Abstract

Taking previous work on brand sensitivity - the fact of more or less bearing a brand in mind when making a purchasing decision -, the authors have carried out research to determine the brand functions for consumers when purchasing and using products. These functions were identified by qualitative research. The authors created appropriate measurement scales and linked brand functions to variables that explain brand sensitivity, among them extent of involvement, perceived differences between brands and the consumers' subjective experience, by means of structural equation models. Findings reveal that there are five brand functions and that, after pruning some items, the measurement scales designed are valid and reliable, even though there is some confusion between the reflex and mentalization functions. Indeed, the findings indicate that the reflex function is confused with "symbolic value" which is an aspect of involvement; that differentiation is confused with the explanatory variable "perceived differences between brands", and that the different brand functions are partly explained by variables that describe the relation between consumers and products, chief among them product importance and perceived risk.
1. Introduction

Brands have recently been recognized as an important corporate asset. Much work has been done on the functions of the brand for the manufacturer but little has been done on its functions for consumers. The brand has been too often considered as a mere attribute of the product. We think that this attribute is of a different nature. The brand is a "folder" in which consumers file all their perceptions of and experiences with products. Consumers often use this cue during the evaluation process, but not always. This behavior has been studied as "brand sensitivity" (Kapferer and Laurent, 1983). Brand sensitivity has been defined as the degree to which a consumer uses the "brand" as information in the choice process. This concept has been operationalized, and valid and reliable scales that measure brand sensitivity are available. The results of research on brand sensitivity show that the most important variables that explain brand sensitivity are the perception of differences between the various brands in the product category and the degree of consumer involvement. The more differences are perceived between the brands, the greater the brand sensitivity. Consumer involvement is also positively related to brand sensitivity, even though in some high-involvement product categories consumers display low brand sensitivity.

General literature on brands, branding and consumer behavior in relation to brands was reviewed. Jones (1996) believes that "...the first purpose of branding was to confirm the legal protection afforded by the inventor's patent, and the second was to guarantee quality and homogeneity after sellers and buyers had lost the face-to-face contact". Jones refers to the role brands play for the manufacturer. We are now interested in what brands mean to consumers. Engel, Blackwell and Miniard (1993) believe that the brand name is "a surrogate indicator of product quality". The importance consumers place on brand names may vary, depending on the ease with which quality can be objectively judged. When consumers are not expert enough to assess the quality of a product, they become more "brand sensitive" and the guarantee of the brand becomes more important. The authors also mention the symbolic function: "... a brand name can also be influential when the name is seen as a status symbol and consumers are motivated by such considerations". Assael (1987) also believes that the brand can be a source of self-identification. In addition, his distinction between the four types of consumer behavior (see Assael, 1987) brings a few more brand functions to mind. Brand names can be used as global information on the general quality of the product, allowing consumers to avoid extensive problem-solving in the case of repeat-buying processes. Maheswaran, Makie and Chaiken (1992) believe that the brand can be considered as a judgmental heuristic that is part of the heuristic-systematic model (Chaiken, 1980). The brand name can be used as a cue that permits consumers to simplify and limit information processing. The authors' research shows that the brand is a knowledge structure that operates as an heuristic cue. This function recalls the aforementioned function derived from Assael's model. Kapferer and Laurent (1983) defined five functions. They developed a 3-item scale to measure each of these functions and showed that these items explained 65% of the variance in brand sensitivity. Even though this conceptualization has proven useful in enriching their research findings, the different concepts of functions and their operationalization are not clear. We tried to use the 3-item scales for the aforementioned functions in one research study (Galí, 1993) but we found that the measures lack reliability and validity. Before
attempting to improve the operationalization of these scales, the concept of the question "what purpose do brands play for the consumer?" should be reconsidered.

If consumers take "brand" into account as information when they make a choice in a particular product category it is because the brand has a psychological utility. The brand plays a certain role in the psychological process. This research aims to build on previous research on brand functions. We aim to conceptualize and operationalize the functions of the brand. The main questions of this research are then the following:

* Does the brand have different functions?
* What are they?
* Can we measure these functions?
* To what extent do the variables that describe the relationship between the consumer and the product (involvement, perceived differences between brands and subjective expertise) explain these functions?

Our research will help managers to better understand the dynamics of the choice process, the elements involved in this choice and the role of the brand among the other choice criteria.
2. Redefinition of the brand functions

Nine in-depth interviews with experts and 3 focus groups consisting of consumers (not students) were carried out. In these focus groups we simulated choices in different product categories and explicitly proposed to the interviewees a simulation of choice when the brand was lacking. We believed that the functions would appear more clearly if we simulated the elimination of the brand from the choice process. Our qualitative research findings revealed six preliminary functions:

1. **Guarantee**: the brand reduces cognitive dissonance in the purchase of the product. Consumers think that the brand is backed up by a manufacturer who will take responsibility for possible problems with the product.
   
   "the brand is your guarantee ..."

   "the brand is like a backing for my purchase ..."

2. **Simplification**: the brand acts as an heuristic cue in some choice sets in which motivation, involvement and choice tasks are low/simple.
   
   "everybody is moving so fast and has so little time; the brand sums up all the information ..."

3. **Differentiation**: the brand permits the consumer to perceive the differences between the competing products in terms of attributes and general quality.
   
   "brands help you make a distinction ..."

4. **Mentalization**: the brand is helpful to consumers themselves, giving them elements which fortify their own perception.
   
   "I hate going into a bar and discovering thirty other guys who are wearing the same shoes I'm wearing."

5. **Symbolism**: the brand provides information about the people who use it.
   
   "they help pigeonhole all of us a little more."

6. **Generic function**: the brand serves to identify a specific product category. Rather than identifying any specific manufacturer, it identifies an entire product category.
   
   "a lot of times they give the product itself its name. Everybody says Chupa-Chups, for example, when what they mean is any kind of lollipop."
3. Development of the measurement scales

We developed a battery of items for measuring the brand functions identified in the qualitative research and we carried out three pre-tests \((n=45, 50, 47)\) using MBA students as our sample. Each student evaluated the items referring to four products with high brand sensitivity (cars, jeans, coffee and beer). The items (see the selected items in Appendix 1) were selected on the basis of internal consistency analysis (Chronbach Alpha). The results (Table 1) demonstrate that we have developed consistent scales for measuring the brand functions.

<table>
<thead>
<tr>
<th>Table 1. Internal consistency analysis: Cronbach Alphas for the scales</th>
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<tr>
<td>1st. pre-test</td>
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<tr>
<td>Guarantee</td>
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<tr>
<td>Simplific.</td>
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<tr>
<td>Symbolic</td>
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<tr>
<td>Generic</td>
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<tr>
<td>Different.</td>
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<tr>
<td>Mentaliz.</td>
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The outcome of an exploratory factor analysis on the items of the third pre-test was not quite as clear: symbolism and mentalization both appeared in the same factor. This is not surprising considering that both functions refer to the same brand utility feature: its value as a statement. The fact that they are mixed up in a single factor may mean that reflex and mentalization are two sides of a single coin: the value of the brand's symbol. For some of the interviewees this symbolic value referred to their perception of themselves (Sirgy, 1982), while for others its symbolism shaped other people's perceptions of the consumer who uses the particular brand. The simplification function appears by itself in one factor, but one item appears in the guarantee factor. The analyses below will show how this problem was handled.

<table>
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<th>Table 2. Factor analysis</th>
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<tr>
<td>5 factors explained 66% of the variance.</td>
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<td>Factor 1: &quot;Symbolic&quot; and &quot;Mentalization&quot;</td>
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<td>Factor 2: &quot;Guarantee&quot; and &quot;Simplification&quot;</td>
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<td>Factor 3: &quot;Differentiation&quot;</td>
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<td>Factor 4: &quot;Simplification&quot;</td>
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<td>Factor 5: &quot;Generic&quot;</td>
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4. A strategy for validity assessment

The next step is to assess the validity of our scales.

Construct validity is achieved if the relationships among variables are consistent with the fact that each variable only measures one out of a set of hypothesized constructs and consistent with the theories linking the different constructs to one another.

To begin with, a successful construct validation demands that correlations among measurements of the same construct be high (convergent validity), and correlations among measurements of different constructs be lower (discriminant validity) and of a sign and magnitude which is consistent with the theory. In principle we can hand-check these first requirements from a correlation matrix but Confirmatory Factor Analysis (CFA) models simplify the task and allow us to go a bit further. Construct validation can be carried out by using a CFA model in which the construct of interest and possibly other related constructs play the role of factors (see, for instance, Bollen, 1989). In this model, all instruments are allowed to load only on the expected factor and no error covariances are permitted. If the following conditions hold, then there is no evidence of invalidity:

- The loadings are high and significant (convergent validity).

- Factor correlations are significantly different from 1 (discriminant validity) and of the sign and order of magnitude predicted by the theory.

- The fit of the model to the data is good.

As an alternative or complement to CFA models, regression models with latent variables can also be used for construct validation. Such models have a major advantage over CFA models, namely that they allow us to assess how and to what extent one dimension can be explained by the remaining ones. They also have a major advantage over classic regression models, namely their ability to correct for the effects of random measurement error.

Measurement errors, which are substantial in data collected through questionnaires, are known to introduce an attenuation bias in the correlation coefficients. This usually results in an attenuation of the estimates of the coefficients of classic regression models.

Regression models with latent variables take random measurement errors into account when estimating the relationships among the latent dimensions. That is, they correct for attenuation, so that even if correlations among the variables are biased, a correction based on the estimated reliability is introduced so that regression coefficients and $R^2$ values are not underestimated as well. When using more traditional methodologies one never knows if insignificant regression coefficients and low $R^2$ values are due to a lack of explanatory power or to the effects of measurement error.

In this paper we will construct models which explain brand functions from a set of subjective variables: the involvement profile (Laurent and Kapferer, 1985), the perceived differences between brands and the level of subjective expertise.
Table 3. Explanatory model

<table>
<thead>
<tr>
<th>Situational factors</th>
<th>Brand Functions</th>
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<tr>
<td>* Involvement profile</td>
<td>* Guarantee</td>
</tr>
<tr>
<td>* Perceived differences</td>
<td>* Simplification</td>
</tr>
<tr>
<td>* Expertise</td>
<td>* Symbolic</td>
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<td></td>
<td>* Generic</td>
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<td></td>
<td>* Differentiation</td>
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<td></td>
<td>* Mentalization</td>
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It should be recalled that the involvement profile consists of the following dimensions.

* Importance: the perceived importance and personal meaning of the product.

* Risk: the importance of the negative consequences in the event of a poor choice.

* Sign Value: the symbolic value attached to the product.

* Pleasure value: the hedonic value of the product, its ability to provide pleasure or an emotional attachment.

* Probability of mispurchase: the subjective probability of making a mispurchase.

One problem is to determine whether the brand functions differ from other related concepts, among them consumer involvement, the perception of differences between brands, and the consumer's experience. A look at the involvement profile (Laurent and Kapferer, 1985) indicates that there may be some overlap between symbolic brand functions and the value of the product symbol.

We therefore wonder how much of the symbolic value is linked to the product and how much to the brand. We encountered the same problem with the variable "perceived differences between brands" and the differentiating function of the brand.
5. Data

In order to solve these problems we carried out a second study. The sample was made up of 138 postgraduate students at ESADE\(^1\), Barcelona. The respondents were distributed as follows: 31 were full-time MBA students, 46 part-time MBA students, 17 were enrolled in a certificate course in Marketing, 24 in refresher courses, and 20 were Ph. D. students. 119 were male and 19 female. 29 were aged 25 or under, 54 were between 26 and 30, 27 between 31 and 35, and 28 were over 35.

Data were collected between December 1994 and March 1995. Each respondent was asked to evaluate all questionnaire items with respect to three different products, so that the data set contained three cases per respondent. 5 different questionnaires were drawn up, using different sets of products. 29 of the completed questionnaires dealt with jeans, beer and coffee, 21 with jeans, cars and batteries, 32 with jeans, washing-up liquid and TV sets, 29 with jeans, pasta and toilet paper, and 27 with jeans, high quality sparkling wine and mineral water. 80% of the evaluations of jeans were dropped from the data set so as not to overweight this product.

The questionnaire used (see Appendix 1) included the measurement scales used in the third pre-test with the following additions:

* Two items were added to the simplification function because the findings of the exploratory factor analysis were not clear.
* One new item was included in the symbolic function in an attempt to distinguish between the symbolic and mentalization function.

Prior to the analyses we carried out some data cleaning. Firstly, we attempted to correct some of the mistakes respondents might have made when filling in the questionnaire.\(^2\)

Secondly we dropped from the sample those careless respondents who seemingly had not taken the questionnaire seriously. These respondents can be distinguished because they often give completely inconsistent answers to items with a similar wording.\(^3\)

Each combination of respondent and product was treated as a case for the analysis and the pooled data across products were analysed.

After the data cleaning and listwise deletion of cases with missing data, the final data set contained 254 cases, from 127 respondents.

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1. Escuela Superior de Administración y Dirección de Empresas, Barcelona (Catalonia, Spain).
2. One common mistake is overlooking the fact that an item is reversed. Responses 1 and 2 to a reversed item were corrected to 5 and 4 respectively if the responses of the same respondent to all the remaining items of the dimension were 4 or 5. Responses 5 and 4 to a reversed item were corrected to 1 and 2 respectively if the responses of the same respondent for all the remaining items of the dimension were 1 or 2. The same was done for items whose meaning is not reversed but whose grammatical formulation is negative, in the cases in which we thought that this might have confused the respondent (P_MISPU3 and DIFFER3).
3. In order to detect these respondents we considered 9 sets of similarly worded items (see Appendix 1), GUARANT1 with GUARANT2 and GUARANT3, SIMPLIF1 with SIMPLIF2, DIFFER1 with DIFFER3, DIFFER2 with DIFFER4, GENERIC1 with GENERIC2 and GENERIC3, SENSIT1 with SENSIT3, PER_DIF with PER_DIF3, SIGN1 with SIGN2, P_MISPU1 with P_MISPU3. An inconsistency was defined as answering 1 to one item in the set and 4 or 5 to one or more of the remaining items in the set or as answering 2 to one item in the set and 5 to one or more of the remaining items in the set. Respondents whose replies were inconsistent four or more times were dropped from the sample. In all, 11 out of 138 respondents were dropped.
6. Method

The Confirmatory Factor Analysis (CFA) models and regression models with latent variables both constitute particular cases of Structural Equation Models with Latent Variables (see for instance Bollen, 1989, or Jöreskog and Sörbom, 1989, as general references and Bagozzi, 1994, for applications to marketing research) and can therefore be estimated by any computer program specialized in models such as LISREL (Jöreskog and Sörbom, 1989, 1993).

In our study, the cases are not independent (the same respondents and the same products appear repeatedly), so that one basic assumption of this type of models is not fulfilled. This invalidates any inference and forces us to rely only on point estimates and descriptive goodness of fit measures. The relevance of parameters is judged according to their standardized estimates, the fit of the model is judged from the Root Mean Squared Residual Correlation (RMSR) and the largest absolute residual correlation (LAR); and the suitability of specifying additional parameters is judged according to the standardized expected change (SEC) (see Jöreskog and Sörbom, 1989).

All estimations in this paper have been carried out using the 8.12 version of the LISREL program with the Unweighted Least Squares (ULS) fit function on the Pearson correlation matrix.

Since only point estimates are to be interpreted, the ULS fit function, whose estimates are warranted to be consistent under arbitrary distributions, is perfectly appropriate. Few theoretical arguments can be provided in favour of Normal Theory fit functions (such as Maximum Likelihood) for ordinal Likert data. More sophisticated fit functions such as the Asymptotic Distribution Free-Weighted Least Squares (Browne, 1984) can be unstable for large models and relatively low sample sizes (Muthén and Kaplan, 1989). When, on the contrary, simpler estimation procedures are employed, a sample size above 200 is reported to be large enough (e.g. Boomsma, 1983).

Pearson Correlations were selected instead of more sophisticated measures of association for ordinal Likert-type data (Olsson, 1979; Muthén, 1987; Jöreskog, 1990; Ridgon and Ferguson, 1991) because of being more easily interpretable and less prone to practical problems (Babakus et al., 1987). Homer and O'Brien (1988) and Coenders and Saris (1995) suggest that in structural equation models with latent variables little is to be gained from the use of more sophisticated measures of association for ordinal data.

Before embarking on large models, which would involve 6 or more factors and more than 20 variables, we proceed to deal with some more immediate problems by using a number of smaller models. Sometimes problems and misspecifications in ULS CFA models are easier to detect in small models because the ULS is a full-information estimator. Misspecifications in one part of the model may therefore have an effect elsewhere, thus making diagnosis difficult.

The second step of the study will consist of fitting separate CFA models for the explanatory and dependent dimensions examined in this paper in order to make a construct validity assessment.

The third step will be to fit a separate regression model with latent variables of each brand function on the set of explanatory variables. The fit of separate models is justified because no simultaneous relationships among dependent variables are specified. The separate estimation guarantees consistency and avoids the problems implied by the fit of very large models on relatively small sample sizes.
7. Some preliminary models

7.1. CFA model of the guarantee, simplification and differentiation functions

This first model was fitted as a result of some doubts regarding the construct validity of the measures of these three functions which were caused by the wording of the questionnaire items and the examination of the correlation matrix.

From the wording of the item SIMPLIF3 (Looking at the brand helps me to know if a ... has a high quality or not) we suspected that it could be an indicator of the guarantee function as well as of the simplification function. In the same way, we suspected that the item SIMPLIF6 (Looking at the brand helps me to distinguish the different ...) could be an indicator of both the simplification and differentiation functions. In addition, SIMPLIF3 correlated very highly with the items of the guarantee function and SIMPLIF6 with the items of the differentiation function.

Within the simplification dimension, some items (SIMPLIF1 "When I buy a ... looking at the brand helps me to choose" and SIMPLIF2 "Looking at the brand of ... makes the choice easier") referred to the extent to which the brand helps when making a choice, and some other items (SIMPLIF4 "When I buy a ... it is not worthwhile for me to spend a lot of time looking at the characteristics of the product. Looking at the brand is enough" and SIMPLIF5 "When I buy a ... looking at the brand is enough for me to choose a good product") to the extent to which the brand is enough for making the choice. This suggested that the measurement errors of these pairs of items could be correlated. Similarly, on the subject of differentiation, some items (DIFFER1 "Only a few brands of ... offer what I am really looking for" and DIFFER3 "Not all the brands of ... have the characteristics I want") referred to the extent to which only a few brands are suitable for what the consumer wants, and some other items (DIFFER2 "I relate each brand of ... to certain differential characteristics" and DIFFER4 "Looking at the brand helps me distinguish the differential characteristics of ...") to the extent to which the brands reveal differences in the product. This suggested that the measurement errors of these pairs of items could also be correlated. Likewise, the examination of the correlation matrix revealed that the correlations between these pairs of items were higher than other correlations within the dimension.

Moreover, high correlations between items of the guarantee dimension and items of the simplification dimension suggested that both dimensions might not achieve discriminant validity.

Our first model is the one suggested by the questionnaire design. The fit of the model was quite poor (RMSR=0.066, with 62 degrees of freedom [d.f.] LAR=0.414). The SECs suggested that a number of loading and error covariance parameters should be added to the model. Since the dangers of an exhaustive data-driven model modification strategy are well documented, we only contemplated adding the parameters which had both a large SEC and made sense according to the observations set out at the beginning of this section. This led to the model in the path diagram shown in Figure 1. Path diagrams represent the questionnaire items in rectangles and the latent dimensions in ellipses. Arrows pointing from the ellipses to the rectangles represent standardized factor
loadings. Measurement error variances are represented as additional arrows pointing to the rectangles. Double-headed arrows represent factor correlations. This model contains two variables which do not constitute valid measures of only one dimension. These variables were therefore dropped. The variable SIMPLIF4 had an extremely low loading (.46) and a high error covariance with SIMPLIF5 (.45), thus reflecting a low valid variance. This variable was also dropped. This led to the model in Figure 2, whose fit indices are quite satisfactory (RMSR=0.031, with 30 d.f. and LAR=0.077).

Figure 1
This model still has several problems. Firstly, some error covariances are relatively high. The wording of the items suggests that the simplification and differentiation functions have two sub-dimensions (SIMPLIF1 and SIMPLIF2 vs. SIMPLIF5; DIFFER1 and DIFFER3 vs. DIFFER2 and DIFFER4). In order to make the subsequent models more parsimonious we decided to retain the specification of a single dimension for each function which can be interpreted as a second order factor, and to retain the specification of error covariances to account for the common variance of the subdimensions.

Secondly, the high correlations between the guarantee and simplification factors raise a doubt regarding discriminant validity. In our opinion, however, the wording of the items of both dimensions points at two different concepts. Therefore, we attribute this high correlation to the fact that perceived quality may be the main determinant of choice for most of the respondents and products included in the sample. We consequently decided to retain the specification of two separate dimensions for the guarantee and simplification functions.
7.2. CFA model of importance, consequences of making a mispurchase and probability of mispurchase

A question is raised regarding the dimensionality of these facets of involvement. Laurent and Kapferer (1985) suggest that the importance construct constitutes one dimension by itself and that the consequences of making a mispurchase and the probability of making a mispurchase constitute two dimensions of risk. However, the results of their exploratory factor analysis model suggest that the importance and consequences of making a mispurchase constitute one single dimension, and the probability of making a mispurchase constitutes another, separate one.

Although, both conceptually and from the examination of the correlation matrix, we suspected that there would in fact be three dimensions, we began by making a model reflecting the two-dimension results in Laurent and Kapferer (1985). The fit of the model was very poor (RMSR=0.112, with 34 d.f., and LAR=0.132). A model with three separate dimensions (see Figure 3) fit considerably better (RMSR=0.057, with 32 d.f., and LAR=0.132) and yielded factor correlations well away from 1 for all three pairs of dimensions. The SECs suggested that the fit of the model could only be further improved by the addition of parameters with little theoretical meaning. In sum, we retained the three original factors from Laurent and Kapferer (1985): importance, consequences of a mispurchase and probability of mispurchase.

![Figure 3](image-url)
7.3. CFA model of the symbolism and mentalization functions and sign value

The aim of this model is to assess the discriminant validity of these dimensions.

The mentalization and symbolism functions are conceptually quite close. The symbolism and mentalization functions of the brand are conceptually different from the sign value of the product. However, this difference mainly involves whether the brand or the product is referred to. Some respondents may have overlooked this distinction when filling in the questionnaire. Moreover, for many products the brand itself may be the main source of sign value, thus causing the dimensions to be very highly related in practice. The examination of the correlation matrix confirmed our fears that some discriminant validity problems might arise.

The model with three factors (Figure 4) fits the data relatively well (RMSR=0.036, with 41 d.f. and LAR=0.185) but all factor correlations are extremely high (all above .9), suggesting a lack of discriminant validity.

Figure 4

The results suggest fitting models with only a combined symbolism/mentalization brand function, measured by a selection of items of both dimensions. The results also suggest dropping the sign value from the list of explanatory variables, including the sign
value as an explanatory latent variable while having doubts about
the issue of discriminant validity would imply the risk of building a
model in which one variable is explained by itself.

The model in Figure 5 was finally selected to measure this
combined symbolism/mentalization dimension, after dropping one
item from each of the two original dimensions. The fit of the model
was excellent (RMSR=0.020, with 9 d.f., and 0.042 as the LAR)
and all loadings were quite high.

7.4. CFA model of the differentiation function and the perceived differences
among brands

Serious doubts arise regarding the discriminant validity of these two
measures. The conceptual definition of the differentiation function
and the perceived differences among the brands is by itself nearly
coincident. The content analysis of the items reveals that the
operational definitions imbedded in the measurement scales are
also very similar (see Appendix 1). Moreover, the correlation matrix
showed high correlations between items measuring both one
dimension and the other.

In order to assess the discriminant validity of these two dimensions
we fitted a two-factor CFA model of the items of both dimensions
specifying an error covariance between DIFFER2 and DIFFER4
(see subsection 7.1). The model is shown in Figure 6 and has an excellent fit (RMSR=0.019, with 12 d.f. and LAR=0.050). However, the correlation between both factors is very high, which argues for a lack of discriminant validity. We decided to drop the perceived differences among brands in order to avoid a variable being explained by itself.

![Diagram](image_url)

Figure 6
8. CFA model for the brand functions

The aim of this model is to definitely specify the valid items for each brand function, establish the relationships between one function and another and assess construct validity.

The first model specified (see Figure 7) takes into account the findings in the previous models fitted for some specific brand functions.

Figure 7

The fit of the model was not extremely good (RMSR=0.049, with 140 d.f. and LAR=0.185). The examination of the SECs and both the original and residual correlations revealed that the variable GENERIC1 ("Sometimes, when referring to brand 'x' of ... I am in fact referring to any ... at all.") tended to correlate more negatively with the items of all remaining dimensions than the variables GENERIC2 ("With some brands of ... , when you ask for the brand you are simply referring to the generic product category, rather than to brand 'x'’) and GENERIC3 ("Many times, people refer to brand 'x' of ... when actually they mean a kind of product rather than a specific brand") which originated high residuals (5 residuals with absolute value above .1 involved the variable GENERIC3). We then fitted a second model omitting this variable (see Figure 8). The error variance of the variable GENERIC2 would converge to a negative estimate
(although low in absolute value) and it was constrained to be zero. The fit of this model was considerably better (RMSR=0.040, with 124 d.f. and LAR=0.109).

We then proceed to interpret it.

The loadings of all variables are moderate or high (all above .6). The fit of the model is relatively good, even though it constrains all variables to load only on the dimension they are supposed to measure. It also constrains all error covariances to zero, except for those between SIMPLIF1 and SIMPLIF2 and between DIFFER1 and DIFFER3. However, sufficient arguments have been provided in favour of these error covariances and regarding their interpretation as the existence of two subdimensions of the simplification and differentiation functions (see subsection 7.1). Validity of these items must be interpreted with respect to these subdimensions.

Within the simplification function, SIMPLIF1 and SIMPLIF2 refer to the extent to which the brand makes the task of choosing the product easier whereas SIMPLIF5 refers to the extent to which the brand itself is grounds enough for making the choice.

Within the differentiation function, DIFFER1 and DIFFER3 refer to the extent to which only some brands offer what the customer wants, whereas DIFFER2 and DIFFER4 refer to the extent to which the brands have perceivable differences, whether they affect the key wants of the customer or not.
The guarantee, simplification and differentiation functions are closely related. This could be foreseen inasmuch as the fact that the different brands have different perceived qualities is an important source of perceived differences between the brands, and as such, can make the choice easier. The mentalization/symbolic function is to some extent related to the differentiation function, which was also to be expected since the existence of some brand differences is necessary if the brand is to change the consumer's personality, either as self-perceived or perceived by others.

The symbolic/mentalization function is at most only weakly related to the remaining functions. The generic function is at most weakly related to any of the remaining functions. It can be assumed that this function is mostly related to the fact that a particular brand was the market leader for a long period in the past.

In short, the good fit of the model and its substantive interpretability provides support for construct validity with the exceptions mentioned.
9. CFA model for the explanatory variables

The aim of this model is to definitely specify the valid items for each explanatory latent variable, establish the relationships between one latent variable and another and assess construct validity.

The first model specified (see Figure 9) takes into account the findings in the previous models fitted for some explanatory variables.

![Diagram](image)

**Figure 9**

The fit of the model was not extremely good (RMSR=0.068, with 94 d.f. and LAR=0.223). It could be seen that P_MISPU2 ("Choosing a ... is quite complicated.") correlated much higher with the items of all dimensions than the remaining items in its own dimension. The wording of P_MISPU2 points at the difficulty of the choice rather than at the probability of making the wrong one.

The model also showed a lack of discriminant validity between the pleasure value and importance dimensions, whose correlation was extremely high (.94). We attribute this to the fact that the pleasure value may be a major source of perceived product importance.

Including both explanatory variables simultaneously to explain the brand functions would likely lead to high multi-collinearity. We decided to use only the importance dimension as an explanatory variable. The decision to discard the pleasure value was based on the conjecture that the pleasure value is predecessor of
importance, so that its effect on the brand functions is probably mostly indirect and omitting the dimension constitutes a minor model misspecification.

The final measurement model for the explanatory variables after dropping PMISPU2 and the PLEASURE value dimension is shown in Figure 10. The loadings of all variables are moderate or high (all above .6). The fit of the model is relatively good (RMSR=0.044, with 48 d.f. and LAR=0.101) even though it constrains all variables to load only on the dimension they are supposed to measure and all error covariances to zero.

As was to be expected, the product's importance is related to the importance of the consequences of a mispurchase. It is also related to the perceived competence to make the choice. Products with a high degree of purchaser involvement may motivate the consumer to learn what to take into account when making his choice. It was also to be expected that the importance of the consequences of a mispurchase would be related to the subjective probability of making such a mispurchase, and, to a lesser extent, to the perceived competence to make the choice. The perceived probability of making a mispurchase, as expected, is negatively correlated with the perceived competence to make the choice, although we expected the absolute value of this correlation to be higher.

Altogether, the model provides no evidence against construct validity.
10. Regression models for the brand functions

An example of the specification of these models can be found in the path diagram in Figure 11. In this path diagram arrows pointing from the explanatory dimensions to the brand function represent standardized regression coefficients. The error term of the regression, the measurement error variances and covariances, and the correlations among explanatory dimensions also constitute parameters of the model but they are omitted for the sake of simplicity of the diagram. All models specify a CFA model for the explanatory variables like the one in Figure 10 and a single-factor CFA model for the particular brand function with the questionnaire items considered in the model shown in Figure 9. The regression slopes of all explanatory variables on the brand function are free model parameters.

Figure 11

Contrary to what is suggested by Figure 9 the CFA model for the simplification function does not specify an error covariance for SIMPLIF1 and SIMPLIF2 since the specification of such error covariance led to a negative variance estimate. The CFA model for the differentiation function specified two error covariances (between DIFFER3 and DIFFER1 and between DIFFER4 and DIFFER2). The CFA model for the generic function did not constrain the error variance of GENERIC2 to zero. The constraint was not necessary to prevent a negative estimate. The remaining CFA models for the symbolic and guarantee functions had the same specification as in Figure 9.
The table below shows the results for the models of all brand functions. For each model the fit statistics are given together with the percentage of variance of the latent brand function revealed by the explanatory latent variables. For each of these latent explanatory variables, the standardized regression slope corrected for measurement error is given.

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All models have an acceptable fit in terms of RMSR. In terms of $R^2$, the differentiation function can be explained by the model ($R^2 = 60\%$). The $R^2$ values for the guarantee, simplification and symbolic/mentalization functions are low (between 15 and 30\%) but still substantial. The $R^2$ value for the generic function is close to zero. This suggests that the models for these functions may omit some important explanatory variables.

The guarantee function becomes particularly evident in circumstances in which the perceived risk is high, regardless of whether the product is important or not. Perceived risk always gives the brand a certain usefulness as a guarantee. The $R^2$ of the guarantee function (29\%) reveals that there are still some predictors of the guarantee function that must be taken into account.

The simplification function is related with both the importance of the product and the risk its purchase involves. The simplification function's $R^2$ is 22\%, which means that there are still some explanatory variables which should be included in the model.

The differentiation function registers an exceptionally high $R^2$: 60\% of explained variance. Logically enough, there is an extremely high relation between the differentiation function and risk and importance. This is consistent with Kapferer and Laurent (1983) who found that involvement ranked after differentiation between brands as a major source of brand sensitivity. The more important the product and the greater the risk involved, the more useful the brand as a differentiating factor.

The sign-mentalization function registers a much lower $R^2$ (15\%); in addition to importance and risk this function is also influenced by a number of factors which are not taken into account in the model.

The generic function is unlike the others. From a management point of view it is a function that must be avoided because it undermines the other utilities of brand: guarantee and differentiation. This "function" depends on factors which are not contemplated in our model ($R^2 = 3\%$): probably on the fact that the brand was at one time the undisputed leader in the market.
The results of all 5 models show that each brand function is related in a different way to the explanatory variables. This enriches the conclusion in Kapferer and Laurent (1983) who assessed the predictors of brand sensitivity as a whole. The results also suggest that there exist other variables which likely explain brand functions and that accordingly, further research is required in the field.

The results in this section have cleared up the doubts which could remain from subsection 7.1. regarding the discriminant validity of the guarantee and simplification functions. The fact that both functions have different patterns of relationships to the set of explanatory variables confirms that respondents perceive them differently.
11. Discussion

The main contribution of this research is that it validates the constructs contained in the preliminary work on brand functions in Gali (1994). Up until now, only an internal consistency analysis had been carried out. The main conclusions of this paper are that there are five distinct brand functions:

- Guarantee
- Simplification
- Symbolic-mentalization
- Differentiation
- Generic

The brand functions revealed are explained by other factors in addition to the "importance" and "risk" of involvement, which already do a great deal to explain brand choices. It is obvious that more work should be done to discover the antecedents of each one of the functions: it seems likely that the different functions will be explained by different variables. Our research also revealed that the idea of involvement, based on the four dimensions used by Laurent and Kapferer (1985), presents some problems: consumers confuse the value of the product sign or symbol with the sign value of the brand itself. These two values might possibly be different (there are product categories in which the sign probably has a value that is independent of brand and vice-versa). Making these two kinds of symbolic or sign value operational is a problem that has not been resolved with the measurement tools used here. We were also unable to distinguish between the external and internal sign values and between the perceived differences between brands and the differentiation function. Although we consider all of them to be different dimensions, our findings demonstrate that consumers mix them up in a single factor.

Our findings have also enabled us to select the items which best measure each function. We have eliminated from the measurement scales the items which did not satisfy the requisites of reliability and validity, arriving at a series of items which are valid and reliable instruments for measuring the concepts that interest us. The correlations among the finally selected items are in Appendix 2.

The main limitation of this study is the sampling of products used in the questionnaire. This had two major consequences:

1) The data are dependent, since each product appears several times in the data matrix. Some exploratory analyses revealed that the product significantly explained the variance of many items in the questionnaire. This makes it impossible to draw inferences about any model estimated on pooled data.

2) The limited number of products may even have affected the point estimates in various ways. For instance, the lack of discriminant validity of some pairs of dimensions may have been caused by this. If the sample contains products whose sign value mainly arises from the brand itself, then no distinction can be made between the dimensions of product sign value and brand symbolic function.

The ideal situation would have been to have as many different products as cases.
Other limitations are:

1) The fact that the questionnaire was self-administered may have allowed the respondents to look back on the answers to previous questions so as to be consistent. This may have inflated the factor loadings and deflated the factor correlations and regression slopes.

2) The omission of relevant explanatory variables (revealed by the low $R^2$ values) constitutes a model misspecification and may have had consequences on the regression slope estimates.

Future research is needed aimed at discovering the antecedents or variables that explain brand functions. On what does each of these functions depend? The problem can also be approached from a situational standpoint: in which situations is each brand function most important? We could hypothesize that each function depends on different variables, which must be studied one by one.
Appendix

Appendix 1: Questionnaire

The number at the left of the item name shows the order in which the item appeared in the questionnaire. A (-) sign shows that items which were reverse-scored. Items are grouped by the dimensions defined, which are not necessarily the dimensions of the final model.

Brand functions:

Guarantee:

2 GUARANT1 With a well-known brand I am sure to buy a better ...
20 GUARANT2 Among several ... which are similar, buying a well-known brand gives me a guarantee of higher quality.
28 GUARANT3 When I buy a ... if I want a high quality I have to buy a well-known brand.

Simplification:

3 SIMPLIF1 When I buy a ... looking at the brand helps me to choose.
13 SIMPLIF2 Looking at the brand of ... makes the choice easier.
29 SIMPLIF3 Looking at the brand helps me to know if a ... has a high quality or not.
30 SIMPLIF4 When I buy a ... it is not worthwhile to spend a lot of time looking at the characteristics of the product. Looking at the brand is enough.
32 SIMPLIF5 When I buy a ... looking at the brand is enough for me to choose a good product.
35 SIMPLIF6 Looking at the brand helps me to distinguish the different ...

Differentiation:

11 DIFFER1 Only a few brands of ... offer what I am really looking for.
16 DIFFER2 I relate each brand of ... to certain differential characteristics.
22 DIFFER3 Not all the brands of ... have the characteristics I want.
26 DIFFER4 Looking at the brand helps me distinguish the differential characteristics of ...

Symbolism:

10 SYMBOL1 Tell me the brand of ... you buy and I'll tell you who you are.
21 SYMBOL2 When I see a person I do not know, I can get an idea of how he or she is like from the brand of ... he or she buys.
24 SYMBOL3 When people buy a ... the brand gives them a bit of personality.
33 SYMBOL4 By knowing the brands of ... a person chooses, I can classify what that person is like.
48 SYMBOL5 Regarding ..., the brand reflects the type of person who buys and uses it.
Mentalization:

| 23 | MENTAL 1 | When people buy a ... the brand helps them reinforce their self-concept. |
| 31 | MENTAL 2 | The brands of ... that I buy give me some information about the way I am or would like to be. |
| 34 | MENTAL 3 | When buying a particular brand of ... I distance myself from other people. |

Generic:

| 14 | GENERIC 1 | Sometimes, when referring to brand 'x' of ... I am in fact referring to any ... at all. |
| 25 | GENERIC 2 | With some brands of ..., when you ask for the brand you are simply referring to the generic product category, rather than to brand 'x'. |
| 27 | GENERIC 3 | Many times, people refer to brand 'x' of ... when they actually mean a kind of product rather than the specific brand. |

Brand sensitivity:

| 5  | SENSIT1 | When I buy a ... I take the brand into account. |
| 17-| SENSIT2 | When it comes to ... the brand is not very important. |
| 46 | SENSIT3 | When I buy a ... I look at the brand. |

Consumer involvement:

Importance of product and of consequences of a mispurchase:

| 1-  | IMP RIS1 | The topic of ... leaves me completely indifferent. |
| 8   | IMP RIS2 | Having bought a ... that does not live up to my expectations is very annoying. |
| 36  | IMP RIS3 | One could say that the topic of ... is interesting to me. |
| 37  | IMP RIS4 | I would be very worried if, after buying a ... I should find out that I have made a mistake. |
| 39  | IMP RIS5 | I attach a great deal of importance to ... |
| 42- | IMP RIS6 | If one makes a mistake when buying a ... the consequences are not very serious. |

Sign value:

| 15  | SIGN1 | The ... that I buy somehow reflects the kind of person I am. |
| 41  | SIGN2 | The ... that one buys somehow reflects the way one is. |
| 47  | SIGN3 | One can get an idea of what someone is like from the ... he or she chooses. |

Pleasure value:

| 4   | PLEASUR1 | .... is a bit of a pleasure for me. |
| 19  | PLEASUR2 | I enjoy buying myself a ... |
| 40  | PLEASUR3 | When one buys a ... one is giving oneself a present. |

Probability of making a mispurchase:

| 7   | P MISPU1 | When we buy a ... we are never sure of having chosen the right one. |
| 43  | P MISPU2 | Choosing a ... is quite complicated. |
| 44  | P MISPU3 | When we buy a ... we are not completely sure of having chosen properly. |
| 45  | P MISPU4 | When I am in the shop and find myself confronted with a lot of ... I feel a bit confused. |
Perceived brand-differences:

9-  PER DIF1  Nowadays, all brands of ... are good.
12- PER DIF2  I think that all brands of ... are about the same.
38- PER DIF3  If we leave some details aside, there are no true differences among the brands of ...

Perceived competence to make the choice:

6  COMPET 1  I know how to choose a ...
18- COMPET 2  I do not exactly consider myself to be an expert in ...
49  COMPET 3  I know everything I need to know in order to compare the different ...
| guarant1 | guarant2 | guarant3 | simplif1 | simplif2 | simplif3 | differ1 | differ2 | differ3 | differ4 | symbol2 | symbol3 | symbol4 | symbol5 | mental2 | mental3 | generic2 | generic3 |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| guarant1 | 1.000   |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| guarant2 | 0.736   | 1.000   |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| guarant3 | 0.674   | 0.729   | 1.000   |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| simplif1 | 0.256   | 0.265   | 0.570   | 1.000   |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| simplif2 | 0.637   | 0.677   | 0.607   | 0.707   | 1.000   |         |         |         |         |         |         |         |         |         |         |         |         |         |
| simplif3 | 0.514   | 0.526   | 0.500   | 0.516   | 0.568   | 1.000   |         |         |         |         |         |         |         |         |         |         |         |         |
| differ1  | 0.316   | 0.375   | 0.400   | 0.396   | 0.428   | 0.270   | 1.000   |         |         |         |         |         |         |         |         |         |         |         |
| differ2  | 0.467   | 0.371   | 0.423   | 0.457   | 0.418   | 0.355   | 0.459   | 1.000   |         |         |         |         |         |         |         |         |         |         |
| differ3  | 0.332   | 0.361   | 0.325   | 0.416   | 0.374   | 0.223   | 0.592   | 0.526   | 1.000   |         |         |         |         |         |         |         |         |         |
| differ4  | 0.544   | 0.539   | 0.590   | 0.568   | 0.564   | 0.460   | 0.494   | 0.522   | 0.542   | 1.000   |         |         |         |         |         |         |         |         |
| symbol2  | 0.096   | 0.113   | 0.191   | 0.192   | 0.167   | 0.182   | 0.301   | 0.420   | 0.277   | 0.279   | 1.000   |         |         |         |         |         |         |         |
| symbol3  | 0.013   | 0.068   | 0.109   | 0.179   | 0.140   | 0.111   | 0.251   | 0.363   | 0.259   | 0.267   | 0.666   | 1.000   |         |         |         |         |         |         |
| symbol4  | 0.130   | 0.059   | 0.184   | 0.198   | 0.120   | 0.169   | 0.255   | 0.352   | 0.295   | 0.260   | 0.821   | 0.712   | 1.000   |         |         |         |         |         |
| mental2  | 0.141   | 0.092   | 0.140   | 0.203   | 0.117   | 0.184   | 0.270   | 0.417   | 0.243   | 0.249   | 0.758   | 0.685   | 0.824   | 1.000   |         |         |         |         |
| mental3  | 0.093   | 0.086   | 0.123   | 0.185   | 0.123   | 0.175   | 0.247   | 0.352   | 0.149   | 0.230   | 0.668   | 0.666   | 0.344   | 0.642   | 0.676   | 1.000   |         |         |
| generic2 | -0.077  | -0.082  | -0.694  | -0.160  | -0.112  | 0.065   | -0.490  | -0.065  | -0.119  | -0.101  | 0.050   | 0.090   | 0.078   | 0.000   | 0.071   | 0.106   | 1.000   |         |         |
| generic3 | -0.060  | -0.033  | -0.827  | -0.066  | -0.213  | 0.050   | -0.255  | -0.157  | -0.106  | 0.008   | 0.085   | 0.089   | 0.049   | 0.014   | 0.096   | 0.079   | 0.707   | 1.000   |         |

**Appendix 2:**

Pearson correlation matrix among selected items

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