

**CONSUMER BEHAVIOR RESEARCH IN EMERGING CONSUMER MARKETS:
THE CASE OF THE OPTIMUM STIMULATION LEVEL IN SOUTH AFRICA**

Jan-Benedict E. M. Steenkamp
Catholic University of Leuven

Steven M. Burgess
University of the Witwatersrand, Johannesburg

Jan-Benedict E. M. Steenkamp is Professor of Marketing and Marketing Area Coordinator, Catholic University of Leuven (Belgium), GfK Professor of International Marketing Research, Wageningen University (the Netherlands), and Davidson Institute Research Fellow, William Davidson Institute, University of Michigan Business School; e-mail: Jan-Benedict.Steenkamp@econ.kuleuven.ac.be.

Steven M. Burgess is Association of Marketers Professor and Marketing Area Coordinator, University of the Witwatersrand, Johannesburg (South Africa) and Faculty Affiliate, William Davidson Institute, University of Michigan Business School; e-mail: steve.burgess@pixie.co.za. This research was supported by a grant from Markinor (Pty) Ltd. to Steven M. Burgess and by a grant from the William Davidson Institute to Jan-Benedict E. M. Steenkamp. We gratefully thank Sue Grant and Mari Harris of Markinor for their kind support.

ABSTRACT

CONSUMER BEHAVIOR RESEARCH IN EMERGING CONSUMER MARKETS: THE CASE OF THE OPTIMUM STIMULATION LEVEL IN SOUTH AFRICA

More than two-thirds of the world's consumers live in emerging consumer markets and transitional economies (ECMs). A fuller understanding of consumer behavior and further advancement of consumer research as an academic discipline require that the validity of theories and models of consumer behavior developed in the Western cultural context be examined in ECMs as well. In this paper, we examine the measurement invariance and nomological relations involving OSL in one of Africa's most important ECMs – South Africa. Our research setting presents an especially stringent context for testing consumer behavior theories. Many respondents are challenged severely economically and educationally, many have probably never had a job and some are illiterate. Nevertheless, the results provide evidence on the cross-cultural generalizability of OSL and exploratory consumer behavior theory. We found a high degree of stability in the OSL structure across these four major ethnic groups in South Africa. Meaningful and theoretically predictable nomological relations are obtained with values, sociodemographics, and exploratory consumer behavior. Suggestions for future research on OSL and for consumer behavior research in general in ECMs are discussed.

Although many theories of consumer behavior have been fashioned by borrowing eclectically across the behavioral sciences (Lunn, 1974, Robertson and Ward 1973), consumer researchers have been less eclectic when selecting populations in which to test their theories. Much of what we know has been derived from empirical studies of consumers in Western countries, especially the U.S.A. This research has yielded a valuable stock of theoretical and empirical findings. However, more than two-thirds of the world's consumers live in emerging consumer markets and transitional economies (collectively referred to as ECMs hereafter). These countries differ significantly culturally, economically, and demographically from Western countries and experience a historically unique and rapid rate of sociopolitical and economic change (Batra, 1996). The further advancement of consumer research as an academic discipline requires that the validity of our theories and models be examined in nonWestern, ECM contexts as well to identify their degree of generalizability and to uncover boundary conditions (Bagozzi 1994, Burgess and Steenkamp 1999, Douglas and Craig 1997, Lee and Green 1991). It is in this vein that Monroe (1993) urges consumer behavior researchers "to move beyond the relative security of our own backyards and investigate issues relative to consumption on an international basis."

The current study contributes to filling the paucity of consumer behavior research in ECM settings. In our work, we focus on the important construct of *optimum stimulation level* (OSL). OSL is a trait referring to the amount of stimulation individuals prefer in life. Previous research has shown that OSL is an important factor in explaining a wide variety of consumer behaviors (Baumgartner and Steenkamp 1996, Celsi et al. 1993, Holbrook and Hirschman 1982, Joachimsthaler and Lastovicka 1984, McAlister and Pessemier 1982, Mittelstaedt et al. 1976, Raju 1980, 1984, Steenkamp and Baumgartner 1992, Steenkamp et al. 1996, Venkatraman and Price 1990, Zuckerman 1979, 1994). However, it is not clear whether OSL exhibits the same nomological relations with exploratory consumer behavior and other variables in ECM countries where the consumer context is severely constrained by external factors such as low income, impoverished consumption environment, different cultures, and large within-country diversity of cultures due to the colonial past.

Our research environment is one of the most important African ECM countries, viz., the Republic of South Africa. The nature of the research environment—an ECM characterized by particularly tough research challenges such as extreme diversity of culture (there are four major

peoples as well as many subgroups) and human development (including illiteracy)— provides a strong test of the cross-cultural generalizability of current OSL theories and models in consumer research.

The contribution of the study is threefold. First, we will test previously established relations between OSL and exploratory consumer behaviors and sociodemographics in an ECM context. Second, we will extend previous research on OSL by examining its relations with personal values, using a recently developed theory on values. Third, we will provide a demonstration of the research and measurement issues and how to address them, that emerge when conducting consumer research in ECM environments characterized by limited educational development and large within-country between-groups diversity.

We proceed in the following manner. We outline the construct of OSL and its relations with personal values, sociodemographics, and exploratory consumer behavior. We will then describe the data used in the study and present the empirical results. The paper ends with a discussion of the findings and their implications for OSL research and for consumer research in ECMs in general.

OPTIMUM STIMULATION LEVEL AND EXPLORATORY CONSUMER BEHAVIOR

The notion that human behavior is sometimes instigated by the mere desire to attain a satisfactory level of stimulation has figured prominently among theories investigating motivational tendencies as causes of people's actions (Berlyne 1960, 1978, Fiske and Maddi 1961). People frequently do not act to reduce arousal, as has traditionally been assumed in drive-reduction type of theories, but are rather actively looking for stimulation from the environment or through internal means. Research on this presumed need for stimulation has shown that people tend to prefer intermediate levels of stimulation – referred to as the optimum stimulation level in the literature – and that there are reliable individual differences in the amount of stimulation considered optimal by a person (McReynolds 1971). To attain a satisfactory level of stimulation, a person may engage in exploration of the environment (Steenkamp and Baumgartner 1992). Exploratory behavior is “behavior with the sole function of changing the stimulus field” (Berlyne 1963, p. 288). Psychologists and consumer behavior researchers have studied exploratory tendencies extensively, and the general finding has been that OSL is a major determinant of (consumer) behaviors with strong exploratory tendencies (see Steenkamp and Baumgartner 1992 and Zuckerman 1994 for overviews).

OSL and values

Schwartz's value theory. Values may be defined as beliefs pertaining to desirable end states or modes of conduct which transcend specific situations (e.g., consumer-related contexts), guide selection or evaluation of behavior, and are ordered by importance vis-a-vis each other to form a system of value priorities (Rokeach 1973). Probably Schwartz and his colleagues (e.g., Schwartz 1992, Schwartz and Bilsky 1987, 1990, Schwartz and Sagiv 1995) have conducted the most important programmatic stream of research on personal values in the last decade. Building on and extending Rokeach's (1973) work, Schwartz derived a typology of values. The crucial aspect that distinguishes among values is the type of motivational goal they express. Ten distinct types of values were derived that reflect a continuum of related motivations. Table 1 provides a definition of the 10 motivational types of value and exemplary values. This continuum gives rise to a circular structure (see Figure 1) that captures the notion that the pursuit of different motivational value types can be compatible or in conflict, depending on how close the value types are (Schwartz 1992). Adjacent value types are most compatible. Conflict increases in proportion to the distance between value types, with value types in opposing positions from the center of the structure being in greatest competition. For example, in the context of ECB, seeking novelty (a stimulation value) by visiting a new retail outlet or buying a new product may be compatible with the pursuit of curiosity (a self-direction value) but in conflict with compliance with social norms (a conformity value).

The ten value types are organized in four higher order value domains openness to change, self-transcendence, conservation, and self-enhancement. The structure and content of Schwartz's value system (see Figure 1) has received impressive empirical support in research in more than 200 samples from 60 countries from every continent, involving over 100,000 persons (Schwartz 1992, Schwartz et al. in press, Burgess and Steenkamp 1999).

--- Table 1 and Figure 1 about here ---

Linking OSL to Schwartz's value theory. Traits and personal values are distinct but related personality concepts (Bilsky and Schwartz 1994, Winter et al. 1998). Each plays an important but different role in regulating behavior and life outcomes. Traits define the individual from an external perspective, presuming that actions flow from "what people are like" regardless of their intentions whereas values refer to the individual's motivational goals and intentions. Traits are often described as referring to people's stylistic and habitual patterns of cognition, affect, and behavior, rather than to their wishes desires, and motivations. Personality traits vary

in terms of how much of a characteristic individuals exhibit, whereas values vary in terms of the importance individuals attribute to particular motivational goals.

The associations between different values and specific traits have not received much attention in the literature. Both research streams have largely developed independently (cf. Winter et al. 1998). In this study, we will examine the relations of OSL with personal values in detail, using Schwartz's theory. OSL is related most closely to Schwartz's value type of stimulation. As Schwartz (1992, p. 7) notes: "Stimulation values derive from the presumed organismic need for variety and stimulation in order to maintain an optimal level of activation." However, OSL is broader than stimulation values only. Previous research suggests that it may also be associated with other motivational goals such as hedonism, self-direction, and achievement (Zuckerman 1979). Schwartz's specific structure of the value types and domains allows for a fine-grained and systematic examination of the associations of values with OSL. According to this theory, associations of any external variable, such as OSL, should decrease monotonically as one goes around the circular structure of value types in both directions from the most positively associated value type (i.e., stimulation) to the most negatively associated value type (i.e., tradition, conformity, security) (Schwartz 1992). This creates a sinusoid curve of associations from most positive to most negative, and back. The specific content of Schwartz's theory allows us to derive predictions that are not generated from existing knowledge about the association between OSL and particular value types (e.g., universalism, power).

In terms of value *domains*, OSL is clearly most closely associated with openness to change and it is in conflict with conservation. Schwartz's theory predicts the same type of sinusoid curve at the level of value domains, showing the strongest positive relation with openness to change, the strongest negative association with conservation, and self-transcendence and self-enhancement in between. Finally, within the context of the sinusoid pattern, we expect OSL to be more strongly associated with self-enhancement than with self-transcendence. Self-enhancement values are individualistically oriented in that they motivate people to enhance their personal interests even at the expense of others when necessary. In contrast, self-transcendence values motivate people to transcend selfish concerns and promote the welfare of others (Schwartz 1992). OSL serves primarily if not entirely individual interests (Zuckerman 1979). Thus, we hypothesize:

H1a: The association between OSL and the importance attached to the ten value types exhibits a sinusoid pattern with the strongest positive relationship observed for stimulation values and the strongest negative relationship for tradition, conformity, and security values.

H1b: The association between OSL and the importance attached to the four value domains exhibits a sinusoid pattern with the strongest positive relationship observed for openness to change and the strongest negative relationship for conservation.

H1c: OSL exhibits a positive association with self-enhancement and a negative association with self-transcendence.

Sociodemographic correlates of OSL

Although sociodemographic variables are not directly part of the psychological explanation of OSL and exploratory consumer behavior, they are relevant to obtain a better understanding of the profile of the stimulation seeker in ECMs and are useful as segmentation variables (cf. Raju 1980). Different sociodemographic variables suggest alternative hypotheses of explanation, some having to do with social learning and some with biological-development tendencies (Zuckerman 1994).

OSL declines from late adolescence on (Raju 1980) and longitudinal studies indicate that this negative relation is due to real age changes rather than to generational differences (Zuckerman 1994). Further, men are on average higher on OSL than women. This effect was found across the entire age span considered (Zuckerman et al. 1978). Zuckerman (1988) developed a biochemical explanation for the findings concerning age and gender. He reviewed research showing that 1) OSL is significantly negatively correlated with the level of the enzyme monoamine oxidase (MAO), 2) females have higher levels of MAO than males at nearly all ages, and 3) MAO levels increase with age.

Raju (1980) found a positive relation between OSL and level of education. Cognitive stimulation is an important component of OSL (Pearson 1970) and higher educated people are more capable and prone to deal with cognitive challenges. Raju (1980) also expected a positive relation of OSL with income but no such relation was found. However, he did not control for age in his analysis (income typically increases with age, but OSL decreases with age). It is possible that once age is controlled for, people with a higher income are in a better position to take the risks involved with stimulation seeking behavior.

OSL is negatively associated with religious practice. People with higher church attendance are lower on OSL. This is not surprising, given the antidogmatic and liberal

attitudes that characterize many high OSLs (Zuckerman and Neeb 1980). Moreover, OSL varied with marital status. Single and divorced people are higher on OSL than others (Zuckerman and Neeb 1980). Divorce may lead to a resurgence of a need for stimulation akin to the situation of being single, which might have been frustrated during marriage.

Alternatively, high OSLs are more likely to stay single or get divorced as the routine and predictability of married life might more easily bore them. There is evidence that OSL varies across ethnic groups (Kaestner et al. 1977, Zuckerman and Neeb 1980), although no specific prediction can be made as in previous research ethnic definitions were specific to the U.S. context. In sum, we hypothesize:

H2a: OSL is negatively related to age.

H2b: OSL is higher for men than women.

H2c: OSL increases with level of education.

H2d: OSL is positively related to income.

H2e: OSL is negatively related to religious practice.

H2f: OSL is higher for divorced people.

H2g: OSL varies across ethnic groups.

Previous studies typically examined each relation in isolation, using bivariate analyses. This may lead to overestimation of effects and/or spurious effects. We will test all hypotheses simultaneously.

OSL and Exploratory Consumer Behavior

Previous research has consistently linked OSL to a broad range of consumer behaviors with a strong exploratory component. Consumers seeking thrills, adventure, disinhibition, new experiences, fantasies, sensory stimulation, escape from boredom, and alternation among familiar things have been identified as engaging in consumer behaviors in order to raise their level of stimulation in life (Holbrook and Hirschman 1982, McAlister and Pessemier, 1982, Raju, 1980, Steenkamp and Baumgartner 1992, Zuckerman 1979). High OSLs tend to have a greater interest in traveling, physical activity in general and outdoor activities and sports in particular (Zuckerman 1979, 1994). OSL is positively related to risky behaviors such as using drugs, drinking alcohol, gambling, and volunteering for unusual experiments (e.g., hypnosis) (Zuckerman 1979). They have a greater preference for emotionally charged stimuli such as fear-arousing ads (Steenkamp et al. 1996) and have a greater interest in pursuing fantasies and fun (Holbrook and Hirschman 1982). Consistent with Holbrook and Hirschman (1982),

Zuckerman (1979) reported that OSL is positively related to movie attendance and reading fiction and non-fiction books. Further, high OSLs exhibit a greater degree of curiosity-motivated behavior. They engage more often in information search out of curiosity, generate more curiosity-based thoughts when exposed to ambiguous ads, and experience greater tedium during repeated exposure to the same ad (Steenkamp and Baumgartner 1992). They have a greater interest in knowing about novel or complex products and brands out of curiosity (Raju 1980).

OSL is also related to exploratory purchase behavior (Baumgartner and Steenkamp 1996). It is positively related to a person's tendency to purchase new products and brands (Raju 1980, Venkatraman and Price 1990) and to variety seeking and the number of brands tried out in a category (McAlister and Pessemier 1982, Raju 1980, 1984, Steenkamp and Baumgartner 1992). High OSLs have a decreased tendency to stick to the same purchase response over time. Mittelstaedt et al. (1976) reported that OSL had a positive effect on innovativeness with respect to retail outlets. High OSLs tried out and adopted more retail outlets than low OSLs. This is consistent with Raju's (1980) finding that OSL is positively correlated with exploration through shopping.

In sum, previous research supports the basic proposition that OSL has a positive impact on exploratory consumer behavior. In the present study, we test the following specific hypotheses in an ECM context:

H3a: Individuals with higher OSLs will be more interested in products, services, and activities that involve the potential to invoke risks, curiosity, new experiences, and physical activity than individuals with lower OSLs.

H3b: Individuals with higher OSLs will exhibit a greater degree of innovativeness in the adoption of new products than individuals with lower OSLs.

H3c: Individuals with higher OSLs will 1) try out a larger number of brands and 2) currently use a larger number of brands, than individuals with lower OSLs.

H3d: Individuals with higher OSLs will 1) try out more retail outlets and 2) currently patronize more retail outlets, than individuals with lower OSLs.

METHODOLOGY

Sample

Data were collected by a leading professional marketing research among a representative national sample of 3,493 South Africans. The questionnaire was developed in English and

translated into Xhosa, Afrikaans, North Sotho, South Sotho, Tswana, Venda, and Zulu using back-translation techniques (Brislin et al. 1973). People were personally interviewed in their homes. All interviewers were from the ethnic group of the respondents and were chosen and trained to fit into the respondent's social class. In South Africa, the four main ethnic cultural groups are Asians, Blacks, Coloureds, and Whites. Due to the Apartheid legacy, these groups have developed largely independent of each other. Our sample included 165 Asians, 2000 Blacks, 390 Coloureds and 938 Whites. Three hundred seventy respondents were dropped due to nonresponse to items or carelessness, leaving an effective sample size of 3,123.

Measures

Optimum Stimulation Level. Steenkamp and Baumgartner (1992) concluded that Garlington and Shimota's (1964) 95-item Change Seeker Index (CSI) is a preferred instrument to measure OSL. Their recommendation was based on both the magnitude of factor loadings of the summated scale scores on the underlying construct of OSL, and significant relationships with related constructs across a series of seven consumer behavior experiments. Steenkamp and Baumgartner (1995) recently developed a new shortened 7-item form of the CSI and validated it cross-culturally in Belgium, the Netherlands, Great Britain, and the U.S.A. (Baumgartner and Steenkamp 1998, Steenkamp and Baumgartner 1995). Their findings indicated that, compared to the original scale, the shortened scale not only reduces the data collection burden for the respondent but also has improved nomological validity and psychometric properties. CSI is typically rated on a 5-point Likert scale. However, in the present study, we use the same 6-point scale as used for the measurement of value priorities (see below) to reduce potential respondent confusion. Before analyses, scores were reversed so that high ratings indicate high OSL.

Values. Schwartz et al. (in press) recently developed a new instrument, called the Portraits Questionnaire (PQ), to assess the value priorities of less advantaged populations for which the standard 57-item Schwartz Value Survey (SVS; Schwartz 1992) is less suitable because of its length and high level of abstractness. This permits extension of values research to many ECMs not studied effectively in the past. The PQ includes short, textual portraits of 29 different people. Each portrait describes a person to whom certain goals, aspirations and wishes - all expressive of the same single value type - are important. For each portrait, respondents answer: "How much like you is this person?" They check one of six boxes labeled: very much like me, like me, somewhat like me, a little like me, not like me, and not like me at all. In the current

research, we added a 7th box labeled "do not know" in order to lessen the incidence of "I-can-answer-any-question" bias and courtesy bias (cf., Brislin et al. 1973) and to encourage respondents who found a particular scale item too challenging to respond accurately. Before analyses, scores were reversed so that high ratings indicated high value importance. Schwartz et al. (in press) presented evidence that the PQ and the SVS measure the same motivational value types. However, the PQ takes much less time to complete (usually less than 10 minutes versus on average 25 minutes for the SVS), and is cognitively less demanding. An index of the importance of a value type was obtained by averaging the ratings for the values within the value type in question. Similarly, the importance of a value domain was obtained by averaging the importances attributed to the value types within each domain.¹⁾ This procedure ensures equal weighting of all values (value types) in the construction of a particular value type (value domain) (Schwartz 1992).

Exploratory consumer behavior. Respondents also responded to a number of questions related to various aspects of exploratory consumer behavior. They indicated whether or not they were interested in each of the following ten consumer products, services, and activities that have the potential to generate arousal (cf. Zuckerman 1979, 1994): novelty toys, educational toys, fiction books, nonfiction books, food and wine, travel and holiday overseas, travel and holiday in South Africa, health and fitness, sport and outdoor activities, and investment opportunities. An index of interest in exploratory products, services, activities was constructed by summing the number of affirmative responses (cf. Epstein 1979, Manning et al. 1995).

Questions about brand purchase behavior were asked for seven categories (alcoholic beverages, cigarettes, soft drinks, major food chains, major clothing retailers, gas stations, and food products). For each category, a comprehensive list of up to 12 brands was shown, and respondents were asked to indicate which of these brands they had ever used, and which brand(s) they currently used. Other brands not listed could be added. The number of different brands the respondent had ever used (currently used) per category was summed across categories into an index of the consumer's generalized tendency to try out brands (an index of the consumer's generalized tendency to purchase multiple brands at the same time).

¹⁾The position of hedonism in Schwartz's theory is ambiguous. Schwartz (1992) argues that it is related both to openness to change and to self-enhancement. Hence, we excluded hedonism from the computation of the importance attached to value domains.

Consumption of innovative products was measured within the context of financial services products. For each of 13 financial services products (whole life policy, endowment policy, retirement annuity, medical insurance, short-term casualty insurance, cheque account, savings account, transmission account, investment account, credit card, gas/garage card, ATM card, and a loan from a bank) respondents indicated whether they had ever used it, and an index of purchase innovativeness was constructed.²

Questions about patronage of retail outlets were asked by presenting respondents a list of 14 types of grocery retail outlets (varying from major nation-wide chains to township supermarkets). Respondents indicated 1) which retail outlet(s) they had ever patronized and 2) which outlets they currently patronize for grocery purchases. Other retail outlets could be added to the list. Two behavioral indices were formed, one pertaining to the number of retail outlets ever used and one referring to the number of retail outlets currently used.

Sociodemographics. Information on the following sociodemographics was obtained: age (in years), gender (1=male, 0=female), household income (in hundreds of South African Rands per month), marital status (single, married, living together, widowed, divorced, separated), level of education (categorized as 1=higher and 0=lower, based on 11 specific types of education reflecting the South African educational system), religious practice (measured by frequency of participation in religious activities such as going to church or temple, praying, etc. on a 6-point labeled scale varying from never (=1) to every day (=6); Zuckerman and Neeb 1980), and ethnic cultural group (Asians, Blacks, Coloureds, Whites). For analyses, marital status was grouped in two categories: 1=single/divorced, 0=others. The ethnic cultural group was recoded in three dummies with Blacks as baseline.

Shortened scales in ECMs

ECMs vary greatly in their human development characteristics, especially education levels (United Nations Development Program 1996). Whereas some countries face significant human development challenges (e.g., China, India, South Africa, Uzbekistan), others are relatively close to the level of Western countries (e.g., Czech Republic, Hungary, Poland). Limited literacy and numeric skills are among the special threats to reliability and validity consumer researchers encounter in less developed economies (Lonner and Berry 1986). Brief scales reduce cognitive demands on respondents, shorten interview completion time and open

² Most if not all of these products would not be considered innovative services in Western countries. This is different in ECM contexts (Business Week 1998, Wells 1996).

ECMs to consumer research that would previously have been precluded. However, researchers must be careful to establish measurement invariance when using shortened scales in ECMs.

RESULTS

Measurement validation of CSI and PQ

A key concern in extending theories and their associated constructs to ECM countries is to assess the measurement properties of the instruments designed to measure the relevant consumer behavior constructs (Douglas and Craig 1983). Consumer behavior instruments like CSI are typically developed and validated in Western countries only. Moreover, ECMs are often culturally quite heterogeneous. Political boundaries often cut across nationalities, especially in Africa and Asia, and due to a lower level of socioeconomic development, the homogenizing forces of education, mass media, and mobility are not as strongly developed in most ECMs.

Change Seeker Index. We assessed the measurement invariance of the seven-item CSI scale across the four main South African ethnic groups: Asians, Blacks, Coloureds, and Whites, using the procedure of Steenkamp and Baumgartner (1998). All cross-ethnic group measurement validation analyses were conducted on the item means and covariances using LISREL 8 (Jöreskog and Sörbom 1993). We assessed configural, metric, and scalar invariance. As CSI is conceptualized as a single-factor model (Steenkamp and Baumgartner 1995), configural invariance implies that all factor loadings are significant and substantial in all groups. Metric invariance means that the factor loadings are equal across groups, and scalar invariance means equal intercepts across groups. Lack of scalar invariance implies that ratings on one or more items in one or more ethnic groups are systematically downward or upward biased (Steenkamp and Baumgartner 1998).

The fit of the configural model was not very good: $\chi^2(56)=553.58$ ($p<.001$), Goodness of Fit Index (GFI)=.912, Comparative Fit Index (CFI)=.933, Tucker-Lewis Index (TLI)=.899. The lack of fit was due to the two negatively scored items. Their (within-group standardized) factor loadings were unsatisfactory (on average .221, the highest loading in any group being .449), and we noted unacceptably high residuals. These findings were not observed in previous studies in Western markets (Baumgartner and Steenkamp 1998, Steenkamp and Baumgartner 1995). However, many South African applied researchers, including the sponsoring research agency, have reported problems concerning negative scoring in the past. The cause of such

problems in South Africa is unclear and requires further research. We decided to drop both negatively worded items.

Configural invariance for the remaining five items was clearly supported: $\chi^2(20)=50.91$ ($p<.001$), GFI=.953, CFI=.995, TLI=.991, Consistent Akaike Information Criterion (CAIC)=596.96.³ All factor loadings were significant ($p<.001$), the average factor loading was .760, with the smallest loading being a high .596. Composite reliabilities were highly similar between groups and ranged between .827 and .893.

Metric invariance was also supported: $\chi^2(32)=100.77$ ($p<.001$), GFI=.950, CFI=.990, TLI=.987, CAIC=537.60. Although the increase in χ^2 was significant ($\Delta\chi^2(12)=49.86$, $p<.001$), which is not surprising given the large sample size (Anderson and Gerbing 1988), the decline in the goodness of fit indices GFI and CFI is insubstantial (Widaman 1985) while CAIC and TLI, both of which take into account goodness of fit as well as model parsimony, deteriorated very little (TLI) or actually improved (CAIC). These results provide strong evidence concerning the metric invariance of CSI (Steenkamp and Baumgartner 1998).

Scalar invariance was not supported as the overall fit of the model deteriorated substantially: $\chi^2(44)=350.14$, GFI=.939, CFI=.955, TLI=.959, CAIC=677.77. The bad fit was due to the intercepts of two items (CSI4 and CSI5 in Steenkamp and Baumgartner 1995) which exhibited a large modification index and expected parameter change (Steenkamp and Baumgartner 1998). Compared to the other three ethnic groups, Blacks provided upwardly biased ratings on the items: .336 scale points for CSI4, .539 scale points for CSI5. This implies that even when a Asian/Coloured/White and a Black have the same underlying OSL (i.e., CSI), a Black respondent will systematically rate higher on CSI4 (on average .336) and CSI5 (on average .539) than the other three groups. An additional ANOVA further supported this finding. It showed that Blacks generally differed to other groups for items CSI4 and CSI5, regardless of the use of mean response across the scale as a covariate. [CSI4 and CSI5 have in common the word *continually*. It seems that this word has a less strong meaning in Black ethnic groups than in the other groups, leading to a higher intercept for Blacks. STEVE: USEFUL? OTHERWISE, WE SHOULD DROP IT]

Setting free these intercepts for Blacks led to a substantial improvement in fit and an acceptable overall fit: $\chi^2(42)=148.26$ ($p<.001$), GFI=.949, CFI=.984, TLI=.985, CAIC=494.09.

³ CAIC was not given for the 7-item model as it is a relative index whose magnitude has meaning only in relation to nested models.

GFI, CFI, and TLI are close to the values obtained for the configural invariance model while CAIC reaches its lowest value for the partial scalar invariance model. Thus, partial scalar invariance was supported. The additive bias in the two items was removed from the ratings of Blacks and the ratings on the items were summed to create composite scores (cf. Steenkamp et al. 1999). Scores on CSI can now be validly compared across ethnic groups and used in the subsequent regression analyses (Meredith 1993, Steenkamp and Baumgartner 1998).⁴

Portraits Questionnaire. The multi-group confirmatory factor analysis procedure is not appropriate for analyzing the structure of value relations as conceptualized in Schwartz's theory. The value types and higher-order domains represent fuzzy partitions on a circumplex continuum of values derived with smallest space analysis, rather than discrete clusters (Schwartz and Bilsky 1990). Instead, following Schwartz and Bilsky (1990), we used Smallest Space Analysis (SSA; Guttman 1968) in order to verify the hypothesized relationships between the motivational value types and the value domains. SSA is a non-metric multidimensional scaling technique in which the distances between values are measured in a multidimensional space—presenting a configural 'map' of the correlations of perceived similarity ratings for the 29 portraits of a person to whom a value is important. Values emerge as points that can be located within wedge-shaped regions, which are contained by arbitrarily drawn partitioning lines. The content of these regions and their arrangement relative to one another form the basis of the analysis. The rationale for this "configural verification approach" (see Davison, 1983) is described more fully in Schwartz (1992). SSAs were conducted for each of the four ethnic cultural groups. The coefficients of alienation (Asians .121, Blacks .119, Coloureds .088, and Whites .086) were less than .015 in all cases, indicating that the two-dimensional maps reproduced the value correlations quite well. [STEVE: ALL VALUES ARE GREATER THAN .015, RATHER THAN SMALLER?] The SSAs largely revealed the theoretical structure as shown in Figure 1, the most important exception being that security values were more closely linked to self-transcendence values (universalism, benevolence) rather than being situated between conformity/tradition and self-enhancement values (power, achievement). This seems to be unique to Southern Africa and indicates that the security has a different meaning in the region (Schwartz et al. in press).

⁴ All analyses were also conducted using the uncorrected CSI scores and the results were substantially the same. The only difference was that in the regression of CSI on sociodemographics (see below), the effect of the ethnic groups was larger, reflecting the differences in scale usage between Blacks and other ethnic groups.

Value associations of OSL

The logic of the organization of the Schwartz value structure means that hypothesized associations between OSL and value priorities follow a sinusoid curve. Figure 2 plots the correlations between respondents' OSL and the importance attached by them to each value type. The correlations are partialled for mean scale use as recommended by Schwartz (1992). As expected, OSL exhibits the strongest positive association with stimulation ($r = .420, p < .001$), while the strongest negative associations are observed for security ($r = -.331, p < .001$), which is one of the value types located opposite to stimulation in the Schwartz value structure. Between these two extremes, the magnitude of the correlations is monotonically decreasing (see Figure 2). However, due to the location of security between conformity/tradition and benevolence in South Africa, the correlation decreases in both directions, with high negative correlations being observed for benevolence ($-.278, p < .001$) as well as for tradition ($-.297, p < .001$) and conformity ($-.244, p < .001$). Thus, with a slight modification concerning benevolence, H1a was supported.

Figure 2 also shows the associations of OSL with the value domains. Consistent with H1b, the correlations followed a sinusoid pattern, with the strongest positive relation being observed for openness to change ($.501, p < .001$) and the strongest negative relation observed for conservation ($-.487, p < .001$). Finally, a respondent's OSL was positively associated with self-enhancement ($.190, p < .001$) while it is negatively related to self-transcendence ($-.433, p < .001$), which is consistent with H1c.

--- Insert Figure 2 about here ---

Relations with sociodemographics

To test H2a-g, we regressed the summated CSI score on age, gender, monthly household income, education, marital status, religious practice, and cultural ethnic group. The results are reported in Table 2. OSL decreases with age ($\beta = -.245, p < .001$) and is higher for men than for women ($\beta = .142, p < .001$). These findings support H2a and H2b. Consistent with H2c, OSL is higher for higher educated people ($\beta = .092, p < .001$). OSL is also positively related to income ($\beta = .132, p < .001$) which supports H2d. No relation is found with religious practice ($\beta = .033, n.s.$) or marital status ($\beta = .022, n.s.$).⁵ Therefore, H2e and H2f were rejected. Ethnic group also affected OSL. Blacks are higher on OSL than the other three ethnic groups. The

⁵ Separate analyses for single or divorced people also yielded nonsignificant results.

unstandardized regression coefficients (not reported) indicate that the estimated difference (while controlling for the other variables) is about 2.5-2.8 on a scale from 5-25. Thus, H2g is supported.

--- Table 2 about here ---

OSL and Exploratory Consumer Behavior

All six indices of 1) interest in exploratory products, services, and activities, 2) adoption of innovative financial products, 3) generalized tendency to try out brands, 4) generalized tendency to currently purchase multiple brands, 5) number of grocery outlets ever patronized, and 6) number of grocery outlets currently patronized, were regressed on CSI. In order to control for spurious effects and to obtain a more precise test of our hypotheses, we added the most important sociodemographics – age, gender, household income, and ethnic group– as covariates in the regression analyses. Given the legacy of separate development under the Apartheid system, a person's cultural ethnic group is likely to have a great impact on actual consumer behavior. The results are reported in Table 3.

As hypothesized (H3a), OSL had a positive effect on interest in exploratory products, services, and activities ($\beta=.204, p<.001$). In line with H3b, OSL has a positive, albeit small, effect on the adoption of innovative financial services ($\beta=.044, p=.001$). OSL has a positive effect on the generalized tendency to try out brands ($\beta=.091, p<.001$) and on the size of the current brand set ($\beta=.077, p<.001$). This supports H3c. OSL also has a positive effect on the number of grocery outlets that were ever patronized by the respondent ($\beta=.099, p<.001$) and on the size of the current shopping set ($\beta=.107, p<.001$). This is consistent with H3d.

The covariates indicate consistent effects of income and ethnic group. Exploratory consumer behavior increases with income and exploratory purchase behavior is lower among Blacks than among other groups, especially Whites.

---Table 3 about here ---

DISCUSSION

In this paper, we examined the measurement invariance and nomological relations involving OSL in an ECM context. Our research setting presented an especially stringent context for testing consumer behavior theory. Many respondents were challenged severely economically and educationally, many had probably never had a job and some were illiterate. Nevertheless, the results are very encouraging and provide evidence on the cross-cultural generalizability of OSL and exploratory consumer behavior theory. Notwithstanding the

refinements made, we found a high degree of stability in the OSL structure across these four major ethnic groups in South Africa. Meaningful and theoretically predictable nomological relations with values, sociodemographics, and exploratory consumer behavior results were obtained.

In general, support was found for our hypotheses. Our research established that consumers' OSL is systematically and predictably related to their value structure. The relation follows a sinusoid pattern for value types and value domains, which is consistent with Schwartz's work and provides new insights into the motivational goals of high (versus low) OSLs. High OSLs are characterized by motivational goals emphasizing own personal intellectual, emotional, and especially hedonistic interests in novel and unpredictable ways, which may go even at the expense of others. This pattern of motivational goals is consistent with Holbrook and Hirschman's (1982) theorizing. High OSLs attach less importance to the security of the status quo and certainty it provides in relationships with close others, institutions and traditions. They are much less motivated than low OSLs to transcend selfish concerns and promote the welfare of others, close and distance, and of nature.

Consistent with our expectations, men are higher on OSL than women, OSL decreases with age, and increases with income and education. On the other hand, no relation was found with marital status. This might be due to the different cultural nature of marriage (such as tribal marriages and polygamy) and widowhood (if needed, the person is taken care of by the family or social group). There was no relation with religious practice either. In South Africa, we find a prevalence of different religions including "Western" Christianity, Africanized Christianity, Hinduism, Islam, Judaism, and tribal religions. The customary participation rate in religious activities differs between these religions which renders comparisons more difficult.

The latter two findings illustrate that some findings obtained in earlier research conducted in Western countries may be less easily transferable cross-culturally than others. While the relations of OSL with income, education, marital status and religious practice are primarily due to social learning, the effects of age and gender are at least partially due to biochemical causes (Zuckerman 1988). Biochemical causes should be less dependent on the sociocultural context in question than social learning. Hence, these effects should be the most likely to be replicated in an ECM context as well. Indeed, we found that the hypotheses for both gender and age were supported while two out of the four other variables did not yield a significant relation.

Consistent effects of OSL on four types of exploratory consumer behavior were found, even when we control for age, income, gender, and cultural ethnic group. OSL had a positive effect on the interest in exploratory products, services, and activities, adoption of innovative financial products, number of brands ever used and currently used, and number of grocery outlets currently patronized and ever patronized. Thus, the findings suggest support for our hypothesis that OSL influences exploratory consumer behavior in an ECM context.

Apart from the effects of OSL, exploratory consumer behavior was also affected by sociodemographics. Two effects were particularly strong and consistent. First, Blacks were consistently lower on the measures of exploratory *purchase* behavior than the other three groups, while Whites were consistently higher on all purchase measures. These effects were much less pronounced for exploratory *interests*. The effect of Apartheid can still be noticed here. Even when we control for income, the socioeconomic consumption environment of many Blacks is relatively impoverished (in terms of modern retail stores, financial institutions, etc.) than the consumption environment of the other groups, while the opposite applies to Whites. Thus, even though Blacks tend to have higher OSLs than others and their exploratory interests are on average equally high as Asians and Coloureds, their opportunities to translate their dispositions and interests into purchase behavior are severely constrained in this ECM context.

Second, income had a positive and substantial effect on all four types of exploratory consumer behavior considered. This indicates that, apart from important psychological effects on exploratory behavior, the classic economic budget constraint plays an important role in understanding consumer behavior with exploratory components. The budget constraint is in general more important in ECM markets where incomes are on average much lower than in affluent Western countries. Nevertheless, even if we control for sociodemographics, it is important to note that OSL still exhibited the hypothesized effects in environments imposing such significant social and economic constraints on behavioral expressions.

Future research should expand this study to other ECMs. Our results on the relationships of OSL with values indicate that it is essentially an individualistic construct. It is related to personal goals that may be achieved even at the expense of others. Such dispositions are more acceptable (within reasonable bounds) in individualistic societies than in collectivistic societies which are more conformity oriented and give priority to in-group goals and welfare over individual goals. As such, behavioral expressions of OSL might be discouraged in collectivistic countries. This should lead to weaker effects of OSL on various exploratory

consumer behaviors, especially directly observable ones such as purchase behavior (cf. Steenkamp et al. 1999). Cross-national research comparing individualistic and collectivistic countries may test this hypothesis. Future research in ECMs may study effects of OSL on other types of exploratory consumer behavior including cognitive responses to ads, evaluation of collative properties of ads, ad repetition, information acquisition, and recreational shopping.

Until recently, ECMs did not attract much research attention. The present study reveals the potential of these countries to test consumer behavior theories. Scales will often have to be adapted to render them cognitively less demanding. Some consumer instruments may have to be adapted at least partially to the local context. Baumgartner and Steenkamp (1998) describe how such combined emic-etic instruments can still be used to compare results across countries. Especially in ECMs, which are so different from the cultural environments in which most of the measurement instruments are developed, the issue of measurement invariance comes to the fore. Future research could validate other established measurement instruments in ECM contexts. It is hoped that in a number of years, many of the scales in the *Handbook of Marketing Scales* (Bearden and Netemeyer 1999) will contain information on their validity in ECMs. This will be a major step in opening up ECMs to consumer behavior research, and allows ECM researchers to build on previous efforts and insights. A closely related avenue of future research is to test consumer behavior theories in ECM settings. All these efforts will help to investigate consumer behavior issues on an international basis and thus to increase the generalizability of consumer behavior theories and findings.

REFERENCES

- Anderson, James C. and David W. Gerbing (1988), "Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach," Psychological Bulletin, 103 (3), 411-423.
- Bagozzi, Richard P. (1994), "ACR Fellow Speech," in: Chris T. Allen and Deborah R. John (eds.), Advances in Consumer Research, Vol. 21, Provo, UT: Association for Consumer Research, 8-11.
- Batra, Rajeev (1996), Marketing Issues and Challenges in Transitional Economies (Working Paper No. 12), Ann Arbor, MI: William Davidson Institute, University of Michigan Business School.
- Baumgartner, Hans and Jan-Benedict E.M. Steenkamp (1996), "Exploratory Consumer Behavior: Conceptualization and Measurement," International Journal of Research in Marketing, 13 (2), 121-137.
- Baumgartner, Hans and Jan-Benedict E.M. Steenkamp (1998), "Multi-Group Latent Variable Models for Varying Numbers of Items and Factors With Cross-National and Longitudinal Applications," Marketing Letters, 9 (1), 21-35.
- Bearden, William O. and Richard G. Netemeyer (1999), Handbook of Marketing Scales, Newbury Park, CA: Sage, 2nd ed.
- Berlyne, Daniel E. (1960), Conflict, Arousal, and Curiosity, New York: McGraw-Hill.
- Berlyne, Daniel E. (1963), "Motivational Problems Raised by Exploratory and Epistemic Behavior," in: Sigmund Koch (ed.), Psychology: A Study of Science, Vol. 5, New York: McGraw-Hill, 284-364.
- Berlyne, Daniel E. (1978), "Curiosity and Learning," Motivation and Emotion, 2 (June), 97-175.
- Bilsky, Wolfgang and Shalom H. Schwartz (1994), "Values and Personality," European Journal of Personality, 8, 163-181.
- Brislin, R. W. (1986), "The Wording and Translation of Research Instruments," in: W. J. Lonner and J. W. Berry (eds.), Field Methods in Cross-Cultural Research, Vol. 8, Beverly Hills, CA: Sage, 137-164.
- Brislin, R. W., W.J. Lonner, and R.M. Thorndike (1973). Cross-Cultural Research Methods. New York: Wiley.
- Burgess, Steven M. and Jan-Benedict E.M. Steenkamp (1999), "Value Priorities and Consumer Behavior in a Transitional Economy," in: Rajeev Batra (ed.), Marketing Issues in Transitional Economies, Norwell, MA: Kluwer Academic Press (in press)
- Business Week (1998), "The New Consumers: How Business Is Chasing the Rising Middle Class of Central Europe," May 25, 40-44.
- Celsi, Richard L., Randall L. Rose, and Thomas W. Leigh (1993), "An Exploration of High-Risk Leisure Consumption through Skydiving," Journal of Consumer Research, 20 (June), 1-23.
- Davison, Mark L. (1983), Multidimensional Scaling, New York: John Wiley.
- Douglas, Susan P. and C. Samuel Craig (1983), International Marketing Research, Englewood Cliffs, NJ: Prentice Hall.
- Douglas, Susan P. and C. Samuel Craig (1997), "The Changing Dynamic of Consumer Behavior: Implications for Cross-Cultural Research," International Journal of Research in Marketing, 14 (4), 379-395.
- Epstein, Seymour (1979), "The Stability of Behavior," Journal of Personality and Social Psychology, 37 (July), 1097-1126.

- Fiske, Donald W. and Salvatore S. Maddi, eds. (1961), Functions of Varied Experience, Homewood, IL: Dorsey Press.
- Garlington, Warren K. and Helen E. Shimota (1964), "The Change Seeker Index: A Measure of the Need for Variable Stimulus Input," Psychological Reports, 14, 919-924.
- Guttman, Louis (1968), "A General Nonmetric Technique for Finding the Smallest Coordinate Space for a Configuration of Points," Psychometrika, 33, 469-506.
- Holbrook, Morris B. and Elizabeth C. Hirschman (1982), "The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun," Journal of Consumer Research, 9 (September), 132-140.
- Joachimsthaler, Erich A. and John L. Lastovicka (1984), "Optimal Stimulation Level-Exploratory Behavior Models," Journal of Consumer Research, 11 (December), 830-835.
- Jöreskog, Karl G. and Dag Sörbom (1993), LISREL8: User's Reference Guide, Chicago, IL: Scientific Software International.
- Kaestner, E., L. Rosen, and P. Apel (1977), "Patterns of Drug Abuse: Relationships with Ethnicity, Sensation Seeking, and Anxiety," Journal of Consulting and Clinical Psychology, 45, 462-468.
- Lee, Chol and Robert T. Green (1991), "Cross-Cultural Examination of the Fishbein Behavioral Intention Model," Journal of International Business Studies, 21 (2), 289-305.
- Lonner, W. J., and J.W. Berry, eds. (1986), Field Methods in Cross-Cultural Research, Vol. 8, Beverly Hills, CA: Sage.
- Lunn, J. A. (1974), "Consumer Decision-Process Models," in: Jagdish N. Sheth (ed.), Models of Consumer Behavior: Conceptual, Quantitative, and Empirical, New York: Harper.
- Manning, Kenneth C., William O. Bearden, and Thomas J. Madden (1995), "Consumer Innovativeness and the Adoption Process," Journal of Consumer Psychology, 4 (4), 329-345.
- McAlister, Leigh and Edgar A. Pessemier (1982), "Variety Seeking Behavior: An Interdisciplinary Review," Journal of Consumer Research, 9 (December), 311-322.
- McReynolds, Paul (1971), "The Nature and Assessment of Intrinsic Motivation," in: Paul McReynolds, (ed.), Advances in Psychological Assessment, Vol. 2, Palo Alto, CA: Science and Behavior Books, 157-177.
- Meredith, William (1993), "Measurement Invariance, Factor Analysis and Factorial Invariance," Psychometrika, 58 (4), 525-543.
- Mittelstaedt, Robert A., Sanford L. Grossbart, William W. Curtis, and Stephen P. Devere (1976), "Optimum Stimulation Level and the Adoption Decision Process," Journal of Consumer Research, 3 (September), 84-94.
- Monroe, Kent B. (1993), Editorial. Journal of Consumer Research, 19 (March).
- Pearson, Pamela H. (1970), "Relationships between Global and Specified Measures of Novelty Seeking," Journal of Consulting and Clinical Psychology, 43 (2), 199-204.
- Raju, P. S. (1980), "Optimum Stimulation Level: Its Relationship to Personality, Demographics, and Exploratory Behavior," Journal of Consumer Research, 7 (December), 272-282.
- Raju, P.S. (1984), "Exploratory Brand Switching: An Empirical Examination of its Determinants," Journal of Economic Psychology, 5, 201-221.
- Robertson, Thomas S. and Scott Ward (1973), "Consumer Behavior Research: Promise and Prospects," in: Thomas S. Robertson and Scott Ward (eds.), Consumer Behavior: Theoretical Sources, Englewood Cliffs, N. J.: Prentice-Hall., 3-42.
- Rokeach, Milton J. (1973), The Nature of Human Values, New York: The Free Press.

- Schwartz, Shalom H. (1992), "Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries," in: Mark Zanna (ed.), Advances in Experimental Social Psychology, Vol. 25, Orlando, FL: Academic Press, 1-65.
- Schwartz, Shalom H. and Wolfgang Bilsky (1987), "Toward a Universal Psychological Structure of Human Values," Journal of Personality and Social Psychology, 53 (3), 550-562.
- Schwartz, Shalom H. and Wolfgang Bilsky (1990), "Toward a Theory of the Universal Content and Structure of Values: Extensions and Cross-Cultural Replications," Journal of Personality and Social Psychology, 58 (5), 878-891.
- Schwartz, Shalom H., A. Lehmann, and S. Roccas (in press), "Multimethod Probes of Basic Human Values," in: J. Adamopoulos and Y. Kashima (eds.), Social Psychology and Cultural Context, Newbury Park, CA: Sage.
- Schwartz, Shalom H. and Lilach Sagiv (1995), "Identifying Culture-Specifics in the Content and Structure of Values," Journal of Cross-Cultural Psychology, 26 (January), 92-116.
- Steenkamp, Jan-Benedict E.M. and Hans Baumgartner (1992), "The Role of Optimum Stimulation Level in Exploratory Consumer Behavior," Journal of Consumer Research, 19 (December), 434-448.
- Steenkamp, Jan-Benedict E.M. and Hans Baumgartner (1995), "Development and Cross-Cultural Validation of a Short Form CSI as a Measure of Optimum Stimulation Level," International Journal of Research in Marketing, 12 (2), 97-104.
- Steenkamp, Jan-Benedict E.M. and Hans Baumgartner (1998), "Assessing Measurement Invariance in Cross-National Consumer Research," Journal of Consumer Research, 25 (June), 78-90.
- Steenkamp, Jan-Benedict E.M., Hans Baumgartner, and Elise Van der Wulp (1996), "Arousal Potential, Arousal, Stimulus Attractiveness, and the Moderating Role of Need for Stimulation," International Journal of Research in Marketing, 13 (4), 319-329.
- Steenkamp, Jan-Benedict E.M., Frenkel ter Hofstede, and Michel Wedel (1999), "A Cross-National Investigation Into the Individual and National-Cultural Antecedents of Consumer Innovativeness," Journal of Marketing, 63 (April) (in press).
- United Nations Development Program (1996), Human Development Report 1996: Economic Growth and Human Development, New York: Oxford University Press.
- Venkatraman, Meera P. and Linda L. Price (1990), "Differentiating Between Cognitive and Sensory Innovativeness: Concepts, Measurement, and Implications," Journal of Business Research, 20 (4), 293-315.
- Wells, K. (1996), "Its New ATMs in Place, a Bank Reaches Out to South Africa's Poor," The Wall Street Journal, June 13, A1, A10.
- Widaman, Keith F. (1985), "Hierarchically Nested Covariance Structure Models for Multitrait-Multimethod Data," Applied Psychological Measurement, 9 (March), 1-26.
- Winter, David G., Oliver P. John, Abigail J. Stewart, Eva C. Klohnen, and Lauren E. Duncan (1998), "Traits and Motives: Toward and Integration of Two Traditions in Personality Research," Psychological Review, 105 (2), 230-250.
- Zuckerman, Marvin (1979), Sensation Seeking: Beyond the Optimal Level of Arousal, Hillsdale, NJ: Lawrence Erlbaum.
- Zuckerman, Marvin (1988), "Behavior and Biology: Research on Sensations and Reactions to the Media," in: L. Donohew, H.E. Sypher, and E.T. Higgins (eds.), Communication, Social Cognition, and Affect, Hillsdale, NJ: Lawrence Erlbaum, 173-194.
- Zuckerman, Marvin (1994), Behavioral Expressions and Biosocial Bases of Sensation Seeking, New York: Cambridge University Press.

Zuckerman, Marvin, Sybil Eysenck, and Hans J. Eysenck (1978), "Sensation Seeking in England and America: Cross-Cultural, Age, and Sex Comparisons," Journal of Consulting and Clinical Psychology, 46 (1), 139-149.

Zuckerman, Marvin and Michael Neeb (1980), "Demographic Influences in Sensation Seeking and Expressions of Sensation Seeking in Religion, Smoking and Driving Habits," Personality and Individual Differences, 1, 197-206.

Table 1: Value Types in Schwartz's Value Theory

Value type	Definition	Exemplary values
Power	Social status and prestige, control or dominance over people and resources.	Social power, authority, wealth
Achievement	Personal success through demonstrating competence according to social standards.	Successful, capable, ambitious
Hedonism	Pleasure and sensuous gratification for oneself.	Pleasure, enjoying life
Stimulation	Excitement, novelty and challenge in life.	Daring, varied life, an exciting life
Self-direction	Independent thought and action-choosing, creating, exploring.	Creativity, curious, freedom
Universalism	Understanding, appreciation, tolerance, and protection for the welfare of all people and nature.	Broadminded, social justice, equality, protecting the environment
Benevolence	Preservation and enhancement of the welfare of people with whom one is in frequent personal contact.	Helpful, honest, forgiving
Tradition	Respect, commitment, and acceptance of the customs and ideas that culture or religion provide.	Humble, devout, accepting my portion in life
Conformity	Restraints of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.	Politeness, obedient, honoring one's parents or elders
Security	Safety, harmony, and stability of society, of relationships, and of self.	Social order, clean

Source: Excerpted from Schwartz (1992)

Table 2: Effects of Sociodemographics on OSL¹⁾

Predictor Variables	β
Age	-.245 ^c
Gender (male)	.142 ^c
Education (higher)	.092 ^c
Income	.132 ^c
Religious practice	.033
Marital status (single/divorced)	.022
Asian	-.100 ^c
Coloured	-.143 ^c
White	-.183 ^c
R ²	.139 ^c

¹⁾ Reported are standardized regression coefficients

^a p < .05

^b p < .01

^c p < .001

Table 3: Effect of OSL on Exploratory Consumer Behavior ¹⁾

Predictor Variables	Criterion Variables					
	Exploratory Interests	Adoption of Innovative Financial Products	Generalized Tendency to Try Out Brands	Generalized Tendency to Purchase Multiple Brands	Number of Grocery Outlets Ever Patronized	Number of Grocery Outlets Currently Patronized
OSL	.204 ^c	.044 ^b	.091 ^c	.077 ^c	.099 ^c	.107 ^c
Age	-.143 ^c	.127 ^c	-.046 ^b	-.023	-.053 ^b	-.012
Gender (male)	.014	.089 ^c	.118 ^c	.000	-.107 ^c	-.130 ^c
Income	.228 ^c	.357 ^c	.119 ^c	.158 ^c	.170 ^c	.223 ^c
Asian	.030	.075 ^c	.165 ^c	.116 ^c	.179 ^c	.080 ^c
Coloured	-.008	.063 ^c	.232 ^c	.107 ^c	.204 ^c	.073 ^c
White	.086 ^b	.466 ^c	.446 ^c	.321 ^c	.361 ^c	.177 ^c
R ²	.169 ^c	.599 ^c	.322 ^c	.200 ^c	.276 ^c	.157 ^c

¹⁾Reported are standardized regression coefficients

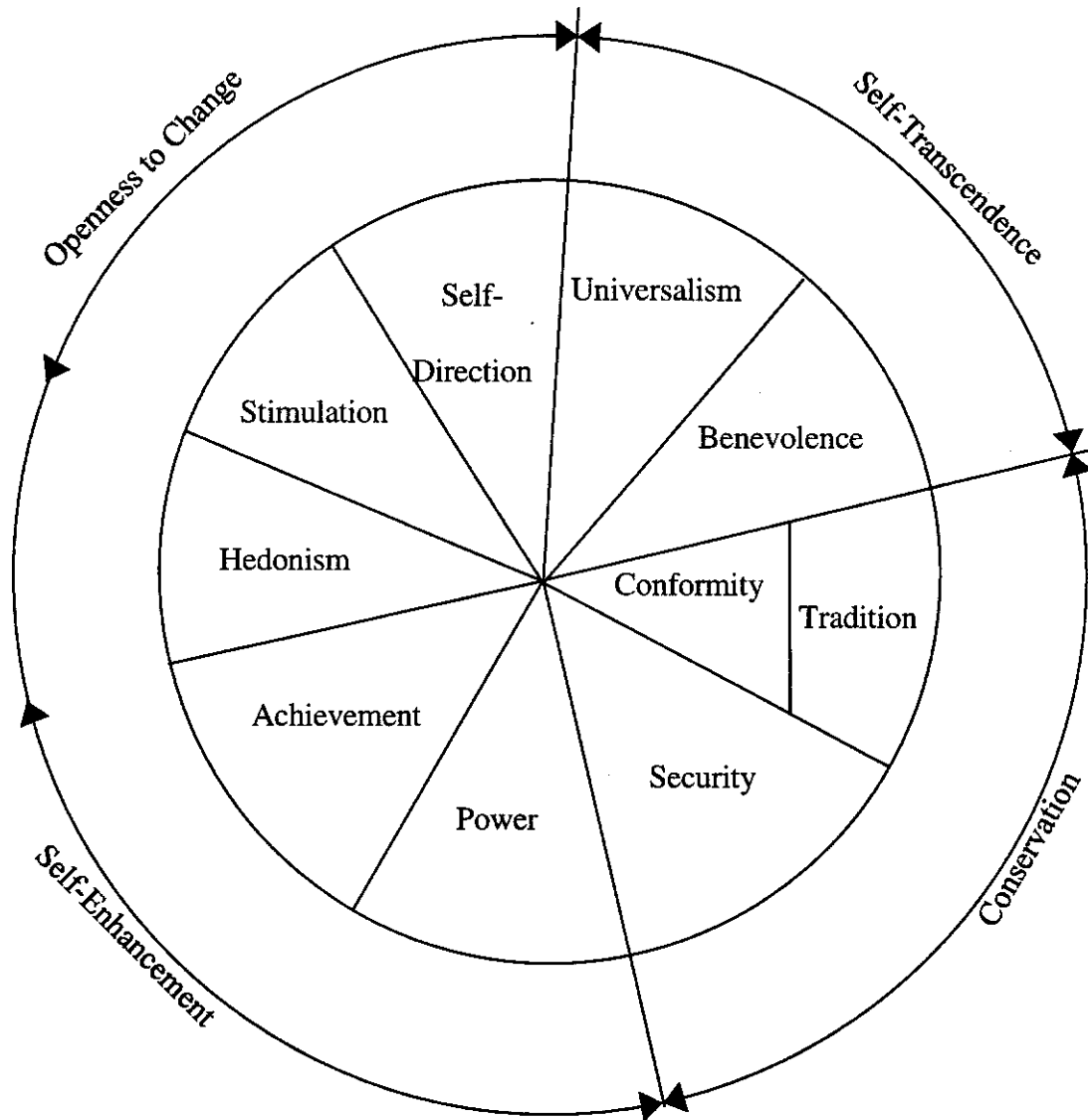
^a p < .05

^b p < .01

^c p < .001

Figure 1

Schwartz's Model of Relations Among Motivational Types of Values and Higher-Order Value Types



Source: Adapted from Schwartz (1992)

Figure 2

Pattern of Partial Correlations Between OSL and the Motivational Value Types and Higher-Order Value Domains

