*DLSU Business & Economics Review 28(1)2018, pp. 67-85*

RESEARCH ARTICLE

# Investigating Consumer Optimum Stimulation Level and Exploratory Online Buying Behavior

**Claro G. Gañac**
De La Salle University, Manila, Philippines
claro-ganac@dlsu.edu.com

**Abstract:** Technology and the Internet have changed every facet of human life on the planet. It has spawned online marketplaces where consumers anywhere around the world can shop 24/7 throughout the year.

This empirical study aimed to explain the meteoric rise of Internet shopping not just because of the leaps-and-bounds advances in technology but also by intrinsic predisposition of consumers to engage in exploratory buying and consumption. The Internet has brought about a shopping environment with high inherent avenues for exploratory behavior.

It is the proposition of this study that online shopping has encouraged exploratory information acquisition, heightened evaluation involvement, and impulsive buying to enhance the optimum stimulation level (OSL) level of consumers. It utilized the generic purchase decision model as a framework to measure Internet-domain exploratory shopping behavior.

Descriptive research using online survey was conducted among 388 netizens to explore the proposed relationship. Principal component analysis on the OSL and exploratory buying behavior constructs confirmed the internal consistency of the empirical measurements. The study found that OSL traits of variety seeking, sensation seeking, and innovativeness have significant statistical correlation with actual exploratory consumer behavior. Variety-seeking OSL exhibited the highest correlation coefficient exceeding 0.50 with exploratory information acquisition and purchase behavior.

Sensation-seeking showed the weakest linkage with exploratory buying behavior across the spectrum of information acquisition to purchase behavior, while consumer innovativeness exhibited the highest correlation with impulsive buying behavior. Income did not exert a significant direct or moderating effect on OSL traits regarding exploratory consumer behavior.

***Keywords:*** Optimum stimulation level, exploratory consumer behavior, online shopping, purchase decision model, variety-seeking, consumer innovativeness

***JEL Classification:*** M31

## Optimum Stimulation Level and Exploratory Online Buying Behavior: An Empirical Investigation

Because of rapid and sustained advances in technology and the Internet, the field of marketing has changed dramatically. Consumers anywhere around the world, including the Philippines, shop online 24 hours a day, seven days a week, 365 days a year. Online marketplaces have become the globe's largest distribution channel.

With ownership and usage of laptops, tablets, and smartphones permeating all segments of the population, the Internet has become one huge market. The commerce of products and services, previously limited to malls and retail establishments, has inexorably spread online at a sustained breathtaking pace.

Because the Internet has made myriad consumer and industrial goods and services accessible online, this study posits that the convenience and the instant anytime, anywhere opportunity to shop for products and make purchases has made possible variety-seeking and impulsive shopping and buying which reflects OSL behavior of the consumers.

There has been a long period of discontinuity in the research stream on exploratory consumer behavior. Pioneers of the exploratory behavior concept (Raju, 1980) noted that the number of empirical research that relate OSL to consumer behaviors has been few and far between. With affluence at an all-time high, fueling the proliferation of new and exciting products and product categories, today's marketplace is fertile ground for studying online-domain exploratory shopping and consumption behavior utilizing OSL drives.

This study sought to respond to the dearth of empirical studies in the Philippines relating consumer shopping behavior and decision making, on the one hand, and personality and motivational constructs on the other. With the Internet shopping having come of age, this study aims to fill the wide chasm in our understanding of consumer motivations and behavior with specific focus on online buying.

## Theoretical Foundations

### *Optimum Stimulation Level*

The OSL concept provides a theoretical basis for understanding the consumer psychology of shopping and buying. Most studies in the marketing and consumer behavior literature have dwelled on the concept of attitude (e.g., Fishbein model), which analyzed purchase decision making as a function of learned beliefs and cognitive evaluations.

The OSL is an extension of marketing theory that seeks to understand consumer behavior as driven by personality traits. Certain consumers have been observed to seek highly unusual consumption, prefer individualistic lifestyles, and exhibit more intense shopping and buying behaviors. They want uniqueness, greater variety, individuality and more excitement, and want a continuous stream of highly stimulating consumption experiences.

The OSL concept is a personality theory introduced in the psychology literature which propounds that every individual has a need for and prefers a minimum level of stimulation (Zuckerman, 1994; McReynolds, 1971). Those who experience a level of stimulation that falls below optimum level will seek additional variety and novelty and "sensate" new and varied experiences to fill the need for incremental stimulation.

Previous empirical studies indicated that consumers' OSL is systematically related to curiosity-motivated consumer behaviors, variety seeking, and risk taking (Steenkamp & Baumgartner, 1992).

Variety seeking behavior has been associated with obtaining stimulation in the purchase and acquisition of products in previous research. High OSL consumers do not want simplification in their decision process; they engage in greater exploration to escape from the "suboptimal level of stimulation." Consequently, they complicate the buying process with variety-seeking behavior (Howard & Sheth, 1969) and the trial of different products and brands (McAlister & Pessemier, 1982).

OSL consumers likewise seek increased levels of exciting, novel, and sometimes unusual sensory experiences from the environment. Most scholars have accepted this definition as equivalent to the OSL concept, and Mehrabian and Russel (1974) formulated psychometric instrument termed arousal-seeking tendency (AST) construct to measure this OSL trait. Steenkamp and Baumgartner (1996) proposed the use of the AST instrument. For this study, this behavior is termed as sensation seeking OSL.

In another vein, technology adoption and innovations were likewise believed to be driven by the need for

OSL. Zuckerman (1979) defined innovativeness as the relative degree to which an individual adopts new technology and innovations ahead of other consumers. Midgley and Dowling (1978) and Foxall (1994) argued that innovative behavior is a trait that is intrinsic in individuals. It can be measured in behavior related to purchase and consumption of novel products and the tendency to take risks and explore new solutions to consumption problems.

## Exploratory Consumer Behavior

Exploratory behavior has been defined as "behavior with the sole function of changing the stimulus field" (Berlyne, 1966, p. 98); curiosity and exploration are considered intrinsically pleasurable and rewarding. Psychologists and consumer behavior researchers have studied exploratory tendencies extensively, and the general finding has been that OSL is systematically associated with consumer behaviors with strong exploratory tendencies.

Exploratory consumer behavior is a concept that is closely woven into consumer buying and consumption of goods and services with traits and tendencies associated with OSL. Raju (1980) noted that OSL-related traits involve "attempts to modify stimulation from the environment and can be termed 'exploratory behavior'" (p. 259).

In marketing literature, high OSL consumers have been observed to engage in exploratory practices to seek variety, novelty, and sensation to fill their need for stimulated arousal in purchasing (Steenkamp & Baumgartner, 1992). OSL has been linked to greater willingness to take risks, try new products, seek product and brand-related information, and shop in new retail facilities (Shiffman & Kanuk, 2007).

Scholars and researchers have made exploratory behavior synonymous to OSL-linked traits such as risk taking, innovativeness, curiosity, variety seeking, browsing, and evaluation of arousing stimuli such as fear-appeal ads (Baumgartner & Steenkamp, 1996; Celsi, Rose, & Leigh, 1993; Holbrook & Hirschman, 1982; McAlister & Pessemier, 1982; Mittelstaedt, Grossbart, Curtis, & Devere, 1976; Raju, 1980, 1984; Steenkamp & Baumgartner, 1992; Steenkamp, Baumgartner, & Van der Wulp, 1996; Venkatraman & Price, 1990; Zuckerman, 1979, 1994).

### *Consumer Purchase Decision Models*

Marketing theorists have formulated the idea that consumers undergo a sequence of actions that lead to the solution of consumer needs and wants (Peter & Olson, 2010). Shiffman and Kanuk (2007) also cited that the classical decision-making model provides a basis for elaborating the activities consumers go through, to simulate the cognitive processes involved in purchase decisions.

Engel, Kollat and Blackwell (1968) pioneered in developing the basic model which later on evolved into the famous EKB model. The basic short-form of the model elaborated on the continuum of five steps consisting of Need Recognition, the Information Search, Evaluate Alternatives, Purchase, and Post-Purchase (Figure 1). The pre-purchase stages consisted of (a) problem recognition; consumers' cognitive need to (b) search and collect product-related information (Shiffman and Kanuk, 2007), and to (c) evaluate alternatives to enable them to make the proper decision and gain satisfaction of the consumption problem (Shiffman and Kanuk, 2007).

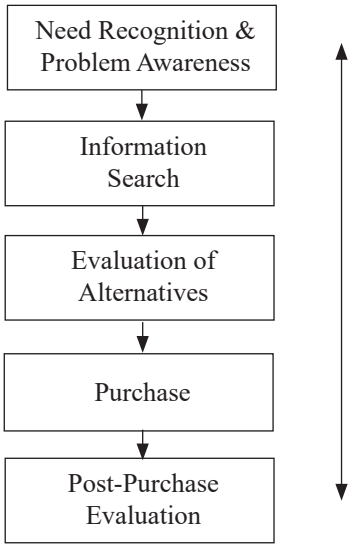



**Figure 1.** Generic (five-step) consumer purchase decision process.

Extending the model in an e-commerce setting, Chen (2009) took note that easy access to the Internet has enabled consumers to be open to the marketing mix of sellers and products. Various researchers have documented increasing use by Americans of the Internet in seeking product or

service-related information (Hampton et al., 2011; Jensen, 2010).

The integration of the buying decision process with exploratory consumer behavior has been an important theoretical development in the research track to put buying behavior within the context of OSL. Steenkamp and Baumgartner (1996) suggested a two-factor framework for exploratory behavior—exploratory information search for product information and exploratory purchase—to study the impact of OSL personal values in the decision-making process.

Under their exploratory buying behavior tendency (EBBT) framework, exploratory information search included the acquisition of information about products, product features and brand varieties, and cognitive evaluation of advertisements. On the other hand, exploratory purchase involves decision-making under risk—attendant behaviors that are related to OSL. In causal experiments, they concluded that exploratory behavior is linked to a person's characteristic need for stimulation, demonstrating that OSL is the major determinant of exploratory shopping behavior.

Motivated by the desire to increase their level of stimulation to optimal levels, high EBBT consumers, on average, were more likely to display curiosity and pursue diversity in the products they consume (Baumgartner & Steenkamp, 1996).

The study corroborated with earlier studies that found that the higher a person's characteristic need for stimulation, the greater was the extent to which the consumer engaged in exploratory behavior (Raju, 1981; Raju & Venkatesan,1980). The last study found that exploratory consumer behavior and OSL are related to responses to shopping stimulus characteristics of (1) novelty and complexity, (2) information-search behavior of consumers, and (3) acceptance of advertising and information stimulus. Hence, the general conclusion is that individuals with higher thresholds of OSL engage in more exploratory buying behavior.

## Conceptual Framework and Hypotheses

While the literature has strongly shown the link between OSL traits and exploratory consumer behavior, the studies have been limited to traditional retail channels. This study sees online markets as another avenue for the stimulation-seeking behavior of consumers.

In an online environment, the stimuli—the product itself and the wide selection of choices that should be in aesthetically attractive stores—is physically not present. Nevertheless, I believe that the shopping experience and the gratifications derived therefrom are "duplicated" in the virtual world through laptops, personal computers, and smartphones. The broad variety of choices, enhanced by high-definition screens, and instantaneous access to product

**Table 1.** *Framework on Online Domain Exploratory Consumer Behavior*

| Traditional Consumer Purchase Decision Model | Exploratory Consumer Behavior Effect From Online Shopping |
|---|---|
| Information Search | • Increased liking for instant information access<br>• Greater amount of product-related information (features, specifications)<br>• More visual and appealing product information (without the physical product)<br>• Knowledge about comparative prices from different stores and brands<br>• Access to information about present sales promotions and bargain products<br>• Viewing of more product advertisements and blogs from third-party reviewers<br>• Instant access to wider selection of online "stores" |
| Evaluation of Alternatives | • Broader choices because of availability of vendor websites and online retail store sites<br>• High-involvement in product information assessment<br>• High-involvement in product and brand evaluation (giving rise to brand switching) |
| Purchase | • Impulse buying (without evaluation)<br>• Multiple ownership of various brands within the same product domain<br>• Buying of bargain products<br>• Sharing (or Word-of-Mouth) of product performance to other shoppers |

information provide the equivalent sensory stimulation of brick-and-mortar stores.

The Internet provides additional distinct advantages, such as the accessibility of large amounts of information, lower search costs, and open access to knowledge about competing products (Daniel & Klimis, 1999). It provides information in terms of details (information depth) and the number of sources (information breadth) that produces stimuli-producing opportunities for exploratory behavior.

High stimulation-arousal behavior in online shopping manifests itself in more intense information search (product information and searching for broader choices of brands and substitutes) and high-involvement evaluation of alternatives (see Table 1). Online shops enable consumers to engage in more cost-effective product and vendor search, reduce canvassing costs, and expedite choice decisions. Internet buying also results in faster execution of purchases and contributes to exploratory purchase (e.g., impulse buying).

Therefore, this paper departs from the Baumgartner and Steenkamp two-factor model and recommends a three-factor model of online exploratory buying behavior, consisting of exploratory information search, evaluation, and purchase. The study has defined 16 indicators of exploratory online shopping behavior within this proposed three-factor Internet domain buying process.

The integration of the basic consumer decision-making model with distinct characteristics of Internet markets represents a forward step in the study of exploratory behavior concept as a new track for understanding online consumer buying behavior.

## Conceptual Framework

OSL is unlike attitudinal constructs of human motivation. The human trait or tendency toward experiencing high levels of stimulation, whether in everyday involvement with the environment or human interactions, reside intrinsically in individuals and provide the drives for exploratory purchase behaviors.

Enhanced, instantaneous access, and convenience afforded by online markets provide opportunities for exploratory consumption behavior. I posit that exploratory online buying is driven by innate OSL personality traits. Figure 2 illustrates the proposed conceptual framework of the study. The object of this paper is to test the validity of such framework among online shoppers in the Philippines—a vastly growing segment of consumers.

In this framework, I posit that exploratory buying behavior on the Internet is associated with OSL tendencies of variety-seeking (sometimes also referred as novelty-seeking), sensation-seeking, and innovativeness.

The model also includes the possible moderating influence of income in the OSL tendencies and on actual online buying behaviors. Income is seen as having a negative influence on stimuli-driven tendencies of

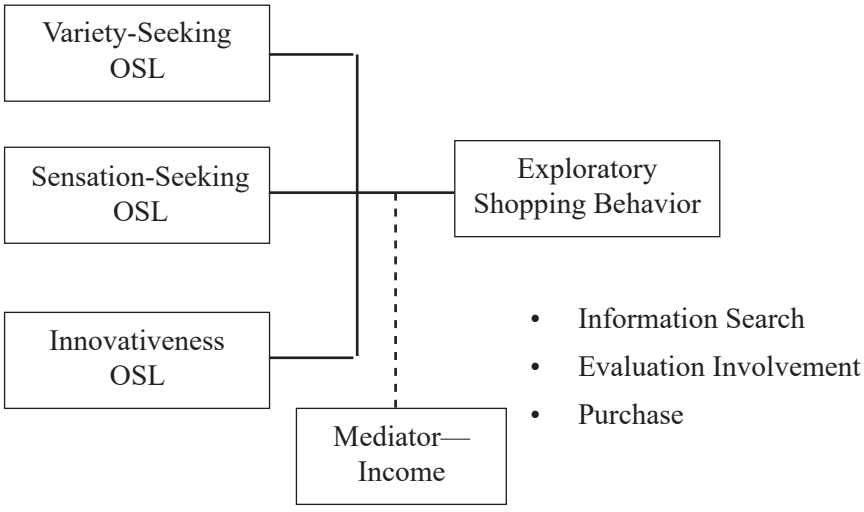



***Figure 2.*** Conceptual framework on online exploratory consumer shopping behavior.

consumers because it sets limits on the influence of OSL activities (e.g., spending cap on Internet data usage for hedonic information search) and on the levels of exploratory behaviors. A moderator variable like income reduces the statistical correlation between the two main constructs under study.

Raju and Vekatesen (1980) lamented the neglect that arose from the lack of a coherent theoretical framework that links observable consumer behaviors with psychological drives and motivations. This paper, therefore, fills the research gap to link OSL of consumers to decision-making processes, which this time again sees relevance—more than 30 years after—in the rapidly expanding online markets.

***Hypotheses***

The study aimed to test the hypothesis that higher intensity of online-domain exploratory behavior (three-factor model) is associated with OSL traits, that is, variety-seeking, sensation-seeking, and innovativeness OSL. Hence, the following operational null hypotheses are proposed for empirical validation:

H01: Variety-seeking OSL trait is not associated with exploratory information acquisition, evaluation involvement, and purchase.
H02: Sensation-seeking OSL trait is not associated with exploratory information acquisition evaluation involvement and purchase.
H03: Innovativeness OSL trait is not associated with exploratory information acquisition evaluation involvement and purchase.

Secondarily, the study aimed to determine if income has a moderating effect on the associations between OSL and exploratory buying behavior. Intuitively, income is believed to affect buying, as well as moderate stimulation-producing tendencies of consumers during the pre-purchase stages.

## Methodology and Construct Definitions

The study utilized descriptive research method using non-probability online sampling method. A total of 388 respondents (exceeding the target sample size with parameters of 5% margin of error and 95% confidence level) were surveyed using a structured self-administered questionnaire instrument. Distribution of the Google Form online survey instrument was accomplished through social media and email, utilizing purposive distribution to college students (18 years old and above) and working professionals and employees (21 up to 50 years old) within Metro Manila.

The study's operational framework was the basis of the instrument and scale system design to elicit and measure consumers' tendencies to engage in exploratory buying behavior and OSL tendencies. The instrument for OSL was formulated from various operational definitions of OSL traits in the literature. The three personality traits were hypothesized as manifestations of OSL related behaviors; the instrument formulation resulted in 13 measurement items using 5-point Likert-scaled statements.

For the Sensation-Seeking Trait (SST), the arousal seeking tendency instrument developed by Mehrabian and Russel (1974) was used as starting point. In the 13-item OSL construct, three AST item statements were utilized. Two additional statements were framed to round up the SST measure to five variables. For Innovativeness, the study made use of the domain specific innovativeness (DSI) construct (Goldsmith & Hofacker, 1991) which defined it as the tendency to adopt a new product (with novel, different features, and attractions). Only two statements from the six-item test measurement were adopted.

On the other hand, the study measured the Variety-Seeking trait as a composite of the change-seeking tendency (CST) of Garlington and Shimota (1964) who defined it as the need for variation in a person's stimuli to "maintain normal functioning" and four indicators of the need for new and complex stimuli which I independently developed.

> The instrumentation related to the concept of Exploratory Consumer Buying were formulated to measure three constructs in the generic decision-making process: exploratory information acquisition, evaluation of alternatives, and buying. Behavioral indicators of "exploration" were based on the operational definition of the three constructs discussed in Table 1 (Framework on Online Domain Exploratory Consumer Behavior) presented in the previous section. A total of 16 variables were formulated independently to measure the three Internet-domain specific exploratory

buying behaviors. The questions were in the form of Likert-scaled statements on a 5-point scale.

The study utilized Pearson's correlation to determine the statistical significance of and the strength of associations between OSL behaviors and exploratory shopping behaviors. The three OSL traits and the three exploratory behavior dimensions of Internet shopping were measured as a weighted composite mean of each sample respondent's score on these scales. The aggregate scores were used as the appropriate variables in the bivariate correlation analysis; all tests of hypotheses for the correlation were conducted at the 0.05 significance level.

In testing the moderating effect of income, multiple regression analysis was conducted on the pair of OSL construct and income as independent variables with each of the three separate exploratory buying behavior as dependent variables. In the regression model, the relationship between the independent variables (OSL) and the dependent variable (exploratory behavior) will detect the indirect effects due to the influence of the moderating variable.

## Results and Discussion

The survey generated a total sample of 388 respondents who are considered Internet citizens (popularly called "netizens") aged 18–50 years old from various income classes. Out of the total, 348 (90% of the total sample) have reported having engaged in shopping and buying in online markets; the statistical analysis covered the dataset from this segment of confirmed Internet shoppers.

The empirical statistical analysis consisted of two stages. First, it sought to evaluate the measurement scales for both the exploratory consumer buying behavior construct and the three OSL constructs elaborated in the study's model. Secondly, it undertook the statistical hypotheses test of relationships between the two concepts of OSL and exploratory consumer buying behavior using Pearson's correlation.

### *Exploratory Buying Behavior and OSL Measurement Scales*

To the best of my knowledge, this empirical investigation of online consumer buying from the perspective of OSL and exploratory behavior is a pioneering effort. In view thereof, the study sought to assess the external validity of the three consumer buying dimensions through factor analysis. A principal component analysis of the 16-variable construct over the 348 sample respondents who affirmed that they have shopped on the Internet was conducted.

The initial component extraction procedure showed strong communalities (Table 2. Appendix A). This indicates a coherent empirical structure of the identified variables in the 16-item instrument. The variable with the weakest factor variance is Evaluation Heuristics which may indicate less than robust definition of this variable. Nevertheless, all the other variables exhibited robust variance contributions, particularly those associated with the Information Acquisition construct. Confirming the strong instrumentation reliability is the Cronbach's alpha for the 16-variable empirical data that has been computed at 0.824, well within acceptable levels of internal reliability.

The initial un-rotated PCA extracted three underlying components (Table 3. Appendix A) with a minimum eigenvalue of 1.00. The three "latent" factors, which accounted for 57.73 of the explained variance in the total data field structure, initially appeared to conform to the three-factor consumer buying framework predicted by the study's exploratory behavior model. The scree plot (Appendix 4) that depicted the variance explanation from the fourth component onwards flattened out with minimal incremental contribution in eigenvalues of the succeeding factors.

On closer inspection, the factor loadings using the un-rotated component structure (Table 4. Appendix A) revealed unclear delineations and multiple loadings of certain variables across the three factors. Hence, the study utilized Promax oblique rotation procedure as opposed to the orthogonal rotation (90 deg. independence between factors) because the factors being considered in the study are assumed to be correlated.

The goal of rotation is to attain an optimal and simpler construct structure by separating each variable load on fewer factors while maximizing the variable loadings on the key factors where each contributes the greatest correlations. With the Promax rotation, the clustering of variables in the three initial extracted factors became clearer.

In Table 4 (Table 5. Appendix A. Promax Rotated Structure Matrix), the unique factor loadings for Factor 1 and Factor 2 have been enhanced to enable a better interpretation of the nature of both factors. It is noticeable that Factor 1 appears to be a combination of Information Acquisition and Evaluation Involvement because most of the measurement items had high factor loadings therein. The finding is contrary to this study's proposed three-factor decision-making process model that separated the two dimensions. Factor 2, on the other hand, unequivocally showed variable clustering on the dimension of Exploratory Purchase. This finding appears to lend support to the conceptualization of Baumgartner and Steenkamp (1996) that postulated the two-factor EBBT model dichotomizing exploratory behavior into information search and purchase.

The dimension of exploratory product evaluation needs to be formulated with more study and be further refined through confirmatory factor analysis psychometric methods. Evaluation processes in consumer problem-solving comprise of varied and often conflicting heuristics involving choice and decision-making. However, scale development and testing are not the main purpose of this empirical research, and hence, further statistical analysis stops short after reporting the results and interpretation herein.

The factor analysis has uncovered a third factor apart from exploratory information and purchase behavior. Factor 3 reveals a combination of the effects of advertising exposure and brand preference, coupled with knowledge and the effects of product prices and bargains. I have termed this factor as Brand Knowledge/Influence. The higher loading of the exposure to advertisements variable on Factor 3 (brand knowledge) at 0.776 instead of Factor 1 (Information dimension) at 0.322 reveals a possible interplay between brand knowledge and the effects of brand-building stimuli, notably advertisements and price promotions.

It must be pointed out that exposure to advertisements in online media is not driven by the advertiser. The consumer's volitional control in online media is more pronounced than in traditional media. It is rather audience-initiated, that is, individual online consumers seek out and watch advertisements about brands on their own volition, which is pre-determined by their knowledge and preference.

The findings from Promax Rotation of the PCA (Table 6. Appendix A) provide instructive insights into exploratory behaviors. There is a weak correlation (0.121) between the Exploratory Information and Evaluation Factor (Factor 1) with Exploratory Purchase (Factor 2). Intuitively, by definition, stimuli-enhancing purchase (e.g., impulse buying) is arrived at by consumers, in fact, even in the absence of information and cognitive processes associated with product/brand evaluation. On the other hand, Brand Knowledge (Factor 3) has a stronger correlation with Factor 1 (Exploratory Information Acquisition and Evaluation). This may be explained by the fact that brand knowledge often involves information processing and evaluation of choices.

Lastly, it is observed that Exploratory Purchase (F2) has the strongest association (0.305) with Brand Knowledge and Preference (F3). This finding may suggest that exploratory purchase (impulsive buying and multiple purchases) is determined more by knowledge of brands previously stored in memory, particularly if these are offered at lower prices.

In regard to the OSL concept, I conducted another set of factor analysis to assess the instrument used to measure specific OSL traits. Using the principal component method, the OSL factor analysis extracted three factors. The factor communalities of the 13 variables showed robust values, with the communality coefficients ranging from the low of 0.401 to the high of 0.783 (Table 6. Appendix A).

This indicates strong inter-correlations between them and acceptable internal reliability of the instrument scales. The whole OSL dataset had a Cronbach's alpha of 0.751, which is above the minimum acceptable level of 0.70. On the whole, the 13-variable set exhibited acceptable psychometric properties, which makes the summed score indices suitable for further statistical treatment.

In accordance with the Kaiser criterion, the minimum threshold for eigenvalues is set at unity (1), which resulted in three extracted factors. The extracted principal components accounted for 63.724% of the total explained variables (Table 7. Appendix A). The scree plot (Appendix B) likewise showed that from the fourth component, the line becomes asymptotically flatter. The 13 variables showed fairly strong fit with the three extracted factors, which upon inspection and closer analysis corresponded to the three OSL

constructs of variety-seeking, sensation-seeking, and consumer innovativeness.

Given the sufficiency of the initial PCA solution showing congruence between the postulated OSL dimensions and the extracted components, no further rotation procedures were deemed warranted for factor interpretation.

Factor 1 corresponded to the Variety-Seeking trait and accounted for the highest explained variance at 43.426% and implies that this dimension of OSL is the predominant personality motive of consumers. Factor 2 represented Sensation-Seeking tendency and explained 11.695% of the overall variance (Table 8. Appendix A). Lastly, Innovativeness (8.603%, the lowest eigenvalue) emerged as Factor 3, basically consisting of the last two variables in the OSL variable matrix.

The eigenvalue contributions provide indications of the incidence of specific OSL traits among Internet consumers in the Philippines. Assuming inferential power of the data set, consumers who possess variety and novelty seeking (Factor 1) tendencies represent the most numerous segment at over 40% share, while sensation-seeking consumers account for close to 12% of the population. Innovative consumers registered the least number (less than 10%) among consumers.

***Hypotheses Testing: OSL and Exploratory Behavior***

Correlation analyses yielded positive and statistically significant associations between exploratory Information Acquisition, Involvement in Evaluation, Exploratory Purchase, and the three respective OSL personality traits (see Table 2 below). The two-tailed *p* values testing the significance of the correlation coefficients of the pair-wise Pearson's correlation runs were established to be significant at less than 0.01 significance level.

Therefore, all the null hypotheses put forward above are rejected, and it is concluded that traits that reflect OSL represented by variety seeking, sensation seeking, and innovativeness are linked with and appear to influence on exploratory online consumer buying behavior.

Specifically, variety-seeking trait had the highest level of correlation coefficient among the three OSL traits with information acquisition (0.565). It also had a slightly lower moderate association with evaluation involvement at 0.491. The correlation with purchase was weakest at 0.309; in a manner of speaking, it shows that other extraneous factors are at work that explain the variation in an exploratory purchase. The results also show that high-variety seeking consumers are more involved in exploratory behaviors prior to the purchase.

Sensation-seeking OSL exhibited the weakest empirical linkage with all exploratory behaviors ranging from Information Acquisition (0.264), Evaluation (0.290), to Purchase (2.90). The Sensation-Seeking dimension reflects the need for more experiential and physically engrossing stimulation (e.g., horse-back riding or travel) based on sensory activities that give pleasure and excitement. Hence, it is understandably acceptable that it has a lower association with buying behavior, in comparison to the more consumer-oriented variety-seeking OSL.

On the other hand, innovativeness OSL was moderately associated with purchase (0.554), a finding that is intuitively acceptable. It had weak associations with information acquisition (0.256), while its relationship with evaluation was even weaker (0.210)—the lowest in the entire matrix structure. The differential correlation results may be interpreted in that innovativeness is the OSL that has higher "involvement" in exploratory buying. This dimension, conversely, had weak correlation on the pre-purchase dimensions; innovativeness appears to be an intrinsic characteristic of individual consumers that is not dependent on just mere search activities.

The study also undertook to evaluate the mediating effect of income on the OSL personality dimensions in relation to exploratory shopping behaviors. The study was to have used the mediational analysis introduced by Baron and Kenny (1986) who examined the effect of mediating variable using multiple regression.

Although there is no postulated causation between OSL and exploratory behavior, nine multiple regression analysis models were run with the three individual OSL traits and monthly income as independent variables (IV) and the three dimensions of exploratory buying behavior as dependent variables (DV). However, this was deemed not necessary as the correlations of monthly income with all three IVs and three DVs were insignificant. In other words, income does not have any direct or joint influence with the OSL traits and the exploratory behaviors.

**Table 2.** *Summary of OSL and Exploratory Behavior Pearson's Correlation Analysis*

| | N = 348 | Information | Evaluation | Purchase |
|---|---|---|---|---|
| **Variety** | Pearson Correlation | .565** | .491** | .309** |
| | Sig. (2-tailed) | .000 | .000 | .000 |
| | N | 348 | 348 | 348 |
| **Sensation** | Pearson Correlation | .264** | .290** | .290** |
| | Sig. (2-tailed) | .000 | .000 | .000 |
| | N | 348 | 348 | 348 |
| **Innovativeness** | Pearson Correlation | .256** | .210** | .554** |
| | Sig. (2-tailed) | .000 | .000 | .000 |
| | N | 348 | 348 | 348 |

***. Correlation is significant at the 0.01 level (2-tailed).*

Marketers and business entrepreneurs can take advantage of the findings of the study. Firstly, it revealed that a significant number of online consumers are motivated by OSL motivations, particularly the Variety-Seeking OSL and Innovativeness OSL. OSL-driven consumers crave for new and different stimuli-producing shopping experiences which can be met through more creative product and marketing communications strategies. Specifically, the study showed that Variety-Seeking consumers undertook greater involvement in pre-purchase exploratory behavior while Innovativeness consumers had greater involvement in exploratory and impulsive purchase.

These represent opportunities for marketers to create more exhilarating product features and to offer a wider selection of variants for each product line. This trend is already evident in fashion apparel and footwear and electronic gadgets, but the same strategy can also work for other categories such as consumer appliance durables, personal care products, home furnishings, and even tours and travel.

Furthermore, the findings suggest that marketing communications should be designed and packaged to become more fun and enthusing experiences. OSL consumers want deeper and more challenging engagements. Hence, advertisers need to find even more challenging ways to communicate information about new products and variants on the Internet and complementary activities (such as events, promotions, contests, etc.) outside of the Internet to create stimulating activities that capture the imagination of consumers.

## Conclusion

The generic sequential decision-making process model has remained a classic framework for the study of both online and in-store buying environments. This study lends empirical verification that it remains a relevant and structurally consistent framework for elaborating consumer buying behaviors.

The contribution of this paper to consumer behavior literature has been the integration of the decision-making process with exploratory buying behavior, thereby creating a theoretical framework for OSL driven online buying. The connection between OSL motivation factors in exploratory buying behavior has been well-established in past empirical studies that were conducted in the US and other Western countries, but have been limited to traditional brick-and-mortar retail stores. The significant findings of statistical association affirm that exploratory buying behavior is likewise applicable in online markets.

It must be acknowledged that the correlations arrived at in the study are on the whole mostly moderate to weak. However, considering that personality factors have been known in the literature (Ajzen, 1987) to have a poor fit with specific individual behaviors, then the modest levels of associations determined in the study lend wisdom to explaining consumer behaviors in terms of OSL traits. If at all, the findings highlight the need to identify other extrinsic factors that can be included in a broader model of online consumer buying behavior. This is without sacrificing parsimony and injecting inordinate complexity in the model.

There has been a long period of discontinuity in the research track on OSL and exploratory behavior since its peak in the 1990s. As this study has cogently demonstrated, the linkage between the two concepts remains relevant and provides an integrated framework to gain better and more comprehensive understanding of online shopping behavior.

The initial work in this paper in developing measurements to operationalize exploratory consumer buying behavior can facilitate further investigations on this research track. I hope that the significant finding will fuel further scholarly interest, particularly in the development of broader and more powerful measurement scale of the online exploratory consumer buying construct.

Future areas of research include using the exploratory buying behavior framework in the study of brand loyalty and switching, as well as the inclusion of extrinsic factors such as multiple screen exposure, brand loyalty, word-of-mouth (in certain product and service categories), and the impact of digital influencers, for example, bloggers, in the spectrum of purchase behaviors.

## References


Ajzen, I. (1987). Attitudes, traits and actions: Dispositional prediction of behavior in personality and social psychology. *Advances in Experimental Social Psychology, 20*, 1-63.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173–1182.

Baumgartner, Hans and Steenkamp, Jan-Benedict, "Exploratory Consumer Buying Behavior: Conceptualization and Measurement", April 1996, International Journal of Research in Marketing 13(2):121-137

Berlyne, D. E. (1966). Curiosity and exploration. Science: Volume 153, Issue 3731, 25-33.

Celsi, Richard L, Rose, Randall L. and Leigh, Thomas W. "An Exploration of High-Risk Leisure Consumption Through Skydiving", Journal of Consumer Research, Volume 20, Issue 1, 1993, pages 1-23.

Chen, L. (2009). Online consumer behavior: An empirical study based on theory of planned behavior (Unpublished Doctoral Dissertation). University of Nebraska – Lincoln.Daniel, Elizabeth and Klimis, George M., "The impact of electronic commerce on market structure: An evaluation of the electronic market hypothesis", European Management Journal, 1999, vol. 17, issue 3, 318-325

Engel, James F., Kollat, David T. and Blackwell, Roger D. (1968) Consumer Behaviour, Holt, Rinehart and Winston, Inc.

Foxall, G. R. (1994). Consumer initiators: Adaptors and innovators. *British Journal of Management, 5*, S3–S12.

Garlington, W., & Shimota, H. (1964). The change seeker index: A measure of the need for variable stimulus input. *Psychological Reports, 14*, 919-924.

Goldsmith, Ronald E. and Hofacker, Charles, "Measuring Consumer Innovativeness", June 1991,Journal of the Academy of Marketing Science 19(3):209-221

Hampton, K., Goulet, L. Rainie, L and Purcell, K. (2011). Social Networking Sites and Our Lives. Pew Internet & American Life Research Center

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

Howard, J. A., & Sheth, J. N. (1969). *The theory of buyer behavior*. New York, Wiley.

Jensen R, "Information and communication technologies, markets, and economic development", The Global Information Technology Report. Conference Paper, New York: Oxford University Press (2010)

McAlister, Leigh and Pessemier, Edgar, "Variety Seeking Behavior: An Interdisciplinary Review", Journal of Consumer Research, Volume 9, Issue 3, 1 December 1982, Pages 311–322

McReynolds, P. (1971). The nature and assessment of intrinsic motivation. Advances in psychological assessment. (P. McReynolds, Ed.) Palo Alto, CA: Science and Behavior Books

Mehrabian, A., & Russel, J. (1974). *An approach to environmental psychology*. Cambridge: MIT Press.

Midgley, D. F., & Dowling, G. (1978). Innovativeness: The concept and its measurement. *Journal of Consumer Research, 4*, 229-242.

Mittelstaedt, R. A., Grossbart, S. L., Curtis, W. W. and DeVere, S. P., "Optimal Stimulation Level and the Adoption Decision Process", *Journal of Consumer Research*, Volume 3, Issue 2, 1 September 1976, Pages 84–94

Peter, J. P. and Olson, J. C., (2010) Consumer Behavior and Marketing Strategy: 9th Edition, Irwin McGraw-Hill

Raju, P. S. (1980). Optimal stimulation level: Its relationships to personality, demographics and exploratory behavior. *Journal of Consumer Research, 7*(3) 272–282.

Raju, P.S. and Venkatesan M. (1980), "Exploratory behavior in the consumer context: a state of the art review", Advances in Consumer Research: Vol. 7, eds. Olson, Jerry C., Ann Arbor, MI, Pages 258-263.

Raju, P. S. (1981). Theories of exploratory behavior: Review and consumer research implications. *Research in Marketing, 4*, 223–249.

Raju, P. S. (1984). Exploratory brand switching: An empirical examination of its determinants. *Journal of Economic Psychology, 5*, 201–221.

Shiffman, L. G., and Kanuk, L. L. (2007). *Consumer behavior* (9th ed.). New Jersey: Pearson Prentice Hall.

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

Steenkamp, J. B. E. M., Baumgartner, H., & Van Der Wulp, E. (1996). The relationships among arousal potential, arousal and stimulus evaluation, and the moderating role of need for stimulation. *International Journal of Research in Marketing*, *13*(4), 319-329.

Venkatraman, Meera and Price, Linda L., "Differentiating between cognitive and sensory innovativeness: Concepts, measurement, and implications", June 1990, Journal of Business Research 20(4):293-315

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

Zuckerman, Marvin (1994). Behavioral expressions and biosocial bases of sensation seeking. New York, NY, US: Cambridge University Press.

## Appendix A.

**Table 1.** *Descriptive Statistics of Exploratory Consumer Buying Behavior Variables*

| Exploratory Consumer Buying Behavior (N = 348) | Mean | Std. Deviation |
|---|---|---|
| I like to have important information before I buy. | 4.38 | .917 |
| I always compare prices before making a decision. | 4.34 | .987 |
| I get excited looking for online products that are bargains or have promotional discounts | 3.97 | 1.032 |
| I carefully read the specifications and features of products that are sold online | 4.31 | .982 |
| I already have a brand in mind when I need to buy a product. | 3.86 | 1.018 |
| I enjoy watching or reading online advertisements and special offers in the internet. | 3.18 | 1.174 |
| I usually look for a variety of different choices of brands and alternatives before I make the final decision to purchase. | 4.08 | .943 |
| I visit different online stores and websites so that I can be assured I am getting the best value. | 4.02 | 1.030 |
| When I have gathered enough information about the alternatives, I spend time to carefully study and compare all choices. | 4.11 | .997 |
| I prefer making a quick decision rather than go through the detailed evaluation process. | 2.74 | 1.195 |
| I often end up buying a product that I do not need. | 2.61 | 1.115 |
| I own different brands of the same product (such as smart phones). | 2.84 | 1.287 |
| Shopping is like an adventure for me. | 3.53 | 1.220 |
| I find bargain products irresistible. | 3.20 | 1.163 |
| When I have found the right brand or product, I stop looking for alternative brands already and make the decision. | 3.54 | 1.080 |
| Once bought, I normally enjoy using the product to explore its different features and uses. | 3.87 | 1.001 |
| After the purchase, I share the performance of the brand/product I bought to family, friends and acquaintances. | 3.98 | .979 |

**Table 2.** *Exploratory Behavior Communalities*

| Variables | Initial | Extraction |
|---|---|---|
| Info_liking | 1 | 0.609 |
| Info_prices | 1 | 0.716 |
| Info_bargains | 1 | 0.538 |
| Info_prodspecs | 1 | 0.698 |
| Info_brandperformance | 1 | 0.44 |
| Info_adverts | 1 | 0.64 |
| Info_brandchoice | 1 | 0.657 |
| Info_stores | 1 | 0.6 |
| Eval_study | 1 | 0.732 |
| Eval_decision style | 1 | 0.561 |
| Buy_implse | 1 | 0.538 |
| Buy_multiownership | 1 | 0.537 |
| Buy_adventure | 1 | 0.626 |
| Buy_bargain | 1 | 0.531 |
| Eval_heuristc | 1 | 0.294 |
| Buy_share info | 1 | 0.52 |

*Extraction Method: Principal Component Analysis (PCA).*

**Table 3.** *Exploratory Behavior Construct PCA Eigenvalues (Total Variance Explained) of Components*

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 5.756 | 35.975 | 35.975 | 5.756 | 35.975 | 35.975 |
| 2 | 2.427 | 15.17 | 51.146 | 2.427 | 15.17 | 51.146 |
| 3 | 1.054 | 6.585 | 57.73 | 1.054 | 6.585 | 57.73 |
| 4 | 0.936 | 5.848 | 63.578 | | | |
| 5 | 0.861 | 5.384 | 68.961 | | | |
| 6 | 0.778 | 4.865 | 73.827 | | | |
| 7 | 0.725 | 4.53 | 78.357 | | | |
| 8 | 0.582 | 3.636 | 81.993 | | | |
| 9 | 0.527 | 3.295 | 85.288 | | | |
| 10 | 0.475 | 2.968 | 88.257 | | | |
| 11 | 0.443 | 2.772 | 91.028 | | | |
| 12 | 0.398 | 2.485 | 93.513 | | | |
| 13 | 0.307 | 1.918 | 95.43 | | | |
| 14 | 0.276 | 1.728 | 97.158 | | | |
| 15 | 0.252 | 1.577 | 98.735 | | | |
| 16 | 0.202 | 1.265 | 100 | | | |

*Extraction Method: Principal Component Analysis.*

**Table 4.** *Un-Rotated PCA Exploratory Behavior Factor Component Matrix*

| Variable | Component | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Info_liking | 0.747 | | |
| Info_prices | 0.801 | -0.265 | |
| Info_bargains | 0.69 | | |
| Info_product specs | 0.805 | | |
| Info_brand preference | 0.63 | | |
| Info_adverts | 0.431 | | -0.639 |
| Info_brand choice | 0.779 | | |
| Info_stores | 0.765 | | |
| Eval_study | 0.827 | | |
| Eval_decision style | | -0.673 | 0.329 |
| Buy_impulse | | 0.733 | |
| Buy_multiownership | | 0.566 | 0.45 |
| Buy_adventure | 0.427 | 0.573 | 0.34 |
| Buy_bargains | 0.383 | 0.619 | |
| Eval_heuristc | 0.41 | 0.351 | |
| Buy_share info | 0.68 | | 0.237 |

**Table 5.** *Exploratory Behavior Promax Rotated Principal Component Structure Matrix*

| | Component | | |
|---|---|---|---|
| | **1** | **2** | **3** |
| Info_liking | .778 | | |
| Info_prices | .842 | | |
| Info_bargains | .644 | | .482 |
| Info_product spec | .827 | | |
| Info_brand preference | .596 | | .413 |
| Info_adverts | .322 | | .776 |
| Info_brand choice | .800 | | |
| Info_stores | .765 | | |
| Eval_study | .852 | | |
| Eval_decision style | | -.525 | -.582 |
| Buy_impulse | | .671 | .355 |
| Buy_multiownership | | .679 | |
| Buy_adventure | .318 | .748 | |
| Buy_bargains | | .669 | .458 |
| Eval_heuristc | .319 | .430 | .357 |
| Buy_share info | .670 | .317 | |

*Rotation Method: Promax with Kaiser Normalization. All component variances on specific variables lower than the absolute value of 0.30 are eliminated in the table to highlight most meaningful covariance with each factor.*

**Table 6.** *Exploratory Behavior Construct Component Correlation Matrix*

| Component | F1 | F2 | F3 |
|---|---|---|---|
| Exploratory Information Acquisition and Evaluation (F1) | 1 | 0.121 | 0.215 |
| Exploratory Purchase (F2) | 0.121 | 1 | 0.305 |
| Brand Knowledge/Preference (F3) | 0.215 | 0.305 | 1 |

*Extraction Method: Principal Component Analysis.*
*Rotation Method: Promax with Kaiser Normalization.*

**Table 7.** *OSL Construct Factor Communalities*

| | Initial | Extraction |
|---|---|---|
| VAR 1 | 1 | 0.568 |
| VAR 2 | 1 | 0.775 |
| VAR 3 | 1 | 0.783 |
| VAR 4 | 1 | 0.686 |
| VAR 5 | 1 | 0.684 |
| VAR 6 | 1 | 0.621 |
| VAR 7 | 1 | 0.546 |
| VAR 8 | 1 | 0.743 |
| VAR 9 | 1 | 0.603 |
| VAR 10 | 1 | 0.636 |
| VAR 11 | 1 | 0.596 |
| VAR 12 | 1 | 0.407 |
| VAR 13 | 1 | 0.401 |

*Extraction Method: Principal Component Analysis.*

**Table 8.** *Factor Eigenvalues (Variances) for OSL Factor Analysis*

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 5.211 | 43.426 | 43.426 | 5.211 | 43.426 | 43.426 |
| 2 | 1.403 | 11.695 | 55.121 | 1.403 | 11.695 | 55.121 |
| 3 | 1.032 | 8.603 | 63.724 | 1.032 | 8.603 | 63.724 |
| 4 | 0.761 | 6.34 | 70.064 | | | |
| 5 | 0.673 | 5.608 | 75.672 | | | |
| 6 | 0.602 | 5.02 | 80.691 | | | |
| 7 | 0.565 | 4.706 | 85.398 | | | |
| 8 | 0.473 | 3.945 | 89.343 | | | |
| 9 | 0.441 | 3.672 | 93.015 | | | |
| 10 | 0.337 | 2.812 | 95.826 | | | |
| 11 | 0.285 | 2.375 | 98.201 | | | |
| 12 | 0.216 | 1.799 | 99.001 | | | |
| 13 | 0.210 | 0.999 | 100 | | | |

*Extraction Method: Principal Component Analysis.*

## Appendix B

***Descriptive Statistics for OSL Construct Variables***

| OSL Variety Seeking, Sensation Seeking, and Innovativeness Variables (N = 348) | Mean | Std. Deviation |
|---|---|---|
| I like trying out new and different kinds of dishes and food most of time. | 4.04 | 1.012 |
| My ideal home would be peaceful and quiet. | 4.23 | .975 |
| I prefer a routine way of life to one that is unpredictable and full of changing situations. | 3.23 | 1.009 |
| I welcome new, exciting and unfamiliar experiences. | 3.99 | .937 |
| I like surprises and daring challenges. | 3.79 | 1.019 |
| People view me as a lively and unpredictable person. | 3.53 | 1.050 |
| As a child, I imagined going away to explore different and exotic places. | 3.83 | 1.130 |
| I prefer a quiet and peaceful environment, without too much noisy activity, anywhere I go. | 3.73 | 1.052 |
| I like a job that offers variety and different and even dificult situations. | 3.92 | .998 |
| I like meeting people with new and bold ideas. | 4.14 | .949 |
| I consider myself a vibrant person with new and creative ideas that most people have not thought about | 3.90 | .989 |
| I like acquiring and using new gadgets and products. | 3.70 | 1.070 |
| I like to be the first to own new products as soon as they are out in the market. | 3.65 | .976 |

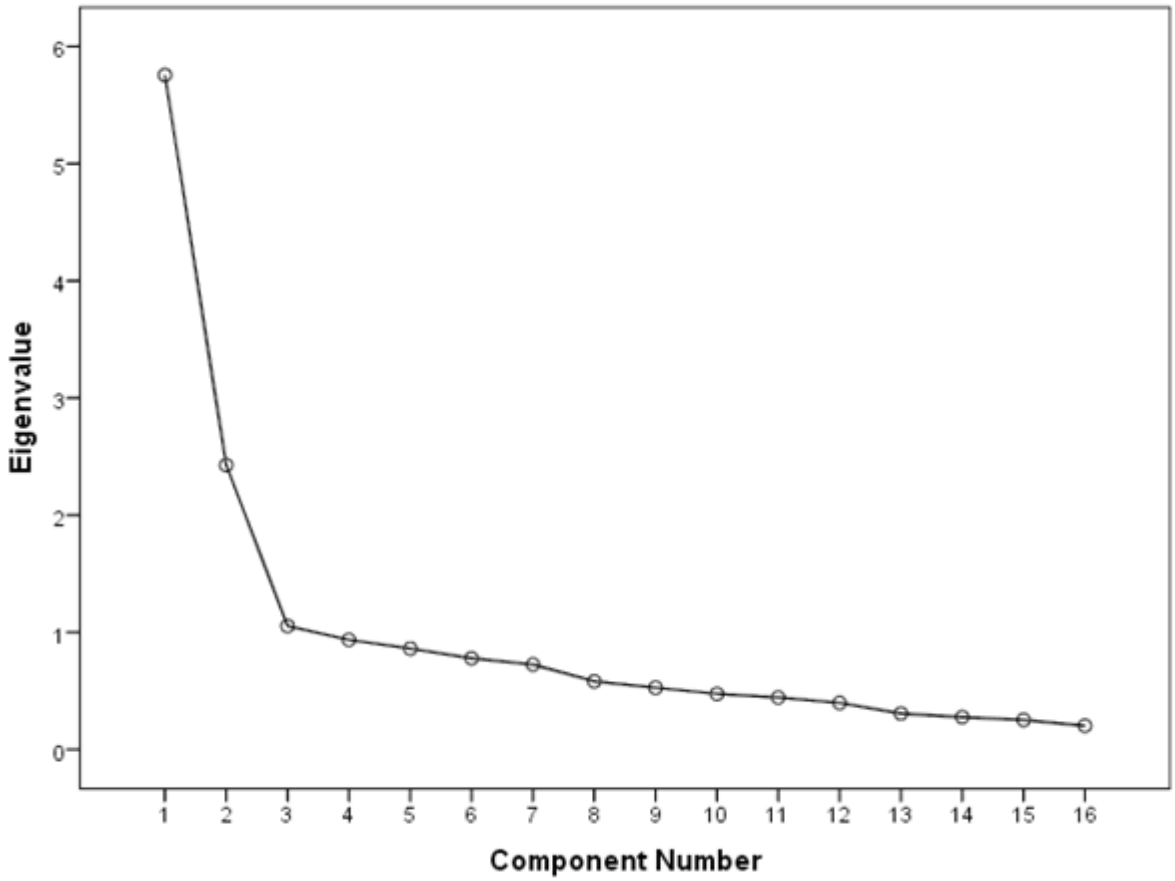
## Appendix C

***Correlation Matrix of Buying Behavior Variables***

| Buying Behavior | Info_like | Info_prices | Info_brgains | Info_prodspec | Info_brndpref | Info_advert | Info_brndchce | Info_stores | Eval_study | Eval_style | Buy_implse | Buy_multiown | Buy_advntr | Buy_brgain | Eval_stop | Buy_shre |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Info_liking | 1 | 0.692 | 0.489 | 0.688 | 0.424 | 0.13 | 0.526 | 0.463 | 0.564 | 0.061 | -0.04 | 0.018 | 0.195 | 0.129 | 0.268 | 0.458 |
| Info_prices | 0.692 | 1 | 0.524 | 0.715 | 0.443 | 0.2 | 0.66 | 0.587 | 0.605 | 0.1 | -0.138 | -0.023 | 0.222 | 0.155 | 0.177 | 0.454 |
| Info_bargains | 0.489 | 0.524 | 1 | 0.566 | 0.358 | 0.323 | 0.464 | 0.461 | 0.49 | -0.087 | 0.06 | -0.006 | 0.255 | 0.326 | 0.241 | 0.322 |
| Info_prodspec | 0.688 | 0.715 | 0.566 | 1 | 0.47 | 0.278 | 0.607 | 0.496 | 0.617 | 0.018 | -0.151 | 0.01 | 0.198 | 0.133 | 0.269 | 0.489 |
| Info_brandprefrnc | 0.424 | 0.443 | 0.358 | 0.47 | 1 | 0.325 | 0.396 | 0.396 | 0.466 | -0.032 | -0.025 | 0.031 | 0.212 | 0.237 | 0.309 | 0.373 |
| Info_adverts | 0.13 | 0.2 | 0.323 | 0.278 | 0.325 | 1 | 0.356 | 0.286 | 0.286 | -0.193 | 0.082 | 0.069 | 0.148 | 0.302 | 0.179 | 0.204 |
| Info_brndchoice | 0.526 | 0.66 | 0.464 | 0.607 | 0.396 | 0.356 | 1 | 0.646 | 0.689 | 0.072 | -0.073 | -0.022 | 0.182 | 0.158 | 0.137 | 0.47 |
| Info_stores | 0.463 | 0.587 | 0.461 | 0.496 | 0.396 | 0.286 | 0.646 | 1 | 0.722 | 0.038 | 0.039 | 0.08 | 0.307 | 0.219 | 0.204 | 0.478 |
| Eval_study | 0.564 | 0.605 | 0.49 | 0.617 | 0.466 | 0.286 | 0.689 | 0.722 | 1 | 0.138 | -0.063 | 0.069 | 0.264 | 0.173 | 0.241 | 0.595 |
| Eval_style | 0.061* | 0.1 | -0.087 | 0.018 | -0.032 | -0.193 | 0.072 | 0.038 | 0.138 | 1 | -0.478 | -0.263 | -0.2 | -0.239 | -0.2 | -0.008 |
| Buy_implse | -0.04 | -0.138 | 0.06 | -0.151 | -0.025 | 0.082 | -0.073 | 0.039 | -0.063 | -0.478 | 1 | 0.277 | 0.309 | 0.338 | 0.162 | 0.064 |
| Buy_multiownership | 0.018* | -0.023 | -0.006 | 0.01 | 0.031 | 0.069 | -0.022 | 0.08 | 0.069 | -0.263 | 0.277 | 1 | 0.368 | 0.277 | 0.104 | 0.135 |
| Buy_advntre | 0.195 | 0.222 | 0.255 | 0.198 | 0.212 | 0.148 | 0.182 | 0.307 | 0.264 | -0.2 | 0.309 | 0.368 | 1 | 0.519 | 0.323 | 0.281 |
| Buy_brgain | 0.129 | 0.155 | 0.326 | 0.133 | 0.237 | 0.302 | 0.158 | 0.219 | 0.173 | -0.239 | 0.338 | 0.277 | 0.519 | 1 | 0.291 | 0.244 |
| Eval_heuristc | 0.268 | 0.177 | 0.241 | 0.269 | 0.309 | 0.179 | 0.137 | 0.204 | 0.241 | -0.2 | 0.162 | 0.104 | 0.323 | 0.291 | 1 | 0.324 |
| Buy_share | 0.458 | 0.454 | 0.322 | 0.489 | 0.373 | 0.204 | 0.47 | 0.478 | 0.595 | -0.008 | 0.064 | 0.135 | 0.281 | 0.244 | 0.324 | 1 |

## Appendix D

***Scree Plot of Unrotated Principal Component Analysis of 16-Variable Exploratory Buying Behavior Scale***



## Appendix E

***Scree Plot of Unrotated Principal Component Analysis of 13-Variable, 3-Factor OSL Construct***