Abstract

Purpose – Proposes a set of strategic options for green brand positioning, based either on functional brand attributes or on emotional benefits. The aim of the study is to test the suggested green positioning strategies against one another, assessing their effect on perceived brand positioning and brand attitude.

Design/methodology/approach – A theoretical model of the dimensionality and attitudinal effects of green brand positioning was developed. Both suggested alternatives to green brand positioning, along with a combined functional and emotional strategy, were tested in an experimental online setting. The hypothesized model was tested in the scope of exploratory factor analysis and structural equation modelling.

Findings – Results indicate an overall positive influence of green brand positioning on brand attitude. Further findings suggest distinct functional and emotional dimensions of green brand positioning with the interaction of both dimensions in the formation of brand attitude. Highest perceptual effects were achieved through a green positioning strategy that combined functional attributes with emotional benefits.

Research limitations/implications – The measures used, while providing good reliability and validity, have their limitations, especially in the case of the emotional dimension of green brand associations. Future research should concentrate on the further development of the constructs used in the study, particularly that of the emotional dimension of green brand associations and replicate the study under “real-life” conditions within different product categories and with a representative sample.

Practical implications – A well implemented green positioning strategy can lead to a more favourable perception of the brand, giving support to the green marketing approach in general. This study supports significant attitude effects of both functional and emotional green positioning strategies. Thus, brand managers should deliver emotional benefits through the brand, at the same time making sure that target groups perceive real environmental benefits.

Originality/value – Although green marketing has been an important research topic for more than three decades (Kassarjian, 1971; Kinnear et al., 1974; Coddington, 1993; Meffert and...
Kirchgeorg, 1993; Hopfenbeck, 1993; Ottman, 1994; Peattie, 1995; Polonsky and Mintu-Wimsatt, 1995; Schlegelmilch et al., 1996; Bigné, 1997; Fuller, 1999; Kalafatis et al., 1999; Calomarde, 2000; Fraj and Martinez, 2002), but few studies have focused specifically on green branding. At present, there is little doubt about the strategic importance of a well-defined brand identity as a prerequisite for delivering brand value (Aaker and Joachimsthaler, 2000; de Chernatony and Dall’Olmo Riley, 1998). A green brand identity is defined by a specific set of brand attributes and benefits related to the reduced environmental impact of the brand and its perception as being environmentally sound. A well-implemented green brand identity should provide benefits to environmentally conscious consumers. While there are some studies on the perceived value of environmentally sound product attributes (Roozen and De Pelsmacker, 1998), the role of emotional benefits in the case of green brands is still largely unassessed.

Brand positioning is regarded a key tool for brand implementation in competitive markets (Aaker, 1996; Hooley et al., 1998; Kotler, 2000). This paper proposes a set of strategic options for green brand positioning, available to marketing planners and brand managers, which are based either on functional brand attributes or emotional benefits. The review of the literature on the subject of green marketing reveals different opinions regarding the adequacy of either cognitive or emotionally oriented persuasion strategies. The aim of this study is to test green positioning strategies by setting functional attributes and emotional benefits against each other, assessing their effect on perceived brand positioning and brand attitude. The research design is an experiment in a setting that allowed for the selective and controlled exposure of participants to advertising stimuli designed to implement different brand positioning strategies.

**Green brand positioning**

Although there is general agreement on the strategic relevance of positioning in modern marketing management, the concept of “positioning” itself still lacks a coherent definition (Aaker and Shansby, 1982; Blankson and Kalafatis, 1999). Brand positioning has been analysed both from a strategic standpoint (Ries and Trout, 1986; Park et al., 1989; Hooley et al., 1998) and an analytical perspective (Hauser and Koppelman, 1979; Caroll and Green, 1997; Hair et al., 1998). Kalafatis et al. (2000) conceive of positioning as an iterative process, consisting of deliberate and proactive actions aimed at the definition of distinct consumer perceptions. Aaker and Joachimsthaler (2000) define brand positioning as the part of the brand identity and value proposition that is to be actively communicated to the target audience. Consequently, brand positioning is based on the interaction of all marketing tools, with an accentuated role for marketing communications because of its relevance in the process of shaping distinct consumer perceptions.

Thus, positioning a brand as a “green brand” entails an active communication and differentiation of the brand from its competitors through its environmentally sound attributes. Ecologically sustainable products will not be commercially successful if green brand attributes are not effectively communicated (Pickett et al., 1995). Coddington (1993) and Meffert and Kirchgeorg (1993) suggest that green positioning as an essential factor in the success of green branding strategies. Following classification schemes of generic positioning strategies (Aaker, 1996;
Tomczak et al., 1997), a brand can be positioned by functional attributes and/or emotional benefits. Green brand positioning strategies are here classified as functional or emotional.

A green positioning strategy based on functional brand attributes aims to build brand associations by delivering information on environmentally sound product attributes. This positioning strategy should be based on relevant environmental advantages of the product compared to competing conventional products, and may refer to production processes, product use and/or product elimination (Meffert and Kirchgeorg, 1993; Peattie, 1995). A car brand, for example, may be considered environmentally sound if the models in question cause significantly lower emissions than competitors’. Several studies address the value perception of selected environmental product attributes (Roozen and De Pelsmacker, 1998).

However, the success of a brand strategy which positions the product exclusively by its functional attributes may be limited by the fact that the reduction of a product’s environmental impact generally does not deliver individual benefits to its buyer. Therefore, the perceived customer benefit may be insufficient as a motivating factor for brand purchase (Belz and Dyllik, 1996). For most products, a consumer would experience functional benefits (i.e. improvement of environmental quality) only in case of generalized environmentally sound consumer behaviour. Furthermore, functional positioning strategies can have some general disadvantages: they can often be easily imitated, they assume rational buyer decisions and they may reduce the flexibility of brand differentiation (Kroeber-Riel, 1991; Aaker, 1996).

As an alternative or complementary strategy, green positioning can be based on at least three conceptually different types of emotional brand benefits:

1. A feeling of well-being (“warm glow”) associated with acting in an altruistic way (Ritov and Kahnemann, 1997). Environmentally conscious consumers experience personal satisfaction by contributing to the improvement of the “common good” environment.

2. Auto-expression benefits through the socially visible consumption of green brands (Belz and Dyllik, 1996). Environmentally conscious consumers experience personal satisfaction by exhibiting their environmental consciousness to others.

3. Nature-related benefits stemming from sensations and feelings normally experienced through contact with nature. These are the result of a sensation of “emotional affinity towards nature,” e.g. “loving nature” or “feeling one with nature” (Kals et al., 1999). Most people experience feelings of wellbeing or even happiness when they are in contact with natural environments. Past communication campaigns for GM-Opel, BP and the Spanish power utility Iberdrola have embedded the brand in pleasant imagery of natural environments, aiming to evoke vicarious nature experiences as emotional brand benefits.

Attitudinal effects of green brand positioning
Most of the research on attitude formation and change can be understood in light of persuasion process paradigms such as the elaboration likelihood model (ELM) of Petty and Cacioppo (1983) or, more recently, the affect-reason-involvement model (ARI)
proposed by Buck et al. (1995, 2000). Both of these distinguish between at least two conceptually different types of persuasion processes: central and peripheral modes of persuasion in the case of the first model, and rational and emotional processes in the second. In both models, a higher involvement of the subject subsequently leads to a higher amount of cognitive elaboration. Additionally, in the ARI model a stronger emotional involvement leads to a deeper emotional elaboration.

According to ELM, attitude formation through the central route takes place under a high amount of cognitive elaboration. Attitude formation or change is a result of a person’s diligent and rational consideration of information that is central to the object (Ajzen and Fishbein, 1980). On the contrary, attitude formation through the peripheral route – that is, in the absence or reduction of cognitive elaboration of information – occurs either through simple inference processes (Mitchell and Olson, 1981) or as a result of feelings associated with the brand. A brand can be associated with emotional contents through conditioning processes in consequence of exposure to emotional brand advertising (Burke and Edell, 1987).

Numerous authors emphasise the efficiency of cognitive persuasion strategies in green marketing, assuming the consumer’s high involvement regarding environmental issues as a consequence of a growing environmental consciousness (Kinnear et al., 1974; Cope and Winward, 1991; Hopfenbeck, 1993; Swenson and Wells, 1997; Fuller, 1999). As Ottman (1994, p. 78) points out: “Clearly, we need a more informed public [regarding environmental topics] which is better equipped to make rational purchasing and policy decisions about products, packaging, and manufacturing processes”. The cognitive orientation of most green marketing research is based on studies showing a significant influence of environmental knowledge and consciousness on consumers’ environmental attitudes (Hines et al., 1987; Stone et al., 1995). Consequently, many authors recommend the use of rational persuasion strategies that implement brand positioning by supplying detailed information on environmental product benefits, capable of satisfying the consumer’s informational needs (Peattie, 1995).

However there is no general agreement on this question. Several studies show only a limited influence of cognitive factors, such as environmental knowledge, while demonstrating a significant influence of affective factors on environmental purchase behaviour (Monhemius, 1993; Davis, 1993, Smith et al., 1994; Finger, 1994). Consequently, these authors recommend affective persuasion strategies. As Coddington (1993) points out, green brand positioning also implies satisfying emotional needs and building an affective relationship with the customer.

A further controversy refers to attitude effects of green branding strategies in a general way. Most studies show a growing environmental consciousness among consumers, leading to generalized positive attitude effects on brands that are perceived as environmentally sound (Bech-Larsen, 1996; Eagly and Kulesa, 1997; Swenson and Wells, 1997; Benito Gómez et al., 1999). Nevertheless, some studies show that in certain situations consumer attitudes can be less positive towards green brands as a consequence of a perceived trade-off between functional performance of the brand and its environmental impact (Coddington, 1993; Schlegelmilch et al., 1996; Fuller, 1999).

Hypotheses and research question
Persuasion models such as the ELM or ARI model imply that two conceptually distinct processes in the perception of green brand attributes lead to the formation of
brand attitudes: the cognitive evaluation of functional brand attributes and the emotional reaction to emotional brand benefits. Both cognitive and emotional brand associations can be analyzed and represented as associative networks (Keller, 1993; Calder and Gruder, 1989) or by means of brand positioning models and perceptual mapping techniques (Hauser and Koppelman, 1979; Caroll and Green, 1997; Hair et al., 1998). The dimensions of perceived brand positioning are generally extracted through exploratory and/or confirmatory factor analysis (e.g. Kalafatis et al., 2000; Bhat and Reddy, 1998).

The proposition of a two-dimensional functional/emotional green brand positioning model is consistent with the revised models on persuasion and positioning (Figure 1). Functional and emotional brand associations should be expected to form distinct dimensions of the perceptual space in a model of perceived green brand positioning. While a rational persuasion strategy such as green brand positioning by functional attributes should enhance the brand’s perception as environmentally sound in the functional dimension, an emotional green positioning strategy should lead to a shift towards the emotional dimension of green brand associations:

**H1.** Perceived green brand positioning is formed by two distinct dimensions, representing the perception of either functional environmentally sound product attributes or emotional benefits related to the environment.

Two further research propositions concern the controversy on attitudinal effects of green positioning strategies. First, the direction (positive/negative) of the effect of green positioning on brand attitude is addressed. Based on the results of most revised studies, a positive attitudinal effect of the perception of a brand as environmentally sound should be expected:

**H2.** Green brand positioning leads to a positive effect on brand attitude.

Secondly, the study addresses the further controversy regarding the adequateness of either rational or emotionally oriented persuasion strategies in green marketing. Thus, one research aim is to assess the respective influence of functional or emotional green positioning on brand attitude:

**RQ.** Which of the proposed green positioning strategies, i.e. green positioning by functional attributes or green positioning by emotional benefits, has the strongest effect on brand attitude?

![Hypothesised perceptual effects of functional and emotional green brand positioning on brand attitude](image.png)
Method

In line with this study’s main objective of exploring and testing the dimensions of green brand positioning and its effects on brand attitude, scale items were developed to measure a brand’s functional and emotional associations related to the environment. These were validated by testing the scales’ ability to discriminate between experimental brands designed a priori to implement a specific, either functional or emotional, green brand positioning. They were applied in an experimental setting, to allow the controlled exposure of the participants to the experimental stimuli, as well as the assessment of the specific effects of the experimental factor. The influence of external factors, such as the environmental consciousness of the participants, was randomised.

Following the analysis method employed in recent studies of perceived positioning (e.g. Bhat and Reddy, 1998; Kalafatis et al., 2000), exploratory and confirmatory factor analysis of the data were used to investigate the dimensionality of perceived green brand positioning. Attitudinal effects of extracted dimensions were assessed in the scope of a structural equation model, developed from the measurement model.

Experimental design

The study was conducted in four simultaneous on-line sessions in the computer laboratory of a university. Participants were instructed to connect through their individual computer terminals to a specific website. They were then automatically exposed for 30 seconds to each of a series of five advertisements, consisting of a single, static image. Four of these stimuli were identical for the different experimental groups and one was specific to each group, which formed the experimental factor. The four related to known brands of small-sized cars; the fifth was specifically designed to implement different positioning strategies of an experimental green car brand. After exposure, participants completed an on-screen on-line questionnaire. All questions could be answered by using the mouse alone. Data were automatically collected in an on-line database.

The participants were 160 students in the final year of the Business Administration degree at a university in the Spanish Basque Country. They were randomly assigned to four experimental groups. Participants were 56 per cent female and 44 per cent male, aged between 22 and 26. It is acknowledged that the use of student samples in marketing research is controversial (Burnett and Dunne, 1986), but this experimental design was realistically feasible only if that limitation was accepted. In fact, the sample profile is not entirely inappropriate, since the brands in the experiment are marketed in Spain to target groups with similar demographic characteristics.

Though brand positioning involves the whole of the marketing mix, an experimental setting in which the sole contact with salient brand attributes takes place through brand communications is not unrealistic. Even in real life conditions, consumers often develop brand perceptions and attitudes mainly or even exclusively through advertising exposure. While it is true that this does not normally occur as a once-only exposure to an advertisement, several studies addressing this issue have suggested that advertising effects can be achieved with only one exposure (Kim et al., 1998; Gibson, 1996; Mandese 1995; Surmanek, 1995).
Independent variables

Each group of participants was exposed to visual stimuli in the form of total of five print advertisements, four of which were extracted from actual communication campaigns for the SEAT Arosa, Fiat Punto, Renault Clio and Opel Corsa. The fifth, group-specific advertisement was, in the case of the three experimental groups, purpose-designed to implement different green positioning strategies for the hypothetical Mercedes ATMO. For the control groups, it was an actual, conventional advertisement for the Mercedes A-Class.

The positioning strategies underlying the purpose-designed advertisement were developed according to the concepts proposed in the theoretical part of this paper. The Mercedes brand was chosen because no initial green brand associations were to be expected. Associations with the umbrella brand of Mercedes were unlikely to interfere with the purpose of the study, as perceptual and attitudinal effects of the experimental brand positioning were assessed relative to the perception of the Mercedes A-Class brand in the control group.

The first of the experimental advertisements was based on a functional brand positioning strategy, based on the attribute “zero emission through new fuel cell technology”. The copy gave detailed information on how emissions are reduced. There were no further environmental or nature cues. The images were identical to those of the advertisement implementing the conventional positioning of the “Mercedes A-Class” brand and had no emotional connotations. The second experimental advertisement was designed to implement an emotional positioning strategy. There were no cues to functional environmentally sound attributes. The brand was embedded in pleasant imagery of nature scenery aimed to evoke feelings experienced in the actual situation, such as “breathing fresh mountain air” or “feeling as free as an eagle”. The third advertisement combined both strategies, positioning the brand by its environmentally sound product attributes and by emotional benefits. The former were specified in the copy and the latter evoked through images of nature (see Appendix 1).

Dependent measures

As one major aim of the study was the construction of a positioning model, the dependent measures were designed to assess relevant brand associations of all of the competing brands included in the study. Brand perceptions were measured with two different types of scale. The first part of the survey consisted of verbal statements and scales. Participants used five point scales, from 5 = “very much” to 1 = “not at all”, to rate how strongly they would associate the brand with certain attributes or brand characteristics. Items included such characteristics as “safe” and “comfortable”. The statements “environmentally sound” and “air pollution” were meant to assess the functional dimension of the perception of the environmental soundness of each brand, while the remaining statements were relevant to other aspects of brand perception but not central to the subject of the study (see Table I).

The second set of items consisted of a battery of visual stimuli that addressed the perception of emotional brand associations related to the brand’s environmental soundness. Their development was based on several studies that show a generally superior capacity of visuals in evoking an emotional response as compared to verbal content, especially in situations with a brief exposure (Holbrook and Moore, 1981; Childers and Houston, 1984; Childers et al., 1985; Louviere et al., 1987;
Grunert-Beckmann and Askegaard, 1997). In this study, the purpose of visual scale development was limited to the measurement of emotions related to nature: that is, feelings of unity with the environment, motivated by “affinity to nature” (Kals et al., 1999). For the selection of the stimuli, 15 interviews were conducted with randomly

<table>
<thead>
<tr>
<th>Factor</th>
<th>PCFA 1: verbal indicators</th>
<th>PCFA 2: visual indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Young Environmental Nature</td>
<td>Urban Air pollution</td>
</tr>
<tr>
<td>Comfortable</td>
<td>0.78 0.02</td>
<td>0.01</td>
</tr>
<tr>
<td>High quality</td>
<td>0.87 −0.06</td>
<td>0.09</td>
</tr>
<tr>
<td>Safe</td>
<td>0.81 −0.06</td>
<td>0.10</td>
</tr>
<tr>
<td>Environmentally sound</td>
<td>0.33 0.03</td>
<td>0.77</td>
</tr>
<tr>
<td>Modern</td>
<td>0.63 0.37</td>
<td>0.10</td>
</tr>
<tr>
<td>Family car</td>
<td>0.59 −0.40</td>
<td>−0.04</td>
</tr>
<tr>
<td>Freedom</td>
<td>0.27 0.71</td>
<td>0.11</td>
</tr>
<tr>
<td>Young</td>
<td>−0.38 0.78</td>
<td>0.04</td>
</tr>
<tr>
<td>Powerful</td>
<td>0.81 0.05</td>
<td>−0.04</td>
</tr>
<tr>
<td>Sporty</td>
<td>0.35 0.46</td>
<td>−0.20</td>
</tr>
<tr>
<td>Urban</td>
<td>−0.25 0.60</td>
<td>0.13</td>
</tr>
<tr>
<td>Fun</td>
<td>0.09 0.76</td>
<td>0.08</td>
</tr>
<tr>
<td>High class</td>
<td>0.86 −0.05</td>
<td>0.13</td>
</tr>
<tr>
<td>Party</td>
<td>−0.18 0.79</td>
<td>−0.02</td>
</tr>
<tr>
<td>Air pollution</td>
<td>−0.16 0.06</td>
<td>−0.80</td>
</tr>
<tr>
<td>Exclusive</td>
<td>0.78 −0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>High tech</td>
<td>0.84 −0.09</td>
<td>0.14</td>
</tr>
<tr>
<td>Low fuel consumption</td>
<td>−0.08 0.25</td>
<td>0.60</td>
</tr>
<tr>
<td>Prestigious</td>
<td>0.85 −0.18</td>
<td>0.11</td>
</tr>
<tr>
<td>Accessibly priced</td>
<td>−0.51 0.51</td>
<td>0.03</td>
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<td>Urban 1</td>
<td>0.12 0.11</td>
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</tr>
<tr>
<td>Mountain</td>
<td>0.85 0.00</td>
<td>0.12 −0.01</td>
</tr>
<tr>
<td>Family</td>
<td>0.41 −0.48</td>
<td>−0.02 0.42</td>
</tr>
<tr>
<td>Shoreline</td>
<td>0.86 0.14</td>
<td>0.09 0.04</td>
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<tr>
<td>Young couple</td>
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<tr>
<td>Friends</td>
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<td>Air pollution</td>
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<td>Urban 2</td>
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<td>Waterfall</td>
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<td>0.10 −0.01</td>
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<td>Urban 3</td>
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<td>0.41 0.61</td>
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<tr>
<td>Sport 1</td>
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<td>0.16 0.07</td>
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<tr>
<td>Urban 4</td>
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<td>0.67 0.22</td>
</tr>
<tr>
<td>Sport 2</td>
<td>0.17 0.83</td>
<td>0.08 0.04</td>
</tr>
</tbody>
</table>

Table I.
Exploratory principal component factor analysis

| Variance extracted | 0.35 0.18 0.09 0.19 0.17 0.17 0.09 | Sample adequacy (Kaiser-Meyer-Olkin) 0.915 12298.489 | Bartlett (Chi-square) (p = 0.000) | α (Cronbach, 1951) 0.8619 |
selected students who did not take part in the main study, to identify three from among
a selection of 12 images showing nature scenery which would best describe their
feelings in contact with nature. The selected images were included in the questionnaire
together with the instruction to indicate on five-point scales, ranging from 1 = “not at
all” to 5 = “completely”, how well they matched the eventual participants’ emotions
and feelings towards the brand in question. Additionally, “filler” pictures were
included in the item battery, which could lead to emotional associations such as “urban
feelings” or “feeling young”, with the aim of distracting from the images related to the
environment (see Appendix 2).

Attitude towards the brand was assessed as a construct of two indicators through
measures of overall evaluation of the brand and purchase intention, consistent with
accepted procedures in attitude research (Kim et al., 1998; Herr and Fazio, 1993; Allen
et al., 1992; Petty et al., 1991; Mitchell, 1986). Participants first rated their overall
impression of each brand on a five-point scale from 1 = “very unfavourable” to
5 = “very favourable” and then the likelihood of purchase of the brand, on a five-point
scale from 1 = “definitely would not buy it” to 5 = “would definitely buy it.”

Results

Perceptual dimensions of green brand positioning

Principal component factor analysis with varimax rotation was used to explore the
structure of perceived brand positioning. The results are shown in Table I. Seven
factors were identified in a two-step analysis of first the verbal and later the visual
items, among them two related to green brand associations. Extracted factors explained 62 per cent of variance in both cases. Twenty verbal indicators were
subsumed into three factors and thirteen visual indicators to four. The results indicate
the existence of well-defined perceptual dimensions. The first factor extracted from the
set of verbal brand associations explains 35 per cent of variance and represents an
extended set of attributes including quality, power, comfort, safety, class and
exclusivity. The second verbal factor (18 per cent of variance) is highly loaded on items
such as “young” and “fun”. Finally, the third factor (9 per cent of variance) explains the
brand associations “environmentally sound,” “air pollution” (high negative loading)
and “low fuel consumption.” This factor represents the functional dimension of
environmentally sound brand perception.

The emotional dimension of green brand positioning, represented by the first factor
extracted from the set of visual items, is also the factor with the highest contribution to
the overall amount of explained variance (19 per cent). The second factor (17 per cent of
variance) refers to the emotional perception of the brand as “young” and “active,” while
the third factor reflects the association of the brand with urban or metropolitan
feelings. The last extracted dimension is related to the emotional association of the
brand with air pollution.

Perceptual mapping of the participants’ perceived green brand positioning
produced the pattern in Figure 2. The green positioning strategy produced an overall
perception of the experimental brand as more environmentally sound than the original
Mercedes A-Class brand, confirming the significant perceptual effect of its
implementation in the experiment (p = 0.000). Furthermore, functional positioning
resulted in a stronger cognitive perception of the brand as environmentally sound,
while emotional positioning evoked an association with nature. At the same time, the
A functional strategy produced a perceptual shift, albeit comparatively weak, towards the emotional dimension, while an exclusively emotional positioning led to a slightly augmented perception of the brand in the functional dimension. The strongest perceptual effects relative to both dimensions were achieved with the combined functional-emotional strategy.

Exploratory results were tested by confirmatory factor analysis (Arbuckle and Wothke, 1999). Both of the latent dimensions of green brand positioning were formed by the items with highest factor loadings in the prior exploratory factor analysis. Thus, the functional factor was assessed by the indicators “environmentally sound” and “air pollution” (negative loading), while the emotional factor was constructed by visual indicators “mountain” and “shoreline” (both with factor loadings > 0.85 in the exploratory analysis). The visual indicator “waterfall”, with a lower factor loading of 0.77, was not included in the analysis, since two indicators were considered sufficient to assess latent variables. Finally, the attitude construct was formed by indicators “overall evaluation” and “purchase intention” (see Table II).

Criteria for model adjustment (Hu and Bentler, 1995) indicate an adequate fit with $\chi^2 = 9.18$ ($p = 0.164$; df = 6) and Root Mean Square Residual (RMR) = 0.012. Both the goodness of fit index (GFI = 0.996) and the adjusted goodness of fit index (AGFI = 0.987; Jöreskog and Sörbom, 1984) are close to 1.0, as is the compared fit index (CFI = 0.998; Bentler, 1990), indicating good fit. Also the root mean square error of approximation (RMSEA = 0.026; Steiger and Lind, 1980), indicates good fit with values lower than 0.05 (Kaplan, 2000; Byrne, 2001).
The dimensionality of green brand positioning and the attitude construct was established following Anderson and Gerbing (1988). Factor loadings of all indicators are significant ($p = 0.000$) and exceed the minimum recommended value of 0.5. Furthermore, the variance-extracted measures range from 0.61 to 0.76, exceeding the square of the correlation estimate in all cases and suggesting adequate discrimination and distinct factors. Also, variance extracted and construct reliability exceed the recommended thresholds of 0.5 and 0.7 respectively (Fornell and Larker, 1981; Hair et al., 1998).

<table>
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<th>Indicator</th>
<th>Environment (functional)</th>
<th>Factor Nature (emotional)</th>
<th>Brand attitude</th>
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<td>Environmentally sound</td>
<td>0.91</td>
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<td>16.99*</td>
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<td>Air pollution</td>
<td>–0.63</td>
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<td>–13.97*</td>
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<td>Mountain</td>
<td>0.87</td>
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<td>22.98*</td>
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<td>Shoreline</td>
<td>0.76</td>
<td>0.82</td>
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<td>Overall evaluation</td>
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<td>Purchase intention</td>
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**Correlations**

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<th>Construct reliability</th>
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<td>Variance extracted</td>
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<td>Construct reliability</td>
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**Model fit**

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<tr>
<td>$p$</td>
<td>0.164</td>
<td></td>
</tr>
<tr>
<td>Cmin/df</td>
<td>1.53</td>
<td></td>
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<tr>
<td>RMR</td>
<td>0.012</td>
<td></td>
</tr>
<tr>
<td>GFI</td>
<td>0.996</td>
<td></td>
</tr>
<tr>
<td>AGFI</td>
<td>0.987</td>
<td></td>
</tr>
<tr>
<td>CFI</td>
<td>0.998</td>
<td></td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.026</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** $^*$ $p = 0.000$

Table II. Confirmatory factor analysis: regression coefficients (standardized, unstandardized, z-values), correlations, variance extracted, construct reliability, model fit
**Attitudinal effects**

After validation of the measurement model, structural equation analysis assessed the effect of both extracted dimensions of brand positioning on the attitude construct. Since the model was developed modifying only two latent variable correlations to regression coefficients, the fit was equal to that of the measurement model indicated in Table II and can be considered acceptable.

Results of the structural analysis of the effects of both dimensions of green brand positioning on the attitude construct, shown in Table III, indicate significant positive influences \( p = 0.000 \). The comparison of causal influences of both latent constructs shows that the emotional dimension on brand attitude has a significantly higher effect.

**Discussion**

This study analysed perceptual and attitudinal effects of the implementation of alternative green brand positioning strategies in advertisements. Results of exploratory and confirmative factor analysis seem to support the hypothesis of two distinct dimensions of perceived green-brand positioning \( (H1) \). The positioning analysis extracted distinct dimensions, representing either functional or emotional green brand associations. The data presented indicate that, as expected, a functional positioning led to a heightened cognitive perception of the brand as environmentally sound, while an emotional positioning strategy had a significant effect on the brand’s positioning relative to the emotional dimension of green brand associations. Furthermore, structural equation analysis supported an overall positive effect of green positioning on brand attitude \( (H2) \), since both dimensions have a significant positive influence on the attitude construct.

Regarding the research question addressing the issue of functional versus emotional positioning strategies in green branding, results suggest a stronger influence of the emotional latent dimension of green positioning on brand attitude in this specific case. However, it cannot simply be concluded that an exclusively emotional positioning will be the most effective positioning strategy in green marketing, because the effect of both dimensions on brand attitude was positive. Furthermore, the combined functional and emotional strategy led to the strongest perceptual shift towards both dimensions of the positioning model.

These findings, together with the relatively high correlation of both perceptual constructs, indicate an interaction between cognitive and emotional processes in the formation of attitude toward green positioned brands. This is consistent with recent

<table>
<thead>
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<th>Brand attitude</th>
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<tr>
<td>Environment (functional)</td>
<td>0.17*</td>
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<tr>
<td></td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>3.83</td>
</tr>
<tr>
<td></td>
<td>( p = 0.000 )</td>
</tr>
</tbody>
</table>

| Nature (emotional)      | 0.43*    |
|                        | 0.51     |
|                        | 8.89     |
|                        | \( p = 0.000 \) |

**Table III.**

Regression coefficients (standardized, unstandardized, \( z \)-values)

*Note:* Parameter difference \( p = 0.000 \) (CR = 3.31)
research on brain functions, showing that cognitive and emotional mental processes are highly correlated in the formation of brand attitudes (Franzen and Bouwman, 2001). Consequently, functional and emotional strategies should be considered complementary rather than alternative, as Bhat and Reddy (1998) have argued is the case with functional and “symbolic” brand positioning strategies. Thus, overall results lead to the general conclusion that a combined strategy, which appeals to both environmental consciousness and emotional benefits, will yield a stronger attitudinal effect than either functional or emotional positioning strategies on their own.

Managerial implications
The findings of this study suggest that a well-implemented green positioning strategy can lead on the whole to a more favourable perception of the brand, thus giving support to the green marketing approach in general. However, there is still a certain controversy about which kind of green persuasion strategy would be the most effective. While most researchers in green marketing postulate functional positioning strategies delivering detailed information on environmentally sound product attributes, this study supports significant attitude effects for both functional and emotional green positioning strategies.

An exclusively functional green brand positioning may fall short of delivering individual benefits to customers, assuming rational decision processes and limited capacity for brand differentiation. While emotional green branding has the potential to overcome these limitations, a purely emotional green position could lead to weaker attitude effects, caused presumably by a possible misinterpretation of vague green claims (Pickett et al., 1995). Therefore communication campaign planners should deliver emotional benefits through the brand, at the same time making sure that target groups perceive real environmental benefits. Attitude formation most probably takes place through an intensive interaction of cognitive and emotional processes. Thus, the most effective brand strategy would be a green positioning, centred in the creation of emotional benefits sustained by information on environmentally sound functional attributes.

Results of the study also underline the effectiveness of brand communications in the implementation of green positioning strategies. There is a variety of well researched approaches to the communicational implementation of emotional brand benefits, such as transformational advertising (Aaker and Stayman, 1992) or emotional conditioning (Kroeber-Riel, 1984; Kim et al., 1998). Green branding communication strategies should be aimed at associating the brand with pleasant, emotional imagery of nature, while presenting information on environmentally sound product attributes. Information should be presented succinctly, so as not to interfere with the emotional conditioning effects of the advertisement (Kroeber-Riel, 1996). On the other hand, there is a general agreement that brand communication constitutes only one component of a successful positioning strategy. There should be no doubt that a green brand positioning strategy not supported by relevant environmentally sound product attributes will fall short of success.

Future research
The research study reported here was conducted under laboratory conditions with once-only exposure to brand communications, and focused on one brand in one product category. The findings need to be confirmed for other brands and product categories in...
more real conditions. The measures used achieved good reliability and validity, but have their limitations, especially in the case of the emotional dimension. Measures for emotional reactions were specifically developed for the purpose of the present study, and it is suggested that their potential outweighed the conceptual limitations. The participants in the experiment were undergraduate students. The results are nevertheless indicative of the responses of the target market in question, but a larger and more varied sample is called for to reinforce the findings.

Future research might profitably concentrate on the further development of the constructs used in the study, particularly the emotional dimension of green brand associations. The method used could be combined with others, such as semantic differential scaling or biometric measures, which should in turn result in a better assessment of variables. This will in turn result in improved understanding of the relationships between the considered constructs and other variables – particularly involvement, which is considered a fundamental moderator of attitude formation processes in revised models. Involvement with environmental issues constitutes an essential factor in environmental behaviour. Future studies should aim to develop standardized instruments for measuring the perceptual and attitudinal effects of alternative green positioning strategies, which finally should lead to the development of more competitive green branding initiatives.

References


Byrne, B.M. (2001), Structural Equation Modelling with AMOS, Lawrence Erlbaum, Mahwah, NJ.


Further reading


Green branding effects on attitude

Figure A1.
Communicational implementation of the experimental green brand positioning
Figure A2.
Visual stimuli used for the measurement of emotional brand associations

Urban 1

Mountain

Family

Shoreline

Young couple

Friends

Air pollution

(continued)
Figure A2.
Green branding effects on attitude