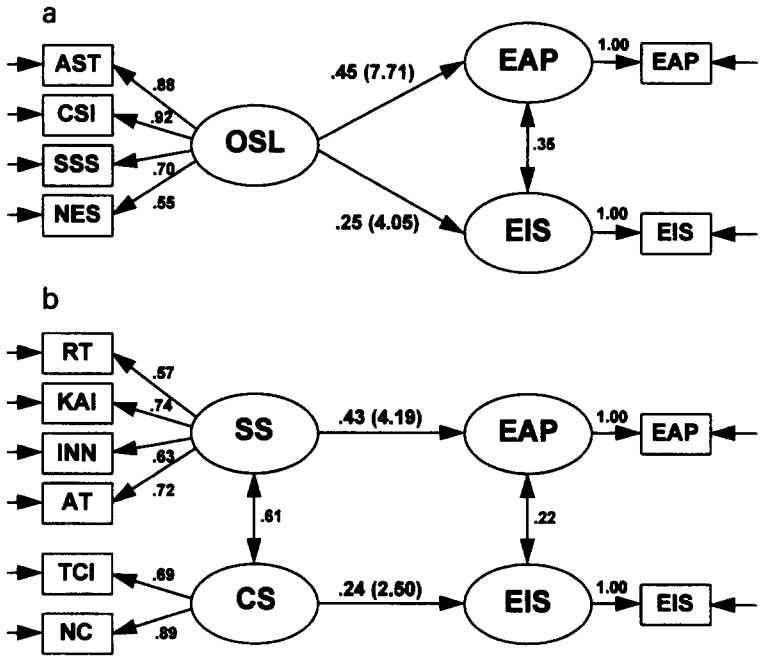

Fig. 1. Criterion-related validity of the EBBT scale. a: Relationship between EBBT and OSL. b: Relationship between EBBT and sensory and cognitive stimulation. Note: The following abbreviations are used in the figure: EAP-Exploratory Acquisition of Products, EIS-Exploratory Information Seeking, OSL-Optimum Stimulation Level, SS-Sensory Stimulation, CS-Cognitive Stimulation, AST-Arousal Seeking Tendency scale, CSI-Change Seeker Index, SSS-Sensation Seeking Scale, NES-Novelty Experiencing Scale, RT-Jackson's Risk Taking scale, KAI-Kirton's Adaption-Innovation scale, INN-Jackson's Innovativeness scale, AT-MacDonald's Ambiguity Tolerance scale, TCI-Melbourne Trait Curiosity Inventory, NC-Petty and Cacioppo's Need for Cognition scale. Numbers are standardized parameter estimates (with *t*-values in parentheses).

stimulation, it is expected that optimum stimulation level is related to both exploratory acquisition of products and exploratory information seeking (Steenkamp and Baumgartner, 1992).

There are four major scales for the measurement of optimum stimulation level: the Arousal Seeking Tendency scale version II of Mehrabian (1978) (Baumgartner and Steenkamp, 1994), the Change Seeker Index of Garlington and Shimota (1964), the Sensation Seeking Scale form V of Zuckerman (1979), and the Novelty Experiencing Scale of Pearson (1970). Previous research has shown that these scales are highly reliable and that they converge to indicate the underlying construct of OSL (cf. Steenkamp and Baumgartner, 1992). We expected that OSL, operationalized as a composite of the four aforementioned scales, would be significantly related to EAP and EIS.

Method. We used the sample of 288 respondents on whom the EBBT scale was calibrated to examine this hypothesis. Because of missing values, only 284 observations were available for this analysis. In the questionnaire the order of the four OSL scales and of the EBBT scale was rotated according to a Latin squares design.

In addition to the foregoing instruments, the Marlowe–Crowne Social Desirability scale short-form (Reynolds, 1982) was also administered. Ideally, scales measuring constructs should be free of social desirability biases, and thus nonsignificant correlations with both dimensions of EBBT were expected. The Social Desirability scale was always the last measure in the questionnaire.

Results. A simple model was estimated in which OSL was specified as an antecedent of both EAP and EIS (see upper half of Fig. 1). Such a specification is consistent with prior theorizing (Joachimsthaler and Lastovicka, 1984; Raju, 1980, 1981; Steenkamp and Baumgartner, 1992). Subjects' ratings on the four OSL scales served as indicators of OSL, while composite scores from the calibration study were used as single indicators of EAP and EIS. LISREL was applied to the correlation matrix of the measures, and the hypothesized model yielded a satisfactory fit: $\chi^2(8) = 63.88$, GFI = 0.93, and CFI = 0.92. Standardized parameter estimates and t-values are reported in Fig. 1. Consistent with our hypothesis, OSL had significant effects on both EAP and EIS. It is apparent that the effect of OSL on EAP is stronger than the effect of OSL on EIS. The reason for this is that CSI and AST have the highest loadings on OSL, and these scales tap mostly sensory forms of stimulation as evidenced by the content of their items and the results obtained by Raju (1980).

Also as expected, the correlations of Social Desirability with both EAP (0.02) and EIS (−0.06) were nonsignificant, indicating that responses to EBBT are not contaminated by social desirability biases.

4.2. Relationships of EBBT with other personality scales

As noted previously, the differentiation of EBBT into EAP and EIS is based on the basic distinction made in personality research between desire for sensory stimulation derived from risky, novel, and varied experiences, and a need for cognitive stimulation manifested in curiosity (cf. Berlyne, 1963; Pearson, 1970; Zuckerman, 1979; see also Hirschman and Holbrook, 1982). Six well-known personality scales, which were expected to differentially tap these basic motivations underlying the two dimensions of exploratory buying behavior, were selected in an effort to provide further evidence on the criterion-related validity of EBBT.

Scales pertaining to sensory stimulation through risky, novel, and varied experiences that we used in our research were the Risk Taking scale of Jackson (1976), the Adaption–Innovation scale of Kirton (1976), Jackson's (1976) Innovativeness scale, and the Ambiguity Tolerance scale of MacDonald (1970). The Risk Taking scale is a generalized measure of willingness to take risks. The Adaption–Innovation and Innovativeness scales were included as measures of inherent or innate innovativeness (cf. Foxall, 1986; Goldsmith, 1986). The Ambiguity Tolerance scale was used because it is frequently mentioned as an antecedent of exploratory behavior (e.g., Berlyne, 1963). People who are tolerant of ambiguity have been found to have higher optimum stimulation levels, and there is some suggestion that they are more willing to take risks and to be innovators (Raju, 1980). Furthermore, an openness to ambiguity should facilitate variation and change seeking.

The Melbourne Trait Curiosity Inventory (Naylor, 1981) and the short-form of the Need for Cognition

scale (Cacioppo et al., 1984) were selected to tap cognitive stimulation seeking. Trait Curiosity was used as a general measure of curiosity (Olson and Camp, 1984); it is generally acknowledged that curiosity is a powerful motive underlying cognitive forms of exploratory behavior (Berlyne, 1978; Fowler, 1965; Voss and Keller, 1983). Berlyne (1963) proposed that need for cognition was a determinant of cognitive stimulation seeking, and Olson et al. (1984) have shown that Petty and Cacioppo's Need for Cognition scale correlates significantly with a variety of measures of curiosity, including Trait Curiosity.

Our hypothesis was that sensory stimulation seeking would be related to EAP, while cognitive stimulation seeking would be related to EIS.

Method. Data from a new sample of 129 undergraduate business students at an American university were collected in order to test this hypothesis. Questionnaires containing the six personality scales were distributed in class, and participation in the study was encouraged through a lottery. A total of 128 subjects provided usable responses. The items comprising the EBBT scale were always put first in the questionnaire, and the other scales were arranged in four different random orders. The composite reliabilities and coefficient alphas of EAP and EIS were 0.84 and 0.78, respectively.

Results. Subjects' ratings on the six personality scales served as indicators of sensory and cognitive stimulation seeking. EAP and EIS were again specified as single-indicator constructs. The model shown in the lower portion of Figure 1 was estimated with LISREL, using a correlation matrix as input.

The resulting model fit the data well [$\chi^2(18) = 35.78$, GFI = 0.94, and CFI = 0.93]. Standardized parameter estimates and t-values are shown in Figure 1. The factor loadings for the personality scales are substantial and significant, which supports their convergent validity. As hypothesized, the paths from sensory stimulation seeking to EAP and from cognitive stimulation seeking to EIS were both significant. On the other hand, the modification indices for the effects of sensory stimulation seeking on EIS and of cognitive stimulation seeking on EAP were both nonsignificant. These findings provide additional support for the criterion-related validity of the EBBT scale and its two subdimensions.

5. Prediction of actual exploratory consumer behaviors

Our scale is an instrument designed to measure individual differences in consumers' *tendencies* to engage in exploratory buying behavior. Of particular interest to marketers is the question whether dispositional measures of exploratory behavior are related to actualized exploratory behavior in the consumer context and whether the EBBT scale, as a particular dispositional measure, is able to predict specific consumer behaviors motivated, at least in part, by exploratory tendencies. Below we report a series of experiments to investigate the predictive validity of the EBBT scale for four specific types of exploratory behavior: innovative behavior (Foxall, 1986; Mittelstaedt et al., 1976), variety seeking in the context of food consumption behavior (Van Trijp and Steenkamp, 1992), cognitive responses to ads (Faison, 1977), and curiosity-motivated search for product information (Hirschman, 1980).

5.1. Experiment 1: Innovative behavior

Recently, scratch-off lottery tickets ('kraslot') were introduced in the Netherlands. These lottery tickets can be bought at various places, cost Dfl. 2.50, and offer the opportunity to win between Dfl. 2.50 and Dfl. 75,000. The product is innovative in the sense that these lottery tickets were not available in the Netherlands until recently. Scratch-off lottery tickets are also risky since money is at stake and the outcome is uncertain. A person's decision to purchase lottery tickets may be considered an instance of innovative behavior since the product of interest is relatively new (Rogers, 1983) and since the purchase involves risk (Ostlund, 1974).

Previous research has shown that willingness to take risks is positively related to innovative behavior (cf. Gatignon and Robertson, 1985). In addition, studies by Mittelstaedt et al. (1976) and Venkatraman and Price (1990) indicate that OSL is a significant determinant of innovative purchase behavior. Since OSL is an antecedent of exploratory buying behavior tendencies and since sensory stimulation seeking through risky and innovative product choices is a major component of EAP, we expected that choice of lottery tickets would be significantly corre-

lated with EAP and that it would be more strongly related to EAP than to EIS.

Method. One hundred and thirty-four Dutch undergraduate students participated in a series of experiments, one of which dealt with innovative behavior. Subjects filled out the EBBT scale (the coefficient alphas of EAP and EIS were 0.80 and 0.84, respectively), and at the end of the experimental session they received Dfl. 10 for their participation. Subjects were given the opportunity to use (part of) this money to purchase scratch-off lottery tickets. [6]

Results. A logistic regression of whether or not a subject decided to purchase scratch-off lottery tickets indicated that subjects scoring high on EAP were significantly more likely to purchase lottery tickets than subjects scoring low on EAP ($p < 0.01$). A similar logistic regression involving EIS was not significant ($p > 0.10$). The point-biserial correlation coefficients for EAP and EIS were 0.29 ($p < 0.01$) and -0.13 (n.s.), respectively. The difference between these correlation coefficients was significant ($p < 0.001$). [7]

The correlation between the number of lottery tickets purchased and EAP or EIS was 0.16 ($p < 0.05$) and -0.23 ($p < 0.01$), respectively, and the difference in correlations was significant ($p < 0.001$). Thus, consistent with expectations, EAP was positively related to innovative behavior and the relationship with EAP was stronger than the one with EIS.

5.2. Experiment 2: Variety seeking behavior

Variety seeking behavior is often regarded as a manifestation of consumers' desire for exploration (Raju, 1980), and exploratory purchase behavior explicitly measures a person's tendency to engage in variety seeking. Previous research supports a positive relationship between OSL and variety seeking (cf. Steenkamp and Baumgartner, 1992), and a study by Van Trijp and Steenkamp (1992) indicates that variation in self-reported food consumption behavior is positively correlated with a scale measuring variety seeking tendencies with respect to foods. Based on this work, it was expected that actual variety seeking behavior would be positively related to EAP and that it would be more strongly correlated with EAP than with EIS.

Method. A total of 45 students (a subgroup of the 159 Dutch subjects on whom the EBBT scale was validated) participated in the following variety seeking experiment. Subjects were exposed to a television program, and while watching the program they had the opportunity to drink coffee and eat a variety of cookies (this resembles a 'typical' Dutch consumption situation). Subjects could choose from a plate containing eight different cookies, five pieces per item. They were told that the researchers were interested in their opinion about the television program, and they were invited to drink coffee and eat as many or as few cookies as they wanted while watching the program.

After watching and evaluating the television program, subjects filled out the EBBT scale. In addition, they indicated which of nine potential attributes of cookies (crispy, soft, high in calories, sweet, good tasting, unhealthy, light, contains many additives, special) were applicable to a given cookie. Choice of the attributes was based on qualitative interviews. At the end of the experiment, the plates were collected, and the experimenter recorded the number of cookies of each type that each subject had consumed.

Analysis and Results. We used a variant of Pessemier and Handelsman's Index of Temporal Variety (ITV) as our measure of variety seeking behavior (Pessemier and Handelsman, 1984). ITV consists of three components pertaining to the dissimilarity of the chosen cookies (PRD), the degree to which choices are evenly distributed across the cookies chosen (PRE), and the relative frequency with which choices change from one purchase occasion to the next (RNB). Since we were not able to record the sequence in which the cookies were chosen (this would have been too intrusive), RNB is not included in our study.

Subjects' ratings on PRE can be obtained from their choices of different cookies. To obtain ratings

[6] Subjects in this and all other experiments were asked to comment on the purpose of the study. No subject linked the dependent variable of interest to the EBBT scale.

[7] Difference tests are based on Williams procedure (Williams (1959). One-sided p-values were used, given the directional nature of our hypotheses concerning the relative effects of EAP and EIS (Ferguson, 1981).

on PRD, perceptual distances between items must be computed. At the individual level, the perceptual data collected constitute an 8×9 matrix, filled with 1's (attribute applicable to the cookie in question) and 0's (attribute not applicable). These data were aggregated across consumers and subjected to correspondence analysis to construct a perceptual map. A two-dimensional map explaining 89.3 percent of the variance was used to compute PRD.

Subjects' ratings on our modified ITV measure were obtained by summing the ratings on PRD and PRE. A higher rating represents greater variety seeking behavior. As expected, EAP was significantly correlated with ITV ($r = 0.25$, $p < 0.05$, one-sided), whereas the correlation for EIS was nonsignificant ($r = -0.09$). The difference between the two correlation coefficients was also significant ($p = 0.05$).

5.3. Experiment 3: Cognitive responses to ads

Exploratory behavior tendencies are not only revealed in overt behavior, but also in cognitive activity, particularly curiosity-motivated thinking (Berlyne, 1978; Olson and Camp, 1984; Pearson, 1970). Thoughts reflecting curiosity have been identified as an important component of consumers' responses to ads (Wright, 1973), and in a study by Rethans et al. (1986) curiosity-based responses accounted for 17 percent of the total number of thoughts evoked by an ad. Since curiosity-based thinking satisfies primarily consumers' cognitive stimulation needs (Pearson, 1970), it was expected that the number of curiosity-motivated thoughts generated in response to an ad would be positively correlated with EIS and that the relationship with EIS would be stronger than the one with EAP.

Method. A total of 62 subjects at an American university participated in the experiment to satisfy a course requirement. They were shown a TV commercial for the British newspaper *The Independent*, and after seeing the ad were asked to write down all the things that had gone through their minds while watching the ad. The ad was selected because of its ambiguity and its presumed potential to stimulate curiosity. Two judges categorized subjects' cognitive responses as either reflecting or not reflecting curiosity (interjudge agreement was in excess of 90 percent), using the definitions put forth by Wright (1973). The data for EAP and EIS were collected at the end of the experimental session, and the two scales achieved coefficient alphas of 0.84 and 0.78.

Results. Subjects on average produced 5.31 thoughts, and the total number of cognitive responses generated was unrelated to either EIS or EAP. Consistent with our hypothesis, EIS was significantly related to the number of curiosity thoughts generated by subjects ($r = 0.28$, $p < 0.05$), whereas the corresponding correlation for EAP was not significant ($r = 0.12$). The difference between the two correlation coefficients approached significance ($p = 0.14$).

5.4. Experiment 4: Information seeking

Steenkamp and Baumgartner (1992) have suggested that consumer information seeking may be motivated either by the desire to make better purchase decisions or by a more general interest in learning more about the environment. In the former case information acquisition serves as a means to some other end, whereas in the latter case it is intrinsically motivated by curiosity and thus an end in itself. Bloch, Sherrell, and Ridgway (1986) make a similar distinction, contrasting prepurchase search, which serves to make better purchase decisions, with ongoing search, which is motivated by a desire to build a bank of information for possible future use or to experience fun and pleasure. When ongoing search is thought of as a recreational pursuit, the primary motive underlying the activity is intrinsic in nature (Bloch et al., 1986). Provided that an information acquisition task makes curiosity motives salient, the extent of search should be positively correlated with EIS, which reflects a general tendency to obtain cognitive stimulation through the acquisition of consumption-relevant knowledge. In addition, we expected that the amount of product information looked at would be more strongly related to EIS than to EAP.

Method. The information display board method was used to test this hypothesis. Information was available for six brands of hypothetical automobiles described on seven attributes. To stimulate curiosity, subjects were told that they had an opportunity to browse through product information about real brands of automobiles whose names had been disguised, and that in the process they might learn some new and

interesting facts about cars. The experiment was conducted on a computer, and subjects looked at as many or as few pieces of information as they wanted. The computer unobtrusively recorded their inspection behavior. The same subjects that had participated in the cognitive response task also participated in this experiment, and 60 subjects provided usable data. [8]

Results. On average subjects looked at 35 pieces of information (83 percent of the total). As expected, EIS was significantly positively correlated with the amount of attribute information looked at ($r = 0.31$, $p < 0.01$), while EAP was not significantly related to the intensity of information search ($r = 0.03$). Consistent with our hypothesis, the difference between the two correlation coefficients was significant ($p < 0.05$).

6. General discussion

This paper proposed a two-factor conceptualization of exploratory consumer buying behavior which is grounded in basic psychological theory on optimum stimulation level and exploratory behavior and is consistent with a variety of distinctions in the consumer behavior literature between sensory and cognitive forms of stimulation seeking. Our attempts to construct a scale for measuring individual differences in consumers' tendencies to engage in exploratory buying behavior based on the two-factor conceptualization and our investigations of the scale's relationship with other constructs and actual exploratory consumer behaviors yielded encouraging results. Exploratory acquisition of products (EAP) and exploratory information seeking (EIS) were found to be related but distinct facets of exploratory buying behavior, and the scale exhibited unidimensionality within each sub-dimension as well as convergent and discriminant validity. The trait validity of the EBBT scale was further supported by the good cross-validity in samples from two different countries and the fact that neither of the two subscales of EBBT appears to be contaminated by social desirability bias.

The pattern of relationships between EAP and EIS and other constructs conforms to theoretical expectations, which supports the nomological validity of the EBBT scale. As suggested by prior theory, both dimensions of EBBT were significantly related to a composite of four OSL scales. In addition, our results show that EAP has stronger associations with sensory stimulation seeking as indicated by a willingness to take risks, inherent innovativeness, and tolerance for ambiguity. Conversely, EIS is more strongly related to cognitive forms of stimulation seeking as indicated by a general measure of curiosity as well as need for cognition. Furthermore, the results of four experiments supported the predictive validity of the EBBT scale and showed that EAP and EIS exhibit differential relations with various types of actual exploratory consumer behaviors.

The EBBT scale has been conceptualized as a trait measure assessing individual differences in people's disposition to engage in two forms of exploratory consumer behavior, EAP and EIS. As such, it is a domain-specific personality variable, and the question arises whether the loss of parsimony due to the introduction of context-dependent traits results in better prediction of actual behavior. As one reviewer put it, "why bother with EAP and EIS when one can connect less superficially to the psyche." There are several reasons why we think such a step might be necessary. First, the idea of domain-specific traits is consistent with extant trait theories since the notion of a hierarchical organization of personality is a unifying characteristic of different trait theories (Pervin, 1993, Chapter 9). In a hierarchical framework, the EBBT scale can be thought of as tapping a secondary trait that is exhibited in a relatively narrow range of situations such as the buying context (Joachimsthaler and Lastovicka, 1984). Second, research has shown that the consistency between very general traits or attitudes and specific behaviors is often rather low (see Ajzen, 1987, for a review). One proposed solution to this problem is to "turn instead to dispositional variables that are more closely linked to the particular behavior in question" (Ajzen, 1987, p. 36). Although the domain-specific measurement of traits does not lead to complete correspondence in the level of specificity at which traits and behaviors

[8] Two subjects were excluded from the analysis because they were identified as outliers, using Bollen's (1989) model-free outlier detection test.

are assessed, it should at least improve the predictive validity of personality constructs. Third, there is limited empirical evidence that context-dependent measures of exploratory tendencies do indeed lead to better predictions than more general but related personality variables. For example, Van Trijp and Steenkamp (1992) show that a scale measuring variety seeking tendencies in the context of food is more strongly related to variation in food consumption behavior than Zuckerman's (1979) Sensation Seeking Scale. Similarly, in the variety seeking experiment reported in Section 5.2, in which we also collected data on a 7-item short-form of the Change Seeker Index (Steenkamp and Baumgartner, 1995), only EAP was significantly related to actual variety seeking behavior. We acknowledge that the empirical evidence is preliminary and that future research will have to address these issues in more detail, but at this point the specification of a domain-specific tendency to engage in exploratory behavior seems both meaningful and useful.

Several implications of our work for research and practice should be pointed out. With regard to research in the fields of marketing and consumer behavior, our framework for conceptualizing exploratory consumer buying behavior suggests that seemingly disparate behaviors such as risk taking, innovativeness, and variety seeking in product purchase and curiosity-motivated search for information share a common characteristic in that they offer the potential for stimulating experiences and are motivated, at least in part, by a desire to adjust actual stimulation to the most preferred level. These behaviors should therefore be amenable to explanation by similar theoretical principles, which would provide for a parsimonious account of their antecedents and consequences. Some initial work in this regard has been provided in this paper, and the scale we have developed to operationalize our conceptualization of exploratory consumer buying behavior should facilitate further investigations of this topic. One issue not addressed in this paper but worthy of investigation is to combine the EBBT scale with measures of extrinsic motivation to try to explain a wide variety of consumer behaviors, as many behaviors contain at least an exploratory component (Raju, 1981). For example, brand switching may occur because of exploratory motivations, because another brand offers a better deal, or for both reasons. By studying the relative importance of exploratory tendencies vis-à-vis extrinsic motivations across products and situations, we obtain a more complete understanding of consumer behavior and of the contexts in which exploratory tendencies are relatively more important.

In terms of managerial implications, our framework emphasizes people's stimulation needs as an important instigator of various types of consumer behaviors. The domain-specific personality trait reflected in EBBT may be a useful segmentation variable and should facilitate target marketing efforts with regard to all elements of the marketing mix. For example, in terms of product policy consumers who are high in EBBT should be particularly receptive to innovative product offerings, less concerned about the risks involved in certain purchases, and more interested in a wide assortment of products to satisfy their variety seeking needs. These consumers should also be less sensitive to the price of products which offer the potential for stimulating experiences. With regard to advertising and promotion, high EBBT consumers may be more curious about consumption-relevant information contained in marketing communications but become bored with a given ad stimulus more quickly than consumers low in EBBT. They may also take greater advantage of promotional campaigns both because they are more likely to know about them and because they offer the opportunity for variety. Similar arguments apply to the design of stores and other distribution programs.

As always, some limitations should be kept in mind when interpreting our results. To begin with, our evidence on the psychometric properties of the EBBT scale and its relationship with other constructs is entirely based on research with student subjects. Future research will have to show whether our scale is also useful with other subjects populations, although the fact that the EBBT scale cross-validated well with a Dutch sample is encouraging. Such research would also allow profiling of consumers that are high or low in exploratory buying tendencies in terms of sociodemographic and other characteristics. It should also be acknowledged that the correlations between the two dimensions of EBBT and actual exploratory behaviors, although significant, were relatively modest. On the one hand, this result is not surprising since research has shown that gen-

eral personality variables are frequently not strongly correlated with specific behaviors (Ajzen, 1987). On the other hand, the modest magnitude of the obtained correlations suggests that the behaviors investigated in our experiments are only partly a function of individual differences in exploratory tendencies in the consumer context and that other factors have to be considered as determinants of innovative behavior, variety seeking, cognitive responses to ads, and curiosity-motivated information seeking. Finally, our investigation of the relationships of the EBBT scale with other constructs and actual exploratory consumer behaviors constitutes only a first attempt at establishing the nomological validity of our instrument. Future investigations will have to show that the EBBT scale has lawful associations with other personality variables and other types of exploratory consumer behaviors. So far the evidence on the construct validity of the EBBT scale is encouraging, however, and we hope that our scale will prove useful to other researchers interested in consumer behavior in general and its exploratory component in particular.

Acknowledgements

The order of the authors' names is arbitrary; both contributed equally to this study. The research reported in this paper was supported by a Research Initiation Grant from the Pennsylvania State University to the first author and a Summer Grant from the Pennsylvania State University to the second author. The authors thank Srinath Gopalakrishna, David van der Lei, Jerry Olson, Steve Perkins, Diane Phillips, Jerome Williams, Dave Wilson, and Elise van der Wulp for help in data collection, coding, and analysis.

Appendix A

A.1. Items in EBBT scale and their means, standard deviations, and factor loadings from the calibration study

	Mean	Standard deviation	Factor loading	
1.	Even though certain food products are available in a number of different flavors, I tend to buy the same flavor. (*)	2.66	1.06	0.53
2.	I would rather stick with a brand I usually buy than try something I am not very sure of. (*)	2.62	1.11	0.71
3.	I think of myself as a brand-loyal consumer. (*)	2.81	1.05	0.63
4.	When I see a new brand on the shelf, I'm not afraid of giving it a try.	3.51	0.91	0.55
5.	When I go to a restaurant, I feel it is safer to order dishes I am familiar with. (*)	2.51	1.07	0.59
6.	If I like a brand, I rarely switch from it just to try something different. (*)	2.80	1.01	0.75
7.	I am very cautious in trying new or different products. (*)	2.91	0.97	0.59
8.	I enjoy taking chances in buying unfamiliar brands just to get some variety in my purchases.	3.00	0.94	0.52
9.	I rarely buy brands about which I am uncertain how they will perform. (*)	2.75	0.95	0.57

10.	I usually eat the same kinds of foods on a regular basis. (*)	2.22	0.93	0.49
11.	Reading mail advertising to find out what's new is a waste of time. (*)	3.31	1.17	0.61
12.	I like to go window shopping and find out about the latest styles.	3.46	1.19	0.47
13.	I get very bored listening to others about their purchases. (*)	3.11	1.01	0.44
14.	I generally read even my junk mail just to know what it is about.	3.39	1.22	0.65
15.	I don't like to shop around just out of curiosity. (*)	3.66	1.22	0.48
16.	I like to browse through mail order catalogs even when I don't plan to buy anything.	3.92	1.12	0.66
17.	I usually throw away mail advertisements without reading them. (*)	3.35	1.19	0.68
18.	I like to shop around and look at displays.	3.72	1.07	0.61
19.	I don't like to talk to my friends about my purchases. (*)	3.58	0.90	0.40
20.	I often read advertisements just out of curiosity.	3.73	0.94	0.66

Note: Items are listed by dimension (first 10 EAP items, then 10 EIS items); in actual administrations of the scale, items should be listed in random order. Items are scored on 5-point Likert scales, with 1 = strongly disagree and 5 = strongly agree. Items marked with an asterisk are reverse scored.

References

Ajzen, I., 1987. Attitudes, traits, and actions: Dispositional prediction of behavior in personality and social psychology. In: L. Berkowitz (ed.), Advances in Experimental Social Psychology 20, 1–63. San Diego, CA: Academic Press.

Anderson, J.C. and D.W. Gerbing, 1984. The effect of sampling error on convergence, improper solutions, and goodness-of-fit indices for maximum likelihood confirmatory factor analysis. Psychometrika 49, 155–173.

Anderson, J.C. and D.W. Gerbing, 1988. Structural equation modeling in practice: A review and recommended two-step approach. Psychological Bulletin 103, 411–423.

Bagozzi, R.P. and Y. Yi, 1988. On the evaluation of structural equation models. Journal of the Academy of Marketing Science 16, 74–94.

Baumgartner, H. and J.-B.E.M. Steenkamp, 1991. An investigation into the validity of Raju's scale of exploratory behavior tendencies. In: Frank Bradley (ed.), Marketing thought around the world, Proceedings of the 20th European Marketing Academy Conference 1, 1–20, Dublin: University College.

Baumgartner, H. and J.-B.E.M. Steenkamp, 1994. An investigation into the construct validity of the arousal seeking tendency scale, version II. Educational and Psychological Measurement 54, 993–1001.

Bellenger, D.N. and P.K. Korgaonkar, 1980. Profiling the recreational shopper. Journal of Retailing 56, 77–92.

Bentler, P.M., 1990. Comparative fit indexes in structural models. Psychological Bulletin 107, 238–246.

Berlyne, D.E., 1960. Conflict, arousal, and curiosity, New York: McGraw-Hill.

Berlyne, D.E., 1963. Motivational problems raised by exploratory and epistemic behavior. In: Sigmund Koch (ed.), Psychology: A study of science 5, 284–364, New York: McGraw-Hill.

Berlyne, D.E., 1978. Curiosity and learning. Motivation and Emotion 2, 97–175.

Bloch, P.H., D.L. Sherrell, and N.M. Ridgway, 1986. Consumer search: An extended framework. Journal of Consumer Research 13, 119–126.

Bollen, K.A., 1989. Structural equations with latent variables, New York: Wiley.

Bone, P.F., S. Sharma, and T.A. Shimp, 1989. A bootstrap procedure for evaluating goodness-of-fit indices of structural equation and confirmatory factor models. Journal of Marketing Research 26, 105–111.

Boyle, B., F.R. Dwyer, R.A. Robicheaux, and J.T. Simpson, 1992. Influence strategies in marketing channels: Measures and use in different relationship structures. Journal of Marketing Research 4, 462–473.

Cacioppo, J.T., R.E. Petty, and C.F. Kao, 1984. The efficient assessment of need for cognition. Journal of Personality Assessment 1984, 306–307.

Cox, D.F. (ed.), 1967. Risk taking and information handling in consumer behavior, Division of Research, Graduate School of Business, Harvard University.

Csikszentmihalyi, M., 1975. Beyond boredom and anxiety. San Francisco: Jossey-Bass.

Csikszentmihalyi, M., 1990. Flow: The psychology of optimal experience. New York: Harper and Row.

Deci, E.L. and R.M. Ryan, 1985. Intrinsic motivation and self-determination in human behavior, New York: Plenum Press.

Faison, E.W.J., 1977. The neglected variety drive: A useful concept for consumer behavior. Journal of Consumer Research 4, 172–175.

Ferguson, G.A., 1981. Statistical analysis in psychology and education, 5th ed., New York: McGraw-Hill.

Fiske, D.W. and S.R. Maddi (eds.), 1961. Functions of varied experience, Homewood, IL: The Dorsey Press.

Ford, J.K., R.C. MacCallum, and M. Tait, 1986. The application

of exploratory factor analysis in applied psychology: A critical review and analysis. Personnel Psychology 39, 291–314.

Fowler, H., 1965. Curiosity and exploratory behavior, New York: Macmillan.

Foxall, G.R., 1986. Consumer innovativeness: Novelty seeking, creativity, and cognitive style. In: E.C. Hirschman and J.N. Sheth (eds.), Research in Consumer Behavior 3, 79–113, Greenwich, CT: JAI Press.

Garlington, W.F., and H.E. Shimota, 1964. The change seeker index: A measure of the need for variable stimulus input. Psychological Reports 14, 919–924.

Gatignon, H. and T.S. Robertson, 1985. A propositional inventory for new diffusion research. Journal of Consumer Research 11, 919–924.

Goldsmith, R.E., 1986. Convergent validity of four innovativeness scales. Educational and Psychological Measurement 46, 81–87.

Hansen, F., 1972. Consumer choice behavior: A cognitive theory, New York: The Free Press.

Heide, J.B. and G. John, 1990. Alliances in industrial purchasing: The determinants of joint action in buyer–supplier relationships. Journal of Marketing Research 27, 24–36.

Hirschman, E.C., 1980. Innovativeness, novelty seeking, and consumer creativity. Journal of Consumer Research 7, 283–295.

Hirschman, E.C., 1984. Experience seeking: A subjectivist perspective of consumption. Journal of Business Research 12, 115–136.

Hirschman, E.C. and M.B. Holbrook, 1982. Hedonic consumption: Emerging concepts, methods and propositions. Journal of Marketing 46, 92–101.

Holbrook, M.B. and E.C. Hirschman, 1982. The experiential aspects of consumption: Consumer fantasies, feelings and fun. Journal of Consumer Research 9, 132-140.

Howard, J.A. and J.N. Sheth, 1969. The theory of buyer behavior, New York: John Wiley.

Hoyer, W.D. and N.M. Ridgway, 1984. Variety seeking as an explanation for exploratory purchase behavior: A theoretical model. In: T.C. Kinnear (ed.), Advances in Consumer Research 11, 114–119, Provo, UT: Association for Consumer Research.

Jackson, D.N., 1976. Jackson personality inventory manual. Goshen, NY: Research Psychologists Press.

Joachimsthaler, E.A. and J.L. Lastovicka, 1984. Optimal stimulation level-exploratory behavior models. Journal of Consumer Research 11, 830–835.

Kaplan, D., 1989. Model modification in covariance structure analysis: Application of the expected parameter change statistic. Multivariate Behavioral Research 24, 285–305.

Kirton, M., 1976. Adaptors and innovators: A description and measure. Journal of Applied Psychology 61, 622–629.

Kumar, N., L.W. Stern, and R.S. Achrol, 1992. Assessing reseller performance from the perspective of the supplier. Journal of Marketing Research 29, 238–253.

McAlister, L. and E. Pessemier, 1982. Variety seeking behavior: An interdisciplinary review. Journal of Consumer Research 9, 311–322.

MacDonald, A.P., 1970. Revised scale for ambiguity tolerance: Reliability and validity. Psychological Reports 26, 791–798.

Mehrabian, A., 1978. Characteristic individual reactions to preferred and unpreferred environments. Journal of Personality 46, 717–731.

Mehrabian, A. and J.A. Russell, 1974. An approach to environmental psychology. Cambridge, MA: The MIT Press.

Mittelstaedt, R.A., S.L. Grossbart, W.W. Curtis, and S.P. Devere, 1976. Optimum stimulation level and the adoption decision process. Journal of Consumer Research 3, 84–94.

Naylor, F.D., 1981. A State-trait curiosity inventory. Australian Psychologist 16, 172–183.

Netemeyer, R.G., S. Durvasula, and D.R. Lichtenstein, 1991. A cross-national assessment of the reliability and validity of the CETSCALE. Journal of Marketing Research 28, 320–327.

Olson, K.R. and C.J. Camp, 1984. Factor analysis of curiosity measures in adults. Psychological Reports 54, 491–497.

Olson, K.R., C.J. Camp and D. Fuller, 1984. Curiosity and need for cognition. Psychological Reports 54, 71–74.

Ostlund, L.E., 1974. Perceived innovation attributes as predictors of innovativeness. Journal of Consumer Research 1, 23–29.

Pearson, P.H., 1970. Relationships between global and specified measures of novelty seeking. Journal of Consulting and Clinical Psychology 43, 199–204.

Pervin, L.A., 1993. Personality: Theory and research, 6th edition, New York: John Wiley.

Pessemier, E.A. and M. Handelsman, 1984. Temporal variety in consumer behavior. Journal of Marketing Research 21, 435-444.

Price, L.L. and N.M. Ridgway, 1982. Use innovativeness, vicarious exploration and purchase exploration: Three facets of consumer varied behavior. In: B.J. Walker et al. (eds.), 1982 Educators' Conference Proceedings, 56–60, Chicago, IL: American Marketing Association.

Raju, P.S., 1977. Exploratory behavior in the consumer context. Unpublished doctoral dissertation, University of Illinois, Urbana–Champaign, IL.

Raju, P.S., 1980. Optimum stimulation level: Its relationship to personality, demographics, and exploratory behavior. Journal of Consumer Research 7, 272–282.

Raju, P.S., 1981. Theories of exploratory behavior: Review and consumer research implications. In: J.N. Sheth (ed.), Research in Marketing 4, 223–249, Greenwich, CT: JAI Press.

Rethans, A.J., J.L. Swasy and L.J. Marks, 1986. Effects of television commercial repetition, receiver knowledge, and commercial length: A test of the two-factor model. Journal of Marketing Research 23, 50-61.

Reynolds, W.M., 1982. Development of reliable and valid short forms of the Marlowe–Crowne social desirability scale. Journal of Clinical Psychology 38, 119–125.

Rogers, E.M., 1983. The diffusion of innovations. New York: Free Press.

Ruekert, R.W. and G.A. Churchill, Jr., 1984. Reliability and validity of alternative measures of channel member satisfaction. Journal of Marketing Research 21, 226–233.

Sheth, J.N., B.I. Newman, and B.L. Gross, 1991. Consumption values and market choices: Theory and application, Cincinnati, OH: South-Western Publishing.

Shimp, T.A. and S. Sharma, 1987. Consumer ethnocentrism:

Construction and validation of the CETSCALE. Journal of Marketing Research 24, 280–289.

Steenkamp, J.-B.E.M. and H. Baumgartner, 1992. The role of optimum stimulation level in exploratory consumer behavior. Journal of Consumer Research 19, 434–448.

Steenkamp, J.-B.E.M. and H. Baumgartner, 1995. Development and cross-cultural validation of a short form of CSI as a measure of optimum stimulation level. International Journal of Research in Marketing 12, 97–104.

Steenkamp, J.-B.E.M. and H.C.M. Van Trijp, 1991. The use of LISREL in validating marketing constructs. International Journal of Research in Marketing 8, 283–299.

Van Trijp, H.C.M., W.D. Hoyer, and J.J. Inman, 1994. Why switch? Variety seeking behavior as an individual x product interaction. Paper presented at the 22nd Conference of the Association for Consumer Research, Boston, MA.

Van Trijp, H.C.M. and J.-B.E.M. Steenkamp, 1992. Consumers' variety seeking tendency with respect to foods: Measurement and managerial implications. European Review of Agricultural Economics 19, 181–195.

Venkatesan, M., 1973. Cognitive consistency and novelty seeking. In: S. Ward and T.S. Robertson (eds.), Consumer Behavior: Theoretical Sources, 354–384, Englewood Cliffs, NJ: Prentice Hall.

Venkatraman, M.P. and D.J. MacInnis, 1985. The epistemic and sensory exploratory behaviors of hedonic and cognitive consumers. In: E.C. Hirschman and M.B. Holbrook (eds.), Advances in Consumer Research 12, 102–107, Provo, UT: Association for Consumer Research.

Venkatraman, M.P. and L.L. Price, 1990. Differentiating between cognitive and sensory innovativeness: Concepts, measurement, and implications. Journal of Business Research 20, 293–315.

Voss, H.-G. and H. Keller, 1983. Curiosity and exploration: Theories and results, New York: Academic Press.

Wahlers, R.G., M.G. Dunn, and M.J. Etzel, 1986. The congruence of alternative OSL measures with consumer exploratory behavior tendencies. In: R.J. Lutz (ed.), Advances in Consumer Research 13, 398–402, Provo, UT: Association for Consumer Research.

Westbrook, R.A. and W.C. Black, 1985. A motivation-based shopper typology. Journal of Retailing 61, 78–103.

White, R.W., 1959. Motivation reconsidered: The concept of competence. Psychological Review 66, 297–333.

Williams, E.J., 1959. The comparison of regression variables. Journal of the Royal Statistical Society 21 (Series B), 396–399.

Wright, P.L., 1973. The cognitive processes mediating acceptance of advertising. Journal of Marketing Research 10, 53-67.

Zuckerman, M., 1979. Sensation seeking: Beyond the optimal level of arousal, Hillsdale, NJ: Lawrence Erlbaum.

Zuckerman, M., 1994. Behavioral expressions and biosocial bases of sensation seeking. Cambridge, England: Cambridge University Press.