

A Short Scale for Measuring Brand Personality

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Abstract

A brand personality scale is developed and tested with a large and carefully selected sample of car owners in Germany. Exploratory and confirmatory factor analyses were used to validate the actual structure of the brand personality scale. Recent research has swiftly leapt ahead to cross-cultural brand personality research without paying very much attention to the correct application of brand personality scales to single brands. This paper shows the usefulness of the scale and highlights the importance of vigorous scale testing. The presented scale may be a viable alternative to Aaker's (1997) popular scale. The focus was on one country and on one industry and therefore offers potential for further testing. The study provides managerial and theoretical implications and areas for future research are suggested.

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Introduction

It is of great value for marketing managers and academics to understand how symbolic brand values can be conceptualized, measured and controlled. One possibility to approach this problem is via the concept of brand personality which is based on the view that brands can be ascribed a human-like personality (Plummer, 1984; Aaker, 1997). Despite the recent increased interest in the concept of brand personality (e.g. Diamantopoulos et al, 2005), several issues which are important from a theoretical viewpoint as well as from a managerial perspective remained unsolved. First of all, research has shown that Aaker's (1997) brand personality scale is sensitive to the cultural context in which it is used and several studies have attempted to adapt the entire scale or parts of it to countries outside the US (e.g. Ferrandi et al, 2000; Aaker et al, 2001; Smit et al, 2002; Ambroise et al, 2003; Müller and Chandon, 2003). In addition, brand personality scales have been applied in the context of single brands (e.g. Grime, 2001; Rojas-Méndez et al, 2004). However, Austin et al (2003) have cautioned applying standardised brand personality scales to single brands or specific product categories without rigorous scale testing because they may not be valid in these contexts. The current study aims to improve the measurement of brand personality and provides a short scale of brand personality. This paper is structured as follows. The following part outlines the concept of brand personality in greater detail. Then the methodology used for this study is presented. This will be followed by a discussion of the most important findings as well as theoretical and managerial implications of our study. The paper ends with a brief outline of the limitations of the study and suggests areas for further research.

Literature Review

The concept of brand personality is 'one of the most common metaphors in the branding literature' (Davies and Chun, 2003, p. 50) and originated out of the notion of brand image whose starting point was in the early 1950s (Gardner and Levy, 1955). Although brand personality enjoyed some popularity and application among advertising practitioners, academic interest in the construct remained limited because its usefulness was impeded by the lack of a uniform definition, structure and empirically valid operationalisation (Kassarjian, 1971). This changed only after Aaker (1997) had developed a general scale which identified the dimensional structure and content of brand personality. Development of the scale was based on the following definition of brand personality which mainly originates from the use of the brand personality concept in advertising: '... [the construct of brand personality] refers to the set of human characteristics associated with a brand' (Aaker, 1997:347). Characteristics are referred to as traits which are defined as 'any distinguishable, relatively enduring way in which one individual differs from others' (Guilford, 1959, p. 6). Aaker's scale is relatively long and may quickly lead to respondent fatigue (e.g. Koebel and Ladwein, 1999; Hieronimus, 2003). For this reason Hieronimus (2003) operationalised brand personality using facets instead of traits as indicators. Despite the fact that Hieronimus' (2003) reduction of the brand personality scale to ten indicators presents a strong simplification of the construct it is the first validated brand personality measurement instrument in a German-speaking context. Thus, one objective of the current study is to assess whether Hieronimus' (2003) scale is valid and reliable when it is applied to a new brand which does belong to one of the product categories his scale had been generated upon originally.

Methodology

Car ownership was the area of investigation. We have obtained the cooperation of a major car manufacturer in Germany to collect empirical data via self-administered postal questionnaires. However, for confidentiality reasons the name of the company has been withheld. In order to certify further that the questionnaire was clear and meaningful to respondents, it was pre-tested at an authorized dealer of the brand (e.g. Hunt et al. 1982). Using the company's national customer database as a sampling frame, primary data for this study were collected from a random quota sample of 5000 brand owners. The sample was drawn via a standardized selection process that minimizes systematic sampling bias. Out of the 5,000 sent questionnaires, 1170 usable responses were received, yielding a response rate of 23.4%. We investigated the likelihood of non-response bias using the extrapolation method (Armstrong and Overton 1977). Based on our analyses we can deduce that non-response bias is not a problem in our study. All items were translated utilizing the back-translation method (Brislin 1986).

Results

Exploratory Factor Analysis

Following the advice of Plummer (1984) and Aaker (1997), respondents were familiarised with the task using an introductory statement which aided them in thinking of the brand as a person. Brand personality was measured on a 5-point Likert-type rating scale using Hieronimus' (2003) German brand personality 10 item inventory. In addition, it was decided to explore whether three additional traits which represent the brand's core values would form part of the brand's personality. The three additional traits are: 'intelligent', 'dedicated' and 'attractive' because these adjectives are used extensively in this car manufacturers marketing communication strategies. Thus, the final battery consisted of 13 items. Regarding the question of sample size, there are roughly 90 cases per variable which exceeds even conservative propositions of a recommended cases-to-variable ratio of ten-to-one (Hair et al., 1998); although, exploratory factor analysis per se poses few demands on the data in terms of, for example, normality (Hair et al., 1998); however, it is an issue regarding Bartlett's Test of Sphericity (e.g. West et al, 1995). The Bartlett Test of Sphericity (Chi-Square = 5778.09, Significance = .000) and the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (.90) were employed to assess the appropriateness of factor analysis which produced very good results (Hair et al., 1998). Exploratory factor analysis (EFA) with SPSS was used in order to explore the dimensionality and possible item redundancy of the brand personality scale (Loehlin, 2004). In order to ensure that exploratory factor analysis is appropriate for use on the data set, the correlation coefficients of the correlation matrix were tested for significance and the anti-image covariance matrix was assessed. The criteria developed by Dziuban and Shirkey (1974) were used where no more than 25% of the non-diagonal elements in the anti-image covariance matrix have a value exceeding .09 and all these criteria were fulfilled. Exploratory factor analysis is used to determine the latent structure of the 13 traits.

The extraction technique is principal components analysis (PCA) as it is suited for identifying and reducing the number of dimensions (Tacq, 1997). A number of previous brand personality studies have used an orthogonal rotation method assuming that the factors are uncorrelated (Aaker, 1997; Aaker et al, 2001; Grime, 2001; Kim et al, 2001; Supphellen and Grønhaug, 2003; Yoon, 2004). However, the use of a rotational method should be driven by

theory (Hair et al, 1998) and orthogonal rotations might cause an unnecessary loss of information if factors are, in fact, correlated. The use of an oblique rotation and, hence, the assumption that the brand personality dimensions are correlated is preferred in our study as this is strongly supported by findings of previous brand personality research (e.g. Aaker, 1997; Koebel and Ladwein, 1999; Ambrois et al, 2003; Sung and Tinkham, 2005; Hieronimus, 2003).

Applying the Kaiser criterion, the exploratory factor analysis extracts two components with an eigenvalue of greater than 1. The overall solution using the oblique rotation leads to a clearer result than the orthogonal rotation i.e. principal loadings are higher and the cross-loadings are lower, thus supporting our previous discussion. The solution explains 64% of variance which is satisfactory (Hair et al, 1998). All loadings are above recommended threshold levels (Hair et al., 1998). The first set of 5 variables was associated with Security (successful, down-to-earth, honest, original, and reliable). The second set of 5 variables capture Passion (spirited, imaginative, daring, passionate, and cheerful).

The 3 traits (intelligent, attractive, and dedicated) that were added to the scale had to be deleted due high cross-loadings. The trait 'intelligent' was part of Aaker's (1997) dimension 'competence'. However, in Hieronimus' (2003) study, the trait had been eliminated just like in this current study due to cross-loadings. Additionally, 'attractive' is similar to Aaker's (1997) trait 'good looking' which belongs to the dimension 'sophistication'. Similarly, 'dedicated' is semantically close to Aaker's (1997) trait 'hard working' and Aaker's et al (2001) trait 'determined' which both belong to the dimension 'competence'. Given the fact that one identical (intelligent) and two similar traits (dedicated, attractive) are existent in Aaker's (1997) and Aaker's et al. (2001) scales, these traits were used to further test whether the factorial structure of Hieronimus' (2003) scale might reconfigure in a single-brand context.

Confirmatory Factor Analysis

Exploratory factor analysis has several weaknesses in relation to scale testing. For example, exploratory factor analysis is not appropriate to confirm unidimensionality of a set of items (e.g. Gerbing and Anderson, 1988). Subsequently, confirmatory factor analysis (CFA) using LISREL 8.8 (Jöreskog and Sörbom, 2006) with the maximum likelihood method was used to confirm the scale's dimensionality and construct validity (Hair et al, 1998). Based on the exploratory factor analysis, an initial model with two correlating dimensions each containing five non-correlated traits was developed. The initial model was evaluated following the guidelines suggested by Anderson and Gerbing (1988). All loadings being significant support convergent validity (Gerbing and Anderson, 1988) are reported in Table I. The model is assessed with the goodness of fit index (GFI), adjusted goodness of fit index (AGFI), comparative fit index (CFI), standardized root mean residual (SRMR), and root mean square error of approximation (RMSEA). The initial model provided a good fit to the data: (GFI=.96, AGFI=.93, CFI=.96, SRMR=.03 and RMSEA=.08). Nearly all values of GFI, AGFI, CFI, SRMR, and RMSEA meet the standards suggested by Hu and Bentler (1999): .95 for GFI, AGFI, and CFI, .08 for SRMR, and .06 for RMSEA.

Even though the model fits the data well it is important to detect any possible areas of misfit in the model (Jöreskog, 1993). Modification indices and the standardised residual covariance matrix were used to do this (Anderson and Gerbing, 1988; Steenkamp and van Trijp, 1991; Jöreskog and Sörbom, 1988). This assessment suggested that the indicators 'reliable' and 'cheerful' do not adequately reflect their hypothesized factors. In the case of 'reliable', the likely cause for this is that a car's reliability may be associated with satisfaction of the car (Bloemer and Lemmink, 1992) rather than with brand personality. Furthermore, 'reliable' can also be used as an item to assess, for example, product quality (e.g. Chao et al, 2005). Thus,

this trait impedes construct validity of brand personality. Regarding the trait 'cheerful', it is found that respondents seem to perceive it contrary to some other indicators belonging to the same factor. In fact, standardised residual covariances and modification indices suggest that the trait is also positively associated with the dimension 'security' and negatively with, for example, 'spirited' and 'daring'. One reason could be that, in the single-brand context of this study, 'cheerful' is semantically closer to traits such as 'honest' and 'down-to-earth' than are, for example, 'daring' and 'spirited'. Moreover, this finding is in line with previous brand personality research because in Aaker's (1997) study, 'cheerful' loaded onto the factor 'sincerity' as opposed to Hieronimus' (2003) findings where the trait loaded onto the dimension 'passion'. Results from earlier studies (e.g. Caprara et al, 2001; Austin et al, 2003) show that deviating behaviour of single traits is not unique to this study. What is important though is to identify traits which deviate consistently which we have shown clearly in this study. In order to assess whether the brand personality scale with the remaining eight traits (see table 1) is valid in the context of this study, the final model is subjected to a second CFA. The final model fits the data very well and much better than the initial model: (GFI=.98, AGFI=.96, CFI=.98, SRMR=.02 and RMSEA=.06).

Table 1 Confirmatory factor analysis

	Initial Model		Final Model	
	Standardized loading	t-value	Standardized loading	t-value
<i>Security Dimension</i>				
Successful	.67 ^a	-	.66 ^a	-
Down-to-earth	.63	18.44	.65	18.16
Honest	.77	21.46	.76	20.23
Original	.73	20.59	.75	20.11
Reliable ^b	.62	18.12	-	-
<i>Passion Dimension</i>				
Spirited	.76 ^a	-	.77 ^a	-
Imaginative	.81	28.22	.82	28.89
	.83		.84	
Daring	.87	28.89	.85	29.49
Passionate	.72	30.39	-	29.76
Cheerful ^b		24.93		-

^a Item was fixed to 1 to set the scale of the construct

^b Item was deleted from the final model

Discussion and managerial implications

The first aim of this study was to assess the validity and reliability of Hieronimus' (2003) brand personality scale using a large random sample of owners of an automotive brand. The quality of this sample has been ensured using a random sampling technique which reduced systematic errors. Hence, the results of this study should be generalisable to all owners of the brand. The process of scale validation which has been illustrated in this study is vital because marketing practitioners need to know whether brand personality scales can be safely

transferred to be used for brand personality research concerned with single brands as opposed to a pool of brands. First of all, the exploratory factor analysis seemed to confirm the hypothesized factorial structure of Hieronimus' (2003) scale. The three additional traits that had been added to the item pool in this study failed to clearly load on either of the two emerging factors nor did they constitute an own factor. The reason they could have done so is that brand managers at the company attempt to communicate these symbolic benefits ('attractive', 'dedicated', 'intelligent') via the marketing mix which is an indirect driver of brand personality (Aaker, 1996; Aaker, 1997). In addition, after the final exploratory factor analysis all remaining ten traits loaded on the two factors as was hypothesized. Further assessment of internal consistency and reliability initially supported Hieronimus' (2003) scale. However, subsequent confirmatory factor analysis revealed that Hieronimus' (2003) complete scale was, in fact, not valid in the context of this study. Results of the analysis showed that 'reliable' and 'cheerful' did not adequately reflect their hypothesized factors.

Thus, the final and validated scale which correctly captures the personality structure of the single brand under investigation in this study was organized into two factors each containing four traits. The results emphasize the importance of vigorous scale testing when brand personality scales are applied to contexts which are different from the context they had been generated upon. A major finding of this study is that further evidence has been found in support of Austin's et al (2003) warning to apply general brand personality scales to single brands. The reason is that single brands are likely to possess unique personalities whose structure and corresponding traits are significantly different from those of personality structures of a pool of brands. Theoretically, this implies that the creation of a standardized brand personality scale that is valid for any single brand is very challenging. Specifically, devising a scale which would be broad enough to validly capture the brand personality of, for example, L'Oréal cosmetics and Harley Davidson motorcycles but still be stable in terms of its dimensionality is practically impossible to achieve. An example which illustrates this can be found in Grime's (2001) study, where it was reported that 'feminine' was not part of Rover's brand personality. However, the results of this study revealed that at least factors which represent the notion of 'security' and 'passion' seem to be generally valid in the sense that they emerge in our current study as well as in a number of other studies (cf. Aaker et al, 2001; Ferrandi et al, 2000, Smit et al, 2002, Ambroise et al, 2003, Hieronimus, 2003). Thus, it could be argued that brand personality may possess several key markers which are relevant to most brands. These key markers may then be complemented by traits specific to the brand or product-category.

Despite the many insightful findings that could be generated, several limitations and avenues for future research deserve mentioning. Although three additional items had been added to Hieronimus' (2003) scale, an identification of new traits which are valid in a German-speaking context did not take place. Future research could achieve this by means of qualitative research such as focus groups and in-depth interviews of customers. If brand personality is to become an accepted tool for modern brand management, marketing researchers and marketers are in need of a reliable and valid measurement instrument.

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