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Drivers of Brand Strength:

Interaction Patterns of Brand Association Characteristics

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Abstract

Brand strength is a major factor of influence on the market performance of a brand. Cognitive brand research conceives brand strength as the result of brand association characteristics, such as favorability, number, uniqueness, and the consensus of customers concerning these characteristics. So far, most research has focused on the impact of individual association characteristics across various brands and has used regression type methods to analyze the relationships. Knowledge of the intra-personal impact of interaction patterns of characteristics of brand associations on brand strength is scarce. This study examines which patterns of brand association characteristics lead to high vs. low brand strength on an individual consumer level. Configural analysis of responses of 729 participants in an online panel who completed 2,822 association tasks concerning six sport shoes brands shows that various combinations of brand association characteristics can relate to high brand strength. Perceived consensus turns out to be a necessary condition. Causal combinations of favorability, number, uniqueness and consensus are better suited for explaining the existence of high brand strength than each of these predictors individually. The combinations change with the level of product category involvement and consumers' individual familiarity with the brand. These findings extend our theoretical understanding of cognitive brand equity and provide guidance for brand management practice.

Keywords: brand strength, brand associations, configural analysis, favorability, uniqueness, consensus

1. Introduction

In globalized economies where product offers abound and choices for consumers seem endless brands have become important management devices for differentiation and cognitive anchors for consumer decision-making. Strong brands have become strategic assets. Brand strength is an evaluative or behavioral response such as commitment, trust, reputation, or recommendation (Broniarczyk & Alba, 1994; Janiszewski & van Osselaer, 2000) that affects brand choice (Agarwal & Rao, 1996; Cobb-Walgren, Ruble, & Donthu, 1995; Low & Lamb Jr., 2000). Literature on cognitive brand equity tells us that brand strength results from what stakeholders know about a brand and how they evaluate that knowledge. In his seminal work on cognitive brand equity, Keller (1993) conceptualizes brand knowledge as associations in consumers' minds that vary by content, favorability, strength, and uniqueness. Following Kamakura and Russell (1991) brands are strong if many consumers are familiar with the brand and hold strong favorable associations that are exclusive to the brand in the product category. Research has investigated whether the number of brand associations (Bennett, Haertel & McColl-Kennedy, 2005), the relative presence of positive versus negative associations (Spears, Brown & Dacin, 2006), the uniqueness of brand associations (Krishnan, 1996), and agreement with desired brand associations (Malär, Nyffenegger, Krohmer, & Hoyer, 2012) influence consumer brand response. These studies have not yet investigated how different brand association characteristics work together in their influence on consumer brand response. Such an examination is timely, as combinations of brand association characteristics may explain brand strength better than individual association characteristics. Different paths to strong cognitive brand equity may exist.

The majority of existing studies search to identify what characteristics of brand associations discriminate strong from weak brands at an aggregate level, that is, across a sample of consumers and brands. Krishnan (1996) advised to conduct intra-brand studies

focusing on multiple consumers of a brand and the variation of brand strength among these consumers. Such an approach has become more popular lately (Romaniuk & Gaillard, 2007; Koll & von Wallpach, 2014) as it avoids potentially confounding factors like desired positioning, history, or the quality of marketing activities. The objective of the present research is to analyze the causal impact of different configurations of number, favorability, uniqueness and consensus of brand associations on brand strength for individual consumers.

The analysis is based on a survey of 729 participants in an online panel that is representative for Germany. Respondents completed 2,822 association tasks concerning six sports shoe brands. Fuzzy-set Qualitative Comparative Analysis (fsQCA; Ragin, 2008) provides the tool to investigate different patterns of brand association characteristics as causes of high and low brand strength. Results show that only perceived consensus is a necessary and empirically relevant predictor for brand strength. Except factual consensus, the other characteristics of brand associations are sufficient but not necessary predictors. Causal combinations of association characteristics are more effective in predicting brand strength than single brand association characteristics. The predictive configurations depend on consumers' levels of product category involvement and brand familiarity.

2. Theoretical background

Kapferer (2004, p. 13) defines a brand as “a shared desirable and exclusive idea embodied in products, services, places and/or experiences” and states that “the more this idea is shared by a larger number of people, the more power the brand has.” He proposes that consensus about a brand's characteristics is an important driver of brand strength. In addition, existing literature indicates that the number, valence and uniqueness of brand associations influence consumer brand response (Bennett, Haertel, & McColl-Kennedy, 2005; Krishnan, 1996; Spears, Brown, & Dacin, 2006). This literature has hardly addressed

how number, favorability, uniqueness and consensus of brand associations interact in their effects on consumers' brand response. Romaniuk and Gaillard (2007) question the direct impact of association uniqueness on consumer brand response. The level of uniqueness may influence the effects of favorability and number of associations. Favorability and number of association may have a stronger positive effect if consumers perceive a brand as unique. Gershoff, Ashesh and Anirban (2008) suggest that the effect of favorability of associations on brand strength is greater for individuals who perceive strong consensus with relevant others.

2.1 Number and favorability of brand associations

Through exposure to a brand, consumers build brand knowledge, consisting of a set of associations regarding the brand. Romaniuk and Neyncz-Thiel (2013) emphasize that the total amount of associations a consumer links to a brand depends on the knowledge and experience a consumer has with a certain brand. Krishnan (1996) states that with an increasing number of brand associations the memory structure that represents a brand becomes richer, which "makes it easier to access the particular brand node from memory (...) since these associations offer multiple pathways to the same brand node" (Krishnan, 1996, p. 392). Krishnan (1996) identifies the number of associations linked to the brand as an indicator for brand strength.

The favorability of a brand association indicates how negatively/positively a consumer evaluates an association (Keller, 1993). Brand managers recognize that creating favorable brand associations is an important driver of brand equity (Christodoulides & de Chernatony, 2010). Dacin and Smith (1994, p. 230) even state that "the favorability of consumers' predispositions toward a brand is perhaps the most basic of all brand associations and is at the core of many conceptualizations of brand strength/equity."

Previous empirical research has confirmed a positive link between the favorability of brand associations and brand strength (Krishnan, 1996; Koll & von Wallpach, 2014).

2.2 Uniqueness of brand associations

Several researchers emphasize the importance of unique brand associations.

Krishnan (1996) suggests using the set of associations that are unique to a brand relative to other brands in the product category as an indicator of brand equity. Zaichkowsky (2010) concludes that a unique brand image allows brands to demand a price premium over competing brands that offer similar product quality. Consumer choice theory shows that features owned by all brands in a consideration set are ignored in consumer decision-making strategies (Dhar & Sherman, 1996). Following Broniarczyk and Gershoff (2003), unique associations, even when trivial, are beneficial for customer-based brand equity.

Research on brand positioning, however, suggests that a single-minded focus on uniqueness may produce undesired outcomes (Reidenbach & Grimes, 1984). A strategy seeking to communicate merely unique qualities for a brand could lead to a negligence of essential category attributes (Keller, Sternthal, & Tybout, 2002). Consumers should be able to categorize a brand before unique associations are added (Barwise & Meehan, 2004; Keller et al., 2002). Punj and Moon (2002) suggest that in particular brands with limited resources need to be well anchored in their product category. Successful positioning embodies a mix between linkages to a product category and differentiating features (Punj & Moon, 2002).

Given the important role that branding scholars attribute to the uniqueness of brand associations in driving brand strength (Netemeyer, Krishnan, Pullig, Wang, Yagci, Dean, Ricks, & Wirth, 2004) surprisingly little empirical research has investigated this relationship. Krishnan (1996) compares high equity brands with low equity brands in six product categories. Results provide weak support for a positive effect of unique

associations. Romaniuk and Gaillard (2007) collected consumers' associations for a large number of brands in eight product categories and find that the relationship of uniqueness with preference is weak at best.

2.3 Factual and perceived consensus of brand associations

Consumers use branded products as symbols for the purpose of social interaction (Ahuvia, 2005) and as extended selves (Belk, 1988). If a branded product should express certain aspects of the user's personality, this will only work if other people have similar brand associations (Elliott, 1994). Consumer consensus concerning a brand is the degree to which different people share the same associations regarding a brand. Taking into account that consumers could falsely believe that others share their brand knowledge there are two types of consensus: factual consensus that can be empirically observed and consensus perceived by consumers. Whether consensus is a fact or perceived, when consumers think to share their associations regarding a brand with others they feel more comfortable. They experience less need for justification, less disagreement (Ross, Greene, & House, 1977), and lower cognitive dissonance (Festinger, 1957). Gershoff et al. (2008) find that individuals tend to overestimate population consensus more for alternatives they like, as opposed to alternatives they dislike. Marks and Miller (1987) attribute this effect to drivers like exposure to similar others, focus of attention, and causal attribution processes.

2.4 Product category involvement and brand familiarity

Research on product category involvement has shown that increasing involvement with a product category increases the level of interest for category-related stimuli as well as the intensity and depth of information treatment (Zaichkowsky, 1994; Mittal, 1995). Different knowledge levels lead to different information processing, evaluation strategies as well as decision-making (Rao & Monroe, 1988; Selnes & Howell, 1999). Product

category involvement, therefore, should have an impact on patterns of association characteristics that lead to high or low brand strength.

Hoeffler and Keller (2003) argue that since consumers may be more attentive to familiar brands, the first priority for brand managers is building a brand knowledge structure. Consumers will use that structure to evaluate and interpret brand-related knowledge. Familiarity can result in a more thorough interpretation and evaluation of brand information. But consumers can rely also on the affect related to a familiar brand. Thus, brand familiarity should have an impact on patterns of association characteristics that influence brand strength.

2.5 Research propositions

The review of extant literature leads to the following research propositions:

P1: Number, favorability, uniqueness and consensus of associations are sufficient conditions for predicting high brand strength.

P2: Combinations of these predictors explain better the existence of high brand strength than each predictor by itself.

P3: A consumer's product category involvement changes the configuration of number, favorability, uniqueness and consensus of brand associations predicting high brand strength.

P4: A consumers' familiarity with a brand changes the configuration of number, favorability, uniqueness and consensus of brand associations predicting high brand strength.

3. Research method

3.1 Data collection

The researchers analyzed consumers' brand associations and brand strength on an individual level. An online panel provided 1,500 respondents representative for the German population from 18 to 80 years in terms of socio-demographic characteristics. At the first contact participants were informed that the researchers are interested to learn about consumers' brand knowledge regarding sports shoes. Respondents were invited to disclose their brand awareness for six sport shoes brands (aware / not aware): Adidas, Asics, New Balance, Nike, Puma, and Reebok. Together these brands have a market share of 91 percent in the sports shoe market in Germany (Outdoor Händlermagazin, 2008). Most respondents were aware of at least four brands, the threshold set for qualification. Qualified respondents got to see one brand randomly selected from those they were aware of. Respondents were asked "What comes to your mind, if you think of brand X?" They wrote down up to a maximum of eight free associations with that brand and indicated how negative or positive they perceived each of the associations on a five-point Likert scale (Spears, Brown & Dacin, 2006). Respondents also stated how strongly they believed other people shared their associations with the brand. They indicated their level of agreement to a set of three items measuring brand familiarity and three items measuring attitudinal brand strength.

Over the next three weeks the participants received the same questionnaire for other sports shoe brands. Brand presentation followed a random order. For people who were aware of more than four brands the brands presented were randomly selected. In week 2 respondents also answered three product category involvement items. In week 3 they provided socio-demographic information. Respondents received financial compensation.

In the first week 1,500 respondents filled out the online questionnaire. This number dropped by approximately 15 percent every week, resulting in 758 respondents after week 4. A major reason for the dropout rate was narrow time windows provided for responding to make sure that time periods between each round were identical across respondents.

After exclusion of consumer-brand combinations with no valid associations the final sample consisted of 729 respondents who had completed 2,822 association tasks (3.9 brands on average). Respondents evaluated Adidas 589 times, Asics 358 times, New Balance 153 times, Nike 570 times, Puma 578 times, and Reebok 574 times. Respondents mentioned on average 3.08 brand associations in each task.

3.2 Measures

Brand associations. Two researchers coded the associations mentioned by the participants in the free association task, discussed discrepancies until they achieved agreement for all codes, and removed the code that included all associations classified as invalid, such as random letters. This procedure resulted in 137 individual codes. The codes served for calculating brand-specific indices for number, favorability, uniqueness and consensus of brand associations at the individual consumer level. Together with measures of perceived consensus, product category involvement and brand familiarity, these indices served as predictors of consumer brand strength.

Number and favorability of brand associations. In accordance with Krishnan (1996) the study calculates the individual level brand association set size (S-score) by counting the number of thoughts a respondent linked to a brand name (Nelson, Bennett, Gee, Schreiber & McKinney, 1993). For each brand and each respondent a favorability score (F-score) resulted from averaging the favorability of all mentioned associations, with higher numbers indicating a more favorable evaluation.

Uniqueness. A relative uniqueness score (U-score) for each respondent-brand combination was calculated by establishing an intra-consumer comparison of the proportion of associations linked to one brand compared with the associations linked to all other brands in the product category (Romaniuk & Gaillard, 2007). In formal terms, the U-score was calculated as follows:

$$(1) \quad = \cdot \left(1 - \frac{1}{3}\right)$$

$$(2) \quad = \frac{\sum_{=1}}{\sum_{=1}}$$

where:

U_{ijk} = uniqueness of association j for consumer i regarding brand k ,

T_{ijk} = dichotomous variable indicating whether consumer i linked association j to brand k

(0 = association j is not linked to brand k ; 1 = association j is linked to brand k),

X_{ij} = count how many other brands consumer i linked to association j , and

U-score $_{ik}$ = average uniqueness score for consumer i regarding brand k .

The first formula displays the uniqueness of an association with respect to one brand for an individual consumer. This formula takes into account how many other brands in the product category the consumer links to the association. The second formula calculates the U-score of a consumer regarding a brand. It accounts for the total amount of (unique and not unique) associations that a consumer links to a brand. The formula provides an indication of the relative uniqueness of all associations a consumer has regarding a brand. The U-score can range from 0 (when a consumer mentions the same associations for all brands) to 1 (when a consumer mentions every single association for one brand only).

Factual and perceived consensus. A measure of factual consensus (C-score) concerning brand associations was calculated for each respondent and brand based on the logic of Koll and von Wallpach (2010). The measure considers every listed association and assigns an individual, brand-specific consensus score to every participant. In formal terms, the C-score is calculated as follows:

$$(3) \quad = \text{---}$$

$$(4) \quad = \frac{\sum_{=1}}{\sum_{=1}} \cdot \text{---}$$

where:

C_{jk} = relative consensus for association j regarding brand k ,

Y_{jk} = count how many consumers linked association j to brand k ,

N_k = number of consumers exposed to brand k

C-score $_{ik}$ = average consensus score for consumer i regarding brand k , and

T_{ijk} = dichotomous variable indicating whether consumer i linked association j to the brand k (0 = association j is not linked to brand k ; 1 = association j is linked to brand k).

The first formula calculates the percentage of consumers who mention a specific association. The second formula determines the C-score for each respondent regarding a specific brand using the relative consensus measure at the association level for all associations a respondent mentioned for a brand. The C-score can range from a minimum close to 0 (if a participant only provides associations that no one else does) to a theoretical maximum of 100 percent (if every participant mentions exactly the same associations).

To measure respondents' perceived consensus participants rated the statement "Other people have similar thoughts regarding Brand X as I have" on a seven-point Likert scale with higher numbers indicating higher perceived consensus.

Product category involvement and brand familiarity. The study measures both consumer involvement with the category (Mittal, 1995; Cronbach's alpha: 0.96) as well as brand familiarity (Kent & Allen, 1994; Cronbach's alpha = 0.93) as a composite of three items rated on a seven-point Likert scale.

Brand strength. The measure of brand strength uses seven-point Likert scales and consists of three indicators of customer-based brand equity typically used as brand strength measures: trust, reputation, and image (Chaudhuri & Holbrook, 2001; Mittal & Frennea, 2010; Cronbach's alpha = 0.93). The brand strength index is an average of the three items.

3.3 Analysis

Fuzzy-set qualitative comparative analysis (fsQCA) can deliver information on complex configurations of antecedents sufficient or even necessary for outcomes of interest (Ragin, 2008a). Researchers form fuzzy sets, which represent both the outcome and the causal conditions by calibrating the degree of membership of sampled cases in each of the sets.

In the context of the current research the target set is the group of consumers who show high levels of brand strength. This outcome could result from membership in each of the fuzzy sets of association characteristics individually or from different combinations of association characteristics, product category involvement and brand familiarity, with each causal condition sufficient and potentially necessary for brand strength.

Researchers can use consistency scores that fsQCA provides to determine causal necessity or sufficiency of various causal conditions for membership in the target set. An assessment of the coverage of necessary causal conditions provides evidence of their relative empirical importance (Ragin, 2006). If the consistency score for a causal condition is greater than 0.9 and its coverage is greater than 0.5, the causal condition can be considered necessary for the outcome as well as empirically relevant (Ragin, 2006). Causal sufficiency exists if membership in a causal condition is consistently less or equal to membership in the relevant outcome (Ragin, 2006). If the consistency score for a causal condition is greater than 0.8 the causal condition can be considered sufficient for the outcome (Wu, Yeh, Huan & Woodside, 2014). Following Ragin (2008a) causal models are informative if their solution coverage is between .25 and .65.

Applying the direct calibration method suggested by Ragin (2008b) the authors used three anchors for the calibration of each fuzzy set: the threshold of full membership in the sets (fuzzy score = 0.95), the threshold for full non-membership (fuzzy score = 0.05) and the cross-over point which separates individuals “more in” from those “more out” of the set (fuzzy-score = 0.5). In order to make cases more distinguishable by widening the

range of variables, the researchers decided to multiply all measures of multi-item constructs, and to proportionally transform the multiplied values into fuzzy scores between 0 and 1 (Chang, Tseng & Woodside 2013). Table 1 presents the extreme values and the cross-over points of the measures in the study.

Table 1
Direct Calibration: Threshold of membership and cross-over points

	Favorability	Number of associations	Uniqueness	Perceived consensus	Measured consensus	Familiarity	Category involvement	Brand strength
Highest value	5	5	1	7	0.2	343	343	343
Cross-over point	3	3	0.66	4	0.15	64	64	64
Lowest value	1	1	0	1	0.1	1	1	1

The next step consisted of determining which configurations to include in the analysis. The authors set the frequency threshold for the minimum number of cases in a fuzzy subset to 1% of the number of brand-respondent combinations studied (2822), which corresponds to a minimum of 28 cases and the cut-off level for consistency to a minimum of 0.90. For the remaining consistent combinations the authors calculated truth tables and selected the “intermediate solution” (Ragin & Sonnett, 2004) for interpretation. Because there is no evident reason to assume symmetric relationships between brand associations and brand strength the authors conducted the same kind of analysis for both the set of respondents with high brand strength and the set of respondents with low brand strength.

4. Results

4.1 Patterns of brand association characteristics related to brand strength

Table 2 lists constructs and measures and their means and standard deviations. The results of fsQCA in Table 3 show that there is only one non-complex condition with a consistency level above 0.9 and a raw coverage greater than 0.5 (Ragin, 2006).

Table 2

Constructs, measures, means and standard deviations.

Constructs	Items	Data	Mean (SD)	α
Number of associations	<i>What comes to your mind, if you think of brand X?</i>	Number of mentioned associations (1 to 8)	3.08 (1.106)	-
Favorability of associations	<i>How negative or positive do you evaluate this association?</i>	Average favorability of associations (1 to 5)	3.92 (0.900)	-
Uniqueness of associations	Uses the associations mentioned within individuals and across brands.	Calculation of U-score (0 to 1)	0.68 (0.230)	-
Factual consensus of associations	Uses the associations mentioned across individuals and within brands.	Calculation of C-score (0 to 1)	0.16 (0.075)	-
Perceived consensus	<i>Other people have similar thoughts regarding Brand X as I have.</i>	Single item score (1 to 7)	5.21 (1.231)	-
Category involvement (Mittal, 1995)	<i>Sport shoes are important for me.</i> <i>I am interested in sport shoes.</i> <i>Sport shoes are highly relevant for me.</i>	Average score of multiple items (1 to 7)	5.01 (1.679)	0.96
Brand familiarity (Kent & Allen, 1994)	<i>I know a lot about brand X.</i> <i>I am familiar with brand X.</i> <i>I have experience with brand X.</i>	Average score of multiple items (1 to 7)	4.61 (1.572)	0.93
Brand strength (Chaudhuri & Holbrook, 2001; Mittal & Frennea, 2010)	<i>I trust brand X.</i> <i>Brand X has a high reputation.</i> <i>I have a positive image of brand X.</i>	Average score of multiple items (1 to 7)	5.24 (1.367)	0.93

Note: Higher numbers indicate higher levels of mentioned associations, favorability, uniqueness, factual consensus, perceived consensus, category involvement, brand familiarity, and brand strength.

Strong perceived consensus among consumers is a necessary condition for the occurrence of high brand strength. This fact is of empirical importance because a substantial number of consumers who perceive strong consensus with others concerning their brand associations show high brand strength. Strong factual consensus alone is neither necessary nor sufficient for high brand strength. A large number, high favorability, and high uniqueness of brand associations individually are sufficient predictors of high brand strength, but none of them is a necessary condition. Proposition P1 is partially supported. The high coverage levels of each association characteristic indicate that there must be multiple patterns of brand association characteristics related to high brand strength.

+	+	+	+	+	0.323	0.109	0.901
-	o	-	+	+	0.315	0.075	0.880
-	-	-	+	o	0.236	0.014	0.925
+	+	+	+	-	0.176	0.029	0.927
Solution coverage: 0.531, Solution consistency: 0.873							
+/- indicates high/low levels of each association characteristic o indicates “does not matter”							

The relationship between characteristics of consumers’ associations and brand strength is asymmetric. Testing the association characteristics for an outcome of low brand strength results in an intermediate solution with consistency (0.63) below the threshold level of 0.8. The drivers of low brand strength do neither appear to be low values on the drivers for high brand strength nor are they a systematic outcome of other combinations of characteristics of the measured brand associations.

4.2 The impact of consumers’ product category involvement and brand familiarity on causal conditions related to high brand strength

Adding respondents’ involvement with the product category and their familiarity with the brand to the analysis increases coverage and consistency of the solution.

Strong perceived consensus and high favorability characterize all solutions. High familiarity with the brand and high product category involvement contribute to high brand strength in some causal combinations. Both are no necessary predictors. In contrast to low familiarity with the brand product category involvement is never weak in any combination related to high brand strength. The analysis results in five empirically relevant configurations with high consistency (Table 5):

Table 5

Causal combinations of association characteristics related to high brand strength under conditions of different product category involvement and brand familiarity

Patterns of brand association characteristics							Raw coverage	Unique coverage	Consistency
Involvement	Familiarity	Number	Favorability	Uniqueness	Consensus (p)	Consensus (m)			
o	+	+	+	+	+	-	0.299	0.126	0.894
+	o	+	+	+	+	+	0.276	0.077	0.914
o	-	-	+	-	+	+	0.246	0.025	0.907
+	o	-	+	-	+	+	0.249	0.020	0.911
-	+	-	+	-	+	-	0.159	0.019	0.934
Solution coverage: 0.586 Solution consistency: 0.879									
+/- indicates high/low levels of each association characteristic o indicates “does not matter”									

(1) Consumers who are highly familiar with a brand show high brand strength if they perceive a strong consensus for a large number of highly favorable associations unique to the brand, despite low measured consensus. The level of product category involvement is of no importance in this causal combination.

(2) Consumers who are not familiar with the brand have high brand strength if they have strong perceived consensus for a small number of highly favorable associations with low uniqueness that are measurably consensual. The level of product category involvement is of no importance in this causal combination either.

(3) Consumers who are highly involved with the product category show high brand strength if they have a large number of highly favorable associations with a brand, which are unique and both measurably and perceptually consensual. In this case the level of familiarity with the brand is of no importance.

(4) Consumers who are highly involved with the product category also exhibit high brand strength if they perceive – and measurably have – strong consensus with others concerning a small number of highly favorable and not unique associations. In this case the level of familiarity with the brand is of no importance either.

(5) Finally, high brand strength exists for consumers who are not involved with the product category but highly familiar with a brand if they hold a small number of highly favorable associations that are not unique to the brand. These consumers perceive strong consensus concerning their associations which in fact are not consensual.

4.4 Test of predictive validity

To test for predictive validity of the findings, the sample was randomly split into a modeling sample and a holdout sample of observations. A fifty-fifty split of all observations with XL stat ensured a comparable distribution of brand strength in both samples. The authors performed fsQCA for the modeling sample and used the resulting configurations to assess their consistency and coverage in the holdout sample. The patterns of complex antecedent conditions are consistent between the two samples. Predictions on the data in the holdout sample indicate highly similar consistency and raw coverage for all configurations. Interested readers can get the results from the authors upon request.

5. Discussion and conclusion

This research examines the relationship between brand association characteristics and brand strength. The research reports patterns of levels of favorability, number, consensus, and uniqueness of associations that cause high individual brand strength. To gain insights into the potential impact of varying levels of product category involvement and brand familiarity on patterns of association characteristics that cause brand strength research added these two potential predictors.

The research contributes to extant knowledge in several ways. Strong perceived consensus concerning brand associations turned out to be necessary for high brand strength in the category of sport shoes. In contrast to current brand management literature, actual

consensus is neither necessary nor sufficient for high brand strength. The analysis of complex causal patterns related to high brand strength provides results which are partly in line with literature. For a large part of consumers, favorability of associations is linked with high brand strength. In contrast to existing research, a small group of consumers have high brand strength despite unfavorable associations if they are not unique to the brand.

When taking product category involvement and brand familiarity into account, this group disappears from the complex solution because the group's membership falls below the minimum number of cases set for fuzzy subsets. All remaining configurations contain high perceived consensus and high favorability as predictors of high brand strength. Number and uniqueness of associations must be either both high or low. Many unique associations support brand strength as much as few non-unique association. Many unique associations contribute to high brand strength if (a) brand familiarity is high (irrespective of the level of product category involvement) or (b) if product category involvement is high (irrespective of the level of familiarity). In contrast, few non-unique associations lead to high brand strength in three combinations: (c) if familiarity is low (irrespective of the level of involvement) or (d) if involvement is high (irrespective of the level of familiarity) or (e) if involvement is low and familiarity is high.

The results of this research calibrate our traditional understanding of important brand association characteristics which calls for many, favorable, unique, and shared associations. The results show that attempts to explain variance in brand strength via relationships with individual antecedents is less informative than identifying combinations of high and low levels of association characteristics related to high brand strength. In line with literature, for a majority of consumers high brand strength occurs only if brand associations are favorable and perceived as consensual. Consumers, however, do not need to hold many of these associations and the associations do not need to be unique.

Managers can benefit from applying these new recipes: The results underscore that creating favorable associations and a high perceived consensus about these associations among consumers should be on top of the branding agenda. When a brand is to reach a consumer segment, which is, for example, not familiar with the brand and not involved with the category, brand management should focus on communicating a limited number of non-unique associations. Unique associations are only related to brand strength in combination with either high involvement or high familiarity. Given the fact that brand enthusiasts or highly category-involved consumers are likely to differ from unfamiliar or less involved consumers with respect to media usage, interaction with other brand users or retail choice, brand managers have an opportunity to design touch-points suited to transmit a limited number of category-typical associations.

This research has several limitations. First of all, the results concern one product category only. Category characteristics such as penetration, social symbolism, or performance risk may impact the causal combinations of association characteristics leading to high brand strength. In categories with higher performance risk (e.g. travel or beauty services) brands may be perceived as less attractive if they possess unique associations only – especially for segments with little involvement and low familiarity where these unique associations may potentially add to the perceived risk. Extending this type of analysis to other product categories is required for a generalization of the findings. Additionally, the analysis was not done for each of the six sport shoe brands individually. There might be differences in the causal configurations from one brand to another depending on characteristics like brand personality or positioning. For example, brands intentionally catering to a very limited market could benefit more from unique and less from consensual associations than brands targeting the mass market. Finally, the study covers a restricted cultural context only. Cultures where individualism is frowned upon and risk-taking is

limited may show different configural conditions of high brand strength, especially when it comes to uniqueness and consensus of associations.

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