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How Important Are Brands?

A Cross-category, Cross-country Study

Marc Fischer, Franziska Voelckner, and Henrik Sattler

The diagnostic metric introduced here measures the role brands play in purchase decisions in a specific category. It can be used before a brand has been introduced into the focal market to better assess the chances and risks for brand investments.

Report Summary

Since brand building requires considerable investment, managers must make the case for the relevance of brand-building activities to a company's success. The conditions for successful brand building are not equally favorable across categories, and depend on several factors, such as customers' predispositions toward brands, the firm's own management capabilities, and activities by competitors.

Customers' predispositions toward brands are particularly important. In addition to communicating the consumer's self-identity, brands may reduce their perceived risk of making a wrong decision.

Here, authors Fischer, Voelckner, and Sattler introduce a new diagnostic metric, called category brand relevance (CBR) to measure the overall role brands play in the decision making of customers in a specific category. Under the assumption that the brand name provides an additional benefit to the customer (e.g., the reduction of perceived risk), category brand relevance can be thought of as a general decision weight that puts expected brand benefits

in relation to other benefits, such as a lower price. An important feature of this category-level measure is that it can be used before an existing or new brand has been introduced into the focal market.

The authors develop a conceptual framework to measure CBR and drivers of CBR. They test their framework empirically with a sample of 5,769 consumers and show how the construct varies across 20 categories and five countries (France, Japan, Spain, U.K., and the U.S.). Their results suggest a high validity of the proposed CBR measure and show substantial differences of CBR between categories and countries.

The findings have important implications for the management of brand investments. The suggested CBR scale can help managers detect the chances for successful brand building *before* launching the investment program. When CBR is low, managers are well advised to carefully analyze the economic potential of brand investment compared to other opportunities of value creation (e.g., investment in personal selling, product proliferation). ■

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Introduction

Brands are of enormous economic importance to companies. The strength of brands such as Starbucks or Nokia enables them to charge a significant price premium. Buyers of a Mercedes-Benz car are known to be especially brand loyal, promising future sales to the company. As a result, brand power is reflected in higher firm-valuation (see, e.g., Barth and Clinch 1998; Simon and Sullivan 1993). It is therefore not surprising that top managers put brand-building activities high on their priorities of management challenges. The extant literature on brand management, brand-equity measurement, and other related issues provides managers with useful support for building and growing a brand (e.g., Aaker 1996; Keller 2008). Brand building requires considerable investments in communication, distribution, and other activities. A question that needs to be answered before any investment decision, however, is the question of relevance. That is, how relevant are brand-building activities for a company's success, compared with other investment alternatives? Implicit in the idea of brand management is the assumption that brand management is of high relevance if not of utmost importance to top management. While this is true for many businesses, it does not apply to all of them. Thus, managers are well advised to carefully analyze the economic potential of brand investments in their business.

The conditions for successful brand building are not equally favorable across categories. The success depends on several factors, such as customers' predispositions toward brands, the firm's own management capabilities, and activities by competitors. Customers' predispositions toward brands are particularly important because brands need, as a starting point, to be relevant to the customer in order to hold any economic value for the firm. Specifically, when customers feel that brands are important for their buying decision, they do so because brands provide important functions along the purchase decision and consumption process.

In particular, brands may reduce the risk of making a wrong decision and may serve the function of communicating the consumer's self-identity. The events in the German power market after its deregulation in 1998 may help illustrate why the overall role of brands for customers is important information that should be considered by brand managers.

Urged by the opportunities of a deregulated market, energy providers invested a great deal to establish and build new power brand names, e.g., Avanza, E.ON, and Evivo. Advertising expenditures more than doubled from €68 million in 1998 to €176 million within just two years. The campaigns were extremely successful by traditional standards. For example, the E.ON brand achieved an unaided recall value of 66% and an aided recall value of 93% among the German population in 2001, which matches with the performance of well-established FMCG brands (Michael 2002). In 2002, the press reported that the €22.5 million campaign by E.ON resulted in the acquisition of only 1,100 new customers, implying an acquisition cost of €20,500 per new customer. Even if lagged effects of brand investments are taken into account, it is hard to believe that these expenditures will ever amortize. Apparently, many German customers possessed a positive image of the E.ON brand, but the positive brand associations were not relevant to them when deciding on a power supply contract.

The example shows that it is important for companies to analyze the overall role of brands in a specific category before any investment decision. The marketing literature (e.g., Aaker 1997; Keller 1993) has introduced a number of important brand-related approaches to measure cognitive brand constructs, such as brand knowledge, brand attitude, and brand personality. Many companies use these constructs to track performance of their brands. As our example from the German power market illustrates, the measurement of such constructs, however, might not be sufficient to fully

evaluate the chances and risks of brand-investment opportunities, because these constructs may miss the link to economic behavior. For companies that plan to create a new brand or to extend an existing brand into new markets (e.g., international markets, new categories), it is important to gain an understanding of the relevance of brands to customers in the focal market in advance of launching large brand-investment programs.

For this purpose, we introduce a new diagnostic metric, category brand relevance (CBR), which measures the overall role brands play in the decision making of customers in a specific category. Under the assumption that the brand name provides an additional benefit to the customer (e.g., the reduction of perceived risk), category brand relevance can be thought of as a general decision weight that puts expected brand benefits in relation to other benefits, such as a lower price.

Brand relevance is an important source of customer-based brand equity. Existing measures such as the Young & Rubicam Brand Asset Valuator or D. A. Aaker's (1996) Brand Equity Ten already include an attribute that measures the personal relevance of a specific brand. Such an attribute is, however, defined at the brand level; i.e., it varies across brands within a given category. In contrast, the proposed CBR metric is defined at the category level, consistent with the common definition of a consumer taste or decision parameter. Hence, it does not vary across brands but only across categories.

What is the added benefit of measuring brand relevance at the category level? Unlike a brand-level measure, category brand relevance can be measured before an existing or a new brand has been introduced into the focal market. It therefore serves as a prelaunch diagnostic; in contrast, customer-based brand-equity measures can be used only as an after-launch diagnostic.

This paper aims to provide several contributions to the branding literature. First, we introduce the concept of category brand relevance. Second, we develop and test a scale to measure CBR in a multicountry context. We apply the scale to 20 product categories, covering FMCG, durables, services, and retailers and involving 5,769 consumers from five countries. The empirical results offer substantive insights into the differences of CBR across countries, categories, and consumers. We study several consumer-specific and category-specific characteristics to explain the observed differences.

The remainder of the paper is organized as follows: In the next section, we present our conceptual framework and briefly discuss the related literature. We continue with the development and validation of the CBR scale. The next section investigates the differences in category brand relevance across countries, categories, and consumers. The paper concludes with a discussion of managerial implications and the limitations of the study.

The Concept of Category Brand Relevance

Definition

It is widely accepted that customers hold brand associations that can be quite different across competing brands. In fact, previous research has noted that differentiation as well as the favorability and strength of associations are important facets of brand knowledge, which is in turn a fundamental source of customer-based brand equity (Keller 1993). While two brands from two different categories may bear resemblance to one another in the level of brand knowledge, they do not necessarily need to be equally important to the customer. This is the case because the importance depends not only on the strength of brand knowledge but also on the extent to which brand knowledge eventually impacts customer decision making. In other words, an

advantage in brand knowledge may translate into an economic advantage, such as a certain price premium (Swait et al. 1993). The (relative) price premium, however, may be quite different across categories for the same differential advantage in brand knowledge. For example, it is likely to be lower in those categories where customers pay relatively more attention to price differences than to differences in brand associations held in memory.

Category brand relevance is a customer-oriented construct that aims at measuring such differences in the roles brands play in customer decision making across categories. Hence, it focuses on the category, not the individual brand. For a given category, we define category brand relevance as the extent to which customer decision making is influenced by the brand as opposed to other decision criteria, e.g., purchase convenience, price, etc. The proposed construct has much in common with the utility weight or taste parameter, respectively, that is part of a preference or brand-choice model (see, e.g., Guadagni and Little 1983). In these models, consumers are assumed to maximize their utility, which is a linear combination of product characteristics, price and other factors. While a consumer perceives differences in product characteristics across brands, he or she assigns a constant weight to each characteristic when forming his or her utility. This weight may vary across consumers and categories, but it does not vary across brands. In the empirical analysis, we will return to the utility weight concept in order to establish convergent validity for our proposed scale.

Since CBR does not vary across brands within a category, its concept is distinct from the idea of widely used constructs such as brand awareness, brand knowledge, brand attitude, etc., which all apply to the individual brand. Nevertheless, we acknowledge that the concept of brand relevance is not totally new but already included in brand-equity measures, such as Young & Rubicam's customer-based

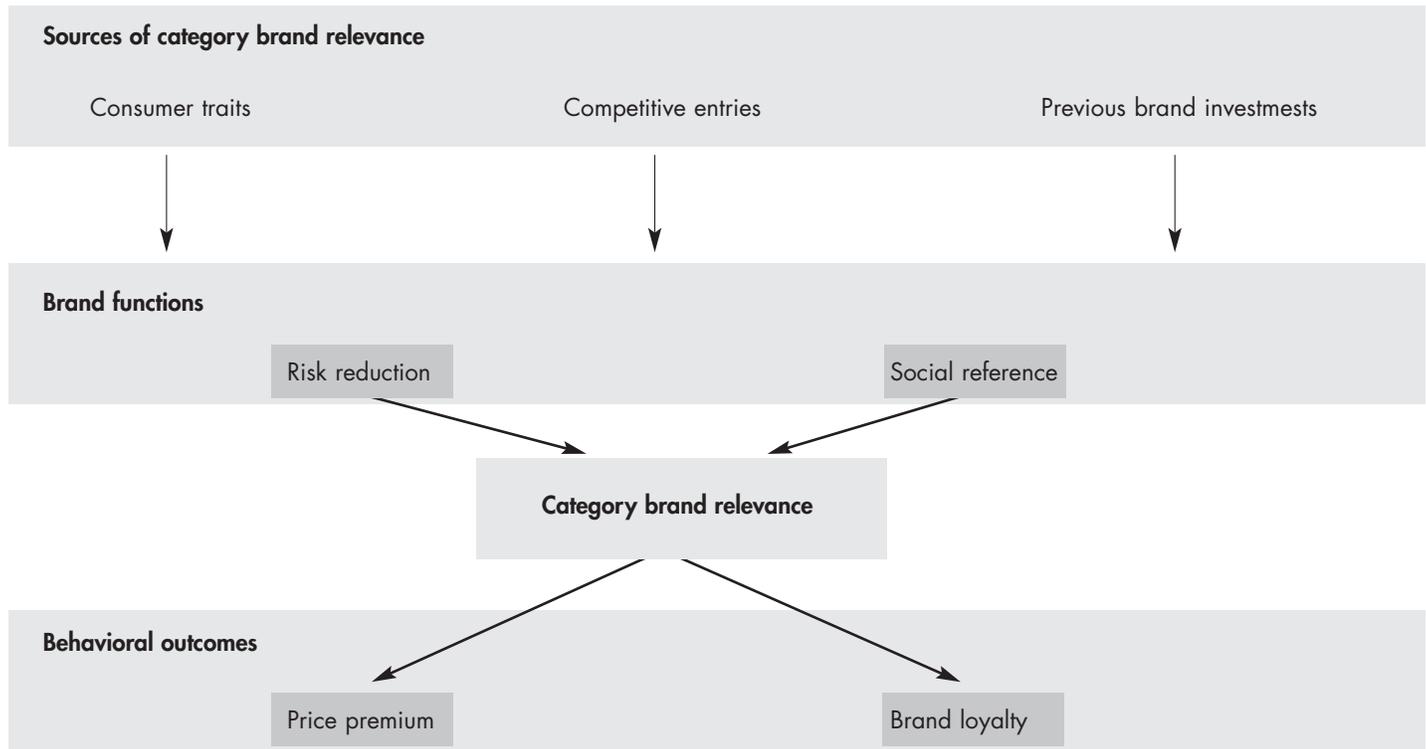
brand-equity model or D. A. Aaker's (1996) Brand Equity Ten concept. In the Y&R model, relevance stands for personal relevance and appropriateness and the perceived importance of the brand. Apparently, the concept is similar to the proposed concept of CBR. The major difference, however, lies in the level of analysis. The Y&R measure is a brand-level measure. It does not indicate how much personal relevance is attributed to the general role that brands play in consumer decision making and how much is due to a potential advantage or disadvantage of the brand in terms of brand knowledge, as an example. CBR focuses on the general role of brands in consumer decision making in a specific category. In contrast to the Y&R measure, it can thus be used as a prelaunch diagnostic to better evaluate the chances and risks of investments targeted at brand building. Interestingly, a recent study of the financial impact of the Y&R measure by Mizik and Jacobson (2008) found that investors consider only relevance and energy (future orientation), not differentiation, esteem, or knowledge. These findings underline the importance of analyzing CBR well in advance of launching large brand-investment programs.

Finally, we note that CBR is distinct from the recently introduced construct of brand engagement in self-concept (Spratt, Czellar, and Spangenberg 2009). This construct is designed to measure a generalized tendency of a person to include brands as part of his or her self-concept, but it does not answer the question of how important brands are for making a purchase decision in a specific product category.

Conceptual framework

Category brand relevance does not appear from nowhere. It has several sources, as our conceptual framework in Figure 1 indicates. CBR is linked to consumer traits. For some consumers, brands play a greater role in the purchase decisions than they do for others. In addition, consumers may perceive the importance of brands to be different across cate-

Figure 1
Conceptual Framework of Category Brand Relevance



gories because of differences in product usage, in the buying process, etc. The role of brands in a category certainly depends on how much firms invested in brand-building activities in the past. Finally, the entry of new competitive brands may impact the future development of category brand relevance.

When customers feel that brands are important for their buying decision, they do so because they expect the brand to provide (intangible) benefits. In our framework (see Figure 1 again), we include two fundamental brand functions as determinants of CBR, functions that help explain why customers perceive the brand name as an important decision criterion. First, customers use the brand signal to reduce their perceived risk and associated information costs that arise from information asymmetry about product quality and other factors (see, e.g., Cunningham 1967; Erdem

and Swait 1998; Keller 2008). Hence, brands adopt a risk-reduction function. Second, consumers may view brands as an important means to communicate facets of their identity and to interact with other people (Belk 1988; Fournier 1998; Muniz and O’Guinn 2001). Brands provide a symbolic value (in the case, for example, of Harley Davidson) or a prestige value (in the case, for example, of Mercedes-Benz) to consumers, which helps them express their identity and personal achievements to other people (Chaudhuri and Holbrook 2001; Keller 2008; Levy 1959). Here, brands adopt a social-reference function.

Finally, we expect category brand relevance to be associated with certain behavioral outcomes. In categories with higher brand-relevance, customers have a higher demand for brand benefits such as reduced risk, and the brand name plays a pronounced role in the

buying decision. As a consequence, when brands are more relevant to customers, we would expect that they are more willing to accept a higher price for a brand-name product or to be more loyal to their preferred brand. Note that both behavioral outcomes are conceptualized at the category level, not at the brand level.

The role of brand functions

Brands are valuable to consumers because they provide important functions along the purchase decision and consumption process in a product category. These brand functions help explain why consumers perceive the brand name as an important criterion for their buying decision. The concept of brand functions has been widely discussed in the literature (e.g., Bhat and Reddy 1998; Kapferer 2008; Keller 2008; Mitchell and McGoldrick, 1996; Tsai 2005). From this literature, two major functions emerge that are relevant at different stages of the purchase and consumption process. First, a brand is a sign whose function is to disclose the hidden qualities of the product. It therefore lowers search and information costs for the consumer and finally reduces his or her risk of making a wrong decision (risk-reduction function). Second, brands may play an important role during the subsequent consumption phase. Here, they serve the function of communicating the consumer's self-identity and connecting with other consumers (social-reference function). While we do not claim that these two functions embrace all possible roles brands may play for consumers, we believe they are especially important and likely to explain the formation of category brand relevance to a great extent.

Risk-Reduction Function. Brands identify the source or maker of a product. Consumers recognize a brand and activate their knowledge about it (Zhang and Sood 2002). Based on what they know about the brand in terms of overall quality and specific characteristics, consumers can form reasonable expectations about the functional and other benefits of the brand.

Consequently, brands contribute to reducing the consumer's (subjective) risk of making a purchase mistake (see, e.g., Kapferer 2008; Keller 2008). From an information economics perspective, products can be classified into three categories, according to the consumer's ability to assess product quality prior to actual product trial and usage (Darby and Karni 1974; Nelson 1970). For search goods, product attributes (e.g., the price, size, color, and ingredient components of a product) can easily be assessed by visual inspection. For experience goods, product attributes (e.g., durability, service quality, ease of use) cannot be evaluated by inspection prior to the purchase. Actual product trial and experience is necessary to reveal hidden qualities. Finally, for credence goods, product attributes cannot even be fully evaluated after product trial (e.g., in the case of the caries protection ability of a toothpaste, or ecologically friendly cultivation). Because of the difficulty in assessing product attributes and quality for experience and credence goods, it is hard to judge quality *ex ante*, and thus consumers may perceive high risks in product decisions. One important way in which consumers handle these risks is that of buying well-known brands, especially those with which consumers have had favorable past experiences (see, e.g., Aaker 1991; Keller 2008; Mitchell and McGoldrick 1996). Brands create trust in the expected performance of the product and provide continuity in the predictability of the product benefit. It follows that brands perform a risk-reduction function, and we expect risk reduction to be an important driver of category brand relevance. The more important brands are for reducing perceived risks in a given category, the higher the category brand relevance should be.

Social-Reference Function. The benefits of purchasing a brand-name product may go beyond reducing perceived risks associated with product decisions. In addition to this primarily functional benefit, brands can also serve as symbolic devices, allowing consumers to project their self-image (Levy 1959). That is,

brands may offer the additional benefit of helping the customer to foster a desired image; i.e., the customer uses the brand to communicate to others the type of person she or he is or would like to be (Belk 1988; Escalas and Bettman 2005). Brands may also be a source of group identity by offering the opportunity to connect with other users of the brand (Muniz and O'Guinn 2001). Hence, brands may provide a social-reference function to consumers, and we expect this function to be a significant driver of category brand relevance. The more important brands are for cultivating a certain public image, the higher the category brand relevance should be.

Scale Development

Item generation and scale purification

We developed new scales for the suggested CBR construct and its determining brand function constructs, risk reduction and social reference. Following Churchill (1979), we generated an item pool for each construct. For this purpose, we screened the relevant literature on brand equity (e.g., Aaker 1996; Keller 2008), brand signaling (e.g., Belk 1988; Escalas and Bettman 2005; Erdem and Swait 1998; Mitchell and McGoldrick 1996); brand relationships/communities (e.g., Fournier 1998; Muniz and O'Guinn 2001), and brand benefits/brand functions (e.g., Aaker 1996; Kapferer 2008; Keller 2008). Next, we pretested the scale items for comprehension, logic, and relevance, in a focus group with three scholars and three practitioners. We used their feedback to modify and adapt the items, which we then presented to three academic experts in brand management in order to assess the scale items' face and content validity. As a result, we designed a questionnaire of 19 items.

To purify our scales, we administered the 19-item questionnaire to a sample of 578 graduate students. Based on confirmatory factor analysis and coefficient alphas, we discarded items whose indicator reliability or item-to-total

correlation was below .40. If this procedure resulted in a scale of more than four items, we further excluded the items with lowest contribution to coefficient alpha in order to obtain a parsimonious measure. Given the reflective nature of the scales, exclusion of an item does not change the measure (see, e.g., Jarvis, MacKenzie, and Podsakoff 2003). Drolet and Morrison (2001) demonstrate that incremental information from higher-order items is very low and may even influence respondent behavior in a negative way, due to frustration. In addition, a scale with fewer items increases the chances for acceptance in practice because of lower market-research costs. Finally, we excluded 7 out of 19 items, leaving us with four items for each construct.

The four CBR items measure the role brands play in comparison to other purchase criteria, the brand's contribution to satisfaction, the customer's focus on the brand, and the relevance of purchasing a brand-name product or service. The four items of the risk-reduction scale reflect the brand-induced reduction of aggravation, expectation of good quality, avoidance of later disappointments, and promise to be worth the money. The four items of the social-reference scale measure the role of brands in terms of the belief of customers that they are judged by other people, that they have much in common with other buyers, that other buyers are similar to them, and that other people notice their brand usage. The Appendix presents the exact description of items for application to product categories. Statements were slightly changed depending on whether the brand was associated with a service or retail business.

Data collection

We collected data on our focal constructs in five countries: France, Japan, Spain, U.K., and the U.S. The broad selection of countries from three continents helps establish the generalizability of our scale in an international context. Moreover, it offers important insights into differences in perceived category brand rele-

vance between countries, which should improve our understanding of varying cross-national challenges in brand management (see, e.g., Keller 2008; Tavassoli 2007). In addition, we apply the new scale to a broad selection of product categories to learn more about the variation of CBR across categories. For this purpose, we collected data in 20 categories, covering FMCG, consumer durables, services, and retailers. Specifically, we obtained data from the following categories: beer, cigarettes, detergents, headache tablets, paper tissues (FMCG), designer sunglasses, leisure wear, medium-sized vehicles, mobile phones, personal computers, TV sets (consumer durables), bank accounts, express-delivery services, mobile-network operators, fast-food restaurants, car insurance, scheduled flights for private trips (services), mail order, drugstores, and department stores (retailers). We selected these categories because they are established categories with comparable importance for the economy in all five countries. Following recent studies in a multinational context (e.g., Erdem, Swait, and Valenzuela 2006; Steenkamp and Geyskens 2006), data were collected via the Internet. The application of a uniform data-collection procedure such as an online survey helps to control for response styles in cross-national research (Adler 1983).

A professional firm specializing in online market research collected data from May to July in 2006. Respondents were invited by e-mail to take part in the survey. They were randomly chosen from country-specific panel lists available to the company. Samples had to be representative of the country population in terms of age and gender. We verified via *t*-tests that the sampling distribution of age-by-gender groups matches the actual distribution in the country ($p > .05$). A comparison of the averages of age and gender between late and early respondents did not indicate statistically significant differences ($p > .05$).

The English questionnaire was translated and back-translated into French, Japanese, and Spanish by native speakers in several rounds until full convergence in translation was achieved. Appropriate screener questions at the beginning ensured that respondents were familiar with the categories. Each respondent had to provide answers for two categories. They were asked to imagine themselves in a typical situation when they purchase a product or service, sign a contract, or choose a retailer. In addition to our three focal constructs, several other questions were asked to collect data for single-item and multi-item measures, which we use for scale-validation purposes. We provide details on these measures subsequently.

Taking part in the survey were 6,168 consumers (more than 1,100 by country). We eliminated 399 respondents (6.5%) who showed a uniform response style (standard deviation of responses across all items is less than .2) or who completed the questionnaire in less than 6 minutes. The latter is a very conservative estimate of the time required to thoroughly complete the questionnaire. A pretest revealed that subjects needed at least 6 minutes to read all items and mark their answers. The average time needed to complete the questionnaire was 14 minutes.

Confirmatory factor analysis

We subject the multi-item scales for the category brand relevance construct and the two category brand functions to confirmatory factor analysis using a multigroup (i.e., five countries) latent variable modeling approach (see, e.g., Byrne 2001; Kline 1998).¹ Estimation is done with maximum likelihood, which assumes multivariate normal data and a reasonable sample size. Simulation research has shown that, given a good model and multivariate normal data, the ratio of sample size to the number of free parameters should be 10:1 or higher to obtain reliable parameter estimates and appropriate significance tests (Baumgartner and Homburg 1996). Our sample is sufficiently large, with a maximum of

195 free parameters and a sample size of 5,769 respondents. In addition, we perform multivariate tests of normality based on skewness and kurtosis of the observed variables. The results show that normality is a reasonable assumption (see, e.g., Bollen 1989).

We look at the sign, size, and significance of the estimated factor loadings and the magnitude of measurement error in each country. All factor loadings are highly significant (t -values higher than 40) and are strongly related to their respective constructs. The three constructs display satisfactory levels of internal consistency as indicated by individual-item reliabilities ranging from .503 to .820, average variance extracted estimates ranging from .405 to .508, and composite reliabilities ranging from .784 to .805 (see, e.g., Bagozzi and Yi 1988). These figures are comparable to results obtained in previous studies (e.g., Voelckner and Sattler 2006). Coefficient alpha for the constructs ranges from .900 to .928, exceeding the suggested threshold (Nunnally 1978). The common fit indices, such as the root mean squared error of approximation (RMSEA) = .036, the comparative fit index (CFI) = .989, and the Tucker-Lewis index (TLI) = .983, indicate that the model fits the data well (Byrne 2001).

In addition, we conduct a test of discriminant validity for our study's two category brand functions, risk reduction and social reference. The shared variance estimate is calculated in each country and compared with the square of the phi-coefficient, which represents the correlation between the two brand functions (Fornell and Larcker 1981). Each of the shared variance estimates exceeds the square of the corresponding phi-coefficient, which provides evidence of discriminant validity.²

We then empirically investigate and explain differences in category brand relevance across countries and categories, using the latent factor means of our three theoretical constructs (i.e., category brand relevance, risk reduction, and social reference). In order for such com-

parisons to be meaningful, the scales used to measure the theoretical constructs have to exhibit adequate cross-national equivalence. Specifically, we employ five-group confirmatory factor analysis to assess cross-national configural, metric, and scalar invariance across the three constructs (see, e.g., Steenkamp and Baumgartner 1998). Full metric and scalar invariance are rarely evident in cross-national research, but partial invariance is desired (Erdem, Swait, and Valenzuela 2006; Steenkamp and Geyskens 2006). In addition to the marker item, at least one scale item measuring the latent construct should be invariant.³ We find that all factor loadings are statistically significant in the five country samples and exhibit a similar pattern of loadings, indicating that our measures exhibit configural invariance. Furthermore, a meaningful comparison of relationships between constructs requires that at least one item per factor (besides the marker item) has to have invariant factor loadings across countries, and for comparisons of latent factor means, these items also have to have invariant intercepts (Steenkamp and Baumgartner 1998). Because in a large-sample model the χ^2 -difference test is usually biased, Steenkamp and Baumgartner (1998) recommend the assessment of any changes in other fit statistics in order to evaluate the tenability of invariance constraints. A comparison of common information criteria (i.e., the Bayesian information criteria, BIC, and the consistent Akaike information criterion, CAIC) and fit indices that take into account model parsimony (RMSEA, TLI) indicates that they are virtually identical or even improve when invariance restrictions are imposed. Both information criteria decrease, i.e., they improve ($\Delta BIC = 5879.51 - 5920.61 = -41.10$; $\Delta CAIC = 5879.52 - 5920.63 = -41.10$) when the invariance restrictions are imposed. Furthermore, the fit indices improve or at least do not change ($RMSEA_{free} = .036$; $RMSEA_{restricted} = .035$; $TLI_{free} = .983$; $TLI_{restricted} = .983$). Thus, partial metric and scalar invariance is established for our data (Steenkamp and Baumgartner 1998).

Assessing convergent, nomological, and discriminant validity

Following the literature on scale validation (e.g., Campbell and Fiske 1959; Churchill 1979), we further investigate the validity of the proposed construct of category brand relevance by assessing its convergent, discriminant, and nomological validity. Through a series of nested model tests within confirmatory factor analysis, we have already established unidimensionality for the multi-item measures of CBR and its antecedents, risk reduction and social reference. In the following discussion, we want to extend the assessment of construct validity by relating the CBR construct to measures that were developed for purposes other than measuring CBR.

To investigate convergent validity, we need to measure the degree to which the CBR construct is consistent with alternative approaches to measure CBR. In our definition of CBR, we refer to the extent to which customers are influenced by the brand name in comparison with other decision criteria, such as price. Our construct thus has much in common with the utility or taste parameter obtained from preference measurement models such as conjoint models. In a conjoint model, CBR is represented by the weight for the brand attribute. We therefore searched the literature for published conjoint studies that include brand as an attribute. To increase the chances of finding studies that are relevant to our set of categories, we considered a 15-year period from 1990 to 2006. We found 112 potentially relevant studies. Among these studies, 95 (85%) dealt with consumer categories in various countries. From these studies, we could use 56 estimated conjoint weights for the brand attribute to correlate with our CBR construct, because these categories are identical or reasonably comparable to the 20 categories in our dataset. We acknowledge that brand weights from previous conjoint studies are a noisy measure due to uncontrollable influences such as method, choice of subjects, definition of product category, etc. We believe, however, that

the use of this data provides a rather conservative test of convergent validity. To better control for potentially confounding influences, we also use a constant-sum approach to directly obtain consumer decision weights from participants of our survey. Previous research (Fischer 2007; Srinivasan and Park 1997) has found that simpler, self-explicated methods often show similar performance when compared with complex conjoint tasks. To obtain constant-sum brand weights, respondents were asked to allocate 100 points across fundamental benefits provided by the product/firm and the brand name (see Fischer 2007, Appendix).

Nomological validity refers to the degree to which the CBR construct relates to measures of other constructs in a manner that is consistent with theory (Carmines and Zeller 1979). In our conceptual framework (see again Figure 1), we emphasize two brand-related behavioral outcomes, willingness to pay a price premium and brand loyalty, that should be associated with category brand relevance. If brands play a more significant role in a specific category, then we would expect that consumers are more willing to accept a price premium for brands and show higher loyalty for their preferred brands. We directly ask for the willingness of consumers to pay a price premium for brand-name products. To measure brand loyalty, we adopt the multi-item measure suggested by Ailawadi, Neslin, and Gedenk (2001) (see the Appendix). Note that both measures are designed to measure overall willingness to pay and brand loyalty at the category level, not for a specific brand.

Discriminant validity refers to the degree to which the proposed scale assesses the CBR construct and not other constructs (Churchill 1979; Peter 1981). We analyze the association between CBR and brand awareness, brand consideration, and brand likability. These constructs are established facets of brand knowledge and brand image, both contributing to brand equity (see, e.g., Aaker 1996; Keller 1993; Roberts and Lattin 1991). Category

Table 1
Multitrait–Multimethod Correlation Matrix (N = 11,538)

	Measures for convergent validity			Measures for nomological validity		Measures for discriminant validity		
	Category brand relevance	Constant-sum weight	Conjoint weight*	Price premium	Brand loyalty	Brand knowledge	Consideration set size	Brand likeability
Coefficient α	.900	NA	NA	NA	.872	.890	NA	.879
Focal measure								
Category brand relevance	1							
Measures for convergent validity								
Constant-sum weight	.538	1						
Conjoint weight*	.434	.497	1					
Measures for nomological validity								
Price premium	.621	.470	.466	1				
Brand loyalty	.692	.464	.458	.673	1			
Measures for discriminant validity								
Brand knowledge	.369	.240	.322	.344	.492	1		
Consideration set size	-.040	-.024	.249	-.037	-.043	.019	1	
Brand likeability	.320	.198	.316	.308	.417	.388	.042	1

Note: All correlations are significant at $p < .05$; bold numbers indicate correlation $> .50$.

*Correlations for conjoint weight are not based on individual response data but on aggregated response data (N = 56).

brand relevance represents another source of brand equity. However, its meaning does not relate to the domains of the brand-knowledge and brand-image constructs. As our introductory example illustrates, we may observe categories with deep brand-knowledge and high brand-likability but low category-brand relevance and vice versa. We directly ask respondents whether they know many brands are in a category and how many they usually consider buying. For measuring overall brand likability in a category, we adopt the multi-item measure by Mitchell (1986, see Appendix).

Table 1 presents the correlation matrix for CBR and the seven measures that we use to assess convergent, nomological, and discriminant validity. The proposed CBR scale shows significant association with alternative CBR measures and the measures of price premium and brand loyalty. The correlation coefficients exceed .50 except for the weights collected from published

conjoint studies. We should mention here, however, that the analysis is based on aggregate data, leading to a sample size of only 56 observations. Given the noise in the data due to many confounding influences, we believe that a correlation of .434 still provides sufficient evidence for convergent validity. Correlations between CBR and brand awareness, consideration set size, and brand likability are significantly lower and do not exceed .40. Hence, our proposed construct differs from these measures, which is consistent with our expectation. Note also that the correlation among the two alternative measures of CBR and the two behavioral outcome measures is consistently higher ($> .45$) than the correlation between the two alternative CBR measures and the three discriminant measures ($< .35$), supporting our conclusions on construct validity for CBR. Finally, we note that our results do not change when we analyze the associations between variables at the country level.

Table 2

Construct Means of CBR by Product Category and Country (Means in Parentheses)

Rank	France	Japan	Spain	United Kingdom	United States
1	Medium-sized vehicles (3.70)	Medium-sized vehicles (3.81)	Cigarettes (3.95)	Cigarettes (3.96)	Beer (4.26)
2	Scheduled flights (3.65)	Mobile-network operators (3.55)	Beer (3.54)	Beer (3.77)	Medium-sized vehicles (4.05)
3	Cigarettes (3.57)	TV sets (3.50)	Medium-sized vehicles (3.54)	Medium-sized vehicles (3.70)	Personal computers (3.85)
4	Mobile-network operators (3.48)	Personal computers (3.36)	Mobile phones (3.46)	Mobile phones (3.45)	Cigarettes (3.80)
5	Mobile phones (3.38)	Bank accounts (3.25)	Designer sunglasses (3.41)	TV sets (3.29)	Mobile-network operators (3.79)
6	Mail order (3.37)	Scheduled flights (3.22)	TV sets (3.35)	Mobile-network operators (3.26)	Fast-food restaurants (3.71)
7	Beer (3.31)	Designer sunglasses (3.19)	Mobile-network operators (3.31)	Fast-food restaurants (3.23)	Express deliveries (3.65)
8	Fast-food restaurants (3.29)	Car insurance (3.17)	Mail order (3.28)	Personal computers (3.20)	TV sets (3.62)
9	Bank accounts (3.27)	Cigarettes (3.15)	Bank accounts (3.27)	Bank accounts (3.18)	Mobile phones (3.61)
10	Designer sunglasses (3.24)	Mail order (3.11)	Express deliveries (3.20)	Designer sunglasses (3.17)	Detergents (3.51)
11	Personal computers (3.21)	Mobile phones (3.09)	Fast-food restaurants (3.15)	Mail order (3.11)	Scheduled flights (3.44)
12	TV sets (3.16)	Headache tablets (3.04)	Car insurance (3.08)	Express deliveries (2.97)	Headache tablets (3.37)
13	Express deliveries (3.11)	Beer (3.04)	Scheduled flights (3.04)	Department stores (2.92)	Designer sunglasses (3.33)
14	Detergents (2.98)	Fast-food restaurants (3.03)	Personal computers (2.98)	Scheduled flights (2.87)	Mail order (3.28)
15	Department stores (2.94)	Express deliveries (2.92)	Detergents (2.94)	Detergents (2.85)	Car insurance (3.18)
16	Car insurance (2.80)	Department stores (2.91)	Department stores (2.92)	Leisure wear (2.72)	Bank accounts (3.13)
17	Headache tablets (2.75)	Leisure wear (2.73)	Headache tablets (2.66)	Drugstores (2.56)	Paper tissues (3.13)
18	Drugstores (2.58)	Detergents (2.65)	Leisure wear (2.58)	Headache tablets (2.51)	Department stores (2.92)
19	Leisure wear (2.47)	Drugstores (2.49)	Drugstores (2.43)	Car insurance (2.49)	Drugstores (2.90)
20	Paper tissues (1.89)	Paper tissues (2.21)	Paper tissues (1.81)	Paper tissues (2.24)	Leisure wear (2.71)

Note: The bold entries are to show the consistency in ranking patterns of CBR for selected categories across countries.

Table 3

Construct Means of CBR and Brand Functions by Country and Type of Goods

Means across countries						Means across types of goods					
Category brand relevance		Risk reduction		Social reference		Category brand relevance		Risk reduction		Social reference	
USA	3.42*	USA	3.89*	USA	2.59*	Durables	3.29	Durables	3.69	Durables	2.28
France	3.12	Spain	3.75	Japan	2.29	Services	3.22*	Services	3.63*	Services	2.25*
Spain	3.07	France	3.65*	UK	2.26*	FMCG	3.06*	Retail	3.45	Retail	2.02
Japan	3.06	Japan	3.33*	France	1.83	Retail	2.94	FMCG	3.38	FMCG	1.95
UK	3.04	UK	3.13	Spain	1.83						
$F(4, 11,534) = 32.63^*$		$F(4, 11,534) = 129.51^*$		$F(4, 11,534) = 152.39^*$		$F(3, 11,535) = 46.09^*$		$F(3, 11,535) = 34.00^*$		$F(3, 11,535) = 46.96^*$	

Note: Significant mean difference ($p < .05$) between a country (type of goods) and the next country (type of goods) down the list is indicated by an asterisk (*). For overall brand relevance and countries, for example, mean CBR for the U.S. is significantly higher than for France, but mean CBR for France does not significantly differ from Spain's mean CBR.

Differences in Category Brand Relevance across Consumers, Countries and Product Categories

Descriptive results

Our analysis produces interesting insights into the importance of brands and their functions for consumer decision making. As expected, we find substantial and significant differences across product categories, both in terms of overall brand relevance (CBR, $F_{19,11,515} = 54.68$, $p < .01$) and its drivers (brand functions), i.e., risk reduction ($F_{19,11,515} = 33.98$, $p < .01$) and social reference ($F_{19,11,515} = 14.75$, $p < .01$). Table 2 displays the rankings of categories in terms of CBR for each country. Across all countries, we find the highest CBR values in the categories of medium-sized vehicles ($M_{CBR} = 3.75$) and cigarettes ($M_{CBR} = 3.69$) and the lowest CBR values in the categories of drugstores ($M_{CBR} = 2.58$) and paper tissues ($M_{CBR} = 2.22$). Medium-sized vehicles are also on top when it comes to the brands' risk-reduction function ($M_{RISK} = 4.09$) and their social-reference function ($M_{DEM} = 2.53$) (not shown, Table 2). For the social-reference function, we find that designer sunglasses rank second highest ($M_{DEM} = 2.52$) (not shown in Table 2), whereas their value for overall rele-

vance (CBR) and risk reduction is average. The bold entries in Table 2 show that we find a consistent ranking pattern of CBR across countries for categories such as cars or drugstores. This result, however, should not be generalized to all categories. Customers from Japan, Spain, and the U.S. view the importance of brands in categories such as TV sets, personal computers, or mail order very differently. We note a striking difference in CBR for private-airline trips between France and the U.K. The private-airline trip category ("scheduled flights" in Table 2) has the second-largest CBR in France ($M_{CBR} = 3.65$), whereas its value is in the lowest third in the U.K. ($M_{CBR} = 2.87$). The distribution of market shares among low-cost carriers and brand-name carriers appears to be consistent with this picture. Low-cost carriers achieved a market share of 37% in the U.K. in 2006 but had less than 5% in France (Riesenbeck and Perrey 2007). To summarize, while brands are perceived equally important across countries in some categories, such as cars, beer, and cigarettes, this does not generalize to other categories. It is therefore mandatory to look at each country individually to identify differences in brand importance for a specific category.

Table 3 shows that the importance of brands and their functions for consumer decision

making also varies across countries and types of goods. Mean-difference tests are based on a *t*-test for groups with unequal variances, because the homoscedasticity assumption is violated for the data. The U.S. leads in CBR ($M_{CBR} = 3.42$) as well as in its drivers, risk reduction ($M_{RISK} = 3.89$) and social reference ($M_{DEM} = 2.59$). This country has implemented the idea of economic freedom for a long time, and the principles of modern marketing were born here. These conditions produced highly competitive product markets with a large variety of products and services. Brands play an important role in guiding the consumer decision in such circumstances; in particular brands provide a means to reduce risks and a means of self-expression. Interestingly, Japan ranks second to last for CBR and risk reduction, while it has the highest mean value for social reference after the U.S. The strong growth of luxury brands in recent years in Japan and other Asian countries seems to reflect the importance of social reference effects in these countries. Luxury brands are a perfect means to communicate social identity to other consumers. Finally, we note that we do not find significant differences between the study's two Roman countries, France and Spain, which are close both in cultural and geographic terms.

Table 3 demonstrates that there are also differences in brand relevance among types of goods. Durables rank highest on all three constructs ($M_{CBR} = 3.29$; $M_{RISK} = 3.69$, $M_{DEM} = 2.28$). It seems plausible to find durables on top of the lists because these products are often expensive and used to demonstrate the social status of their owners. Our selection of durables categories includes medium-sized vehicles, mobile phones, and TV sets, for example. We find significant differences in terms of risk reduction and social reference between services on one side and FMCG and retail businesses on the other side. The results for the type of goods, however, should be interpreted with caution, as we do not cover the full range of categories within each type.

Drivers of category brand relevance

Our findings show that category brand relevance varies considerably across categories, countries, and types of products. To better understand the sources of that variation, we perform a second-stage analysis by regressing reported CBR values on consumer characteristics and product-market characteristics. Consistent with our conceptual framework (see Figure 1), we assume that CBR is basically determined by two brand functions. Their relative contribution to the formation of CBR may differ across consumers. For example, younger people may value the social-reference effect of brand usage more than older people do. Our second-stage model therefore includes moderators such as age and gender as well as a random component to reflect unobserved consumer heterogeneity in the contribution of brand functions to CBR.

Consumer Characteristics. Previous research on consumer behavior suggests that risk aversion increases with age (Pålsson 1996). Older people have undergone the consumption experience more during their lives than younger people have, and older people value more highly continuity in their decision making. If avoiding risks is of higher value for older people, we would expect them to put a larger weight on the risk-reduction function of brands when making a purchase decision. Hence, we expect a positive moderating effect of age on the influence of risk reduction on CBR. In contrast, the moderating effect with respect to social reference should be negative. Younger consumers are still developing their professional and “social” careers. Their need to demonstrate progress in life and personal achievements is stronger. Hence, they are likely to value the social-reference effect of brands more highly than older consumers do, which in turn results in a larger weight being assigned to the social-reference function of brands during the purchase decision process.

From gender-related research (Byrnes, Miller, and Schafer 1999), we know that men are less

risk averse than women. Men may perceive the brand signal as a means to reduce the risk of making a wrong decision. But because of their lower risk-aversion, this function is less important to them. Hence, we expect that risk reduction contributes more to CBR for women in comparison with men. It is, however, hard to find unidirectional arguments for gender-related differences with respect to the influence of the social-reference function. The value of brands as a signal to other consumers may be high for both male and female consumers. Consequently, we do not make a sign prediction but leave it as an empirical question.

Product-Market Characteristics. We postulate that there are several potentially relevant product-market characteristics that may explain differences in CBR across categories. On the one hand, these characteristics arise from previous brand investments and competitive entries. On the other hand, they reflect differences in the buying or consumption process that are linked to the product. We consider seven potential factors: the visibility of consumption, the degree of product homogeneity, the frequency of new product introductions, the number of brands in the market, the ability to judge product quality in advance, the extent of the decision process, and the extent of group decision making.⁴

We expect that the overall importance of brands, i.e., CBR, is higher in categories in which consumption is more visible to other people, the degree of product homogeneity is larger, the frequency of new product introductions is higher, and the range of available brands is larger. Visibility of consumption (of, for example, cars and sunglasses) clearly is a necessary condition for consumers to capitalize on the social-reference effect of brands (Bearden and Etzel 1982). Hence, CBR should be higher for these categories. In categories of products that provide more or less the same level of quality, it becomes harder to deliver unique benefits to the customer. Here, the brand offers the means to differentiate

itself from competitors, and consumers value this differentiation because they may benefit from the brand to emphasize their distinct personalities (see, e.g., Belk 1988). Higher frequency of new product introductions (e.g., the replacement of mobile phones or computers by the next generation) and a greater range of brands available to the consumer create a situation in which uncertainty is likely to be higher. Consumers are limited in their capacity to evaluate and memorize product information (Bettman, Luce, and Payne 1998). The brand name may provide the means to reduce the risk associated with the evaluation of a newly introduced product. It also helps lower the information costs that arise from assessing alternatives from a larger range of products (see, e.g., Erdem, Swait, and Valenzuela 2006).

We expect that the ability to judge product quality *ex ante* and the extent of the decision process are negatively related to CBR. Particularly in service industries, consumers are unable to assess product quality in advance. They need to trust the supplier of the service and often perceive a high risk associated with their decision, e.g., in terms of the safety of an airline or treatments by physicians. Brands may offer an important quality signal in advance that reduces the perceived risk (Erdem and Swait 1998). We expect that as the extent of the decision process increases, the importance of brands as a decision criterion decreases, because consumers spend more time to collect and evaluate information from various sources (Klink and Smith 2001). As a result, they are better informed and reduce the perceived risk. The brand signal loses in value.

Finally, we note that we do not have a clear prediction for the influence of the extent of a group decision process on CBR. Generally, the level of information should be higher when more persons contribute to the decision (Ward and Reingen 1990). This would suggest a negative effect on CBR because uncertainty should be lower. However, group decisions are also a process in which conflicting interests

and opinions need to be unified. The brand name might play an important role in such negotiation processes because it works as a means to transform divergent beliefs into a consensus (Spiro 1983).

Data Collection. Information on the constructs CBR, risk reduction, and social reference as well as on gender and age are provided by the respondents in the survey. For product characteristics, we collected data from an external panel of 30 marketing experts. Half of them are from industry; the other half are academics. All experts possess considerable international marketing experience and indicated that they are qualified to evaluate the 20 categories. Details of the questionnaire can be found in the Appendix. We note considerable convergence in the answers of the experts. The inverse coefficient of variation (mean divided by SD) exceeds 2 by far. Only for group decision making is the value 1.64, which is still above 1, indicating relatively low variation with respect to the mean. Nevertheless, we acknowledge that ratings from multiple raters may bias model estimates due to errors in individual informants' responses. To correct for these errors, we apply the confidence-based weighting procedure to aggregate responses, as suggested by Van Bruggen, Lilien, and Kacker (2002). To weight responses, this procedure uses informants' self-assessed confidence in the accuracy of their answers.

Model Specification. We model the formation of category brand relevance as follows:

$$CBR_{ikl} = \alpha_0 + \beta_{1i}RISK_{ikl} + \beta_{2i}DEM_{ikl} + \gamma_1V_Cons_k + \gamma_2Homog_k + \gamma_3Freq_k + \gamma_4No_Brd_k + \gamma_5Exp_Qual_k + \gamma_6Ext_Dc_k + \gamma_7Group_Dc_k + v_k + \tau_l + u_{kli}, \quad (1)$$

with v_k i.i.d. $N(0, \sigma_v^2)$, τ_l i.i.d. $N(0, \sigma_\tau^2)$, and u_{ikl} i.i.d. $N(0, \sigma_u^2)$.

where

CBR_{ikl} = category brand relevance perceived by individual i for

- $RISK_{ikl}$ = risk reduction perceived by individual i for category k in country 1;
- DEM_{ikl} = social reference perceived by individual i for category k in country 1;
- V_Cons_k = visibility of consumption in category k ;
- $Homog_k$ = degree of product homogeneity in category k ;
- $Freq_k$ = frequency of new product introductions in category k ;
- No_Brd_k = number of brands available in category k ;
- Exp_Qual_k = ability to judge quality *ex ante* in category k ;
- Ext_Dc_k = extent of decision process in category k ;
- $Group_Dc_k$ = extent of group decision making in category k ;
- α, β, γ = (unobserved) parameter vectors;
- v, τ, u, σ^2 = error terms and variances;
- i = 1, 2, . . . , I (number of individuals);
- k = 1, 2, . . . , K (number of categories);
- l = 1, 2, . . . , L (number of countries).

Our model includes category-specific error components, v_k , and country-specific error components, τ_l . By incorporating this error structure, we account for the fact that there are unobserved category-specific and country-specific variables that might influence CBR. We assume these errors and the idiosyncratic error, u_{ikl} , to be uncorrelated. As a result, the error variance is $\text{Var}(v_k + \tau_l + u_{ikl}) = \sigma_v^2 + \sigma_\tau^2 + \sigma_u^2$. In addition, this structure implies that errors are correlated across categories within a country and across countries within a category, reflecting the joint impact of omitted variables at the category and country level.

Consistent with our conceptualization, we also assume that consumers are heterogeneous with respect to the relative contribution of the brand functions to the formation of CBR.

Table 4

Rater-Bias Corrected Results of Covariate Regression

	Expected sign	Coefficient estimate (standard error)
Constant		.357 (.167)
Brand functions		
Risk reduction	+	.588 (.012)
Risk reduction * sex (male = 0; female = 1)	+	.020 (.006)
Risk reduction * age	+	.002 (.000)
Standard deviation		.004 (.001)
Social reference	+	.198 (.020)
Social reference * sex	+/-	-.009 (.010) ^{NS}
Social reference * age	-	-.002 (.001)
Standard deviation		.158 (.003)
Product-market characteristics		
Visibility of consumption	+	.057 (.009)
Degree of product homogeneity	+	.109 (.026)
Frequency of new product introductions	+	.084 (.019)
Number of available brands	+	.056 (.021)
Ability to judge quality <i>ex ante</i>	-	-.278 (.024)
Extent of decision process	-	-.075 (.019)
Group decision making	+/-	.140 (.023)
Error components		
Country-specific error standard deviation		.146 (.006)
Category-specific error standard deviation		.077 (.006)
Number of individuals		5,759*
Log likelihood		-13,398.88

Note: NS = not significant ($p > .05$), based on two-sided *t*-test.

*Ten individuals were excluded because they evaluated only one product category.

Specifically, we consider gender and age as important moderators. However, there are likely to be other unobserved heterogeneity factors such as lifestyle variables that may explain differences in the importance of the two brand functions. We model consumer heterogeneity in the β -coefficients that are associated with risk reduction and social reference as follows:

$$\beta_i = \bar{\beta} + \delta_1 Sex_i + \delta_2 Age_i + \omega_i, \quad (2)$$

with ω_i i.i.d. $N(\mathbf{0}, \Sigma)$,

where Sex_i measures the gender of individual i , Age_i denotes his or her age, and ω represents a vector of individual-specific deviations from the mean vector $\bar{\beta}$ that are assumed to be normally distributed with zero mean and variance-covariance matrix Σ . The vector ω captures the influence of unobserved heterogeneity factors.

Estimation results. Substituting Equation 2 into 1 produces the full estimation equation, which we estimate using the simulated maximum likelihood technique. To reduce the computation time, we use patterned pseudo-random numbers, such as Halton sequences, instead of pure random draws. Specifically, we use 25 Halton draws (see, e.g., Greene 2001).

We present estimation results using the rater-bias adjusted ratings from experts in Table 4. Model fit is very good. OLS-based R^2 , which does not account for consumer heterogeneity, amounts to .614. Collinearity among regressors is not an issue. The variance inflation factor never exceeds the critical value of 10 (Greene 2004).

Estimation results confirm our expectations. Risk reduction and social reference turn out to be significant drivers of category brand relevance. On average, the contribution of risk reduction to CBR is almost three times larger than that of social reference ($\bar{\beta}_1 = .588$, $p < .05$ vs. $\bar{\beta}_2 = .198$, $p < .05$). Gender and age are important moderators of the influence of brand functions on CBR. The relative importance of risk reduction is higher for women ($\delta_{11} = .020$, $p < .05$) and for older people ($\delta_{12} = .002$, $p < .05$). Gender does not seem to moderate the effect of social reference ($\delta_{21} = -.009$, $p > .05$), but age does ($\delta_{22} = -.002$, $p < .05$). There are other, unobserved consumer-specific factors that moderate the effects of risk reduction and social reference on CBR, as is reflected in the significant standard deviations of the random components ($\sigma_{\omega,1} = .004$, $\sigma_{\omega,2} = .158$, both $p < .05$).

We also find strong evidence for the impact of product-market characteristics on CBR. Products that are consumed in public (visibility of consumption) are associated with higher CBR ($\gamma_1 = .057, p < .05$). CBR is higher when products are more homogenous ($\gamma_2 = .109, p < .05$), which is consistent with our expectation. We also find evidence for the assumed positive effect of the frequency of new product introductions on CBR ($\gamma_3 = .084, p < .05$). Consistent with our expectation, we find that CBR is higher in categories with a larger number of available brands ($\gamma_4 = .056, p < .05$). CBR is lower in markets in which product quality can be more easily judged *ex ante* ($\gamma_5 = -.278, p < .05$). Consistent with our expectation, CBR appears to be lower for products for which the decision process is more extensive ($\gamma_6 = -.075, p < .05$). We could not derive a sign prediction for the extent of group decision making based on theoretical arguments. Interestingly, we find that brands are also more important to consumers in group decision making situations ($\gamma_7 = .140, p < .05$).

To summarize, the selected product-market characteristics indeed provide important insights into the drivers of CBR across categories. We note, however, that there are still relevant category-specific and country-specific factors that explain differences in CBR, as is reflected in the significant standard deviation of the respective error components ($\sigma_v = .077, \sigma_\tau = .146$, both $p < .05$).⁵

Managerial Implications

Our results have important ramifications for management practice. In the introductory example, we referred to a development in the German power market after its deregulation in 1998. Energy providers invested a great deal in new brands, leading to a rise in total advertising expenditures from €68 million in 1998 to €176 million in 2000. However, brand relevance appears to have been low because electrical power is a commodity. There is not

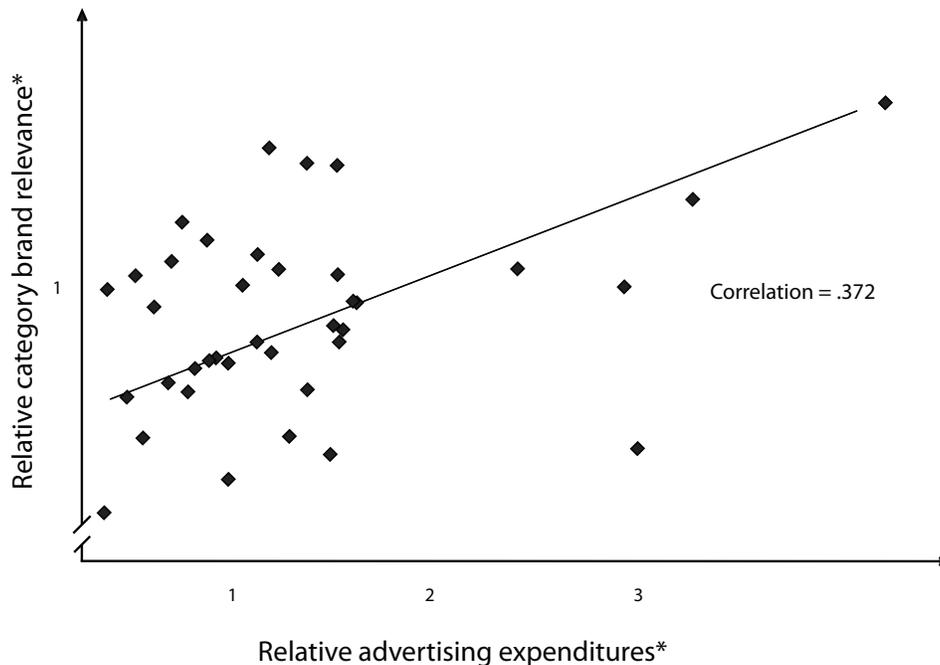
much uncertainty about the reliability and quality of energy supply on the consumer side; and it is hard to believe that power brands are used to communicate the self-identity of consumers and to connect consumers with other people. Energy companies learned their lessons. While total advertising expenditures in Germany increased from €18.2 billion in 2000 to €23.6 billion in 2007, expenditures in the energy sector fell from €176 million to €70 million in that period, according to ACNielsen Media Research (AC Nielsen 2000–2007). Newly launched brands such as Evivo by RWE (Rheinisch-Westfälische Elektrizitätswerke) eventually disappeared from the market.

The suggested CBR scale could have helped energy managers to detect the low chances for successful brand building before launching the investment program. When CBR is low, managers are well advised to carefully analyze the economic potential of brand investment in comparison with other opportunities of value creation (e.g., investment in personal selling). Our consumer-based scale does not quantify the return on brand investments, but it provides an important early warning signal that may prevent management from rushing into suboptimal investment decisions.

A high-level correlation analysis of advertising expenditures and CBR suggests that the level of advertising expenditures is set in concordance with the level of CBR (see Figure 2). For this analysis, we collected data on total advertising expenditures for our 20 product categories in Japan, the U.K. and the U.S. from public sources such as Dentsu's (2008) report on *Advertising Expenditures in Japan*, the U.K. *Advertising Statistics Yearbook 2007* (WARC 2007), and *Nielsen Media Research* (2008) and *Advertising Age* (2008) in the U.S. The data cover the years 2005 and 2006, respectively. We divided expenditures and CBR scores by their country means so that data can be pooled across countries.⁶

Figure 2

Association Between Category Advertising Expenditures and Category Brand Relevance



*Relative means that CBR values and expenditure values are mean-standardized within each industry.

Figure 2 shows that category advertising expenditures are indeed correlated with the degree of category brand relevance in that category ($\rho = .372, p < .05, N = 38$). Since the economic lever for brand-building activities is higher in markets with high CBR, firms seem to invest more in advertising. We note that our analysis should be interpreted as an analysis of association but not as a test of causality. In fact, we believe that category advertising expenditures also impact CBR (see again Figure 1). Our small dataset, however, does not enable us to analyze the simultaneity between advertising expenditures and category brand relevance.

Although it seems plausible that firms should align their brand investments with the level of CBR, we do not claim that, as a basic principle, firms should not invest in brands in markets in which category brand relevance is low. It may be a viable strategy for a firm to invest in a market with low CBR so that the firm's

brand investment helps develop the overall relevance of brands in that category over time. Apple might be a good example for the personal computer category in this respect. It is, however, apparent that such investments need to be made over a longer time. In addition, the focus of the brand campaign is likely to be different, as customers first need to be educated about the benefits of a brand name. Measuring category brand relevance is thus important for a firm in any case because it provides important information on the chances and risks of brand investments in a specific product market.

There are also chances for a brand-niche strategy in categories with low CBR. In such categories, it is likely that a small segment of customers values the benefits from brands more highly than do the rest of the customers. The proposed scale helps identify these customers and tailors the brand strategy to their specific needs. In fact, we observe successful brands in commodity markets such as toilet

paper (e.g., Charmin), paper tissues (e.g., Tempo), or spices (e.g., Ostmann).

Finally, our CBR framework provides managers with valuable insights into the drivers of CBR. The contribution of risk reduction and social reference to CBR may differ across consumers within a category as well as across categories. Based on the relative importance of the brand functions, brand managers may develop or revise their marketing campaigns to better address the brand needs of their target consumer segments or target markets.

Conclusions, Limitations, and Future Research

In this research, we suggest a new scale to measure category brand relevance, which reflects the overall role brands play in purchase decision, in comparison with other criteria. We also propose a framework of antecedents and consequences of CBR. Specifically, we develop scales to measure the risk-reduction function and social-demonstration function of brands. We test and validate the proposed scales in 20 product categories and five countries. The findings from this survey provide interesting insights. For example, we find that cars and cigarettes are on top of the list of categories in terms of CBR across all five countries. For other categories, however, the relative importance of brands is different across international markets. In addition, CBR appears to be highest in the U.S. and for durables. We also find that CBR is higher when consumption is more visible to the public, products are more homogenous, and more brands compete in a market. In contrast, CBR is lower in categories in which consumers can better judge the quality of goods in advance.

The new scale of CBR adds to the extant marketing literature on cognitive brand constructs, such as brand knowledge, brand attitude, and consumer-based brand equity. While these constructs are measured at the brand

level, the proposed CBR construct focuses at the category level. Because CBR is a category-level construct, it can be used as a prelaunch diagnostic to better assess the chances and risks for brand investments.

Our research is subject to limitations that may stimulate further research. First, although we choose a diverse range of categories, covering durables, FMCG, services, and retail businesses, the scales could be applied to other categories. A broader range of categories would allow for a more profound test of the relevance of brands across different types of goods.

Second, it would be interesting to extend the application to other countries. By including more countries, researchers could investigate the importance of cultural differences (e.g., cultural values) and economic differences (e.g., income distribution) for explaining country differences in CBR.

Third, our conclusions about the relationship between category advertising expenditures and CBR are limited. Consistent with our expectations, we find evidence for an association between the two measures. Future research could investigate the simultaneity between CBR and advertising expenditures, particularly if longitudinal data are available.

Finally, future research could investigate how CBR can be integrated into normative frameworks that evaluate the economic outcome of brand and other marketing investments.

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Measurement Appendix

Consumer Survey

*Participants evaluated each item using a seven-point Likert scale with “strongly disagree” (1) and “strongly agree” (7) as anchors.

Statements apply to FMCG. Minor adaptations are required for services and retailers.

Category brand relevance* ($\alpha = .900$)

When I purchase a product in the given category, the brand plays—compared to other things—an important role.

When purchasing, I focus mainly on the brand.

To me, it is important to purchase a brand name product.

The brand plays a significant role as to how satisfied I am with the product.

Risk reduction* ($\alpha = .928$)

I purchase mainly brand name products because that reduces the risk of aggravation later.

I purchase brand name products because I know that I get good quality.

I choose brand name products to avoid disappointments.

I purchase brand name products because I know that the performance promised is worth its money.

Social reference* ($\alpha = .909$)

To me, the brand is indeed important because I believe that other people judge me on the basis of it.

I purchase particular brands because I have much in common with other buyers of that brand.

I pay attention to the brand because its buyers are just like me.

I purchase particular brands because I know that other people notice them.

Brand loyalty* (Ailawadi, Neslin, and Gedenk 2001; $\alpha = .893$)

I prefer a particular brand.

I am willing to invest additional time and/or effort, just to be able to buy my favorite brand.

When purchasing, it is usually important to me which brand I purchase.

Price premium*

I prefer to purchase a brand-name product, even if that means paying an additional price.

Constant-sum brand-weight measure (adapted from Fischer 2007)

We will now ask you some questions about the criteria which might be important to you when purchasing [CATEGORY XY]. How relevant is each of these criteria to you when you have to make a decision about buying or not buying in [CATEGORY XY]? To this end, you have 100 points. The more important a criterion is to you, the more points you should give it. You can also rate a criterion with 0 points if it is of no importance to you at all when purchasing a product. Please divide exactly 100 points.

Price and possible maintenance costs

Quality

Effort required for the purchase (it is easy to get/purchase the product)

Advertising information about the provider and the product (ads on TV, radio, in newspapers, brochures, stores, etc.)

Brand

Likability (Mitchell 1986; $\alpha = .880$)

Most brands in this category . . . 1 = I don't really like, 7 = I like very much.

My feelings about most of the brands in the category in question are very. . . 1 = unpleasant, 7 = pleasant.

My feelings about most of the brands in the category in question are very . . . 1 = bad, 7 = good.

Consideration-set size

Thinking about all [CATEGORY XY] brands available and familiar to you, how many of these brands would you consider? Approx. ____ brands

Brand knowledge* (adopting ideas from Keller 1993; $\alpha = .890$)

In the category in question, I associate many brands with unique ideas.

In the category in question, many brands differ with respect to the notions I have about them.

I have a very clear picture in my mind of many different brands in the category in question.

I have a clear idea of most brands of this category in my mind.

For most brands in the category in question, it is hard for me to tell what kind of an image they are trying to project [reverse-coded item].

Questions of the Expert Survey ($N = 30$)

*Experts evaluated each item using a five-point Likert scale with “strongly disagree” (1) and “strongly agree” (5) as anchors.

Ability to judge product quality *ex-ante** ($M = 3.07$, $SD = 1.11$)

Consumers feel competent to objectively assess the relevant quality criteria prior to first buying a product in [CATEGORY XY].

Visibility of consumption* ($M = 3.13$, $SD = 1.40$)

The consumption of products in [CATEGORY XY] is visible to the public, i.e., other people notice the brand in use.

Degree of product homogeneity* ($M = 2.98$, $SD = 1.14$)

Competitors in [CATEGORY XY] virtually offer the same quality level.

Frequency of new product introductions* ($M = 3.02$, $SD = 1.24$)

In [CATEGORY XY], new products are frequently launched.

Extent of group decision making ($M = 2.04$, $SD = 1.24$)

The typical decision process in [CATEGORY XY] can be characterized as follows:

1 = alone

5 = with other people

Extent of decision process ($M = 2.69$, $SD = 1.35$)

Please imagine a situation in which consumers usually buy products in [CATEGORY XY].

1 = The consumer virtually makes an automated choice.

2 = The consumer chooses from a small number of brands s/he is familiar with.

3 = The consumer searches for other alternatives in addition to the brands s/he is familiar with and which are offered to him/her.

4 = The consumer invests evaluate and compare all alternatives that s/he has found.

5 = The consumer invests a lot of time to evaluate and compare alternatives. A decision is only made when the consumer feels that s/he has collected and processed all information that is required for the decision.

Number of brands available ($M = 3.21$, $SD = .85$)

Among how many different brands can a consumer typically choose in [CATEGORY XY]?

Only one brand

2–3 brands

4–10 brands

11–30 brands

More than 30 brands.

Confidence in own evaluation* (used for weighting of responses; see Van Bruggen, Lilien, and Kacker 2002, 473)

I felt competent in answering the survey questions.

Notes

1. We also ran exploratory factor analyses, which reinforced the results of the confirmatory factor analyses. All the factor loadings were highly related to their respective constructs, and explained variance estimates were sufficiently high for all constructs.

2. For the sake of brevity, we do not report on the analyses and psychometric properties of the scales by country in more depth. Details can be obtained from the authors upon request.

3. For the assignment of a scale metric to the latent vari-

able, the factor loading of one item (“marker item”) per factor is set to be equal to one. The intercept of each marker item is fixed to zero in all groups in order to fix the origin of the scale (Steenkamp and Baumgartner 1998).

4. Note that, in contrast to consumer traits, it would not be meaningful to consider product-market characteristics as moderators of the influence of brand functions on CBR. Product-market characteristics are linked to the object of decision and can therefore not be used to explain how the subject of decision, i.e., the consumer, weights the role of brand functions when evaluating the relevance of brands in a category. Consumers may, how-

ever, differ in their tastes with respect to brand benefits from risk reduction and social reference, depending on age and gender.

5. We also considered country-specific variables such as the Hofstede cultural values (Hofstede 2003). These variables, however, caused severe collinearity issues,

which are probably due to the fact that we have only data on five countries.

6. Data were not always available for the product category of interest except at a higher aggregation level. In such cases, we took the average CBR score of the corresponding categories.

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