

Model of antecedents of enduring involvement

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No study so far has investigated antecedent predictive validity of enduring involvement. This may be one of the main reasons for the present problems with conceptualization of involvement construct. The aim of the present study was to select the most appropriate model of antecedents of enduring involvement. PII and IP were used to measure involvement with five products. EPPS and MAT were used to measure needs. Other antecedent variables included were: learning environment, use, sex and age. Sample: 200 students and 307 non-students. Different models of antecedents of enduring involvement yielded best fit for involvement with different products.

Involvement is a key consumer behavior variable. Yet its conceptual clarification and methodological purification are far from satisfactory. (Cohen 1983; Rothschild 1984; Antil 1984; Muncy & Hunt 1984). The existing research of involvement dealt primarily with the relationship between involvement and its consequences. A typical study would experimentally manipulate situational involvement of subjects and look for the impact this has on some aspect of consumption related behavior. Consequent predictive validity of situational involvement (Gench & Javalgi 1987; Holmes and Crocker 1987; Petty & Cacioppo 1981), as well as of the enduring involvement (Zaichkowsky 1985b) was generally confirmed. Significant efforts were also made to measure enduring involvement with products and services (Laurent and Kapferer 1985; Zaichkowsky 1985a). These studies confirmed that involvement measures have satisfactory face validity, internal consistency and reliability. Some studies argue that discriminant validity of the construct is still questionable (Bloch and Richins 1983; McQuarrie & Munson 1987).

However, an important component of concept's construct validity is also its antecedent predictive validity, i.e., whether scores on construct's measures can be predicted from its postulated antecedents. No study so

far has thoroughly addressed the question of antecedent predictive validity of enduring involvement. This may be one of the main reasons for the present problems with conceptualization of involvement. The present paper attempts to clarify the relationship between enduring involvement and its antecedents.

Relationship of involvement with its antecedents is not as self-evident as it may seem. A more detailed account of the genesis of enduring involvement and a more precise theory of its antecedents are needed if involvement is to become a useful scientific construct. Satisfactory theory can only be built through a series of steps, each involving theory exposition, empirical testing and reformulation of the models where necessary. As the present study is only the first step of investigation into relationship of enduring involvement and its antecedents, the goal is not to develop a complete theoretical account. Rather, the study concentrates on the core concepts and relations among them.

What are the causes of enduring involvement with a product category? Most studies agree that the construct has three categories of antecedents (Bloch & Richins 1983; Houston & Rothschild 1977): 1. A product and its characteristics, 2. the individual's motivational structure (his needs, values, goals ...), and 3. his prior experience with this product (learning).

In the present study, the emphasis was laid on the relationship between needs and enduring involvement. Other motivational and personality variables, potentially important predictors of enduring involvement (self concept, values, goals, norms, roles, personality traits), were not included in our research, since adequate theoretical account of their relationship with involvement is lacking.

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The author wishes to thank Ministry of Science and Technology for founding the project and Klas Brenk and Janez Damjan for their assistance and suggestions.

In the following sections, first the relevant concepts are discussed and a theoretical framework for explanation of their relationship is elaborated. Then alternative models of effects of antecedents of enduring involvement are presented. Empirical testing of the models is described in the final sections of the paper.

Motivational structure

According to Kotler (1986, p.3), human needs and wants are the starting point for the discipline of marketing. Needs are the key concept of motivation theory and have been demonstrated to be an important segment of predictors of human behavior (Cattell et al. 1975; Boyle 1988). Obviously, motivational processes in humans are much too complex to be reduced to needs. Different theories of motivation (e.g. social, cognitive, learning theories) put emphasis on different concepts, processes or phases (for review, see Steers and Porter 1987). Need theories put emphasis on a set of inner, dispositional tendencies, which have different classes of goal states or objects, but similar formal properties, components and mechanisms.

One of the basic questions of need theories is: Which needs motivate human behavior? Lists attempting to answer this question are very diverse, ranging from two to a couple of dozen entries. These lists of motives can be arranged into a hierarchy of specificity. The number of motives one chooses to list depends entirely on the degree of specificity with which one decides to analyze them (Maslow 1954, p.70). This hierarchy is not only a matter of classification, but one of dynamic connections among different levels of drives, goals, desires, etc. Deeper needs express themselves through more superficial desires.

When one proceeds to analyze deeper levels of motivation, one is ultimately always led to certain goals or needs beyond which he cannot go (Maslow 1954, p.66). These basic needs (Maslow 1954) or ergs (Cattell 1985) are ends in themselves (Cattell & Kline 1977, p.176). The basic needs, "pushes" (Maslow 1954) are universal, while the superficial wants, "pulls", through which the basic needs are canalized, are much more culture dependent.

In economics, the term "basic need" has often normative connotations. *'...in economics, ..."need" presumably is a moral, psychological or physical imperative... If we "need" something, we must have it: there is literally no alternative of either substitution or abstinence'* (Lutz and Lux 1988). Unlike these notions, in the present study, the term "basic need" is not used as a value judgment and it does not imply that everybody should be provided for. The term basic needs refers to independent

motivational factors, "ultimate roots of human effort and activity" (Cattell 1985, p.9), the source of which can not be traced to some other more fundamental needs.

The dilemmas about exact number and nature of basic human needs don't have an unanimously accepted answer. Many eminent motivation theorists, to mention only McDougall, Murray and Maslow, proposed differing lists. Taxonomy of dynamic motive structures that emerged from Cattell's extensive factor-analytic studies has doubtlessly the best empirical and methodological foundation (Boyle 1988). The present theoretical disposition therefore depends principally on Cattell's framework. Cattell uses neologism *erg* for a basic need to avoid ambiguities associated with the terms drive, instinct and need. He defines *erg* as *'an innate psychophysical disposition to acquire reactivity (attention, recognition) to certain classes of objects more readily than others, to experience specific emotion in regard to them, and to start on a course of action which ceases more completely at a certain specific goal activity than at any other'* (Boyle 1988, p.754). Some ergs have innate somatic basis and all ergs are postulated to have innate neural basis. Presumably, this is located principally in amygdala and some parts of the hypothalamus where ergic goal states in the most general sense are encoded and compared to actual state (LeDoux 1989). The starting point of motivational cycle is a detected discrepancy between goal state and actual state as conveyed by incoming exteroceptive and proprioceptive stimuli that arrive either directly or preprocessed by cognitive brain areas. This discrepancy triggers arousal and emotional experience that is specific to the need involved. A goal-directed behavior is activated and, if successful, the incoming stimuli change to match the goal state and the discrepancy vanishes.

The force by which an erg directs behavior toward particular goals can be stronger or weaker. Cattell calls this strength as ergic tension. Cattell and his colleagues developed a series of tests to measure the tension level of different ergs (Cattell et al. 1975). Ergic tension has two components. One is enduring and depends on individual's constitution and his early learning history with respect to this erg (imprinting and repression). Cattell calls it ergic trait. The other component is ergic state. It depends on the level of momentary psychological and physiological gratification or deprivation of an erg and on stimuli situation. Thus, we can speak of intra-individual variations in tension of a particular erg, as well as of inter-individual differences. Traits are not considered to be absolutely stable, but relatively stable average levels that can change due to maturation factors (Styer, Ferring & Schmitt 1992).

Prior experience

Prior experience refers to past use and past purchases of the product, as well as to all indirect contacts with the product. Effect of prior experience on enduring involvement is already contaminated with effects of other antecedents, principally motivation. Individual's motivational structure affects his propensity to get in touch with particular products. On the other hand, individual's experience with the product doesn't depend solely on his motivational structure, but also on his or her learning environment. In the learning environment of every individual, some products are more common, it is easier to get in touch with them, it is easier to get them. Other products are less common. The individual's learning environment is defined by his/her culture, but also by his/her subculture, social class, social roles etc. (Vodopivec 1992).

Product and its characteristics

In his criticism of learning theories that simply stress changes in connections between stimuli and responses, Maslow (1954, p.110) pointed out that in the long run, no choice of satisfiers can be casual and arbitrary. A particular product can satisfy one or more ergs only because of its intrinsic properties. On the other hand, learning environment affects not only probability that an individual gets in touch with particular product, but partly also his perceptions as to which needs a particular product can address. We assume that these perceptions are similar for individuals belonging to the same culture. Otherwise, interaction terms would be introduced into analyzed models that would make solutions very difficult, if not impossible to identify.

Enduring involvement

Consumer involvement with a product¹ category is widely recognized as an important marketing variable. Definitions and operationalizations of involvement construct in consumer behavior literature are not altogether congruent (Antil 1984; Muncy & Hunt 1984; Rothschild 1984). Most papers agree that involvement is a state of motivation, arousal or interest (Cohen 1983; Johnson & Eagly 1989; Rothschild 1984). Cohen

(1983) insists that its consequences should be separated from definitions and operationalizations of the concept of involvement itself. Its consequences are types or levels of information search and processing.

In their theoretical development, most studies posit that involvement has enduring and situational component (Andrews, Durvasula & Akhter 1990; Arora 1982; Bloch & Richins 1983; Houston & Rothschild 1977; Zaichkowsky 1985a). Some include response component as well (e.g. Houston & Rothschild 1977), albeit according to the general view, response component should not be included in the involvement construct itself, but among its consequences.

The present study is concerned with enduring involvement, solely. An important stream of involvement research stems from the observation that individuals have relatively stable and enduring involvement levels with some product classes. (for review see Andrews, Durvasula & Akhter 1990) *Relative stability* allows for changes in average enduring levels of involvement which can occur due to maturation, learning, long-term changes in environment and role transitions. The term *product involvement* is sometimes used instead of enduring involvement, meaning roughly the same (Mittal & Lee 1989; Zaichkowsky 1985a).

Definitions of involvement as a state of motivation, arousal or activation are obviously not adequate when one proceeds to define enduring involvement. Though Kapferer and Laurent (1985) wrote about enduring drive state, this appears to be a contradiction in terms. Those definitions that speak of personal relevance, importance or interest (e.g., Antil 1984) are more acceptable, but not very illuminating.

To understand better the nature of enduring involvement, we must go back to its genesis. Involvement with a product category develops when all three categories of antecedents (product, motivation, learning) coincide. A product or activity in which it is used can reduce tension of one or more ergs. Emotions accompany ergic tension reduction. LeDoux (1989) defines emotions as affectively charged conscious experiences, (which brings us to Krugman's consciousness bridging experiences). Through repetition of this experience, the product acquires affective significance (LeDoux 1989). Synaptic circuits connecting brain areas for long-term, episodic and conceptual memories where objects are cognitively represented (mostly hippocampus), with brain areas for evaluation of affective significance of stimuli (mostly amygdala and some parts of hypothalamus) develop and strengthen through coexcitation of both areas. Affective learning doesn't take place solely through direct experience with the product in purchase and use. Human learning is very complex,

¹ The term product is used in a broad sense of Kotler's (1986) definition to encompass also services, ideas etc.: 'A product is anything that can be offered to a market for attention, acquisition, use or consumption that might satisfy a want or need.' (p.6)

and is not confined to immediately present stimuli and reactions. Imitation, identification, media presentation, referent group observation, etc. are also relevant for affective learning, since all these kinds of learning are often accompanied with empathy and emotional experiences.

An individual with high enduring level of tension of particular erg is likely to have more frequent and more intensive emotional experiences related to products that can facilitate tension reduction of this erg. On the other hand, learning environment also affects probability that affective learning will take place.

Enduring involvement is therefore best defined as a disposition for involved behavior towards a particular product category. Synaptic pathways connecting affective and cognitive brain areas can be hypothesized to be its neural basis. These pathways can be activated from within or from the outside. When stimuli related to affectively significant products are encountered, state of arousal, characteristic for involved behavior, is activated. The same is true when tension of ergs, related to particular product, is high.

Dimensionality of enduring involvement.

A review of the literature reveals prevailing opinion of researchers that enduring involvement is not unidimensional. Researchers distinguish at least two dimensions of enduring involvement: rational (cognitive, functional) and emotional (affective) (e.g., McQuarrie & Munson 1987; Park & Young 1983; Zaichkowsky 1987). Laurent and Kapferer (1985) distinguish several facets of involvement: Importance, hedonic or pleasure value, sign value, risk probability and risk importance. Risk probability and risk importance are related to decision and are therefore to a large extent situationally determined. Importance corresponds closely to the rational dimension of enduring involvement as identified by other researchers, whereas pleasure value corresponds to the emotional dimension. As to sign value, a question arises whether it should be considered as a separate dimension of enduring involvement. Though it must be recognized that the sign value is one of the most important benefits that individuals seek in many products, it is related to one particular basic need (self assertion) and to its corresponding emotion (pride). If we are to concede a separate dimension of involvement to every basic need and to the related emotion, the concept of involvement becomes useless. For example, many products (toys, baby clothes, etc.) are related to parental erg and emotion of tenderness. Thus, following the sign value example, we should also speak of tenderness involvement. And

curiosity involvement, etc. The only way for involvement to remain an useful explanatory construct is to consider all these emotions manifestations of emotional involvement. The main value of involvement construct is that it subsumes in one dimension all the diversity of a product's relations with various needs, values and goals. Our view is also in line with findings of McQuarrie and Munson (1987), who failed to identify sign value as a separate dimension of involvement. In their analysis, this dimension was mixed with pleasure dimension.

Theoretical model

Distinguishing dimensions of involvement is important since different dimensions tend to affect different consequent variables (Laurent & Kapferer 1985). There are also some indications that different dimensions of enduring involvement have different antecedents. One study of effects of motivational variables on enduring involvement found out that need measures correlate higher with emotional involvement, while usage rate correlates higher with rational involvement (Vodopivec 1991). It seems that emotions experienced in ergic tension reduction are mainly reflected in the emotional dimension of enduring involvement. Usage rate is a consequence of emotional involvement. On the other hand, usage rate of a product is also strongly influenced by environmental factors. This results in rational involvement. Rational involvement then gradually turns into emotional involvement. This explanation is embodied in the model of antecedents of enduring involvement in Figure 1. Obviously, this model is a simplification. At least to some extent, all the constructs involved probably mutually affect each other. However, at this stage of development of theory of antecedents of enduring involvement, it is wiser to start with a model that takes into account only the most important effects.

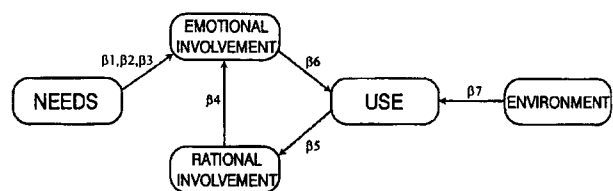


Figure 1. Theoretical model of antecedents of enduring involvement

Research objectives

The genesis of enduring involvement as a learning process may seem obvious at the theoretical level.

However, questions about relative importance of particular antecedents and precedence of effects remain to be investigated empirically. Studies of involvement are often unclear or even contradictory on these issues: Does one use a product because she/he is involved with it or is it the other way around? Is one involved with a product because it satisfies her/his needs or does she/he use the product because it satisfies her/his needs? Is the mechanism equal for all products or is it different for different products?

The aim of the present study was to find out whether the proposed theoretical model is indeed the best approximation of the pattern of relationships between enduring involvement and its antecedent constructs. Theoretical model was compared with four alternative models that also provide plausible explanation of relationships of enduring involvement and its antecedents and are parsimonious enough to be of theoretical relevance. The four alternative models are shown in Figure 2.

METHOD

Variables and measures

Involvement

Involvement with four products and one service was measured: *Car, hi-fi set, washing machine, watch and traveling*. In our opinion, testing of the models using five products would yield a reasonable degree of generalizability, provided that results are convergent.

Involvement measures from two sources were used: Personal Involvement Inventory (PII, McQuarrie & Munson 1987; Zaichkowsky 1985a; 1987) and Involvement Profile (IP, Kapferer & Laurent 1985; Laurent & Kapferer 1985). Only a subset of items from each instrument was used.

Analyses of PII have shown that it is somewhat redundant and that shorter subset of items can yield satisfactory reliabilities. Therefore we used only four items for which previous research has shown the highest loadings on *emotional* dimension of involvement (McQuarrie & Munson 1987; Zaichkowsky 1987; our own preliminary research, our own preliminary studies of Slovenian version of PII: *boring-interesting, exciting-unexciting, desirable-undesirable, unappealing-appealing*) and four items with highest loadings on *rational* dimension of involvement (*not needed-needed, essential-casual, important-unimportant, useful-trivial*). Items were presented in form of six-point bipolar scales. Preliminary testing yielded correlations between the original and reduced scale ranging from .87 to .92 for different products.

For IP, the two published items for importance scale were taken from Laurent and Kapferer (1985: '*___ is very important to me.*' and '*For me ___ does not matter.*') and the two published items for pleasure scale were taken from Kapferer and Laurent (1985: '*I can't say I particularly like ___.*' and '*For me ___ is a real pleasure.*'). Items were presented in form of five-point Likert scales.

Confirmatory factor analysis has shown that IP importance items and PII rational involvement items reflect in fact a single dimension, and IP pleasure items and PII emotional involvement items reflect another dimension in case of all five products and services (see Bagozzi 1991; Stenkamp and Van Tryp 1991 for procedure). Therefore, two dimensions of involvement (emotional and rational) were measured using measures from both sources. Participants, were instructed to give their ratings taking into account their enduring relationship with particular product.

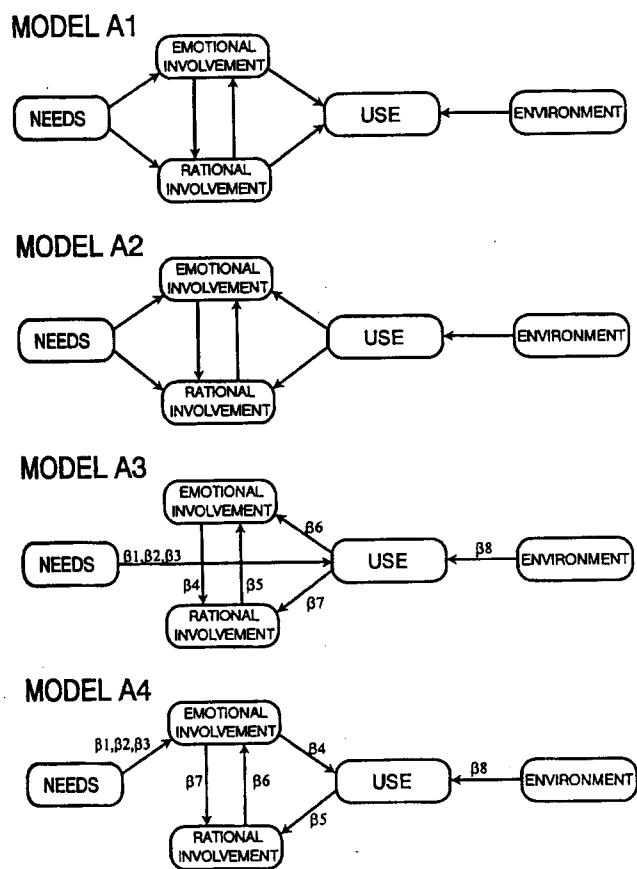


Figure 2. Alternative models of antecedents of enduring involvement

Needs

Instruments for measurement of need variables were selected according to the following criteria: 1) sufficient theoretical and psychometric foundation; 2) coverage of all relevant basic needs or a large subset of them. 3) a general purpose battery (not designed expressly for clinical, educational or work psychology setting). Two measurement instruments in psychological literature met our requirements: Edwards Personal Preference Schedule (EPPS, Edwards 1959) and Motivation Analysis Test (MAT, Cattell et al., 1975). EPPS stems from Murray's motivation theory. It measures 15 manifest needs with 9 measures (items) for each dimension. Items are presented in pairs and the subject picks from each pair the item that describes him better. MAT stems from Cattell's theory. It is consisted of four subtests and each measures 10 erg and sentiment factors. In our study, we used only Estimates and Paired Words subtests. They exploit mechanisms of autistic distortion and associations to assess strength of measured basic motivational structures.

Three need variables were used as antecedents of involvement with each product or service (Table 1). They were selected on the basis of results of an exploratory study in which participants' involvement with 52 products and services was measured, as well as subjects' scores on a wide range of motivational variables (Vodopivec 1991). The three need variables which had the highest correlations with involvement with each product were selected for the present study. Only those items from MAT and EPPS which measured the selected need variables were included in questionnaire administered to our subjects. In Sex need, MAT Mating and EPPS Heterosexuality items were combined. Confirmatory factor analysis revealed that they measured the same latent dimension. This was not the case with MAT Assertiveness and EPPS Dominance items. Therefore, only MAT was used to measure this basic need.

Table 1
Need variables in the models

variable	Products				
	Car	Hi-fi equipment	Washing machine	Watch	Travel
N1	Narcism (MAT)	Change (EPPS)	Order (EPPS)	Order (EPPS)	Change (EPPS)
N2	Assertiveness (MAT)	Affiliation (EPPS)	Home-parental (MAT)	Home-parental (MAT)	Affiliation (EPPS)
N3	Achievement (EPPS)	Sex (EPPS+MAT)	Achievement (EPPS)	Achievement (EPPS)	Sex (EPPS+MAT)

Use

Two kinds of measures were applied to determine usage rate of selected products and services. Responses about how often the participant uses the product and how much of it she/he uses and how much she/he spends on it were combined into 'objective' measure (Ua). Participant's estimation whether she or he uses _____ /1. less /2. the same /3. more /4. much more / than people on the average was taken for 'subjective' measure (Ub).

Learning environment

Measures of product's closeness to subject's learning environment were selected with precaution to avoid contamination with effects of subject's motivation. Usage rate of the product by important others was deemed the most neutral measure with respect to motivation. Therefore the following four items were used: (1) My parents / (2) my friends / (3) people with job similar to my own/ (4) people with status similar to my own/ use(d) _____ / 1. less / 2. the same / 3. more / 4. much more / than people in general.

Sex and age

Sex and age were used as exogenous variables in all the models tested with effects on all other latent constructs. Since a significant part of covariances of the studied constructs is due to joint effects of demographic variables, it was important to take this into account in our models. For the reason of clarity, these variables and their effects are not shown in Figures 1 and 2, but are included in results in Table 3.

Participants and Procedure

All measures were compiled into a booklet and participants indicated their responses directly into it (no separate response sheet was used). Our sample consisted of two groups. The first group were 200 business and psychology undergraduate students. They answered the questionnaire during class time. Their median age was 21. There were 61 % female, and 39 % male participants. The other group was a sample of 500 participants randomly selected from a telephone directory. The questionnaire was sent to them along with a prepaid return envelope and an accompanying letter which explained the purpose of the research and gave detailed instructions. Ten days later, the participants were sent a follow-up card. 307 valid questionnaires were returned (61% response rate). 47% of participants in this group were females and 53% males.

Their median age was 41. On the average, they were significantly better educated than the population as a whole. No claims of representativeness of the sample are made here and no conclusion about population parameter values can be drawn. Nevertheless, we consider the sample acceptable for tentative theory testing.

Analysis of Models

Reliability analysis of measures of each construct was performed first. Several items were dropped from need scales due to poor item-total correlations. At least ten items for each need variable were retained. All involvement measures were acceptable and all six items for emotional involvement and six items for rational involvement with each product/service were retained. Measures of each construct were randomly split into two halves. Each half served as a manifest variable in the analysis of the models. The two manifest variables for each construct are denoted with small letters a and b.

Cases with at least one missing value on included variables were dropped from each analysis. The smallest effective sample size was 480 in the total sample analysis. Univariate distributions of manifest variables were tested prior to computation of correlation matrices. Skewness and kurtosis coefficients were within recommended boundaries 1 (Kaplan 1989), except for rational involvement with *washing machine* and *watch* and emotional involvement with *car* and *traveling*, where skewness was slightly over 1, but less than 1.5. These variables were normalized prior to computation of correlation matrices. Variable environment (E) was not considered to be a latent construct, but an emergent variable in the sense of Cohen et al. (1990). Thus all four measures of this variable were summed into one single, errored indicator. Its reliability was estimated at .8 on the basis of parallelism with 'subjective' measure of use (Ub).

Analysis of models was first run on a combined sample of both groups, and after that on the non-student sample separately. Results were somewhat different, but the ordering of fit of models for all five products and services was the same in both cases. Thus, only the results of analysis of the combined sample are reported.

Correlation matrices were analyzed, since models were scale-invariant in the sense of Cudeck (1989). Correlation matrices are given in Appendix A. Parameters were estimated by maximum likelihood, since all variables except sex and age had normal distributions. Sex and age were exogenous variables with no measurement model, so their non-normality was tolerable.

LISREL 8 (Joreskog & Sorbrom 1993) option which constrains all variances of latent variables to 1 was used. All the parameters reported in the Results section are completely standardized, with manifest and latent variables' variances equal to 1. The evaluation of fit of the models, followed guidelines by Mulaik and colleagues (1989). Relative Parsimonious Normed Fit Index Type 2 (RPNFI2) was used.

RESULTS AND DISCUSSION

Fit statistics for theoretical and alternative models for the five products and services are presented in Table 2. All chi-square statistics are significant beyond 1% level. If we were to take chi-square test literally, no model is correct. However, many eminent theorists of structural equations modeling have recently taken position that the notion of 'correct model' should be discarded. For example, Cudeck and Henly (1991, p.512) write that "*Models usually are formalizations of processes that are extremely complex,*" and "*...no model is completely faithful to behavior under study.*" Chi-square test would, if sample size is adequate to give it power, almost certainly reject any model, even if it is 'useful' and 'sound', unless it is a saturated model. Instead of looking for the 'correct model', emphasis should rather be laid on comparison of models and selection of the model that yields the most appropriate description of the studied processes.

Chi-square is not an adequate test for comparison of models with different degrees of freedom, since additional free parameters in the model usually improve fit. Mulaik and colleagues (1989) provide the following guidelines for comparison of theoretically relevant models with different degrees of freedom:

1) Normed fit index type two: It corrects small-sample error of NFI.

2) Correction with parsimony ratio: To penalize the loss of degrees of freedom of less parsimonious models.

3) Relative index: Measurement model usually contributes the larger portion of degrees of freedom and, therefore, larger portion of discrepancy between the sample matrix and the fitted matrix as well. But the researcher is normally interested principally in relations in the structural model. Therefore, zero structural and saturated structural models should be used as a basis for NFI to reflect only the fit of structural model.

Relative Parsimonious Normed Fit Index type 2 (RPNFI2) was therefore used to compare and select models: where T denotes theoretical model, SS denotes saturated structural model and S0 zero structural

$$RPNFI2 = \frac{\chi_{S0}^2 - \chi_T^2}{\chi_{S0}^2 - \chi_{SS}^2 - (df_T - df_{SS})} \cdot \frac{df_T - df_{SS}}{df_{S0} - df_{SS}}$$

model. T, SS and S0 share the same measurement model. In S0, all matrices of effects among latent variables (B and Ψ) are constrained to zero (except diagonal of Ψ). In our case, effects of both exogenous variables (sex and age) on all other constructs were included in all the models compared and we were principally interested in relations among endogenous constructs. Therefore, we applied a special variant of S0 model with all parameters free. In SS, Γ matrix is full and free, and Ψ matrix is symmetrical and free.

Models A1, A2 and A3 are symmetric with respect to direction of causation between emotional and rational involvement. Fit is the same, regardless of whether the hypothesized causation is in one direction or another, or both. Parameters of model with mutual causation are reported. In computation of fit indices, however, degrees of freedom of model with unidirectional causation are taken into account.

According to RPNFI2 indices in Table 2, the proposed theoretical model is the best description of relationship of enduring involvement and its antecedents in case of *hi-fi equipment, washing machine and watch*. Model A4 yielded the best fit in case of *car*, and model A3 in case of *traveling*. Differences in RPNFI2 are so small that these results can't lead to final conclusions. A strong support for validity of these results is the fact

that the same analysis with only non-student subsample yielded the same ordering of models for all five products/services. The proposed theoretical model is therefore the best parsimonious approximation of complex relationships of involvement and its antecedents in case of a substantial subset of products and services. How large and important is this subset of products and services, we can not infer from the present analysis of a sample of five. However, we can also conclude that it is highly probable that for a substantial subset of products and services, other models better summarize the studied processes than our proposed theoretical model.

Table 3 shows important parameters of the models. Results of analysis of the model which yielded the best fit for each product or service are presented. All parameters are completely standardized. Reliabilities of measures are in general satisfactory. Standardized value of one parameter exceeds 1, but for less than its standard error. Effects of *sex* and *age* on other variables of the models are in many cases highly significant and relevant (g parameters). These effects may also partially hide effects of the variable learning environment.

Effects of *needs on involvement* are, in general, relatively weak, yet significant and relevant. After all other antecedents (sex, age, use and even rational involvement) were taken into account, need factors still explained some 20% of variance of emotional involvement, on the average, regardless of which model proved to be the best. The kind of modeling used in

Table 2
Goodness-of-fit indices

		Products					
		Car	Hi-fi equipment	Washing machine	Watch	Travel	
Model*	df						
SO	80	χ^2	502.2	969.3	424.8	952.7	830.9
SS	59	χ^2	164.7	289.7	222.8	252.6	315.4
T	73	χ^2	267.9	318.2	358.4	430.2	402.4
		RPNFI2	.483	.652	.235	.508	.570
A1	70	χ^2	227.9	324.4	356.2	396.0	352.1
		RPNFI2	.440	.505	.188	.423	.497
A2	70	χ^2	225.2	361.3	357.7	395.8	391.9
		RPNFI2	.444	.476	.184	.423	.456
A3	73	χ^2	261.6	325.9	381.6	436.3	354.7
		RPNFI2	.496	.644	.153	.501	.633
A4	72	χ^2	227.8	318.0	356.9	418.8	349.0
		RPNFI2	.523	.605	.222	.481	.594

* see Figures 1,2.

Table 3
Important parameters of the models

parameter ^b	Products				
	Car (model A4) ^a	Hi-fi equipment	Washing machine	Watch	Travel
β^c					
1	.07*	.14	.31	.31	.56
2	.26	.13	.22	-.15	.07*
3	.05*	.28	.18	.20	.11
4	.26	.40	.06*	.47	.55
5	.26	.76	-.03*	.72	.34
6	.48	.89	.18	.30	.35
7	.61	.19	-.02*	-.16	.37
8	.05*				.23
$\lambda^{d,e}$					
E1a	.91	.89	.85	.84	.86
E1b	.61	.66	.72	.65	.77
R1a	.84	.92	.73	.94	.95
R1b	.88	.90	1.06	.85	.82
Ua	.78	.76	.52	.85	.83
Ub	.95	.63	.79	.93	.82
N1a	.48	.54	.66	.66	.55
N1b	.85	.82	.82	.83	.82
N2a	.63	.59	.86	.88	.56
N2b	.72	.83	.87	.85	.85
N3a	.57	.83	.55	.60	.80
N3b	.81	.84	.83	.75	.88
γ					
sex=>f					
EI	-.12	-.07*	.20	-.05*	.20
RI	.18	.04*	.25	.15	.06*
E	.10*	.02*	.07*	.09*	-.05*
U	-.24	-.01*	.62	.00*	-.05*
N1	-.07*	.03*	.17	.15	.02*
N2	-.03*	.29	.04*	.01*	.28
N3	-.15	-.41	-.06*	-.04*	-.42
age=>g					
EI	-.36	-.05*	.25	-.10*	-.18
RI	-.12*	.15	.15	.13	.24
E	.14	-.36	.00*	-.26	-.09*
U	.31	-.10*	.52	-.09*	-.02*
N1	.18	-.57	.74	.72	-.56
N2	.37	-.27	.70	.69	-.27
N3	.09*	-.27	.70	.69	-.27

a See Figure 2; b All parameters are completely standardized; c See Figures 1,2; d Measurement model was congeneric. a and b denote the first and the second manifest variable for each construct (see 'Analysis of models'); e EI=emotional involvement, RI=rational involvement, E=environment, U=use. N1, N2, N3=needs (see Table 1); f Effects of sex on other variables, 1=M, 2=F; g Effects of age on other variables; * t < 2.

the present study can therefore reveal what basic needs does a particular product serve. This question is gaining importance in the age of increasing globalization of marketing, when marketers, underneath superficial, culturally dependent wants and mores, look for universal anchoring points for positioning of their products and brands.

Magnitude of effects among *emotional involvement*, *rational involvement* and *use* varies significantly from one product to another. This also indicates that development of enduring involvement with different products is quite different.

Effects of variable *environment* are small and mostly insignificant or even negative. Construct *environment* obviously requires better operationalization to reveal its actual role in this context.

CONCLUSIONS

The aim of the present study was to find an universal model that would explain effects of antecedents of enduring involvement with products and services. Results of the comparisons of alternative models failed to

support our expectations. Results suggest that the genesis of involvement with different products and services is too diverse to allow for an unitary model. Replicating the present research with a number of other products and services would reveal regularities as to which classes of products and services conform to various competing models.

Future studies should also extend some points that in retrospect prove to be important limitations of the present research. Needs probably shouldn't be considered an uniform class of antecedents of involvement, but should be classified with respect to important dimensions (for example *approach - avoidance* needs). Then fit of alternative models should be examined with different groups of needs. A distinction between unintegrated and integrated component of needs (Cattell 1985) or implicit needs and self-attributed needs (McClelland, Koestner & Wienberger 1989) is presumably also important for the analyzed models and should be taken into account. A counterpart of this distinction should be examined on the involvement side also, especially for emotional involvement, since many indices support the hypothesis that self-attributed measures like PII and IP cannot completely exhaust the scope of individual's emotional involvement with particular product. Another important point to improve is operationalization of the construct of learning environment. If adequately elaborated, this should doubtlessly prove to be an important source of variance of enduring involvement. Aside from usage rate of the product by important others, environment's expectations and norms about usage of the product should be explicitly included.

However, our results support the hypothesis that the proposed theoretical model of antecedents of enduring involvement is the model of choice for a large number of products and services. This means that emotional involvement and rational involvement have indeed different antecedents and genesis, and should, therefore, always be treated as separate variables in involvement studies.

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Accepted September 1995

APPENDIX A

CORRELATION MATRICES

Car

	EIa*	EIb	RIa	RIb	E	Ua	Ub	N1a	N1b	N2a	N2b	N3a	N3b	sex **	age
EIa	1.0														
EIb	.56	1.0													
RIa	.51	.37	1.0												
RIb	.53	.42	.75	1.0											
E	.01	.07	.08	.08	1.0										
Ua	.31	.20	.28	.19	.09	1.0									
Ub	.25	.18	.26	.20	.07	.74	1.0								
N1a	.08	.03	.08	.08	-.06	.04	.06	1.0							
N1b	.11	.01	.10	.12	.03	.07	.09	.41	1.0						
N2a	.30	.08	.26	.26	.11	.08	.16	.13	.17	1.0					
N2b	.14	.05	.11	.22	.05	.05	.11	.10	.11	.46	1.0				
N3a	.12	.08	.10	.13	-.02	.10	.10	.16	.20	.21	.07	1.0			
N3b	.17	-.02	.11	.13	-.05	.15	.21	.16	.15	.25	.17	.46	1.0		
sex	-.15	.07	.04	.03	.04	-.28	-.34	-.09	-.12	-.04	-.18	-.09	-.16	1.0	
age	-.07	-.11	-.03	.01	.09	.24	.41	.09	.18	.19	.32	.09	.12	-.38	1.0

Hi-fi equipment

	EIa	EIb	RIa	RIb	E	Ua	Ub	N1a	N1b	N2a	N2b	N3a	N3b	sex	age
EIa	1.0														
EIb	.59	1.0													
RIa	.69	.56	1.0												
RIb	.67	.48	.83	1.0											
E	.16	.09	.18	.23	1.0										
Ua	.67	.41	.57	.53	.27	1.0									
Ub	.53	.41	.47	.48	.15	.51	1.0								
N1a	.15	.18	.15	.06	.08	.25	.18	1.0							
N1b	.26	.29	.24	.16	.21	.31	.22	.45	1.0						
N2a	.19	.22	.11	.12	.12	.17	.22	-.04	.30	1.0					
N2b	.12	.19	.08	.03	.14	.11	.16	.08	.17	.49	1.0				
N3a	.39	.31	.33	.28	.10	.40	.38	.28	.31	.08	-.08	1.0			
N3b	.31	.26	.23	.18	.05	.31	.27	.05	.22	.09	.03	.70	1.0		
sex	-.05	.17	.03	.02	.13	-.02	.13	.15	.20	.16	.35	-.07	-.20	1.0	
age	-.34	-.32	-.26	-.21	-.30	-.40	-.34	-.31	-.48	-.27	-.30	-.43	-.39	-.38	1.0

Washing machine

	EIa	EIb	RIa	RIb	E	Ua	Ub	N1a	N1b	N2a	N2b	N3a	N3b	sex	age
EIa	1.0														
EIb	.64	1.0													
RIa	.13	.04	1.0												
RIb	.14	.11	.77	1.0											
E	.07	.08	-.01	.01	1.0										
Ua	.37	.24	.12	.05	.08	1.0									
Ub	.34	.15	.13	.14	-.01	.41	1.0								
N1a	.37	.37	.03	.03	.04	.20	.12	1.0							
N1b	.44	.44	.02	.07	-.06	.17	.18	.54	1.0						
N2a	.42	.35	-.02	.04	.02	.22	.18	.43	.48	1.0					
N2b	.49	.41	.04	.10	-.03	.25	.24	.44	.46	.75	1.0				
N3a	.29	.25	.11	.07	.07	.17	.13	.20	.31	.38	.39	1.0			
N3b	.30	.21	.07	.03	.04	.15	.15	.14	.28	.38	.36	.45	1.0		
sex	-.01	-.02	.18	.20	.06	.05	.38	-.01	-.13	-.30	-.13	-.04	-.18	1.0	
age	.50	.46	-.06	.03	-.02	.35	.26	.42	.56	.60	.58	.19	.32	-.40	1.0

Watch

	EIa	EIb	RIa	RIb	E	Ua	Ub	N1a	N1b	N2a	N2b	N3a	N3b	sex	age
EIa	1.0														
EIb	.54	1.0													
RIa	.47	.42	1.0												
RIb	.53	.41	.80	1.0											
E	-.12	-.03	-.07	-.14	1.0										
Ua	.43	.35	.63	.56	.02	1.0									
Ub	.47	.30	.69	.58	-.19	.79	1.0								
N1a	.17	.08	.13	.16	-.13	-.04	-.06	1.0							
N1b	.27	.13	.15	.21	-.11	.02	.05	.55	1.0						
N2a	.14	.03	.21	.15	-.18	.09	.14	.44	.48	1.0					
N2b	.19	.06	.26	.22	-.15	.08	.12	.46	.46	.75	1.0				
N3a	.29	.20	.28	.25	-.02	.21	.16	.22	.31	.38	.39	1.0			
N3b	.14	.11	.11	.13	-.08	.01	.04	.16	.28	.39	.35	.45	1.0		
sex	-.02	.03	.01	.09	.16	.00	.01	-.01	-.14	-.30	-.13	-.04	-.18	1.0	
age	.13	.06	.07	.03	-.24	-.03	.01	.42	.56	.60	.59	.20	.32	-.39	1.0

Travelling

	EIa	EIb	RIa	RIb	E	Ua	Ub	N1a	N1b	N2a	N2b	N3a	N3b	sex	age
EIa	1.0														
EIb	.66	1.0													
RIa	.68	.61	1.0												
RIb	.57	.48	.78	1.0											
E	.07	.02	.14	.18	1.0										
Ua	.54	.34	.49	.45	.21	1.0									
Ub	.51	.30	.50	.46	.16	.70	1.0								
N1a	.29	.23	.27	.25	.12	.27	.30	1.0							
N1b	.44	.41	.37	.31	.04	.41	.40	.45	1.0						
N2a	.26	.23	.23	.17	-.01	.20	.17	-.04	.30	1.0					
N2b	.16	.13	.12	.12	.01	.08	.14	.08	.16	.47	1.0				
N3a	.32	.28	.23	.15	.09	.32	.31	.28	.30	.08	-.07	1.0			
N3b	.13	.12	.11	.01	-.01	.13	.18	.06	.24	.09	.04	.71	1.0		
sex	.29	.36	.21	.20	-.02	.05	.11	.14	.20	.16	.35	-.06	-.19	1.0	
age	-.39	-.40	-.20	-.14	-.06	-.31	-.38	-.31	-.47	-.26	-.32	-.42	-.41	-.40	1.0

* EI=emotional involvement, RI=rational involvement, E=environment, U=use, N1, N2, N3=needs. a and b denote the first and the second manifest variable for each construct (see section Analysis of models); ** 1=M, 2=F