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How a sustainable message affects brand attributes

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Abstract

Purpose – The purpose of this paper is to understand how an advertising campaign incorporating an ecological message affects heuristic structure of consumer preferences for hedonic (design and aesthetics) and utilitarian benefits (functionality and performance) provided by the product advertised. Also, the second objective is to reach an understanding of how brand equity moderates these relationships.

Design/methodology/approach – The paper proposes a two-stage study: a qualitative and exploratory part, in which the authors seek to determine the most important hedonic and utilitarian attributes as well as strong and weak brands, and a quantitative and causative part to test the hypothesis proposed.

Findings – The results show that when the brand advertised incorporates an ecological message, consumers show a greater preference for hedonic attributes than when the advertisement does not incorporate this message. On the other hand when the brand incorporating the sustainable message is weaker, consumers show a greater preference for hedonic attributes than when it is stronger.

Practical implications – The result shows important managerial implications for companies with weaker brands, since it indicates that it is much more profitable, in terms of consumer's perceived usefulness, to invest in social and ecological actions than stronger brands.

Originality/value – Analyse how the used of ecological messages can modify consumer's heuristic according to utilitarian and hedonics attributes.

Keywords Utilitarian benefits, Customers' preferences, Hedonic benefits, Sustainable messages

Paper type Research paper

Introduction

Sustainable messages appear frequently in advertising to facilitate brand differentiation from competence and to make advertisements stand out from a cluttered environmental media (Leonidou *et al.*, 2011). Many authors consider that when a company supports a social cause or develops sustainability production, these actions add value to its brand (Kashmanian *et al.*, 2011; Keller and Lehmann, 2006). Indeed, Porter and Kramer (2006, p. 78) propose that sustainability is “an inescapable priority for business leaders in every country”. Advertising is responsible for conveying the pro-environmental image to consumers by taking advantage of the growing environmental awareness among consumers (Grillo *et al.*, 2008), and the sustainable message is a signal to consumers and other stakeholders indicating that the advertised brand is being managed with environmental respect, fulfilling the needs of future generations and the long-term economy (Porter and Van der Linde, 1995; Zinkhan and Carlson, 1995). In other words, a sustainable message can be considered as a window



through which a company's future can be seen, in the sense that the company is facing the key environmental, economic and social issues that will determine if it will prosper in the forthcoming marketplace (Kashmanian *et al.*, 2011).

The inclusion of sustainable message in an advertisement is being extended to many brands from agriculture, industry and services (Leonidou *et al.*, 2011). Although the first advertisements with an ecological message appeared in the late 1960s, it was not until the late 1980s that green advertising experienced strong growth, mainly because of increased consumer consciousness, strong competitive pressures and governmental regulations (Kilbourne, 2004). However, some abuse and confusion about what a green messages means led to a decline in ecological advertising in the 1990s (Easterling *et al.*, 1996). However, in the new millennium, and after further international legislative developments, public interest in sustainable messages was renewed (Yin and Ma, 2009).

Among all brands of goods there are industrial products which predominantly use ecological messages (Leonidou *et al.*, 2011). Manufactured or industrial products are defined by their compositional characteristics as function and form (Luchs and Swan, 2011). Form refers to exterior features of a product, the visible parts, while a function refers to attributes that meet the purpose of its uses (Talke *et al.*, 2009). Its shape and esthetical component influence customers in a cognitive and emotional way (Rindova and Petkova, 2007), in the sense that shape provides a clue to consumers about how the product performs and how they may perceive its benefits (Hargadon and Douglas, 2001). On the other hand, function is directly related to product reason and features, providing the utility derived from its use (Hertenstein *et al.*, 2005). Furthermore, it has been found that there are trade-offs between functional features and hedonic attributes when consumers assess a chosen set of products (Chitturi *et al.*, 2007).

Using a sustainable message in ads benefits businesses if the result is a greater preference for the advertised brand compared to a similar advert that does not included a sustainable message. Many researchers and brand managers seem convinced that using sustainable messages increases an ad's effectiveness on consumers, since it allows the transmission of sustainable values from message to brand (Samu and Wymer, 2009).

An extensive literature exists that addresses how environmental advertisements impact on consumer behaviour from various perspectives (Newell *et al.*, 1998); for example, taking into account the type of service advertised (Chan *et al.*, 2006) or the green-based consumer involvement with regard to green claim effectiveness (D'Souza and Taghian, 2005). The approach taken in this paper, and one of its main novelties, is to determine the relationship between managerially controllable product design aspects, such as form and function, with an additional stimulus when the advertisement includes a sustainable message, and also of consumer perceptual responses, with the aim of reaching a better understanding of how these variables relate to each other.

The recognition of a brand and its equity are fundamental prerequisites for successful marketing (Erfgen *et al.*, 2015). For example, a strong brand increases the likelihood that the brand becomes part of a consumer choice set (Nedungadi, 1990). Furthermore, in situations of low involvement, the strength of a brand also serves as a key piece of information in the heuristic used by consumers in the purchase decision process (Cacioppo *et al.*, 1986). The brand name, as a sign of brand strength, activates a set of associations in memory that creates the assumption of certain qualities in the product attributes (Romaniuk and Sharp, 2003).

Given that many companies advertise their sustainable management, it is important to know how this advertising affects product preferences and if these effects are the same in strong or weak brands. Although brand strength is usually considered as a

moderator of commercial stimuli effectiveness (Aqueveque, 2006), practically nothing is known about its effect on sustainable advertising as a moderator of consumer preferences for product design attributes. However, at least under some conditions, the brand strength can moderate this relationship to the point that it overshadows the sustainable message, especially when the brand is well known and highly accessible from memory (Nedungadi, 1990). In other words, although a brand provides very strong attachment stimulus, even when this is a sustainable message, does not always enhance brand preference. Researchers call this overshadowing the ceiling effect (Lee, 2002). As noted by Simonson *et al.* (2004) a ceiling effect can occur when in a commercial choice process, for example, one option has an 80 per cent market share in a particular trading environment, and another option of 20 per cent; in this case, any environmental manipulation is very unlikely to increase the leader's proportion.

To date, no empirical academic research has investigated the existence of this ceiling effect on a sustainable message attached to an advertisement. We therefore begin by defining the ceiling effect, which from statistics refers to the fact that, in a causal analysis, when an independent variable reaches extremely high values it no longer generates any effect on the dependent variable (Everitt and Skrondal, 2010).

From a business standpoint, it is important to know how it helps to publicize sustainability in their brand image and consumer preferences. This research contributes to the literature by showing the existence of the moderating effect and the ceiling effect of brand strength and how they influence preferences for product design attributes. In a series of experiments with a total of 490 respondents, we confirm the existence of the moderating effect and ceiling effect of brand strength. In addition, the findings show practitioners how they can leverage sustainable advertising to improve their brand image, particularly if their brand is not particularly strong.

The structure of this work is as follows: the theoretical underpinning that justifies the approach to the research hypothesis is first described. Then the methodology employed and the four experiments conducted are also described. Finally, the expected results, the conclusions and future research lines and implications for managers are presented.

Research framework

Significant resources have been invested to improve product and brand performance; in one case by product designers trying to improve form and function (Townsend *et al.*, 2013), and in another case by marketers trying to improve brand image and sales by promotion and other commercial stimuli (Inman *et al.*, 2009).

Luchs and Swan (2011) defined a product design as "the set of properties of an artefact", which consists of discrete characteristics of holistically integrated form and function. Form is the way in which the functional product features are delivered (Townsend *et al.*, 2013) and include shape and aesthetic components, occasionally denoted as hedonic benefits (Chitturi *et al.*, 2007), while function is characterized by structural and technological features, which provide the utility derived from the use of the product (Hertenstein *et al.*, 2005).

Previous research has shown that form and function affect beliefs about the product, attitudes towards brand and consumer preferences and purchases (Hertenstein *et al.*, 2005; Inman *et al.*, 2009; Sloot *et al.*, 2005; Suh, 2009). According to Batra and Ahtola (1991), the hedonic component measures the experiential affect related to the object, providing fun, pleasure and excitement in the purchase (e.g. how pleasant and agreeable those associated feelings are). On the other hand, the utilitarian component indicates instrumentality; that is, how useful and beneficial the object is for consumers.

Previous research has classified products according to their level of hedonic or utilitarian features (Batra and Ahtola, 1991; Dhar and Wertenbroch, 2000; Suh, 2009). Okada (2005) states that hedonism and utilitarianism are both abstract dimensions that define various aspects of the product. Her study concludes that people respond more favourably to a hedonic product than to a comparable utilitarian item, but they also spend more time justifying the purchase of the hedonic product. Consumer choice is influenced by the hedonic or utilitarian nature of the goods (Zheng and Kivetz, 2009). However, hedonism and utilitarianism are not necessarily two extremes on a one-dimensional scale (Rindova and Petkova, 2007; Voss *et al.*, 2003). Some products (e.g. a fashionable new cell phone) may rate high or low in both the hedonic and utilitarian dimensions (Crowley *et al.*, 1992). On the other hand, some researchers consider that it is possible to establish a trade-off relationship between functional and form features; in other words, between utilitarian and hedonic attributes (Chitturi *et al.*, 2007).

Hedonic and utilitarian dimensions enable market researchers to test the effectiveness of advertising campaigns and emphasize experiential or functional experience (Voss *et al.*, 2003). A social mission is currently increasing in companies and has both real and practical implications on how sales and advertisement strategies are defined. In this sense, incorporation of a sustainable message in product advertisement is very common. But what attributes of a product might be associated with an advertising message that includes a sustainable message? As pointed out above, industrial products are typically considered to comprise both utilitarian and hedonic benefits (Chitturi *et al.*, 2010; Dhar and Wertenbroch, 2000; Luchs and Swan, 2011; Okada, 2005). Utilitarian benefits refer to the functional and practical components of a product, while hedonic benefits refer to the aesthetic, experiential and enjoyment-related attributes (Batra and Ahtola, 1991; Dhar and Wertenbroch, 2000; Hertenstein *et al.*, 2005; Wakefield and Inman, 2003). Both functional quality and hedonics are part of product design features and they are also considered as important contributors to customer loyalty (Alonso-Almeida *et al.*, 2014).

There is no consensus in the literature as to which components are the most important in the purchasing process. If the hedonic components are identified with luxury and the utilitarian with need, then according to the hierarchy of needs, the latter enjoy a higher status than luxury components (Kivetz and Simonson, 2002; Maslow *et al.*, 1970). Similarly, the principle of priority assigns greater value to utilitarian elements (Berry, 1994; Weber and Parsons, 1998), and therefore consumers eventually choose products with more utilitarian features. By contrast, a theoretical framework is proposed that claims just the opposite. The principle of hedonic dominance (Chitturi *et al.*, 2007) states that consumers attach greater importance to the hedonic benefits provided they meet or exceed their utilitarian needs. According to previous studies, the characteristics inherent to these product components may decisively influence the effectiveness of a commercial stimulus (Ailawadi *et al.*, 2006; Inman *et al.*, 2009). As pointed out by Dhar and Wertenbroch (2000) and Okada (2005), in the case of advertised stimulus, the goal of advertising is to present consumers with these utilitarian and hedonic benefits and persuade them to purchase the product (Calfee and Ringold, 1994).

The aim of this paper is to further our understanding of the role of incorporating a sustainable message in advertising, and of how these messages affect consumer attribute preferences for different types of brands. In this study we consider that consumers follow a linear compensatory model, which is an habitual supposition in conjoint analysis (Shocker and Srinivasan, 1979). For this purpose, we take as our theoretical basis the Elaboration Likelihood Model (ELM) (Cacioppo *et al.*, 1986), which

claims that the persuasiveness of an ad is achieved via two processing routes: a central and a peripheral route. The central route is invoked when the recipient shows an interest in the product being advertised and processes the received message while ignoring other complementary elements. On the other hand, the peripheral route is invoked when the receiver is not especially interested in the product, but the advertisement may arouse his or her interest as result of its complementary elements, including the presenter, the music or other peripheral components.

Thus, the incorporation of a sustainable message in a brand's advertising should influence the consumer via the peripheral route, given that it is not the main argument or the reason for the message (Berger *et al.*, 1999). Nevertheless, the persuasiveness of the message will ultimately depend on just how the brand is perceived, as being either strong or weak. When a brand is perceived as being strong, then it transmits a sense of quality superior to that conveyed by other brands (Dawar and Parker, 1994), an element that is more closely related to functionality than to aesthetics (Page and Herr, 2002). According to the experiments reported by Chitturi *et al.* (2010), consumers believe that strong brands have greater functionality, which means they pay much more attention to hedonic than utilitarian benefits when choosing the product.

What is the effect on customer preference of an advertisement carrying a sustainable message as regards the relative influences of the hedonic and utilitarian product benefits? Previous studies have shown that adverts employing a sustainable message convey signals of high quality to consumers, because in addition to the benefit derived from the product consumption they also enjoy a feeling of wellbeing by having contributed to an environmental or social cause (Strahilevitz and Myers, 1998), and this in turn alleviates their anxiety about buying products with low functionality (Dawar and Parker, 1994; Page and Herr, 2002). On the other hand, if consumers believe that the product advertised has a high functionality, it reduces the guilt they might feel about the consumption of hedonic attributes, and they pay more attention to attributes associated with appearance and luxury (Chitturi *et al.*, 2007; Okada, 2005; Zheng and Kivetz, 2009). In summary, consumers prefer hedonic products to those with more utilitarian attributes, and basically for two reasons: a) if they are sure that products have reached an adequate level of usefulness in utilitarian attributes, and b) if the product provides enough arguments to justify an increased attention to hedonic attributes. In this sense, according to previous studies (Chitturi *et al.*, 2010), greater consumer preference for hedonic attributes over more utilitarian ones is related with indicators of trust provided by a strong brand or a high priced product. Therefore, the fact that a brand announces its support for an action of value creation for society reduces consumers' feelings of guilt and provides sufficient grounds for paying greater attention to hedonic attributes, and at the same time lesser attention to utilitarian attributes, since consumers derive a better feeling from supporting a sustainable firm by purchasing these products. Furthermore, as pointed out by Rindova and Petkova (2007), functional (utilitarian) and esthetical (hedonic) components influence customers in a cognitive and emotional way. These assumptions indicate that consumers are more likely to prefer hedonic to functional attributes after viewing a product advertisement that includes a sustainable message.

Therefore, we formulate the following hypotheses:

- H1. An advertisement that incorporates a sustainable message, as opposed to one that does not, increases consumer preferences for hedonic benefits.
- H2. An advertisement that incorporate sustainable message, as opposed to one that does not, decreases consumer preferences for utilitarian benefits.

The second objective is to reach an understanding of how brand equity moderates these relationships. Brands are usually classified according to their brand equity; those with a high value are called strong brands, while those with a low value are called weak brands (Ho-Dac *et al.*, 2013). Several researchers have established that the strength of the brand is an effective signal of product quality (Rao *et al.*, 1999). Furthermore, strong brands are usually established and consolidated brands in the market; they offer much more credible signals than weaker brands (Erdem and Swait, 1998; Erfgen *et al.*, 2015), and they are also more robust to the loss of value than weak brands (Ho-Dac *et al.*, 2013). On the other hand, the brand's strength is an important factor in decision-making in conditions of uncertainty, i.e. in purchasing processes where product quality is difficult to perceive (Montgomery and Wernerfelt, 1992), and it is usually considered as a moderator of commercial stimuli effectiveness (Aqueveque, 2006).

According to Lee (2002), the evaluation and product selection process is based on the following factors: perceived stimuli, information delivered by the message advertised, or on information retrieved from memory. When consumers use information stored in their memory, strong brands are usually part of the choice set, as well as being easier to remember (Hauser and Wernerfelt, 1990; Romaniuk and Sharp, 2003). In addition, better knowledge also implies greater familiarity, the result of direct or indirect experience of brands (Alba and Hutchinson, 1987), thereby providing consumers with a greater ability to assess attributes than when brands are less well known (Hoek *et al.*, 2000; Krishnan and Chakravarti, 1999).

In keeping with the ELM (Cacioppo *et al.*, 1986), the inclusion of a sustainable message in an advertising campaign appeals to the peripheral processing route of persuasion. However, when a brand is strong; that is, well known and highly accessible from memory, it is unlikely that the addition of new stimuli can improve its accessibility (Nedungadi, 1990), and these new stimuli produce what is known as a ceiling effect (Lee, 2002). The ceiling effect refers to the fact that when in a causal analysis data with an independent variable reach extreme positions in the range of variance, that is, when data cannot assume higher values, these data have no effect on the dependent variable (Everitt and Skronidal, 2010; Simonson *et al.*, 2004). As such, we would expect the persuasiveness of an advertisement incorporating a sustainable message, processed via the peripheral route, to be less as the central processing becomes stronger. Ehrenberg (2000) suggests that advertising reinforces the preferences for a brand that consumers currently purchase, and therefore no change in attitude occurs. Indeed, it certainly appears that advertisements ensure and promote continuity in customer preferences. If a strong brand carries a relevant central argument, in the sense that a stronger brand tends to transmit higher quality (Dawar and Parker, 1994), a new advertising campaign that includes a sustainable message, for example, will have a lower impact than it would in the case of a weak brand, since the sustainable message would have less relevance in the central argument. Therefore, the information provided by an ad with a sustainable message via the peripheral route tends to overlap the strong brand information sent by the central route, which in itself generates a limited additive effect, whereas for weak brands, whose signal is weaker, both signals by the two routes provide greater information to decision makers. According to Voss *et al.* (2003), the utilitarian attributes in product implies a lesser role in consumers' brand evaluation. As a result, an ad with a sustainable message should have a greater effect on the weaker brands, due to their lack of a credible brand signal, than to strong brands, which already provide substantial guarantees.

Based on these arguments, we formulate the following hypotheses:

- H3.* An advertisement incorporating a social cause message for a weak brand will increase the influence of hedonic benefits to a greater extent than for a strong brand.
- H4.* An advertisement incorporating a social cause message for a weak brand will decrease the influence of utilitarian benefits to a lesser extent than for a strong brand.

Methodology

Study

Our aim therefore is to analyse the effect of advertisements that include a sustainable message in campaigns for different brand types on consumer preferences, in terms of a product's hedonic and utilitarian benefits. To this end, we propose a two-stage study: a qualitative and exploratory part in which we seek to determine the most important hedonic and utilitarian attributes as well as strong and weak brands, and a quantitative and causative part to test the hypothesis proposed. As a product type for this study, we select a laptop or notebook, given the familiarity of this product for the members in our groups of analysis. A laptop is a portable personal computer with a clamshell form factor, which allows mobile use, and important factors in the purchase process being utilitarian attributes related to performance and hedonic attributes related to design.

An exploratory analysis is performed to identify and classify the most significant utilitarian and hedonic attributes of a laptop. Two groups of engineering students from Polytechnic University of Catalonia, consisting of 28 (12 men and 16 women) and 31 (13 men and 18 women) students, respectively, were asked in an open-ended questionnaire to describe the most important functional and hedonic attributes of the product and the most common range of levels. These results are in line with those found by Townsend *et al.* (2013) in the case of cars and Chitturi *et al.* (2010) in the case of mobiles. The attributes chosen were as follows (see Table I for levels):

- Functional: dimension (in inches), capacity (in Gb) and processor performance (ranging from Intel Core I3 to I7).
- Hedonic: futuristic colour (currently or new colour), lightweight design (aluminium), slimline.

A second step in the qualitative stage consists in classifying brands into stronger or weaker brands. In this stage, a spontaneous evocation test was conducted to determine what brand names the respondents could recall without any stimulus. This type of test is common in studies of brand awareness and shows that the frequency with which a brand name is repeated is a good indicator that the brand belongs to a strong brand-choice set (Nedungadi, 1990; Romaniuk and Sharp, 2003). In accordance with Hauser and Wernerfelt (1990), a free recall study was conducted with a further 42 students (15 men and 27 women) in which Apple was identified as a strong brand and Lenovo as a weak brand. These results are in agreement with brand equity data published by interbrand ranking, where Apple was considered to be the second most highly valued brand, while Lenovo was outside the top 100 (Interbrand, 2012).

Design

In the quantitative stage, we conducted a 2x2 (strong and weak brand vs sustainable advertisement and neutral ad) between-subject experiment to test our hypothesis. The experimental design is based on a Pareto optimal solution, combining blocs of two




Features	A	B	C	No Notebook
				
	Functionalities	Functionalities	Functionalities	
<i>Utilitarian</i>				
Dimension	15.6"	15"	13"	
Capacity	8 Gb	4 Gb	2 Gb	
Processor performance	Intel Core I7	Intel Core I5	Intel Core I3	
<i>Hedonic</i>				
Style and appeal	Style and appeal	Style and appeal	Style and appeal	No Notebook
Futuristic	No	Yes	Yes	
Lightweight design (aluminium)	No	No	Yes	I choose not to purchase any of the options
Slimline Points	No	No	Yes	

Table I.
Example of
information provided
in study

and three profiles and factors with two or three levels, codified in a vector pattern. The two profiles and the two levels were codified as (0,1; 1,0; does not buy), and the three profiles and the three levels as (-1,1; 0,0; 1,-1; does not buy) (Table I is an example of three profiles). A sample of 490 graduate students was presented with the following scenario: they wish to buy a new laptop fulfilling the utilitarian and hedonic requirements (types A, B and C) detailed above. They were requested to allocate 100 points between the four options (-1,1; 0,0; 1,-1; does not buy) or 75 points between the three options (0,1; 1,0; does not buy) to reflect their purchase decision preferences (Raghavarao *et al.*, 2011).

Furthermore, in order to assess the impact of environmental advertising, two types of print advertisement were created, one incorporating a social cause message (The greenest family of notebooks), and another without any social cause message.

The proposed heuristic linear compensatory model is a main factor experimental design, where \bar{y}_{ij} is the average of points in option i form profile j :

$$E(\bar{y}_{ij}) = \mu + \delta_{Hij}\beta_H + \delta_{Uij}\beta_U + e_{ij}$$

where μ is the constant (the overall mean); β_H , β_U the parameters to be estimated and δ_{Hij} , δ_{Uij} the main factor variables, in a coded vectorial manner, defined as follows (Chitturi *et al.*, 2010):

- $\delta_{Hij} = 1$, if the hedonic quality is at its highest level in option i form profile j .
- $= 0$, if the hedonic quality is at its average level in option i form profile j .

- = -1, if the hedonic quality is at its lowest level in option *i* form profile *j*.
- $\delta_{Uij} = 1$, if the functional quality is at its highest level in option *i* form profile *j*.
- = 0, if the functional quality is at its average level in option *i* form profile *j*.
- = -1, if the functional quality is at its lowest level in option *i* form profile *j*.

Fieldwork was conducted in the spring of 2013, and the model was estimated using ordinary least squares based on the scores assigned to each profile by the respondents.

Results

We asked 600 students to participate in a voluntary activity, but only 490 responded to our call: 113 completed the survey of the weaker brand (Lenovo) with neutral advertising; 123 subjects completed the survey of the strongest brand (Apple) with neutral advertising; 110 completed the survey of the weaker brand (Lenovo) advertising with social causes, and 144 subjects completed the survey of the strongest brand (Apple) with cause-related advertising. Due to differences in sample sizes we perform our analysis with the standardized estimations represented by *z*. The results for the four sets of choice, for both the strong and weak condition brands, are shown in Table II.

On the basis of the scores allocated by the respondents to each scenario, the principal effects model is adjusted in order to estimate the effect exerted by of the hedonic and utilitarian attributes in terms of functionality. In general, the study shows that the laptop is not simply a utilitarian piece of equipment, but that customers also value the hedonic benefits deriving from its design. However, in the scenario with neutral advertising, only the utilitarian benefits are in both cases significant for the weak brand (Lenovo) ($z = 0.551, p = 0.001$) and for the strong brand (Apple) ($z = 0.445, p = 0.001$), although with lesser weight in the latter than in the former case. As regards the strong brand (Apple), neutral advertising also has a significant effect on the hedonic attributes ($z = 0.260, p = 0.016$), but it is not significant for the weak brand (Lenovo). As expected, these results are consistent with the prediction that, when it comes to valuing a strong brand, consumers give more importance to the hedonic benefits and less importance to the utilitarian benefits than when valuing a weak brand (Chitturi *et al.*, 2010). Moreover, it is worth pointing out that, in the case of the weak brand, the benefits arising from product design exerted no influence on customer preferences.

However, when the scenario includes an ecological message in the advertising campaign, the situation shows a marked change. Where the weak brand (Lenovo) is concerned, the effect of the utilitarian benefits is significant ($z = 0.544, p = 0.001$), with

Table II.
Influence of hedonic and utilitarian benefits on customers preferences: study with laptop

	Neutral advertisement		Advertisement with social-cause message	
	Weak brand (Lenovo)	Strong brand (Apple)	Weak brand (Lenovo)	Strong brand (Apple)
Utilitarian Benefits	Sig. 3.837 $z = 0.551$ $p = 0.001$	Sig. 3.641 $z = 0.445$ $p = 0.001$	Sig. 4.518 $z = 0.544$ $p = 0.001$	Sig. 1.557 $z = 0.239$ $p = 0.008$
Hedonic Benefits	Not Sig. 1.28 $z = 0.192$ $p = 0.242$	Sig. 2.081 $z = 0.260$ $p = 0.016$	Sig. 5.851 $z = 0.705$ $p = 0.001$	Sig. 2.751 $z = 0.421$ $p = 0.001$

values very similar to those of the neutral message; likewise significant is the effect on the hedonic benefits ($z = 0.705$, $p = 0.001$) when compared with the insignificant value in the case of the neutral ad. Furthermore, in the case of the strong brand (Apple), once again both the utilitarian effect ($z = 0.239$, $p = 0.008$), with values lower than the neutral message, and the hedonic effect ($z = 0.421$, $p = 0.001$), with values higher than the neutral message, are both significant. As predicted in *H1*, the inclusion of a message associated with an ecological issue increases the influence of the hedonic benefits; that is to say, the effect of the hedonic benefits on consumer preferences are significant, showing higher values for both the strong brand and the weak brand when the advertisement includes a message concerning sustainability than in the case of a neutral advertisement. However, in *H2*, according to which a neutral message versus a sustainable message increases consumer preferences for utilitarian benefits, is not completely confirmed. However, where the strong brand (Apple) is concerned, a decrease in the influence of the utilitarian benefits is certainly observed, although this does not occur for the weak brand (Lenovo), which even though it gives rise to a decrease in weight, the difference is so small as to be insignificant.

The results show that consumers presented with an advertisement containing a sustainable message obtain a higher quality image, i.e., one of greater functionality, and as a result they pay much greater attention to its hedonic attributes in their assessment of the block of profiles. These results are in line with those reported by Chitturi *et al.* (2010), where the perception of high quality is associated with better functionality, thus serving to reduce the guilt associated with the consumption of hedonic attributes. As such, our findings are consistent with the principle of hedonic dominance (Chitturi *et al.*, 2007), in the sense that when a product has a high level of quality, consumers attach greater importance to hedonic rather than to utilitarian needs. Therefore, these results confirm *H1* and *H2*, but only for the case of the strong brand rather than in the weaker in this second hypothesis.

Moreover, advertising with a sustainable message adheres to the peripheral route of persuasion, as predicted by the ELM, because it is not the main argument of the campaign. In line with that was predicted by Nedungadi (1990), when a brand is strong, new stimuli scarcely enhance consumer preferences, since these strong brands are in the region of the ceiling effect (Lee, 2002). Here again our results show that the effects between the strong and the weak brand are different, and thus brand strength acts as a moderating effect (Aqueveque, 2006).

The results also reflect that a weak brand incorporating an ecological message in its advertisement increases consumer preference for hedonic attributes (neutral advertisement, $z = 0.192$, $p = 0.242$; sustainable message, $z = 0.705$, $p = 0.001$) to a much greater extent than when the sustainable message is included in the strong brand advertisement (neutral advertisement, $z = 0.260$, $p = 0.016$; sustainable message, $z = 0.421$, $p = 0.001$). These findings confirm *H3*. In line with Rao *et al.* (1999) and Ho-Dac *et al.* (2013), the strength of a brand actually acts as signal of the product quality and, moreover, it is a robust signal insofar as it is difficult to change in the short term. Therefore, the incorporation of a sustainable message has a much lower impact on a stronger brand than on a weaker brand whose brand signal is more tenuous.

On the other hand, when the weak brand incorporates a sustainable message in its advertising, the utilitarian product benefits decrease (neutral advertisement, $z = 0.551$, $p = 0.001$; sustainable message, $z = 0.544$, $p = 0.001$), but to a lesser and insignificant extent than when the brand owner is the strongest (neutral advertisement, $z = 0.445$, $p = 0.001$; sustainable message, $z = 0.239$, $p = 0.008$). Therefore, *H4* is also

confirmed. In other words, although a weak brand that includes an environmental care message increases customer interest in its hedonic attributes to a much greater extent than in a strong brand, distrust generated by its poor signal as weak brand deters consumers and causes them to continue paying greater attention to its utilitarian attributes. On the other hand, the intense signal that stronger brands generate by themselves means that the attachment of a sustainable message in their advertising leads consumers to concentrate less on utilitarian attributes and focus their attention more on hedonic ones.

Discussion and managerial implications

In this study, an experiment is conducted to evaluate how the inclusion of a sustainable message in print advertisements affects the pattern of consumer preference, a heuristic based on a linear compensatory model. Also, if this effect is moderated by the type of brand advertised, according to whether it is a strong or a weak brand. The work is guided by theories derived from the traditional dual processing models of persuasion (Cacioppo *et al.*, 1986), taking into account that a message of sustainability follows the peripheral route (Berger *et al.*, 1999). In addition to the principle of hedonic dominance (Chitturi *et al.*, 2007), this model provides the basis for the corroboration of *H1* and, in part, *H2*, insofar as the inclusion of a sustainable message in the advertisement causes consumers to perceive products as possessing higher quality, and they feel less guilt for giving greater importance to hedonic attributes (Okada, 2005).

Second, the moderating effect that the type of brand advertiser, either strong or weak, may exert on consumers' perception of utility is also analysed. To this end, the theory of product evaluation and brand recognition principle is taken into account (Lee, 2002), according to which, the strongest brands are easily remembered, since they form part of subject's choice set (Hauser and Wernerfelt, 1990) and consumers are much more familiar with them (Alba and Hutchinson, 1987). In these circumstances, delivering sustainable messages in the form of new stimuli scarcely improves the brand image, and thus does not affect perception of its quality, but rather provides supporting arguments for greater attention to hedonic attributes. Confirmation of *H3* and *H4* corroborates this finding. This is in line with Ehrenberg (2000), who states that advertising does not change customer preferences, but rather reinforces their existing preferences. In the case of consumer preferences, the incorporation of a sustainable message (the greenest family of notebooks) in advertising only significantly benefits weak brands, while in strong brands such messages serve to maintain rather than improve their brand image.

With the arrival of new millennium, international green advertising has been reactivated and this is particularly true for large multinational corporations in industries that are often accused of polluting the environment. However, most of these companies revealed that their sustainable advertising follows an irregular pattern, which reflects a reactive policy against some external events such as stricter environmental laws, or against some reactions or boycotts from media or from their customers (Leonidou *et al.*, 2011). The findings in that paper show the desirability of maintaining a proactive position, taking into account the relationship between the green message sent and product design characteristics. Product designers need to be conscious of the attributes (hedonic and utilitarian) they design into a product, and how these attributes are affected by a sustainable advertising. The existence of a trade-off between functional features and hedonic attributes was proposed by Chitturi *et al.* (2007), and our findings support this proposition. Although the advertising

employed could be regarded as a generalist message or, in words of Manrai *et al.* (1997), quite vague, our results are in line with the proposed hypothesis. In the case of the inclusion of an ecological message, consumer preferences for hedonic benefits are increased, so it is important for marketers to take esthetical, multisensory and emotional aspects into account in the product design and in line with the ad strategy. On the other hand, consumers' preferences are influenced by a sustainable message, since they tend to focus less on utilitarian benefits, especially in strong brands. In this case, marketing managers of strong brands should consider the hierarchical structure of attribute benefits, insofar as when a product reaches an acceptable level of utility, consumer interest tends to focus on the hedonic attributes. Therefore, our recommendation for brand managers is for them to invest in sustainable messages with the aim of focusing attention on hedonic benefits, rather than investing in more functional attributes that many consumers may not appreciate.

Most previous studies on the effects of business involvement in social and ecological actions have found a positive relationship between social actions and purchase decisions (Bhattacharya and Sen, 2003; Pracejus *et al.*, 2003). This body of research implicitly advocates strategies of investment in social and ecological actions for all products, without differentiating between their effect on hedonic and utilitarian attributes. In contrast, our findings suggest different strategies depending on the strength of the brands. The results from both brands show a pattern in which sustainable messages tend to exert less impact on stronger brands than on the weaker brands. In other words, the increase in cumulative weight of the two estimates when a sustainable message is attached to advertisement is higher in weak brand than in strong brand. Our results clearly indicate the existence of the ceiling effect, which opens up opportunities for weaker brands. In this sense, the management model of weaker brands should focus on investment in sustainability, since this is beneficial for perceived utility as a whole. Green advertising should be regarded as an indispensable part of company's environmental marketing strategy, because it can help to gain a sustainable competitive advantage and achieve superior performance. This option provides weak brands with a way of competing that is an alternative to the most traditional marketing communications, which usually favour more established and remembered brands (Ho-Dac *et al.*, 2013). In contrast to weak brands, additional investment in social or ecological actions does nothing further to improve utility as perceived by consumers, but only offers arguments for focusing their attention on hedonic attributes.

As regards the heuristic criteria decision, while the strong brand models show a compensatory effect between the weight gained and loss of utilitarian and hedonic attributes, in the case of weaker brands the models show the complementary effects of improving their weight on both attributes. This result has important managerial implications for companies with weaker brands, since it indicates that in terms of consumer's perceived usefulness it is much more profitable to invest in value creation actions for society than in stronger brands. In conclusion, our findings suggest that managers and marketers should be prepared to enhance and foster ecological messages in weak brand products. On the other hand, in strong brand products, no significant influence of the ecological advertisement on consumer preferences is found. In this regard, our results provide a novel contribution by confirming the existence of a moderating and ceiling effect of brand strength on the inclusion of an ecological message in a printed advertisement. However, the use of a vague message may in fact generate such a ceiling effect, and in order to overcome this it will therefore be

necessary to improve claims, making them not only clear and understandable but also regarded as valid by those who receive the message.

Finally, the findings also suggest that the two routes of persuasion proposed in the ELM (Cacioppo *et al.*, 1986) have different objectives in marketing communication. The greater credibility inherent in strong brands implies that they have less need to use the central route in their message in order to improve their persuasiveness. As Dawar and Parker (1994) pointed out, a strong brand entails a corresponding central argument, in the sense that a stronger brand tends to convey an impression of higher quality. The peripheral route is therefore the way to provide stronger brands with the means of improving and maintaining their positioning. Weaker brands, however, do not have these cognitive schemes established in consumers' minds (Ho-Dac *et al.*, 2013). Thus, although the peripheral route greatly enhances consumers' perceived utility, the fact that their attention remains centred on utilitarian attributes indicates that the level of mistrust remains. Hence, unlike in the case of strong brands, consumer behaviour does not appear to follow the compensatory model. In short, if weak brands focus their efforts on peripheral routes, this should not imply that they neglect the central route, which is the one that builds confidence in consumers, the implications of which should be taken into account by managers.

Our study has several limitations. First, we have studied the effect of a sustainable action on one product only, a laptop, and only by means of an ecological message. More cases concerning other types of products and other social messages are needed to validate the findings obtained in this study; for example, using more specific messages, such as "80% of our components are recyclable". This would provide an extension to this research. Second, although the use of student samples is very common, especially in the USA, since they provide relatively homogeneous samples in regard to age, education, income, etc., they often give rise to conservative results (Erdem *et al.*, 2006). In our research, the sample is formed by engineering students, who have great experience and familiarity and an extensive knowledge in the use of such products, and therefore the attention and importance they give to utilitarian attributes may generate some bias when compared with a sample of the general population.

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