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The impact of brand extensions on brand personality: experimental evidence

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Abstract

Purpose – To investigate empirically the impact of brand extensions on brand personality, using Aaker's scale to measure the latter.

Design/methodology/approach – Experimental study manipulating extension fit (good/poor fit), controlling for brand familiarity and including a control group.

Findings – No adverse impact on brand personality of core brand as a result of introducing extensions (irrespective of fit).

Research limitations/implications – Cross-sectional study not capturing potential long-term effects of extensions with poor fit. Longitudinal research is needed, as are replications with different brands, types of extensions and consumer segments.

Practical implications – Preliminary support for introducing extension for a quality brand without fear of adversely affecting its brand personality.

Originality/value – First study explicitly investigating impact of brand extensions on brand personality.

Keywords Brand identity, Brand image, Brand extensions, Consumer behaviour

Paper type Research paper

In recent years, there has been increased interest in the brand personality construct as its strategic importance has become more apparent. Brand personality is defined as “the set of human characteristics associated with a brand” (Aaker, 1997, p. 347). A distinctive brand personality can help create a set of unique and favorable associations in consumer memory and thus build and enhance brand equity (Keller, 1993; Johnson *et al.*, 2000; Phau and Lau, 2000). As a result, brand personality is considered to be an important factor for the success of a brand in terms of preference and choice (Batra *et al.*, 1993; Biel, 1993). Indeed, a well-established brand personality can result in consumers having stronger emotional ties to the brand and greater trust and loyalty (Siguaw *et al.*, 1999; Johnson *et al.*, 2000), thus providing an enduring basis for differentiation (Aaker and Fournier, 1995; Halliday, 1996; Haigood, 1999) which is difficult to copy (Aaker, 1996). From a managerial perspective, brand personality enables firms to communicate with their customers about the brand more effectively and plays a major role in advertising and promotional efforts (Plummer, 1985; Batra *et al.*, 1993; Aaker, 1996). As such, marketing practitioners have become increasingly aware of the importance of building “a clear and distinctive brand personality” (Yaverbaum, 2001, p. 20).

Surprisingly, despite the importance to practitioners of creating meaningful and distinctive brand personalities (Bull and Oxley, 1996; Court *et al.*, 1997), there is a relative paucity of empirical research to guide them in managing their development. This is particularly notable as brands must maintain consistent, desirable, and enduring personalities to ensure their long-term success (Lannon, 1993; Alt and Griggs, 1988; Siguaw *et al.*, 1999). A major reason for the lack of research was the absence, until recently, of a comprehensive and psychometrically sound brand personality measure. In this context, previous studies tended to rely on either *ad hoc* scales or measures of *human* personality (e.g. Evans, 1959; Lowe, 1961; Evans, 1962; Westfall, 1962; Grubb and Hupp, 1968; Birdwell, 1968; Kassarian, 1971). Following Aaker's (1997) seminal work, however, in which a five-dimension, 42-trait scale of brand personality was developed and validated, a stream of empirical research has started to emerge (Aaker, 1999; Musante *et al.*, 1999; Siguaw *et al.*, 1999; Bauer *et al.*, 2000; Farhangmehr and Azevedo, 2000; Ferrandi *et al.*, 2000; Huber *et al.*, Mäder *et al.*, 2000; Aaker *et al.*, 2001; Hayes *et al.*, 2001; Kim *et al.*, 2001; Wysong *et al.*, 2002). None of these studies, however, has sought to examine whether (and how) *extensions* of an established brand might impact upon its personality. For example, can brand extensions change the configuration of the core (parent) brand along the five personality dimensions? Are some dimensions more (less) affected than others? Does the direction and/or magnitude of the change depend on the *type* of the extension in terms of fit? Is the impact of extension fit on brand personality dependent upon the perceived *quality* of the core brand?

Extant brand personality research is currently silent on the above questions. Moreover, answers cannot be found by reviewing the findings of the brand extension literature. Despite the impressive number of investigations in this area (for recent summaries see Ahluwalia and Gürhan-Canli, 2000; Barone *et al.*, 2000; Bottomley and Holden, 2001), brand personality has not been studied as a dependent variable in brand extension studies. Instead, the focus has been on consumer evaluations of the extension itself (Aaker and Keller, 1990; Sunde and Brodie, 1993; Bottomley and Doyle, 1996), attitudes towards the core (i.e. parent) brand (Keller and Aaker, 1992; Park *et al.*, 1993; Park *et al.*, 1996; Gürhan-Canli and Maheswaran, 1998; Swaminathan *et al.*, 2001), and economic outcomes such as market share (Sullivan, 1992; Park and Srinivasan, 1994; Reddy *et al.*, 1994), profit maximization (Wilson and Norton, 1989) and cannibalization effects (Moorthy and Ping, 1992; Reddy *et al.*, 1994; Lomax *et al.*, 1996; Lomax and McWilliam, 2001).

The literature does, however, raise the idea that brand personality *may* be affected by brand extensions. Keller's (1993) seminal work identifies those associations that consumers have with a brand which go to make up brand knowledge and, subsequently, brand equity. Of particular interest to this research are associations from product attributes (e.g. Fairy is associated with gentleness) and non-product attributes (e.g. Nike is associated with ruggedness). In this context, while a substantial body of research has shown that product-related associations are indeed affected by brand extensions (e.g. Loken and John, 1993; Milberg *et al.*, 1997; Herr *et al.*, 1996; John *et al.*, 1998), there is no empirical research into how non-product related associations (such as a brand's personality) are affected by brand extension activity.

It is this gap in the literature that the present study seeks to address. Specifically, we investigate the impact of extension fit and consumers' evaluation of core brand

quality on brand personality, while controlling for the effects of brand familiarity. We do this by utilizing a before-after experimental design with control, enabling us to focus on the potential *change* in brand personality dimensions as a result of the extension introduction (Mitchell and Jolley, 1996). This type of design has been used by a number of previous extension studies (e.g. Kardes and Allen, 1991; Park *et al.*, 1993; Morrin, 1999). It was chosen because of the high level of control in accounting for extraneous factors (such as an advertising campaign by the company being studied), thus enhancing the internal validity of the research (Calder *et al.*, 1981).

The intended contribution of our study is three-fold. First, in terms of theoretical development, the study links together two important research streams (brand personality and brand extensions) thus providing insights into how a brand's personality is affected by the characteristics of an extension. Second, the study provides additional evidence on the generalizability of Aaker's (1997) brand personality scale by examining the stability of the five brand personality dimensions in a different empirical setting. Third, the study findings should be of relevance to practitioners, for whom it is important to gauge the impact that different types of brand extension will have on brand personality in order to facilitate the development, reinforcement, and protection of its key differentiating characteristics. For example, extensions introduced for strategic reasons (e.g. to enter a new market) may have unexpected (and possibly undesirable) effects on brand personality. By knowing how the type of a planned extension (in terms of fit) may alter the profile of the brand on the five personality dimensions, marketers should be in a better position to assess the broader impact of their extension strategies. Similarly, advertising professionals can enhance their understanding of how potential brand extensions may affect brand personality within a product category and use this information to tailor specific advertising campaigns.

In the following section we provide a brief conceptual background and develop hypotheses linking extension fit and core brand quality to brand personality. Next, we describe the experiment conducted to test these hypotheses and the measures used to operationalize the constructs of interest. We conclude the article by considering the implications of the findings and offering suggestions for future research.

Conceptual background and hypotheses

Brand personality as a measure of core brand evaluations

Brand personality supports the identification of the consumer with his/her brand and thus increases the personal meaning of a brand for an individual (Ambler and Styles, 1997). The reason why consumers perceive brands as having personalities is part of a wider process of building or re-affirming their own self-concept (Aaker, 1999). Self-concept is defined as "the totality of the individual's thoughts and feelings having reference to himself as an object" (Rosenberg, 1979, p. 7) and research has suggested that individuals tend to relate brands to self-concepts (Dolich, 1969; de Chernatony and McWilliam, 1989b; Morgan 1993). Individuals will accept brands with images similar to their perceived self-concept and reject brands with images dissimilar to their self-concept (Sirgy, 1982). Brands, therefore, have a personality that users value beyond functional utility (Landon, 1974; de Chernatony and McWilliam, 1989a) and consumers will use brands as symbolic devices to explain and express their own particular personality (de Chernatony and McWilliam, 1990; de Chernatony and

Dall'Omo Riley, 1998; Aaker, 1999). Porsche, for example, has a personality that is sophisticated and exciting, Nike has a rugged personality, while IBM's personality is one of competence (Keller, 1998).

Brand personality is an essential component of brand image that helps create brand equity (Batra *et al.*, 1993; Biel, 1993). Plummer (1985) suggested that brand image consisted of three essential features:

- (1) physical attributes (e.g. green in color);
- (2) functional characteristics (e.g. cleans teeth more effectively); and
- (3) characterization (e.g. youthful).

This latter characterization process was termed brand personality. It is well known that the introduction of brand extensions can have positive or negative effects on a core brand's image and subsequent equity (Romeo, 1991; Loken and John, 1993; Milberg *et al.*, 1997; Swaminathan *et al.*, 2001). Given that brand personality constitutes an essential part of brand image, extending the brand may well impact on the brand's personality dimensions.

In this study, we use Aaker's (1997) five brand personality dimensions as measures of core brand evaluation following the introduction of an extension. More specifically, we focus on potential *changes* along these dimensions, i.e. we compare consumers' pre- and post-extension scores on each brand personality dimension to identify any significant shifts attributable to the extension.

A word of caution is warranted at this stage: unlike previous measures of core brand evaluation which enable the detection of "positive" (i.e. core brand enhancement) and "negative" (i.e. core brand dilution) extension effects (see Loken and John, 1993; Milberg *et al.*, 1997; Ahluwalia and Gürhan-Canli, 2000), a monotonic interpretation of brand personality dimensions is neither possible nor appropriate. For instance, an increase in "ruggedness" following the introduction of an extension could be positive or negative, depending on the salience of ruggedness as a dimension in defining the (original) personality of the particular brand in question. As Keller (1998) points out, many brands will *not* wish to be strong on some dimensions as they conflict with other dimensions. For example, ESPN has a rugged personality (reflecting its sports focus) but is weak on the sophistication dimension (in line with its mass market focus). This highlights an important issue when considering factors affecting a brand's personality: it is *not* sensible to consider *all* increases (decreases) on personality dimension scores as strengthening (weakening) the brand. This is because brand personality is a *profile* multidimensional construct (Law *et al.*, 1998), in that its dimensions cannot be combined algebraically. Its conceptual nature is similar to human personality, for which "it is theoretically meaningless to algebraically aggregate introversion and conscientiousness to represent how strong the personality of a person is" (Law *et al.*, 1998, p. 746). Thus, the "ideal" personality of a brand will depend on the brand's market and its positioning within that market: for example, Advil (pharmaceutical drug) will presumably be unconcerned by being viewed as unexciting, K-Mart will be unsurprised by its lack of sophistication, and Oil of Olay and Revlon will be most pleased that they are *not* viewed as rugged (Keller, 1998).

In light of the above, when examining the impact of extensions on brand personality, changes in the latter must be interpreted as a modification of the original brand configuration (or profile) along the five brand personality dimensions.

Post-extension evaluative statements regarding an “enhanced” or “diluted” brand personality can only be made under *specific* assumptions as to the desirability of the original (i.e. pre-extension) positions on each of the five brand personality dimensions. As the latter are clearly brand-specific, it follows that the interpretation of any changes in brand personality configurations as “positive” or “negative” must also be brand-specific.

Extension fit and brand personality

Extension research has largely relied on categorization theory (for a recent review, see Kim *et al.*, 2001) as the underpinning theoretical rationale behind its investigations (Kardes and Allen, 1991; Park *et al.*, 1993). We also base our hypotheses for the impact of extensions on brand personality on this theoretical framework.

When extending a brand, the transfer of brand associations is largely determined by categorization judgements, i.e. whether the consumer accepts the new extension as being a suitable member for the brand category (Park *et al.*, 1989, 1991). A category exists whenever people treat two or more distinguishable objects equally (Boush and Loken, 1991). When faced with an extension, consumers initially categorize the new introduction by assessing the suitability of its membership in a category that has the brand name as the category label (Park *et al.*, 1991; Sheinin and Schmitt, 1994). Prior research indicates that categorization judgments and the transfer of parent brand associations to the extension are particularly affected by consumer perceptions of “fit” (Aaker and Keller, 1990; Han and Schmitt, 1997; Smith and Park, 1992; Morrin, 1999). Specifically, “the more similar the extension is to a parent brand, the more likely are consumers to infer the parent brand characteristics in the extension” (Bhat and Reddy, 2001, p. 113). If the core (parent) brand associations are transferred to the extension, then consumers will perceive the extension as fitting with the brand category and will accept it, which, in turn, should also have a positive effect on the core brand (Chakravarti *et al.*, 1990; Park *et al.*, 1991). In this context, it has been shown that extensions can modify core brand perceptions, resulting in an enhancement or dilution of the core brand image (Gürhan-Canli and Maheswaran, 1998; Kirmani *et al.*, 1999; Loken and John, 1993; Swaminathan *et al.*, 2001). More specifically, good fit is considered to be important for positive consumer evaluations (i.e. enhancement) of the core brand (Aaker and Keller, 1990; Keller and Aaker, 1992; Sunde and Brodie, 1993; Bottomley and Doyle, 1996). On the other hand, a brand extension that exhibits poor levels of fit can create damaging associations and potentially dilute the core brand (Ries and Trout, 1986; Loken and John, 1993; Park *et al.*, 1993, Park *et al.*, 1996). Since brand extensions have been shown to affect core brand image (in terms of enhancement or dilution), and since brand personality is a key component of brand image (Plummer, 1985; Aaker, 1996), it can be expected that fit will also impact on brand personality.

More specifically, good fit between the extension and the core brand implies that the extension is perceived to be consistent with the core brand (Park *et al.*, 1991; de Magalhães Serra *et al.*, 1999) resulting in small (if any) changes in the location of the core brand on the five personality dimensions. Conversely, poor fit could result in a perceived inconsistency between the core brand and that of the extension (Park *et al.*, 1991; Bhat and Reddy, 2001). Such inconsistency may be manifested in material shifts

in the scores on some (or even all) brand personality dimensions. Thus the following hypothesis is proposed:

- H1. The better the fit between the extension and the core brand, the smaller the change in brand personality dimensions following the introduction of the extension.

Core brand quality and brand personality

In addition to the hypothesized impact of fit on brand personality, the latter may also be influenced by consumers' evaluations of the quality of the core brand that is being extended. Perceived quality is defined as "a global assessment of a consumer's judgement about the superiority or excellence of a product" (Zeithaml, 1988, p. 3). It has been identified theoretically as a core element of brand equity (John *et al.*, 1998) stemming from, amongst other things, its role in facilitating successful extensions (Aaker, 1990). In this context, high-quality brands have been seen to extend more easily into distant market categories (Rangaswamy *et al.*, 1993), at least in part because they are viewed as more expert, credible and trustworthy by consumers (Keller and Aaker, 1992). From this, quality appears to moderate the effect of fit when assessing an extension. Actual examples of brand extensions support this contention. Brands that have successfully developed "distant" (i.e. poor-fitting) extensions *without* any discernible effect on the core brand, are invariably high-quality brands. Harley Davidson (from motorcycles to men's toiletries), Virgin (from music to airlines) and Hallmark (from greetings cards to videos) are notable cases in point. These examples also suggest that the perceived quality of the core brand may moderate the effect of fit on its personality. Thus, the following hypothesis is put forward:

- H2. The higher consumers' evaluations of core brand quality, the lesser the impact of fit on brand personality dimensions.

Brand familiarity (covariate)

Brand personality assessments are expected to be affected by consumers' brand knowledge and familiarity (Alba and Hutchinson, 1987; Peracchio and Tybout, 1996). In this context, it has been noted that "the degree to which consumers believe that a brand possesses personality traits relevant to its performance [...] appears to be related to how well they 'know' the brand" (Hayes *et al.*, 2001, p. 4). Accordingly, and consistent with prior extension research (e.g. Muthukrishnan and Weitz, 1991; Broniarczyk and Alba, 1994; Dacin and Smith, 1994; Klink and Smith, 2001), we incorporate brand familiarity as a control variable in our study.

Method

Experimental design

A before-after experimental design with control was used to test the research hypotheses. This is a "true" experimental design which "does an excellent job of controlling for rival hypotheses such as history and maturation" (Christensen, 1988, p.

247): it is also known as the pretest-posttest control group design (Campbell and Stanley, 1963).

Three (randomly assigned) groups were included in the design, namely:

- (1) a treatment group exposed to an extension with good fit;
- (2) a treatment group exposed to an extension with poor fit; and
- (3) a control group not exposed to the experimental stimulus.

Inclusion of a proper control group substantially enhances internal validity because “if a nontreated control group is unavailable in a study which compared two types of interventions, one would never be certain what might have happened to subjects in either treatment group had they received no treatment” (Spector, 1981, p. 46). Moreover, the fact that each treatment group was exposed to one type of extension only eliminates the potential confounding influence of a “sequence” effect (Christensen, 1988) and the lack of independence in post-extension brand personality assessments (which would be the case had all subjects responded to several brand extensions).

Procedure

Subjects were 102 business executives enrolled in an executive MBA course at an English university. Each subject was randomly assigned to one of the three conditions (i.e. good fit, poor fit, and control). All three groups were balanced in terms of size ($N = 34$ per group). The average respondent age was 35.8 years, 20.6 percent were female, 64.7 percent were married and 68.6 percent had a college degree. Consistent with previous extension research (e.g. Klink and Smith, 2001), we chose a classroom setting to reduce subject mortality, given that repeated administrations of the research instrument were necessary. In the first administration, all subjects were given an identical questionnaire and were asked to complete Aaker’s (1997) brand personality scale in relation to the brand of interest (see below). Subjects were also asked to evaluate core brand quality and indicate their degree of brand familiarity using established scales (see “Measures” section). One week later, two groups (randomly selected) were exposed to two brand extensions (one per group, randomly allocated), while the third group served as control. All three groups were subsequently asked to complete Aaker’s (1997) brand personality scale again, while the two treatment groups were also asked to evaluate the fit of the extension to which they had been exposed.

Stimuli

The Land Rover brand was used as the focal brand in studying the impact of extension introductions on brand personality. This particular brand was chosen because:

- it is a well-known and long-established brand in the UK, and thus familiar to the respondents;
- Land Rover competes in the sports-utility vehicle (SUV) sector of the automobile market, a sector in which “an important distinguishing factor between different makes is the brand, and in particular, the emotional and product values this brand represents to them” (Bull and Oxley, 1996, p. 240); and
- Land Rover’s target market includes the subjects participating in the study as potential customers, hence enhancing the external validity of the study (Calder *et al.*, 1981).

Two hypothetical (but credible) extensions were developed for inclusion in the experiment, following detailed discussions with experts from the automobile industry (including one brand and one marketing manager from Land Rover, and two senior executives from the Motor Industry Research Association). An all-terrain-vehicle (ATV) was chosen as the “good-fit” extension and an aftershave lotion as the “poor-fit” extension (see Appendix 1 for descriptions). To ensure that the levels of fit were indeed perceived to be different, a pretest was conducted with 20 subjects (not participating in the main study) using Keller and Aaker’s (1992) perceived fit scale (see “Measures” section) as well as an overall similarity measure (1 = very dissimilar, 7 = very similar to Land Rover products). The pretest mean ratings did indeed confirm that the ATV’s fit was significantly better than that for the aftershave on both measures (Table I).

Measures

The measures for all constructs in the study (i.e. brand personality, extension fit, core brand quality and brand familiarity) were drawn from previous research, and, following advice from the methodological literature (Diamantopoulos *et al.*, 1994), subjected to two separate pretests. First, an “expert” pretest was conducted with three industry experts (possessing in-depth knowledge of the subject area) and six academic researchers (well-versed in experimentation and questionnaire design). This was followed by a second pretest comprised of ten “ordinary” consumers. The pretests revealed no major problems with the content, length and layout of the questionnaires, with one exception (discussed below).

Brand personality. Aaker’s (1997) five-dimension brand personality scale was used as the dependent variable in the study, however, one trait (“Western”) under the “Ruggedness” dimension had to be dropped, as it was found to be highly ambiguous in both pretests. Pretest respondents consistently highlighted that “Western” could be seen either as “European/Westernized/developed country” or “wild west/cowboys/typically American”. It was thus decided to eliminate this item from the brand personality scale to avoid confusion[1].

Table II provides descriptive statistics on the five brand personality dimensions for the entire sample as well as the treatment and control groups (prior to the introduction of the extensions). Note that all five brand personality dimensions exhibit good reliability, in line with recommended thresholds (e.g. DeVellis, 1991; Nunnally and Bernstein, 1994)[2]. Note also that there are no significant differences in the means of the three groups on any brand personality dimension: this confirms the initial comparability of the (randomly assigned) groups. In this context, “although random assignment provides the greatest assurance possible of comparability of subjects, it is not infallible. Should there be a failure of randomization to provide comparability,

		Mean ratings			Significance
		ATV	Aftershave	<i>t</i> -value	
Table I. Pretest results	Perceived fit	4.80	2.27	9.81	$p < 0.001$
	Similarity	4.50	1.70	12.39	$p < 0.001$

comparison of the subgroups' pretest mean scores would tell us so" (Christensen, 1988, p. 228).

It can be seen that Land Rover scores highly on the "Ruggedness" and "Competence" dimensions and receives the lowest scores on the "Sophistication" dimension. This pattern is consistent with the brand values emphasized by Land Rover. As Bull and Oxley (1996) point out: "Land Rover means *guts*, determination, endurance, staying power [...] Each Land Rover vehicle is the leader of its class in 4 × 4 performance, capability and durability – that's *supremacy*" (p. 241, emphasis in original).

Extension fit. This was captured by the (random) assignment of the subjects to the ATV (good fit) and aftershave (poor fit) conditions based on the pretests of the extension stimuli (see "Stimuli" section earlier). This approach treats fit as a manipulated variable (see, for example, Broniarczyk and Alba, 1994) and resembles "a manager's decision to extend or not to extend a brand into a given product category" (Klink and Smith, 2001, p. 332). In addition, subjects exposed to the two extensions were also asked to complete Keller and Aaker's (1992) scale of perceived fit ($\alpha = 0.97$)[3]. This latter approach "construes fit in terms of individual differences in perceptions" (Klink and Smith, 2001, p. 332). By using both approaches, a managerially oriented operationalization of fit (i.e. manipulated fit) can be contrasted with a consumer-based notion of fit (i.e. perceived fit) and the consistency in results from testing the research hypotheses assessed. Note that, as expected and consistent with the pretest results (see Table I earlier), subjects exposed to the ATV extension scored significantly higher ($t = 7.76, p < 0.001$) on the perceived fit measure (mean = 4.68, SD = 1.51), than subjects exposed to the aftershave extension (mean = 2.11, SD = 1.20).

Core brand quality. A six-item scale based on Keller and Aaker (1992) and Dodds *et al.* (1991) was used to evaluate the quality of the Land Rover brand as perceived by the study subjects. All six items loaded significantly on a single common factor (accounting for 61.7 percent of the variance) and the resulting scale also demonstrated high reliability ($\alpha = 0.87$).

Brand familiarity. A five-item scale comprised of Mishra *et al.*'s (1993) product expertise measure plus an item from Srinivasan and Ratchford's (1991) knowledge scale was employed to measure brand familiarity. The scale's unidimensionality was confirmed by a single-factor solution accounting for 75.2 percent of the variance in the five items. Its reliability was also very high ($\alpha = 0.92$). Appendix 2 lists all the measures used in the study.

Brand personality dimension	Cronbach's α	Full sample	Mean (SD) ^a			$F_{2,99}$ ^b	p -value
			ATV	Aftershave	Control		
Sincerity	0.76	2.84 (0.55)	2.79 (0.54)	2.81 (0.58)	2.91 (0.53)	0.496	0.611
Excitement	0.82	2.76 (0.60)	2.82 (0.57)	2.63 (0.61)	2.84 (0.62)	1.252	0.290
Competence	0.79	3.47 (0.58)	3.56 (0.61)	3.42 (0.58)	3.44 (0.57)	0.542	0.583
Sophistication	0.76	2.29 (0.59)	2.26 (0.62)	2.25 (0.54)	2.35 (0.63)	0.305	0.738
Ruggedness	0.82	4.38 (0.66)	4.50 (0.59)	4.29 (0.58)	4.37 (0.79)	0.901	0.410

Notes: ^aScale anchored at 5 = extremely descriptive, 1 = not at all descriptive; ^b F ratio associated with one-way ANOVA

Table II.
Brand personality scores
(before)

Findings

Analysis overview

Given the current interest in the potential *change* in brand personality dimension scores as a result of an extension introduction and, in light of the well-known problems associated with analyzing difference scores from before-after measures (for a review, see Cronbach and Furby, 1970), the following approach was adopted (see Kerlinger, 1992). First, post-test scores on the brand personality dimensions (i.e. after the extension introductions) were regressed against their corresponding pretest scores (i.e. before the extension introductions). Next, five new variables were created based on the residuals from these regressions, representing residualized (or regressed) gain scores for each brand personality fit dimension[4]. Finally, these residualized gain scores were used as the dependent variables in the following multiple regression models used to test the research hypotheses:

$$\begin{aligned} BP_i = & \beta_0 + \beta_1 \text{ FIT1} + \beta_2 \text{ FIT2} + \beta_3 \text{ QUALITY} + \beta_4 \text{ QUALITY} \times \text{FIT1} \\ & + \beta_5 \text{ QUALITY} \times \text{FIT2} + \beta_6 \text{ FAMILIARITY}, \end{aligned} \quad (1)$$

$$\begin{aligned} BP_i = & \beta_0 + \beta_1 \text{ FIT} + \beta_2 \text{ QUALITY} + \beta_3 \text{ QUALITY} \times \text{FIT} \\ & + \beta_4 \text{ FAMILIARITY}, \end{aligned} \quad (2)$$

where BP_i is the residualized gain score for brand personality dimension i ($i = 1, \dots, 5$), FIT1, FIT2 is the manipulated fit (FIT1 = 1 if exposed to ATV extension and 0 otherwise; FIT2 = 1 if exposed to aftershave extension and 0 otherwise)[5], FIT is the perceived fit, QUALITY is the core brand quality, and FAMILIARITY is the brand familiarity.

Model 1 treats fit as a manipulated variable and is tested using the entire sample ($N = 102$). Model 2, on the other hand, utilises the perceptions of fit by the two groups exposed to the extensions, and is therefore tested on a reduced sample ($N = 68$)[6]. To avoid multicollinearity between the main effects and the interaction terms (see Jaccard *et al.*, 1990), Lance's (1988) residual centering technique was used. Specifically, each interaction term (e.g. $\text{QUALITY} \times \text{FIT1}$) was regressed on its component parts (i.e. QUALITY and FIT1) and the residuals saved and subsequently used as the interaction term in the full effects models in equations (1) and (2).

Results

With Model 1, only the equation with "Excitement" as the dependent variable returned a (marginally) significant result ($R^2 = 0.107$, $F_{6,95} = 1.905$, $p = 0.088$), with significant coefficients for FIT1 ($\beta_1 = 0.222$, $p = 0.063$) and $\text{QUALITY} \times \text{FIT1}$ ($\beta_3 = -0.240$, $p = -0.024$). The regression equations for the other brand personality dimensions (i.e. "Sincerity", "Competence", "Sophistication" and "Ruggedness") all failed to reach significance ($p > 0.10$), thus providing no evidence of differential changes in brand personality as a result of being exposed to extensions of varying fit (H1). A moderating influence of core brand quality (H2) could not be established either.

Estimation of Model 2 produced practically identical results: none of the brand personality dimensions returned significant regression equations ($p(0.10)$), hence

providing no empirical support for the research hypotheses. Note that the inability to detect significant effects cannot be attributed to either small sample sizes (and hence low power) or the presence of multicollinearity. Both Models 1 and 2 easily satisfy conventional thresholds (see, for example, Kleinbaum *et al.*, 1998) for variables-to-cases ratios (typically 10:1) and variance inflation factors (VIFs). Regarding the latter, the maximum VIF in any equation came to 1.484, which is much smaller than the common rule-of-thumb “to be concerned with any value larger than 10” (Kleinbaum *et al.*, 1998, p. 241).

Taken collectively, the above results indicate that no significant *changes* in brand personality occurred as a result of the extension introductions. In other words, the configuration of the Land Rover brand remained stable along the five personality dimensions, even when a poor-fitting extension was involved. Moreover, neither core brand quality nor brand familiarity were found to influence changes in brand personality dimensions. Having said that, it could well be the case that the latter two variables impact upon consumers’ *initial* perceptions of brand personality. In this context, some of Aaker’s (1997) brand personality dimensions (e.g. “Competence”) are comprised of traits with clear quality connotations (e.g. “confident”, “reliable”, and “technical”), and hence, could be expected to be influenced by consumers’ assessments of overall brand quality. Moreover, it has been argued that assessments of brand personality may be linked to the degree to which consumers “know” the brand (Hayes *et al.*, 2001), implying an influence of brand familiarity.

We examined these issues by regressing the brand personality scores prior to exposure to the extensions against core brand quality and brand familiarity. As Table III shows, with the exception of “Sophistication”, core brand quality has a positive significant effect on all brand personality dimensions. In contrast, brand familiarity only returned a (marginally) significant effect on the “Sincerity” dimension ($\beta = 0.168$, $p = 0.073$). Thus, it seems that only quality perceptions are materially related to the personality of the Land Rover brand.

Discussion

The current study has sought to contribute to the study of brand personality by considering how the latter is potentially affected by the introduction of brand extensions. While previous research has demonstrated the role of extension fit in influencing both positive and negative reciprocal effects on the core brand (e.g. Swaminathan *et al.*, 2001), our research findings showed that fit has no discernible effect on the configuration of the core brand along the five personality dimensions.

Brand personality dimension	R^2	$F_{2,99}$	p -value	Beta coefficients (standardized)	
				Quality	Familiarity
Sincerity	0.166	9.825	0.000	0.354**	0.168*
Excitement	0.052	2.742	0.069	0.177*	0.127
Competence	0.278	19.067	0.000	0.527**	−0.001
Sophistication	0.007	0.330	0.719	−0.048	0.071
Ruggedness	0.130	7.408	0.001	0.346**	0.073

Notes: * $p < 0.10$; ** $p < 0.01$

Table III.
Regression results

Brand personality is thus resilient to change as a result of an extension introduction, irrespective of the level of fit (and irrespective of whether the latter is operationalized as manipulated fit or perceived fit). The perceived quality of the core brand was also not found to moderate the effect of extension fit on brand personality. However, core brand quality was consistently and positively related to the respondents' initial perceptions of brand personality (with the exception of the "Sophistication" dimension).

Although our findings did not support the research hypotheses, it should be emphasized that "null outcomes can be meaningful" (Hubbard and Armstrong, 1992, p. 133). In our case, the research findings help explain how high-quality brands are able to extend into distant markets, since less well-fitting extensions do not appear to carry greater risks of brand personality change. From a managerial perspective, this is important as it helps alleviate any fears of *undesirable* core brand personality changes as a result of extension activities. Clearly, this will be welcomed by those managers contemplating the use of brand extensions as part of a growth strategy for their firm. At the same time, our results do not provide any empirical support for the notion that *desirable* changes in brand personality dimensions can be brought about by using an extension strategy. Thus, those firms seeking to reposition their core brand via an extension (in order, for example, to make its brand personality more exciting or sophisticated) will not be encouraged by our findings.

The observed positive link between core brand quality and four out of five brand personality dimensions also has practical implications. Specifically, it indicates that consumers' evaluations of core brand quality influence the way in which the Land Rover brand is perceived along the "Sincerity", "Excitement", "Competence" and "Ruggedness" dimensions. Whether this link between core brand quality and brand personality also applies to *other* brands is, of course, open to speculation since, as already mentioned, brand personality is a profile construct, and therefore there is no single configuration of brand personality scores that is "optimal" for all brands. Consequently, it cannot be taken for granted that consumer evaluations of quality will impact on the personality of a brand with a very different configuration than the Land Rover brand (e.g. a brand scoring, say, high on "Sophistication" and "Sincerity" but low on "Ruggedness" and "Excitement"). Having said that, for the *specific* brand under investigation, the positive link between quality and brand personality suggests that emphasizing quality aspects in marketing communications is likely to reinforce Land Rover's positioning on key dimensions of its personality, such as "Competence" and "Ruggedness". At the same time, an emphasis on quality is unlikely to influence the brand's position on the "Sophistication" dimension. Should, for whatever reason, Land Rover's management wish to improve the brand's "Sophistication" (which currently receives the lowest score of all brand personality dimensions; see Table II), highlighting quality aspects would not appear to be the way forward, since consumers' perceptions of Land Rover's quality are *not* linked to "Sophistication" (see Table III).

On the methodological front, the present findings provide support for Aaker's (1997) brand personality scale in a different empirical setting. With the exception of a single item ("Western" under the "Ruggedness" dimension), the scale was found to be readily applicable to a different set of respondents and a different brand than those used in the Aaker (1997) study, and all brand personality dimensions displayed good reliability in both administrations of the scale. Although we definitely agree that a key issue in

brand personality research is to investigate “the extent to which Aaker’s (1997) structure of personality attributes associated with commercial brands differs across cultural contexts” (Aaker *et al.*, 2001, p. 7), our experience also suggests that applying Aaker’s (1997) scale in a UK context is unlikely to be particularly problematic.

Limitations and future research

Several limitations of our study need to be acknowledged. First, the Land Rover brand, like most brands in the SUV sector, is a relatively expensive purchase and thus a high-risk, high-involvement product. Whether the stability of brand personality in the face of extensions is the same for low-risk, low-involvement products has not been tested in this study, and thus future research is needed in this respect.

Second, the extension stimuli used in the experimental design took the form of concise product information administered over a short period of time. However, brand personality is formed from a variety of influences including advertisements, endorsements, and so forth (Batra *et al.*, 1993; Aaker 1996). As such, it may take wider and longer exposure to the extension and related marketing activities (such as advertising, word of mouth, actual experience with the extension, etc.) before any material change in brand personality can be observed. This suggests that longitudinal research may be needed to investigate the extension effect over a prolonged period of time. While such an approach would undoubtedly reflect better the reality of consumers’ exposure to real-life extensions (hence enhancing external validity), it would also massively complicate the task of isolating the effect of the extension from the myriad of other influences on core brand personality that occur after an extension launch (for a full listing of possible influences over and above the extension effect, see Aaker, 1996).

Third, while our study showed stability of the personality of the Land Rover brand in the face of extension information, such stability was observed among a sample of UK respondents. However, in an increasingly global marketplace, brand extensions occur not in one but several national markets (often simultaneously). Whether Land Rover’s brand personality would have also remained unchanged following the introduction of the same extensions but in a different national market is, again, a question that only future research can answer. More generally, if personality for a given brand is assessed differently by consumers in different national markets, does it follow that extensions rolled out globally will have different brand personality effects in different markets? A comparative approach to investigating this issue (ideally utilizing several brands and different types of extension) would appear to be particularly appealing in this context.

Finally, other likely influences on brand personality remain to be researched and compared with the extension effect. For example, co-branding, sponsorship and celebrity endorsement have all been shown to have an effect on the image of the brand (Park *et al.*, 1996; Gwinner, 1997; McCracken, 1989), although their impact on brand personality remains obscure. Their relative importance when compared to the effect of brand extensions should help develop better understanding of brand personality change in a wider context. With better understanding of brand personality will come a greater ability to manage this strategically important construct. The prize on offer is significant, given the enduring differentiation and concomitant competitive advantage in the marketplace that brand personality can help achieve.

Notes

1. Dropping this item was not seen as a major problem as there were four other traits which captured the "Ruggedness" dimension (i.e. outdoorsy, masculine, tough, rugged).
2. The corresponding reliabilities "after" exposure to the extension were equally good ("Sincerity" = 0.74; "Excitement" = 0.84; "Competence" = 0.77; "Sophistication" = 0.73; "Ruggedness" = 0.81). Moreover, calculation of reliabilities separately for each group (both before and after exposure to the extensions) showed good internal consistency of all brand personality dimensions (the lowest value being 0.69 for the "before" measure of "Ruggedness" in the Aftershave group).
3. A common factor analysis revealed that all three items loaded on a single factor, explaining 94.87 percent of the variance, thus supporting the unidimensionality of the perceived fit scale.
4. This procedure ensures that "the effect of the pretest scores is removed from the posttest scores; that is, residual scores are posttest scores purged of the pretest influence" (Kerlinger, 1992, p. 311).
5. Thus the control group is represented by $FIT1 = 0$ and $FIT2 = 0$ under this coding scheme.
6. Since the control group ($N = 34$) was not exposed to any extension information, the perceived fit measure was obviously not applicable.

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Appendix 1

Extension descriptions

All-terrain-vehicle (ATV)

Land Rover is considering introducing a new type of ATV (all terrain vehicle) using its existing 4 × 4 technology. It will be larger than the quadbikes currently available but smaller than existing 4 × 4 vehicles (e.g. Discovery, Shogun, Vitara). It will be an open-top vehicle with a roll bar for protection. A soft-top option will also be available. It will be targeted at farmers for agricultural use but will also be sold as a leisure vehicle. The new ATV will carry the Land Rover name and badge and will be available from Land Rover dealerships.

Aftershave

Land Rover is contemplating extending its product range into toiletries. Specifically, it is contemplating introducing a male aftershave. It will be sold in larger containers than existing aftershave products. Unlike the majority of products available, Land Rover's aftershave will be sold in a metal container in typical Land Rover green colour. The new aftershave will carry the Land Rover name and badge. The aftershave will be made available through a number of retail outlets including department stores, chemists and multiple grocers, as well as Land Rover dealerships.

Appendix 2

Construct	Source	Description (scoring)	Example items
Brand personality	Aaker (1997)	Five-dimension, 42-trait scale; items scored 5 = extremely descriptive, 1 = not at all descriptive	(1) Sincerity: Cheerful, down-to-earth, honest, friendly, original (11 items in total); (2) Excitement: daring, trendy, exciting, spirited, cool, unique (11 items in total); (3) Competence: reliable, hard-working, secure, intelligent, technical (nine items in total); (4) Sophistication: upper-class, glamorous, good-looking, charming (six items in total); (5) Ruggedness: outdoorsy, masculine, Western, tough (five items in total) ^a
Perceived fit	Keller and Aaker (1992)	Three items scored on a seven-point scale	(1) Very logical/Not at all logical for Land Rover; (2) Very appropriate/Not at all appropriate for Land Rover; (3) Bad/Good fit between Land Rover and the ATV (aftershave)
Core brand quality	Keller and Aaker (1992); Dodds <i>et al.</i> (1991)	Six items scored on a seven-point scale	(1) Low/High quality; (2) Inferior/Superior products; (3) Poor/Good workmanship
Brand familiarity	Mishra <i>et al.</i> (1993); Srinivasan and Ratchford (1991)	Five items scored on a seven-point scale	(1) Not/Very knowledgeable; (2) Inexperienced/Experienced; (3) Novice/Expert buyer

Note: ^aThe trait “Western” was eliminated from the “Ruggedness” dimension following pretests

Table AI.
Variables and their
measures