

Pro-environmental messages have more effect when they come from less familiar brands

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Abstract

Purpose – This research aims to compare consumer responses to pro-environmental communication and appeals to recycle packaging when these messages come from a high-familiarity versus a low-familiarity brand.

Design/methodology/approach – Two online between-subjects experimental studies evaluate consumer perceptions and the willingness to comply with recycling appeals in response to pro-environmental communications from a high-familiarity versus a low-familiarity brand. To test the hypotheses, the studies examine the moderating role of sustainability habits and the mediating role of shared environmental responsibility.

Findings – Findings show that communicating a brand's adoption of sustainable packaging is more salient to consumers when the appeal comes from a low-familiarity rather than a high-familiarity brand, especially when sustainability habits are weaker. The mediating role of shared environmental responsibility partly explains consumers' commitment to act pro-environmentally.

Research limitations/implications – Sustainability officials and policymakers should consider the impact of pro-environmental interventions that encourage collective recycling between brands and consumers. Practitioners are encouraged to examine revised waste management schemes such as extended producer responsibility programs to elicit the collaboration of consumers in initiatives that boost recycling and stimulate pro-environmental behaviors.

Originality/value – Using the diagnosticity–accessibility framework and habit theory, to the best of the author's knowledge, this research is among the first to empirically examine the role of sustainability habits in consumer responses to pro-environmental brand communications. It also highlights consumers' willingness to comply with brands' take-back programs in a shared effort to reduce plastic waste and encourage a circular economy.

Keywords Pro-environmental brand communication, Brand familiarity, Sustainability habits, Shared environmental responsibility, Sustainable packaging, Consumer perceptions, Commitment

Paper type Research paper

1. Introduction

Only 9% of plastics ever produced have been recycled. Approximately half have ended up in landfills or been incinerated (Geyer *et al.*, 2017). Single-use plastic packaging not only causes an environmental problem that jeopardizes recycling efforts but also motivates unsustainable consumption behaviors (Avio *et al.*, 2016). Until recently, industry efforts to reuse or recycle plastic in a circular economy have lagged behind when trying to implement more efficient recycling systems (Filho *et al.*, 2019). Although an increasing number of global brands are incorporating sustainability innovations such as eco-friendlier packaging (e.g. Coca-Cola plant-based bottles), brands such as PepsiCo, Starbucks and McDonald's are working on recycling efforts, asking consumers to return bottles to stores (Closed Loop Partners, 2021; Pepsi, 2022). Some of these schemes, often seen in Europe, are based on the principle of *extended producer responsibility* (EPR) (Filho *et al.*, 2019; Lindhqvist, 2000), where the producer is responsible for post-consumption waste. This responsibility includes the

design, marketing and communication of product packaging to ensure efficient waste management (Meherishi *et al.*, 2019). EPR programs, if applied successfully, can provide a number of advantages, including increased collection and recycling ratios while stimulating the durability and reusability of packages. EPR for packaging, for instance, has contributed to significant increases in recycling rates in the European Union (EU). In 2019, an estimated 41% of plastic packaging waste in the EU

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The author wishes to thank Dr Sandra Costa for her valuable comments, which played an important role in shaping the manuscript. Also the CCC group for their helpful feedback in the presentation of this research at Católica Lisbon School of Business and Economics.

The author also gratefully acknowledges the support from FCT – Portuguese Foundation of Science and Technology for the project UID/GES/00407/2020.

Received 22 December 2021

Revised 8 March 2022

26 July 2022

23 September 2022

Accepted 28 September 2022

The current issue and full text archive of this journal is available on Emerald Insight at: <https://www.emerald.com/insight/1061-0421.htm>



Journal of Product & Brand Management
Emerald Publishing Limited [ISSN 1061-0421]
[DOI 10.1108/JPBM-12-2021-3782]

was recycled (Eurostat, 2021). However, because plastics mainly consist of fossil fuels, high energy levels are also spent on the recovery and incineration of plastic packaging waste in the EU. This phenomenon makes it possible to create a synergy between voluntary and mandatory approaches that increase recycling rates. According to Filho *et al.* (2019), firms (e.g. brand producers) have an opportunity to create conditions that stimulate the voluntary participation of consumers in circular business models via take-back programs (e.g. collection points at retailers) that invite them to return end-of-use packaging for recycling. Thus, consumer collaboration in interventions such as separating waste, recycling and returning used packages to stores or disposal facilities is essential for the success of EPR schemes (OECD, 2014).

Research examining the interplay between marketing communications, sustainable packaging and waste management interventions such as EPR schemes lags in considering how consumers respond to brand communications in their daily decisions. Although a vast body of research has covered consumer responses to sustainable packaging (Herbes *et al.*, 2020; Ketelsen *et al.*, 2020; Magnier and Crié, 2015), the role of consumers in decreasing packaging waste is less studied. However, encouraging consumers to incorporate pro-environmental principles such as returning and contributing to the recycling of packages post-consumption is important (Nguyen, 2020; van Birgelen, 2009). Despite that several studies focused on how consumers assess, perceive and judge various packaging elements such as materials, size, shape and logos (Herbes *et al.*, 2020; Nguyen *et al.*, 2020; Underwood *et al.*, 2001) less research focused on consumers' perceptions and their commitment to act pro-environmentally in response of brand appeals. This is especially relevant among consumers who have less habitual sustainable behaviors since they represent an untapped market segment with the potential to be converted and to contribute to a more sustainable planet.

Surprisingly, to this day, there is limited research about the role of habits in pro-environmental behaviors. Because habitual behavior precedes many pro-environmental decisions (Steg and Vlek, 2009), the role of habits is critical for understanding how consumers process and respond to sustainability messages from brands with which they have low familiarity versus high familiarity. As habit theory suggests, behavior is highly contingent on automatic processes, and therefore, it can be difficult to alter behavior in a familiar context (Linder *et al.*, 2022; Verplanken, 2018). This opens an avenue of research to understand in more detail how low-familiarity brands are prone to eliciting more pro-environmental perceptions and intentions. In addition, there is a need to complement research on pro-environmental behaviors with a more holistic understanding of the role of habits in decision-making processes that goes beyond the leading approaches focusing on reasoned action, planned behavior and spillover effects to understand and predict pro-environmental behavior (Steg and Vlek, 2009).

Although collaborative stakeholder approaches have been advanced from an organizational standpoint (Soundararajan *et al.*, 2019), research examining the collaborative role of consumers in pro-environmental initiatives promoted by brands is scarce (de Bakker *et al.*, 2019). That is, more research has been devoted to the role of businesses and brand producers in the management of packaging waste (Boz *et al.*, 2020; Leal

Filho *et al.*, 2019) but less attention has been given to the role of other stakeholders, namely consumers, as active participants in waste management schemes (Meherishi *et al.*, 2019). This situation calls for a better understanding of how producers and associated brands may encourage a shared stakeholder responsibility (Goodstein and Wicks, 2007; Yu *et al.*, 2019) with consumers.

The purpose of this research is to address the existing gaps in the research. Therefore, this paper examines the effect of pro-environmental communication messages on consumer perceptions of brands and on the opportunities to increase the returnability and recyclability of packaging post-consumption on the basis of sustainability habits in a shared effort between consumers and brands. To address these issues, this paper begins by developing theoretical arguments based on the literature on brand communications (Aaker, 2003; Keller and Aaker, 1992; Keller and Lehmann, 2006) and on (sustainable) packaging-related decisions involving high- versus low-familiarity brands (Herédia-Colaço *et al.*, 2019; Underwood *et al.*, 2001; Underwood, 2003). The accessibility–diagnosticity framework (Ahluwalia and Gürhan-Canli, 2000; Feldman and Lynch, 1988; Vizcaíno and Velasco, 2019) and habit theory (Linder *et al.*, 2022; Steg and Vlek, 2009; Verplanken *et al.*, 1997) are then used to develop the first set of hypotheses. The literature on stakeholder responsibility (Goodstein and Wicks, 2007) and on environmental citizenship (Yu *et al.*, 2019) is also examined to shed light on consumers' willingness to comply with brands' appeals to return and recycle packaging and to develop the third hypothesis. Next, the methodology section describes two experimental studies that test the hypotheses using an online panel of Amazon Mechanical Turkers (MTurkers), followed by analyses of the results, theoretical and practical contributions and directions for future research.

2. Literature review and hypotheses development

Based on the literature, this section develops hypotheses about the effect of pro-environmental communication messages from high- and low-familiarity brands, the moderating effect of sustainability habits and the mediating effect of shared environmental responsibility.

2.1 Brand communications involving sustainable packaging decisions

A brand embodies a firm's reputation (Walsh *et al.*, 2009). The aggregate consumer associations concerning the core characteristics of a company and associated brands result in positive or negative brand reputation perceptions (Milewicz and Herbig, 1994). Consumers will form positive associations only with brands that they perceive to be credible when companies project consistent messages over time. If they fail to clearly communicate their intentions or repeatedly deliver marketing signals that are not credible, then brands risk alienating their customer base, and they eventually develop a negative reputation (Veloutsou and Moutinho, 2009). To improve their reputation in response to pressure from governments, activists and consumers, major global brands are making efforts to comply with the sustainable (packaging) norms of organizations such as the Sustainable Packaging Coalition (Nguyen *et al.*, 2020; SCP, 2020). Some of these brands belong to well-known

multinational corporations such as PepsiCo. and Nestle, which have adapted more sustainable business models to comply with sustainable development goal 12, related to sustainable consumption and production (Saari *et al.*, 2017). There has also been societal pressure regarding the sustainability of recycling, with the public expecting more sustainable packaging from brands (Boz *et al.*, 2020; Yu *et al.*, 2019).

Packaging is one of many attributes that create brand associations in the minds of consumers (Keller and Aaker, 1992). Packaging includes the manner in which products are presented to consumers in retail stores (e.g. food and beverage), and it refers to the container of a product that encompasses various elements that characterize the product's visual appearance (Chandon, 2013). Despite the broad classification scheme for package elements in the scientific literature, two main classification schemes can be used to characterize the design of a package. These schemes are the packaging design elements related to graphics – color, typeface and logos – and the packaging's structural elements – shape, size and material (Herbes *et al.*, 2020; Underwood, 2003). In line with this conceptualization, packaging can be associated with the external element of a product (i.e. not part of the physical product itself), and it is possible that inferences about its sustainable nature (e.g. a package's eco-friendly materials) can be directly made, inducing brand associations (Pitta and Katsanis, 1995). Brand managers often capitalize on the strength of these associations to introduce extensions to a core product or brand (Broniarczyk and Alba, 1994). For instance, well-known brands, such as Pepsi and Nestle, have been investing in R&D to offer packaging that is reusable or recyclable, resulting in extensions of the core brand (Meherishi *et al.*, 2019; Nestle, 2022; Pepsi, 2022).

Brand and product extensions may include modifications to packaging (Pitta and Katsanis, 1995), which result in high investments made by brands in recycling technologies that offer more sustainable alternatives to conventional packaging. Following Magnier and Crié (2015, p. 361), sustainable packaging is defined as packaging that “evokes explicitly or implicitly the eco-friendliness of the packaging via its structure –, e.g. materials, reduction or removal, recyclability, biodegradability or reusability.”

The role of packaging in brand communications has been recognized as an important promotional tool that helps communicate the identity and image of the brand (Agariya *et al.*, 2012). In addition, it is a vehicle of communication that automatically brings past experiences, knowledge and perceptions regarding the brand into consumers' consciousness (Underwood *et al.*, 2001). More importantly, it triggers communications around the brand that have already occurred. For instance, packaging-related studies reveal that consumers use shortcuts to evaluate packages in relation to more familiar stimuli (Herédia-Colaço *et al.*, 2019). Studies examining product package design salience (Underwood, 2003) have shown how on-package elements have a greater impact on purchase decisions for low- rather than high-familiarity brands (Underwood *et al.*, 2001). This suggests that the way in which consumers process communication from brands with which they have more versus less familiarity should impact how information is processed. High familiarity requires less cognitive effort to process (Alba and Hutchinson, 1987) and can be processed through advertising clutter (Dahlén, 2001).

Similarly, when consumers are exposed to an advertisement that is congruent with a high-familiarity brand, the advertisement should be easier to recognize and to retrieve from memory since consumers have greater schema associations with familiar brands than with unfamiliar brands (Lange and Dahlén, 2003). Cue utilization theory (Herbes *et al.*, 2020; Richardson, 1994; Underwood *et al.*, 2001) further suggests that contextual cues are more salient during decision-making in the presence of low-familiarity brands because it is harder for consumers to analyze their intrinsic attributes. Consequently, consumers tend to rely on extrinsic cues (i.e. packaging) to infer the quality and other attributes of low-familiarity brands.

In summary, the lines of research just described involving communication from high-familiarity versus low-familiarity brands suggest that consumers use cues derived from a familiar brand name, whereas for an unfamiliar brand, most perceptions are derived from contextual cues.

2.1.1 The accessibility–diagnosticity framework

This prior research is also in line with the accessibility–diagnosticity framework (Feldman and Lynch, 1988). More specifically, Ahluwalia and Gürhan-Canli (2000) investigate the role of familiar brand names in consumer responses to product extensions. Despite the relevance of this past research, limited studies have measured how pro-environmental communication involving product extensions such as making packaging modifications to an existing product impacts consumers with different brand familiarity levels. This is important because many brands are now adopting sustainable packaging and communicating with consumers, inviting them to be part of their pro-environmental efforts (Unilever, 2022).

The accessibility–diagnosticity framework is used to explain this effect (Menon *et al.*, 1995). It suggests that consumers use the most accessible and diagnostic cue to make inferences about a product. Following Vizcaino and Velasco (2019), this paper considers *accessibility* to be the ease with which consumers retrieve past or frequent experiences with a brand and *diagnosticity* to be the ability of the cue to provide enough information to make a decision. For instance, consumers tend to use memory-stored brand perceptions when in the presence of a familiar brand to accelerate the evaluation process and make more efficient decisions. However, when exposed to an unfamiliar stimulus (i.e. a low-familiarity brand), the accessibility of information is gathered from available contextual cues to make inferences about brands (Vizcaino and Velasco, 2019).

It is therefore hypothesized that consumers will use more context-based information (i.e. sustainable package information) when in the presence of a low-familiarity brand message to make evaluations. However, when exposed to a high-familiarity brand message, because the stored information is well rooted in memory through multiple exposures to the brand, processing will lead to memory-stored information. In this case, it is predicted that the effect of pro-environmental messaging will be less pronounced because the most accessible and diagnostic cue will be the familiar brand association. More formally, this paper hypothesizes as follows:

H1. Communicating a brand's pro-environmental initiative will have a more pronounced effect on consumer perceptions (*sustainability and brand reputation*) of a low-familiarity than of a high-familiarity brand.

2.2 The moderating impact of sustainability habits

Habit theory suggests that individuals tend to repeat behaviors in stable contexts and that response frequency induces the formation of habits (Aarts and Dijksterhuis, 2000). Habits are also preceded by goals (e.g. dental flossing every day to have healthy teeth), but once habits are established, they no longer become goal directed (Miller *et al.*, 2019). Instead, actions become guided by cues (heuristics) gleaned from the environment without much deliberation (Strack and Deutsch, 2004). In other words, habits represent learned predispositions to engage in a particular behavior led by a memory-based cognitive structure that is triggered once individuals are in a particular situation. In many cases, behavior is largely habitual and led by automatic cognitive processes; in other cases, it is preceded by more elaborate reasoning (Steg and Vlek, 2009).

The role of habits is rarely accounted for in research involving pro-environmental behavior, which often focuses on the role of norms, motivations, affect, goal framing and values, supported by the norm-activation model (Schwartz, 1977), the value-belief-norm theory of environmentalism (Stern, 2000) or the theory of planned behavior (TPB; Ajzen, 1991), among others. Despite the relevance of their contribution to environmental psychology, some of these theoretical frameworks, such as the TPB, suggest that individuals make reasoned decisions or are led by motivations. However, behavioral responses do not depend on these factors alone. Consumers' propensity levels to change behavior also depend on other behavioral antecedents, such as habits and contextual factors (Steg and Vlek, 2009; Wilson, 2016).

Despite the limited attention paid to habit theory, pro-environmental decisions have been shown to be affected by sustainability habits (Linder *et al.*, 2022). Sustainability habits, also known as pro-environmental habits, can be defined as the way behavioral decisions that support the environment or harm it as little as possible are made (Steg and Vlek, 2009).

Achieving sustainability goals has been at the forefront of many policymakers, global leaders, businesses and the UN Agenda 21 program (Lee *et al.*, 2016). However, achieving such goals has been a fight in conflict with everyday realities and contexts that automatically trigger unsustainable habitual behaviors (Linder, 2022). Similarly, habits have been shown to influence the attitude-behavior gap often seen in environmental decisions by acting as either a potential barrier to or a motivator for pro-environmental behavior (Dahlstrand and Biel (1997). Therefore, it is important to investigate the role of sustainability habits in pro-environmental decisions because they also act as a boundary condition in attitude-behavior models often seen within the environmental sustainability domain (Verplanken and Aarts, 1999). According to Dahlstrand and Biel (1997), strong habits narrow the attitude-behavior gap, whereas weak habits widen this gap. Furthermore, Steg and Vlek (2009) suggest that consumers with less established sustainability habits are more prone to react to new stimuli involving attitude or intention interventions. However, consumers with more established habits are bound by more automatic processes and have a greater propensity to disregard pro-environmental information that is not aligned with their choices. In these cases, habitual behavior may involve selective attention and misperceptions because consumers adhere to information that confirms their

choices and discard information that is not aligned with their habitual behavior. This reflects how habits, namely, habit strength, exert a strong influence on pro-environmental behavioral decisions (Aarts and Dijksterhuis, 2000).

Drawing on this literature and on the accessibility–diagnosticity framework (Ahluwalia and Gürhan-Canli, 2000; Feldman and Lynch, 1988; Vizcaino and Velasco, 2019) previously described, this study predicts that sustainability habits are an important moderating factor to consider when analyzing consumers' responses to a new pro-environmental campaign. Specifically, it is expected that, combined with brand familiarity, sustainability habits will explain consumers' propensity to comply with pro-environmental communication from different brand types. It is hypothesized that consumers with weak rather than strong sustainability habits are more likely to be impacted by pro-environmental initiatives promoted by a novel or low-familiarity brand than by a high-familiarity brand. Conversely, as sustainability habits increase, pro-environmental communication initiatives from either brand type are expected to have less of an impact. Several reasons support this proposition. First, communication from high-familiarity brands is expected to induce past associations with the brand (e.g. diagnosticity of the familiar brand association), neutralizing more contextual information (e.g. pro-environmental efforts). Second, consumers with strong sustainability habits already conform to pro-environmental behaviors (van Birgelen *et al.*, 2009). Third, there is a generalized consumer feeling that sustainability is a corporate responsibility of more mature brands (Nielsen, 2021). Based on this literature, the second set of hypotheses is proposed as follows:

- H2.* There is an interactive effect between pro-environmental brand communication and sustainability habits. Specifically, (a) communicating pro-environmental initiatives from a low-familiarity (vs a high-familiarity) brand will have a more pronounced effect on the willingness to comply with a brand appeal for weak-sustainability-habit consumers. However, (b) for strong-sustainability-habit consumers, there is no differentiated communication effect between low- and high-familiarity brands.

Although consumers increasingly demand more sustainability from brands (Marín-García *et al.*, 2019), not all consumers are willing to comply with appeals to recycle and return packaging (Meherishi *et al.*, 2019). Therefore, it is important to analyze potential factor(s) that act as barriers or motivators in pro-environmental decisions, as reviewed next.

2.3 The mediating role of shared environmental responsibility

To understand the efficacy of interventions aimed at promoting more sustainable behaviors, it is useful to evaluate the role of stakeholders, namely, consumers, in firms' responsibilities. For instance, EPR is a type of intervention strategy that indirectly requires the collaboration of consumers in waste management actions (e.g. take-back schemes) promoted by brand producers. Such a strategy is more contextual than informational (Steg and Vlek, 2009) because it provides the conditions, e.g. collection points at stores, under which

consumers can voluntarily take part in the returnability and recyclability process of packages post-consumption (van Birgelen, 2009).

This research proposes a novel approach to explain consumers' commitment to act pro-environmentally with brands, here termed "shared environmental responsibility." This definition differs from the literature (Cordier *et al.*, 2019) on the allocation of restoration costs among stakeholders. This construct is aligned with prior research on stakeholder responsibility (Goodstein and Wicks, 2007) and environmental citizenship (Yu *et al.*, 2019). It includes the voluntary participation of stakeholders (i.e. consumers) in collaborative actions with the goal of contributing to a more sustainable future. In this prior research, limited attention has been paid to whether stakeholders have ethical responsibilities to firms and, if so, what the scope of those responsibilities is. This paper examines individuals' belief that their collaboration in disposable decisions is a function of reciprocity between brands and consumers. It departs from a belief (i.e. the consciousness of one's pro-environmental duty to reach a common goal) that should be integrated into an affective reaction that precedes intentions, also recognized as immediate antecedents of behavior (Feldman and Lynch, 1988). Specifically, it views shared environmental responsibility as a mediator of the relationship between sustainability habits and the commitment to act pro-environmentally.

Because habitual responses are "mediated by mental processes" (Steg and Vlek, 2009, p. 312), it is hypothesized that a *shared environmental responsibility* belief will indirectly affect the relationship between sustainability habits and the willingness to comply with a brand's request to return and recycle packages. The third hypothesis is proposed as follows:

H3. There is a conditional mediating effect of shared environmental responsibility between sustainability habits and the commitment to act pro-environmentally. When consumers consider acting pro-environmentally, shared environmental responsibility will mediate the effect between sustainability habits and the willingness to comply with a brand's appeal to return and recycle packages.

In summary, this paper proposes that pro-environmental brand communication (e.g. communicating the adoption of sustainable packaging) has a greater impact on consumer perceptions of a low-familiarity brand than of a high-familiarity brand (*H1*). This

study also examines the moderating impact of sustainability habits between pro-environmental brand communication and consumers' willingness to comply with an appeal from high- vs low-familiarity brands (*H2a* and *H2b*). Finally, this study assesses the mediating role of shared environmental responsibility between consumers' sustainability habits and their commitment to act pro-environmentally (*H3*) (Figure 1).

3. Methodology

3.1 Study 1: the impact of brands' pro-environmental communication appeals

3.1.1 Experimental design

To test the hypotheses, an online experiment was designed with a two-group (pro-environmental brand communication: high-familiarity brand, low-familiarity brand) between-subjects design while testing for sustainability habits as a moderator. The mediating role of shared environmental responsibility between consumers' sustainability habits and their willingness to comply with a brand's request was also assessed. Using three sequential scenarios, the pro-environmental communication for two (high familiarity vs low familiarity) soft drink brands was manipulated. This study used a real and a fictional brand logo, as suggested by previous research (Herédia-Colaço *et al.*, 2019).

3.1.2 Data collection

In total, 176 MTurkers participated in the online study using a Qualtrics interface. MTurkers were chosen because they are considered more attentive than student subjects and representative of the population (Buhrmester *et al.*, 2018). The sample was composed of 98 males and 78 females. The majority, 55.4%, were between 25 and 34 years old. The descriptive statistics of the sample is presented in Table 1.

3.1.3 Procedure and stimuli

The participants were first asked to complete a self-reported measure of sustainability-related habits and then some open-ended (filler) questions unrelated to habits. Next, they were randomly allocated to one of the responding groups and asked to evaluate a single-use plastic bottle of Pepsi-Cola (high-familiarity brand) or Soda Pop (fictitious, low-familiarity brand), the first scenario. For instance, those in the high-familiarity brand condition read, "Pepsi-Cola is a soda brand that distributes carbonated soft drinks and other beverages. This Pepsi-Cola comes in the original (PET) single-use plastic bottle." The participants were then asked to answer a question about their

Figure 1 Conceptual framework

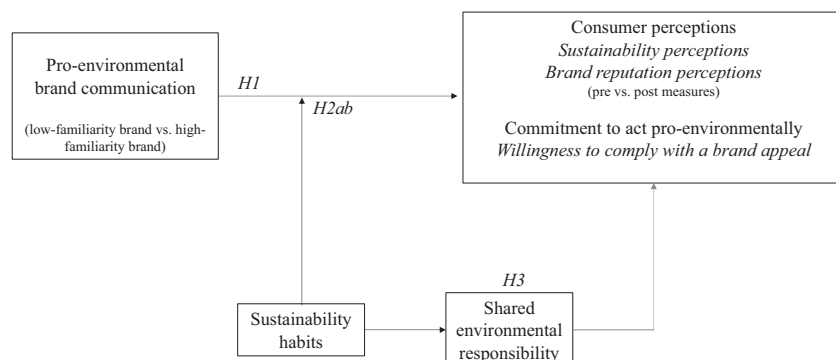


Table 1 Descriptive statistics

	Study 1 N = 176	(%)	Study 2 N = 215	(%)
Gender				
Male	98	55.7	141	65.6
Female	78	44.3	74	34.4
Age				
18–24	36	20.5	18	8.4
25–34	86	48.9	100	46.5
35–44	31	17.6	49	22.8
45–54	10	5.7	32	14.9
55–64	9	5.1	13	6.0
65+	4	2.3	3	1.4
Education				
Secondary school	–	–	1	0.5
High school	22	12.5	16	7.4
Bachelors	125	71.0	143	66.5
Masters	26	14.8	52	24.2
PhD	2	1.1	1	0.5
Other	1	0.6	2	0.9

level of familiarity with the brand as a manipulation check. Then, the study examined the participants' perceived sustainability and their perceptions of the reputation of the brand they had just seen. In the second scenario, the participants were given a statement informing them that the brand was considering replacing its single-use plastic bottles with 100% recycled and recyclable material bottles. Again, the same consumer perception measures were assessed. In the third scenario, the participants were presented with another statement informing them that customers were asked to hold on to their plant-based bottles as part of their pro-environmental commitment and to return them to local supermarkets to be recycled, an initiative intended to cut pollution on land and at sea. They were then asked about their willingness to comply with the brand appeal. To finish, the participants were asked to rate whether they believed this should be a shared initiative between the brand and its customers. Finally, they were asked to complete demographic measures and were thanked for their participation (see Appendix 1 for details).

3.1.4 Measurements

The measurement items were adapted from previous research and were measured using seven-point Likert scales. After being presented with the initial stimulus, the participants were asked, "How familiar are you with the brand presented?" (1 = not at all familiar, 7 = very much familiar). This item used as a *manipulation check* for brand familiarity was adapted from Herédia-Colaço *et al.* (2019). The items measuring brand sustainability perceptions (four items), such as "This brand is a socially responsible brand" (1 = not at all, 7 = very much), were adapted from Brunk (2012) and Delgado-Ballester and Luis Munuera-Alemán (2005). The items measuring brand reputation perceptions (six items), such as "The brand treats its customers in a fair manner" (1 = strongly disagree, 7 = strongly agree), were adapted from Walsh and Beatty (2007) and Walsh *et al.* (2009). These are the consumer perception measures. The items measuring sustainability habits, such as "I recycle used plastics" (1 = strongly disagree, 7 = strongly agree), were

adapted from Chuvieco *et al.* (2018). The item measuring consumers' willingness to comply with the brand appeal and the item assessing shared environmental responsibility belief were adapted from van Birgelen *et al.* (2009) and Goodstein and Wicks (2007), respectively. The complete scales and factor loadings for more than two item scales and based on a factor analysis procedure with principal component analysis and varimax rotation appear in Appendix 2.

3.1.5 Analysis and results

3.1.5.1 Manipulation check. The brand familiarity manipulation check worked as intended. As expected, the participants in the high-familiarity brand condition indicated higher levels of brand familiarity with the Pepsi-Cola brand than those in the low-familiarity brand condition exposed to the fictitious Soda Pop brand [brand familiarity: $M_{\text{high-familiarity}} = 5.82$, $SD = 1.3$ vs $M_{\text{low-familiarity}} = 4.22$, $SD = 2.3$; $t(175) = 5.63$, $p < 0.001$].

3.1.5.2 One-way MANOVA. To test $H1$ suggesting that communicating pro-environmental initiatives has a greater impact on consumers' perceptions (*sustainability and brand reputation perceptions*) of a low-familiarity brand than of a high-familiarity brand, one-way multivariate analysis of variance (MANOVA) was conducted. The goal of this analysis was to compare the effect of consumers' perceptions of pro-environmental communication from a low-familiarity versus a high-familiarity brand on the dependent variables, measured before and after providing information about the brand's sustainable packaging adoption.

Consumer perceptions of sustainable packaging adoption (pre- and post-measures). The results from the pre-measure (before providing information about sustainable packaging adoption) show that the participants exposed to the high-familiarity (Pepsi-Cola) brand reported higher brand perceptions than those exposed to the low-familiarity (fictional Soda Pop) brand in terms of sustainability perceptions [$M_{\text{high-familiarity}} = 5.10$, $SD = 1.3$ vs $M_{\text{low-familiarity}} = 4.74$, $SD = 1.5$; $F(1, 175) = 2.91$, $p = 0.09$] and brand reputation perceptions [$M_{\text{high-familiarity}} = 5.39$, $SD = 0.90$ vs $M_{\text{low-familiarity}} = 5.00$, $SD = 1.2$; $F(1, 175) = 5.99$, $p < 0.05$]. However, findings show that, after consumers received information about the brand's sustainable packaging adoption, the results from the post-measure revealed no significant differences between their evaluations of the high- and low-familiarity brands (see Table 2).

Low-familiarity versus high-familiarity brand's perceptions. Furthermore, pairwise *t*-test analyses on the pre- versus post-measures were conducted to separately examine consumer perceptions of the low- and high-familiarity brands. The results show that the ratings of the low-familiarity brand increased after receiving information about sustainable packaging adoption (post-measure) in terms of sustainability perceptions [$M_{\text{low-familiarity-pre}} = 4.74$, $SD = 1.5$ and $M_{\text{low-familiarity-post}} = 5.32$, $SD = 1.2$; $t(87) = -4.43$, $p < 0.001$] and brand reputation perceptions [$M_{\text{low-familiarity-pre}} = 5.00$, $SD = 1.2$ and $M_{\text{low-familiarity-post}} = 5.29$, $SD = 1.7$; $t(87) = -3.96$, $p < 0.01$]. In the high-familiarity brand condition, despite the increase in sustainability perceptions [$M_{\text{high-familiarity-pre}} = 5.10$, $SD = 1.3$ and $M_{\text{high-familiarity-post}} = 5.40$, $SD = 1.2$; $t(87) = -3.68$, $p < 0.001$], there were no significant differences between the pre- and post-measures in terms of brand reputation

Table 2 Study 1: the impact of pro-environmental communication about sustainable package adoption on sustainability and reputation perceptions about low versus high-familiarity brands

N = 176	Pre-measure				F	Post-measure				F
	Low-familiarity brand		High-familiarity brand			Low-familiarity brand		High-familiarity brand		
	Mean	SD	Mean	SD		Mean	SD	Mean	SD	
Sustainability perceptions	4.74	1.5	5.10	1.3	2.91+	5.32	1.2	5.40	1.2	0.17
Reputation perceptions	5.00	1.2	5.39	0.90	5.99*	5.29	1.2	5.36	0.93	0.19
	Low-familiarity brand					High-familiarity brand				
	Pre-measure		Post-measure		t-test	Pre-measure		Post-measure		t-test
	Mean	SD	Mean	SD		Mean	SD	Mean	SD	
Sustainability perceptions	4.74	1.5	5.32	1.2		−4.43***	5.10	1.3	5.40	
Reputation perceptions	5.00	1.2	5.29	1.7	−3.96***	5.39	0.9	5.36	0.9	0.56

Notes: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 1$

perceptions [$M_{\text{high-familiarity-pre}} = 5.39$, $SD = 0.9$ and $M_{\text{high-familiarity-post}} = 5.36$, $SD = 0.9$; $t(87) = 0.56$, $p > 0.1$, ns]. Overall, the results show that communicating package sustainability from a low-familiarity rather than high-familiarity brand has a more pronounced effect on consumer perceptions, supporting *H1*. The MANOVA and *t*-test results are shown in Table 2.

3.1.5.3 Moderation analysis. To test *H2* suggesting that pro-environmental communication from low-familiarity (high-familiarity) brands will be more impactful for weak- than strong-sustainability-habit consumers, multiple regression analysis was conducted using model 1 of Hayes' (2013) PROCESS macro for SPSS. This procedure was used for bootstrap resampling and to compute the 95% confidence intervals (CIs) of the moderating effect of sustainability habits on the willingness to comply with the brand's pro-environmental appeal. The pro-environmental brand communication variable was dummy coded, while a sustainability habit index was used as a continuous (mean-centered) variable.

3.1.5.4 Willingness to comply. A significant pro-environmental brand communication \times sustainability habits interaction was obtained [$b = 0.52$, $SE = 0.15$, $t(176) = 3.47$, $p < 0.01$, 95% $CI = [0.223 \text{ to } 0.809]$). A significant main effect of pro-environmental brand communication ($b = -0.55$, $SE = 0.17$, $t(176) = -3.15$, $p < 0.01$; 95% $CI = [-0.891 \text{ to } -0.205]$) and a main effect of sustainability habits also emerged ($b = 0.43$, $SE = 0.11$, $t(176) = 4.04$, $p = 0.001$; 95% $CI = [0.218 \text{ to } 0.633]$). When evaluating the main effects separately, the significant but negative main effect of pro-environmental communication highlights the impact of the message from the low- versus the high-familiarity brand on consumer responses. The positive main effect of sustainability habits on the willingness to comply dependent variable also shows how habit strength is important during decision-making. However, when analyzing their interaction, slope analysis (Aiken and West, 1991; Fitzsimons, 2008) reveals differences between weak- and strong-sustainability-habit participants in their willingness to comply with a pro-environmental initiative based on brand familiarity.

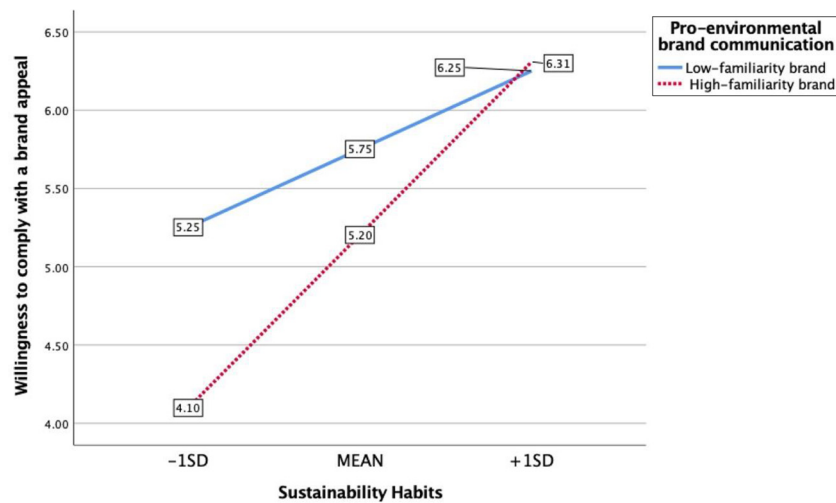
To analyze the nature of the relationships in more detail, the conditional indirect effects at different values of the moderator (± 1 SD from the mean) were probed. Specifically, the participants with weaker sustainability habits (-1 SD) were

more willing to comply with a pro-environmental initiative from the low-familiarity brand than from the high-familiarity brand ($b = -1.15$, $SE = 0.24$, $t(176) = -4.68$, $p < 0.01$, 95% $CI = [-1.64 \text{ to } -0.67]$). In contrast, when the level of sustainability habits increased and surpassed the mean, no differences in the participants' willingness to comply with either (low- or high-familiarity) brand ($+1$ SD; $t = 0.24$, $p > 0.1$, ns) were observed, supporting *H2a* and *H2b*. Figure 2 plots the group means for the willingness to comply with the brand appeal dependent variable.

3.1.5.5 Mediation analysis. To test *H3*, a mediation analysis was conducted using Hayes' PROCESS macro (Model 4; Hayes, 2013). *H3* proposes that the relationship between sustainability habits and the commitment to act pro-environmentally will be mediated by a shared environmental responsibility belief from consumers. In the model, sustainability habits, shared environmental responsibility, and the commitment to act pro-environmentally, i.e. the willingness to comply with a brand appeal, are included as the predictor variable, mediator and outcome variable, respectively. Bootstrapping results (based on 5,000 samples) confirmed a significant and positive indirect effect of sustainability habits through shared responsibility on the willingness to comply with a brand appeal (indirect effect = 0.29, $SE = 0.09$, 95% $CI = [0.134, 0.483]$). The impact of sustainability habits on shared environmental responsibility ($b = 0.54$, $SE = 0.08$, $p < 0.001$, 95% $CI = [0.374, 0.697]$) and the impact of shared environmental responsibility on the willingness to comply with a brand appeal ($b = 0.54$, $SE = 0.06$, $p < 0.001$, 95% $CI = [0.425, 0.661]$) were significant. However, when both sustainability habits and shared environmental responsibility were entered into the regression, the conditional direct effect of sustainability habits on the willingness to comply with a brand appeal was still significant (direct effect = 0.37, $SE = 0.07$, $p < 0.001$, 95% $CI = [0.23, 0.514]$), indicating partial mediation and thus partially validating *H3*.

3.1.6 Discussion

The results of Study 1 show that pro-environmental communication efforts are especially salient for consumers' responses to low-familiarity brands. Although high-familiarity brands are positively evaluated, the differential communication effect between brands seems to dissipate when information about sustainable packaging adoption is provided. That is, the

Figure 2 Study 1: Willingness to comply with a brand appeal

pro-environmental appeal from low-familiarity brands becomes especially salient when consumers are made aware of such initiatives. This effect is further reinforced on weak-sustainability-habit consumers, as shown in their willingness to comply with appeals from low-familiarity brands. The mediation findings also show that the willingness to comply with these appeals is partially driven by a shared environmental responsibility belief that seems to emerge during decision-making. To further examine this phenomenon, the next study examines a stimulus beyond the soft drinks' product category.

3.2 Study 2: the willingness to comply with pro-environmental appeals

The primary purpose of Study 2 is to conceptually replicate the findings from the prior study and to build on the set of theoretical propositions presented earlier in the literature review. Because an increasing number of well-recognized brands in the personal care business (e.g. Dove) are optimizing their packaging for sustainability, this study uses a personal care product to demonstrate the robustness of the effects across different product categories, a common practice in the branding and packaging literature (Delgado-Ballester, 2004; Magnier and Crié, 2015; Quad Packaging, 2018).

3.2.1 Experimental design

Similar to Study 1, a two-group (pro-environmental brand communication: high-familiarity brand, low-familiarity brand) between-subjects design was used while testing sustainability habits as a moderator. The mediating role of shared environmental responsibility between consumers' sustainability habits and their willingness to comply with a brand's request was also tested.

3.2.2 Data collection

In total, 215 MTurkers participated in Study 2, again run via a Qualtrics interface. The sample was composed of 141 males and 74 females. The majority of the sample, 65.6%, was between 25 and 34 years old (Table 1).

3.2.3 Procedure and stimuli

As in Study 1, each participant was randomly presented with either a single-use plastic shower gel bottle for the Dove high-familiarity brand or a low-familiarity (fictitious) brand called Tempo. They were also presented with three scenarios shown in sequential order. For instance, in the first scenario, the participants read:

Dove (Tempo) is a personal care brand that distributes personal and beauty care products for men and women. This Dove (Tempo) shower gel comes in the original single-use plastic packaging.

The participants were again asked about their level of familiarity with the brand, the *manipulation check*. The same consumer perception questions from Study 1 (sustainability and brand reputation perceptions) were asked before and after communicating the brand's pro-environmental initiative to switch from single-use to sustainable packaging, the second scenario. As in Study 1, an additional statement was provided informing consumers that, as part of its pro-environmental commitment, the brand asked its customers to hold on to their sustainable shower gel bottles and return them to local supermarkets to be recycled, the third scenario. The participants were then asked about their willingness to comply with the pro-environmental initiative and whether they believed this should be a shared initiative between the brand and its customers. Finally, demographic measures were applied, and the participants were thanked for their participation (see Appendix 1 for details).

3.2.4 Measurements

The same measures from Study 1 were administered using seven-point Likert scales: the brand familiarity manipulation check (one item); the measures for sustainability perceptions (four items), brand reputation perceptions (six items); sustainability habits (six items); and the willingness to comply with a brand appeal (one item); and the item assessing shared environmental responsibility belief (see Appendix 2 for details).

3.2.5 Analysis and results

3.2.5.1 Manipulation check. The brand familiarity manipulation check worked again as intended. As expected, the participants

Table 3 Study 2: the impact of pro-environmental communication about sustainable package adoption on sustainability and reputation perceptions about low versus high-familiarity brands

N = 215	Pre-measure				F	Post-measure				F
	Low-familiarity brand		High-familiarity brand			Low-familiarity brand		High-familiarity brand		
	Mean	SD	Mean	SD		Mean	SD	Mean	SD	
Sustainability perceptions	5.23	1.1	5.65	0.96	8.77**	5.44	1.0	5.72	0.89	4.69*
Reputation perceptions	5.27	0.97	5.57	0.94	5.2*	5.27	1.0	5.54	1.0	3.78+
	Low-familiarity brand				t-test	High-familiarity brand				t-test
	Pre-measure		Post-measure			Pre-measure		Post-measure		
	Mean	SD	Mean	SD		Mean	SD	Mean	SD	
Sustainability perceptions	5.23	1.1	5.44	1.0	-3.21**	5.65	0.96	5.72	0.89	-1.04
Reputation perceptions	5.27	0.97	5.27	1.0	0.09	5.57	0.94	5.54	1.0	0.86

Notes: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 1$

in the high-familiarity brand condition indicated higher levels of brand familiarity with the Dove brand than those in the low-familiarity brand condition exposed to the fictitious Tempo brand [brand familiarity: $M_{\text{high-familiarity}} = 5.85$, $SD = 1.1$ vs $M_{\text{low-familiarity}} = 4.51$, $SD = 1.8$; $t(213) = 6.45$, $p < 0.001$].

3.2.5.2 One-way MANOVA. To test $H1$, a one-way MANOVA was again performed on sustainability and reputation perceptions before and after communicating the brand's sustainable packaging adoption.

Consumer perceptions of sustainable packaging adoption (pre- and post-measures). Similar to Study 1, the results from the pre-measure show that the participants' ratings of the high-familiarity (Dove) brand were higher than those of the low-familiarity (fictional Tempo) brand in terms of sustainability perceptions [$M_{\text{high-familiarity}} = 5.65$, $SD = 0.96$ vs $M_{\text{low-familiarity}} = 5.23$, $SD = 1.1$, $F(1, 214) = 8.77$, $p < 0.01$] and brand reputation perceptions [$M_{\text{high-familiarity}} = 5.57$, $SD = 0.94$ and $M_{\text{low-familiarity}} = 5.27$, $SD = 0.97$, $F(1, 214) = 5.20$, $p < 0.05$]. The results from the post-measure also revealed higher ratings of the high-familiarity (Dove) brand over the low-familiarity (fictional Tempo) brand in terms of sustainability perceptions [$M_{\text{high-familiarity}} = 5.72$, $SD = 0.89$ and $M_{\text{low-familiarity}} = 5.44$, $SD = 1.0$; $F(1, 214) = 4.69$, $p < 0.05$] and brand reputation perceptions [$M_{\text{high-familiarity}} = 5.54$, $SD = 1.0$ and $M_{\text{low-familiarity}} = 5.27$, $SD = 1.0$; $F(1, 214) = 3.78$, $p = 0.05$]. However, in the high-familiarity brand condition, the evaluation perceptions decreased by almost half compared with the pre-measure evaluations. The MANOVA and t -test results are shown in Table 3.

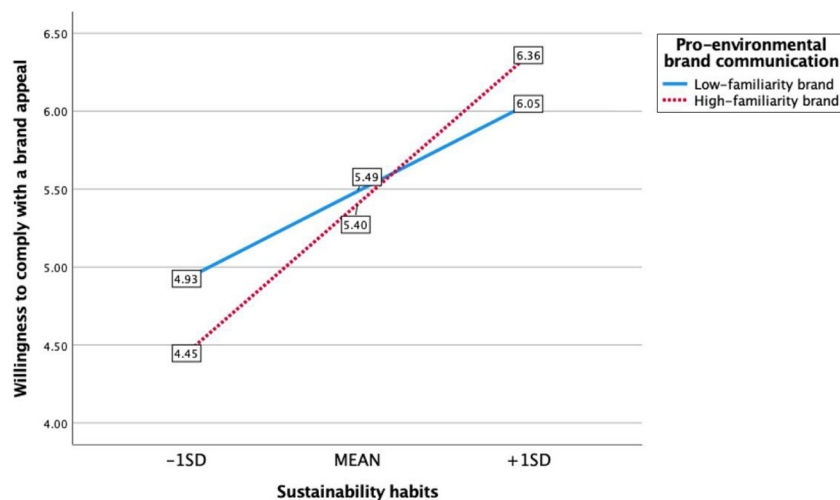
Low-familiarity versus high-familiarity brand's perceptions. Follow-up pairwise t -test analyses revealed once again that communicating sustainable packaging adoption from a low-familiarity brand had a more pronounced effect on the participants' sustainability perceptions [$M_{\text{low-familiarity-pre}} = 5.23$, $SD = 1.1$ and $M_{\text{low-familiarity-post}} = 5.44$, $SD = 1.0$; $t(107) = -3.21$, $p < 0.01$] despite a nonsignificant difference in brand reputation perceptions [$M_{\text{low-familiarity-pre}} = 5.27$, $SD = 0.97$ and $M_{\text{low-familiarity-post}} = 5.27$, $SD = 1.0$, $t(107) = 0.09$, $p > 0.1$, ns]. For the high-familiarity brand, no significant differences were observed between the pre- and post-measures in terms of sustainability perceptions [$M_{\text{high-familiarity-pre}} = 5.65$, $SD = 0.96$ and $M_{\text{high-familiarity-post}} = 5.72$, $SD = 0.89$; $t(106) = -1.04$, $p > 0.2$, ns] or brand reputation perceptions [$M_{\text{high-familiarity-pre}} =$

5.57 , $SD = 0.94$ and $M_{\text{high-familiarity-post}} = 5.54$, $SD = 1.0$; $t(106) = 0.86$, $p > 0.2$, ns] supporting $H1$ (Table 3).

3.2.5.3 Moderation analysis. To test $H2$, multiple regression analysis was again conducted using the PROCESS macro for SPSS (Model 1; Hayes, 2013) to assess the impact of pro-environmental communication appeals on consumers' willingness to comply with the brand's initiative. Similar to Study 1, the pro-environmental brand communication variable was dummy coded, while a sustainability habit index was used as a continuous (mean-centered) variable.

3.2.5.4 Willingness to comply. A significant interaction between pro-environmental brand communication \times sustainability habits was obtained ($b = 0.37$, $SE = 0.15$, $t(215) = 2.41$, $p < 0.05$, 95% CI = [0.067 to 0.669]), as well as a significant and positive main effect of sustainability habits ($b = 0.52$, $SE = 0.11$, $t(215) = 4.92$, $p < 0.001$; 95% CI = [0.312 to 0.73]). A nonsignificant main effect was obtained for the pro-environmental brand communication ($b = -0.08$, $SE = 0.16$, $t(215) = -0.51$, $p > 0.61$; 95% CI = [-0.405 to 0.24]). Slope analysis (Aiken and West, 1991; Fitzsimons, 2008) revealed that weak-sustainability-habit participants (-1 SD) were more willing to comply with a pro-environmental appeal from the low-familiarity brand than from the high-familiarity brand ($b = -0.48$, $SE = 0.23$, $t(215) = -2.06$, $p < 0.05$, 95% CI = [-0.935 to -0.022]). In contrast, when the level of sustainability habits increased and surpassed the mean, no significant differences in the participants' willingness to comply with either brand's pro-environmental appeal were observed ($+1$ SD; $t = 1.35$, $p > 0.2$, ns), supporting $H2a$ and $H2b$. Figure 3 plots the group means for the willingness to comply with the brand appeal dependent variable.

3.2.5.5 Mediation analysis. Similar to Study 1, a mediation analysis was conducted using Hayes' PROCESS macro (Model 4; Hayes, 2013) to test $H3$. Bootstrapping results (based on 5,000 samples) confirmed once more a significant and positive indirect effect of sustainability habits through shared environmental responsibility on willingness to comply with a brand appeal (indirect effect = 0.28, $SE = 0.07$, 95% CI = [0.165, 0.418]). The impact of sustainability habits on shared environmental responsibility ($b = 0.53$, $SE = 0.07$, $p < 0.001$, 95% CI = [0.393, 0.672]) and the impact of shared environmental responsibility on the willingness to comply ($b = 0.53$, $SE = 0.06$, $p < 0.001$, 95% CI = [0.40, 0.658]) were

Figure 3 Study 2: Willingness to comply with a brand appeal

significant. When both sustainability habits and shared environmental responsibility were entered into the regression, the conditional direct effect of sustainability habits on the willingness to comply was still significant (direct effect = 0.42, SE = 0.08, $p < 0.001$, 95% CI = [0.267, 0.567]), again showing partial mediation.

3.2.6 Discussion

These findings are consistent with those of Study 1, which shows the effect of pro-environmental communication for low-familiarity brands. Consumers have stable perceptions of high-familiarity brands, but the effect of marketing communications for low-familiarity brands is promising, especially for weak-sustainability-habit consumers. The mediation findings indicate that consumers seem to believe in shared pro-environmental initiatives with brands, but only to a certain extent.

4. Discussion

This research examines the effect of pro-environmental communication from novel and low-familiarity brands versus well-known or high-familiarity brands on consumers' perceptions and willingness to comply with brands' appeals. The moderating role of sustainability habits in this relationship is also addressed. Overall, the findings show differential brand communication effects on consumers' perceptions before and after receiving sustainability-related information (e.g. sustainable packaging adoption). Low-familiarity brands can capture consumers' attention with communication messages, especially when their sustainability habits are lower. Furthermore, brands can encourage more sustainable behaviors by sharing pro-environmental initiatives with consumers (e.g. creating take-back programs and arranging waste collection points at retailers) via the mediating role of shared environmental responsibility. However, the partial mediating effects suggest that other factors seem to be present when consumers commit to act pro-environmentally.

4.1 Theoretical implications

This research extends the literature on branding and brand communications (Aaker, 1992; Boz *et al.*, 2020; Brunk, 2012;

Keller, 1993; Keller and Aaker, 1992; Keller and Lehmann, 2006; Maxfield, 2008). It also builds on prior research examining branded packaging (Herédia-Colaço *et al.*, 2019; Underwood, 2003; Vizcaino and Velasco, 2019) and sustainable packaging (Nguyen *et al.*, 2020). However, contrary to prior work that devotes specific attention to sustainable packaging and the many definitions offered by brands to promote sustainable packaged goods (Boz *et al.*, 2020; Feber *et al.*, 2021; Ketelsen *et al.*, 2020; Nguyen *et al.*, 2020; Simpson and Radford, 2012), this paper is less focused on the packaging itself. Instead, it focuses on packaging as a communication vehicle used by brands to promote the return and recycling of packages post-consumption. It builds on previous research that links post-consumer package disposal and purchase behaviors toward sustainable (beverage) packaging (Boz *et al.*, 2020; van Birgelen, 2009) and on research that addresses the need to create take-back programs targeted at consumers to ensure the returnability and recyclability of packaging (Leal Filho *et al.*, 2019).

This research also extends prior work about the important role of *brand familiarity* at enhancing (versus not) consumer perceptions toward a brand (Alba and Hutchinson, 1987; Vizcaino and Velasco, 2019). Specifically, it shows how the communication from low versus high familiarity brands has a differential impact on sustainability and reputation perceptions toward a brand (Walsh and Beatty, 2007; Walsh *et al.*, 2009; Wei and Jung, 2022; Wood *et al.*, 2018).

The accessibility–diagnosticity framework. Furthermore, this research contributes findings about how consumers process product attribute information and their commitment to act pro-environmentally. It corroborates the accessibility–diagnosticity literature (Ahluwalia and Gürhan-Canli, 2000; Feldman and Lynch, 1988; Menon *et al.*, 1995; Vizcaino and Velasco, 2019), which suggests that consumers tend to use shortcuts or more accessible cues (e.g. brand names) to evaluate products and ignore relevant contextual factors (e.g. provision of opportunities to increase recycling) from more familiar brands (Underwood *et al.*, 2001; Underwood, 2003; Vizcaino and Velasco, 2019).

Sustainability habit strength. The strength of sustainability habits also accounts for this effect, suggesting that consumer responses to brand communication strategies can be strengthened by habits. Therefore, this paper contributes to habit theory (Verplanken, 2018) and the need to understand in greater detail the role of habits in pro-environmental decisions (Linder et al., 2022). Specifically, this paper responds to a call from the prior literature suggesting that examinations of effective intervention strategies for behavioral change, as well as a combination of strategies aimed at overcoming the barriers that prevent pro-environmental behavior, are needed (Steg and Vlek, 2009). Both studies in this paper used a combination of informational, e.g. aimed at heightening awareness of the brand's sustainable packaging adoption, and contextual, e.g. aimed at eliciting shared participation in the brand's EPR scheme, strategies. Important findings were obtained. First, they suggest that pairing informational and contextual strategies appears to be especially effective when evaluating intentions to engage in pro-environmental behaviors. Second, this effect is enhanced on weak-sustainability-habit individuals, which is an important finding because it shows how the attitude-behavior gap can be narrowed when targeting low-sustainability-habit consumers. Third, (sustainability) habits in themselves are relevant determinants of behavior, adding to previous research that mainly considered factors such as reasons, motivations, affect, norms, values and spillover effects to explain pro-environmental behavior (Ajzen, 1991; Catlin and Wang, 2013; Schwartz, 1977; Stern, 2000; Truelove et al., 2014). Fourth, considering the role of sustainability habits when designing interventions is an effective strategy for promoting pro-environmental transformations (White et al., 2019).

Stakeholder responsibility. Importantly, this research adds to a large body of literature on stakeholder responsibility (Goodstein and Wicks, 2007) and environmental citizenship (Yu et al., 2019) and demonstrates a unique underlying indirect effect of shared environmental responsibility between individuals' sustainability habits and their commitment to engage in collaborative actions with brands.

4.2 Managerial implications

This paper provides insights into the factors present when consumers evaluate brands and their commitment to act pro-environmentally when faced with the chance to recycle packaging waste. *Packaging waste management.* Waste management of packaging still needs improvement from both the business and consumer perspectives. From the business perspective, EPR systems, for instance, are aimed at transitioning to a circular economy by 2050 in Europe. EU propositions to increase recycling are part of the Green Deal to respond to the ongoing climate crisis, with the aim of recycling at least 55% of plastic packaging waste by 2030 (European Parliament, 2022). However, there is still a debate on the role of the business models that (brand) producers need to adopt to successfully enable this transition (Filho et al., 2019).

Stakeholder responsibility. Among the struggling factors identified are the lack of clarity about the roles and different responsibilities of stakeholders directly and indirectly related to firms – producer responsibility organizations, suppliers, municipalities, collectors, recyclers and consumers. More

research on joint collaboration among multiple stakeholders, including consumers, in initiatives that boost recycling is needed. Producers can create benefits by decreasing the costs of materials, namely, by using recycled materials. Doing so implies investing in measures that include better design and materials for recyclability or developing standards for the minimum recycled content in packaging.

Take-back programs. In addition, it is important to provide factual information to consumers about their positive contribution when returning used products at collection points instead of disposing them. Fast food retailers such as McDonald's are partnering with Loop, a coalition of major consumer product companies, to stimulate take-back behaviors for packaging. However, instead of just focusing on sustainable packaging alternatives (e.g. aluminum or plant based), it is necessary to stimulate more sustainable behaviors. Charging more for a product that comes in a disposable package or incentivizing the use of reusable cups (e.g. for hot beverages that prevent users from burning their hands) may elicit repetition processes that will eventually form more sustainability habits.

Marketing communication strategies. Moreover, marketing communication managers can develop different communication strategies for low- and high-familiarity brands in a given market and reach target audiences that have less or more habitual sustainable behaviors. The findings presented here show that there is an opportunity for low-familiarity brands to reach an untapped segment of consumers low in sustainability habits. Consequently, brands can increase their market share by targeting these consumers. More mature brands are encouraged to proceed with their pro-environmental efforts. However, a viable strategy to compensate for the more spontaneous behaviors that consumers tend to use to evaluate products from high-familiarity brands is to work on creating sub-brands that share the same category benefit. Core brands' unique features may strengthen the association with an existing brand and generate consumer interest. However, well-known brands need to frequently update their strategies to keep consumers coming back for more because brand disloyalty is becoming the new normal (Nielsen, 2019).

Global commitment to eliminate single-use plastics. To conclude, these results are important for sustainability officials and public policymakers involved in developing pro-environmental interventions and related campaigns and ultimately working toward the global commitment goal of eliminating the use of single-use plastics by 2025, that is, the New Plastics Economy Global Commitment to introduce sustainable packaging (Ellen MacArthur Foundation, 2022).

4.3 Limitations and future research

One limitation of this study is that there may be additional explanations for the finding that weak-sustainability-habit consumers are driven more by appeals from low-familiarity brands than from high-familiarity brands. Consumers may be skeptical about brands' motives for engaging in pro-environmental actions (Brunk, 2012; Nguyen et al., 2019; Szabo and Webster, 2021), especially high-familiarity brands that may not have consistently demonstrated ethical conduct (Herédia-Colaço et al., 2019). For instance, Wood et al. (2018) suggest that mainstream brands benefit more from quietly

advertising their environmental friendliness than niche brands because consumers may not believe that well-established corporations can reach a certain level of environmental standards possible for smaller ventures. To evaluate other explanations for these effects, more research is needed. For instance, to conduct field experiments in addition to online studies, where actual decisions can be observed. Also, the use of differential intervention effects of cash versus noncash incentives on recycling behavior can be further analyzed. In addition, this study did not examine packaging attributes such as visual cues, which may have driven some consumers' evaluations. Furthermore, not all plastics are the same; some are products in themselves, while others are part of an end-user product. This research tested packaging as a product, although it mainly examined its extrinsic properties and not its intrinsic content. Additional research could also evaluate whether effort or convenience is an alternative mediator that might explain the (un)willingness of consumers to comply with brands' requests to bring back end-of-use packaging to stores.

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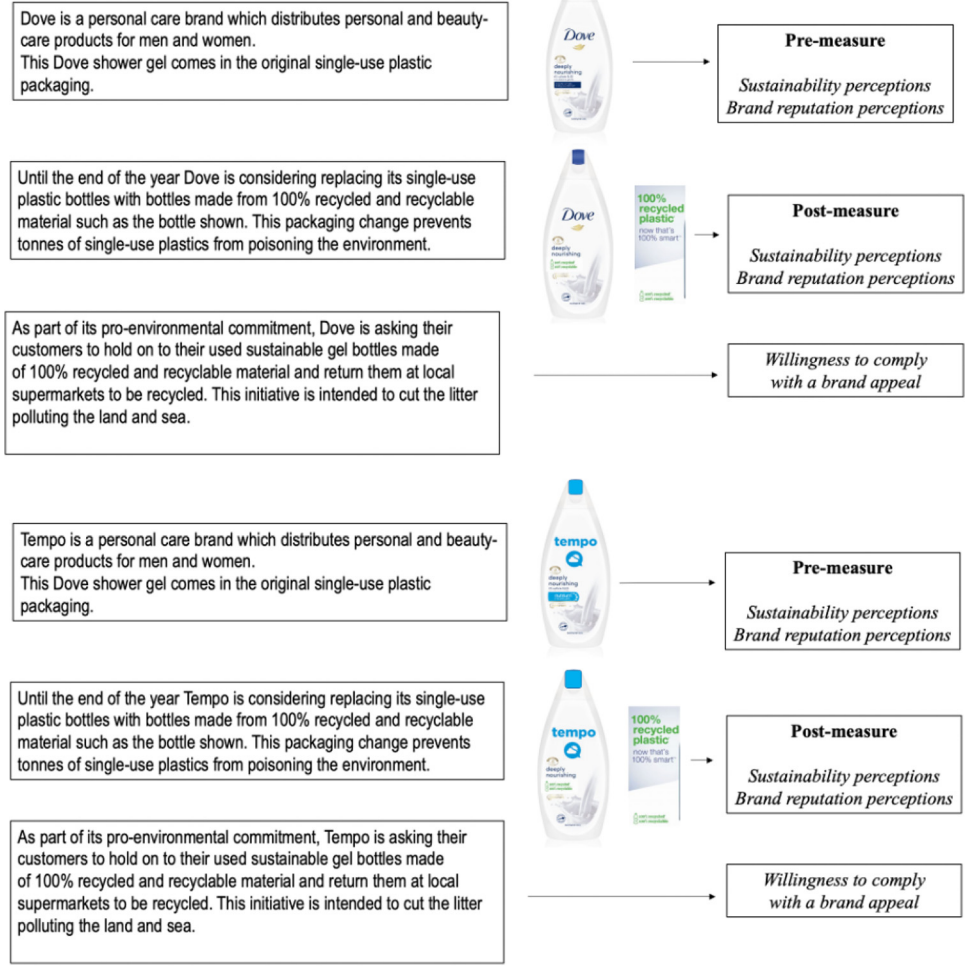
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Further reading

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Appendix 1. Stimuli used in the study design

Study 2



Note: Due to spatial constraints, only a product category is presented for stimuli representation

Appendix 2. Measurement scales

Manipulation Check

adapted from Herédia-Colaço *et al.* (2019)

7-point Likert-type scale (1 = not at all, 7 = very much)

1. How familiar are you with the brand presented?
-

Consumer Perceptions

Sustainability Perceptions

adapted from Brunk (2012) and Delgado-Ballester and Luis Munuera-Alemán (2005)

7-point Likert-type scale (1 = not at all, 7 = very much)

Measurement items	Factor loadings	Cronbach α
"Overall, how do you rate this brand?"		
1. This brand is a socially responsible brand*	Study 1 _{pre-measure} : 0.87-0.90 Study 1 _{post-measure} : 0.89-0.90	α Study 1 _{pre-measure} = 0.91 α Study 1 _{post-measure} = 0.92
2. This brand respects moral norms*		
3. This brand cares about the environment*	Study 2 _{pre-measure} : 0.76-0.86 Study 2 _{post-measure} : 0.74-0.85	α Study 2 _{pre-measure} = 0.87 α Study 2 _{post-measure} = 0.84
4. This brand is trustworthy**		
*Items 1-3 are from the consumer perceived ethicality scale (CPE), adapted from Brunk (2012).		
**Item 4 is adapted from Delgado-Ballester and Luis Munuera-Alemán (2005).		

Brand Reputation Perceptions

Adapted from Walsh and Beatty (2007) and Walsh *et al.* (2009)

7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree)

"Please rate your level of agreement with the following statements:"

<i>Customer Orientation</i>	Study 1 _{pre-measure} : 0.75-0.84 Study 1 _{post-measure} : 0.79-0.85	α Study1 _{pre-measure} = 0.90 α Study1 _{post-measure} = 0.90
1. The brand treats its customers in a fair manner.		
2. The brand's employees create a great experience through courteous customer treatment.	Study 2 _{pre-measure} : 0.81-0.84 Study 2 _{post-measure} : 0.81-0.85	α Study2 _{pre-measure} = 0.90 α Study2 _{post-measure} = 0.91

Good Employer

3. Looks like a good company to work for.
4. Looks like a company that has good employees.
5. Looks like a reliable and financially strong company.
6. Looks like a company with strong prospects for future growth.

(continued)

Product and Service Quality

7. Offers high-quality products and services.

Sustainability Habits

adapted from Chuvieco *et al.* (2018)

7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree)

“Please rate your level of agreement with the following statements:”

- | | | |
|---|--|--|
| 1. My purchase habits are affected by my concern for our environment. | Study 1: 0.70-0.80
Study 2: 0.71-0.78 | α Study 1: 0.84
α Study 2: 0.84 |
| 2. I take short showers to reduce water usage. | | |
| 3. When I go to the supermarket, I bring my own shopping bag. | | |
| 4. I recycle used paper. | | |
| 5. I use refillable/reusable products. | | |
| 6. I recycle used plastics. | | |

Commitment to Act Pro-Environmentally*Willingness to Comply with a Brand Appeal*

adapted from van Birgelen *et al.* (2009)

7-point Likert-type scale (1 = not at all, 7 = very much),

1. How willing are you to comply with this initiative?

Shared Environmental Responsibility

adapted from and Goodstein and Wicks (2007)

7-point Likert-type scale (1 = not at all, 7 = very much)

1. This should be a joint initiative between the brand and its customers.

Note: The factor loadings for more than two item scales were based on a factor analysis procedure with principal component analysis and varimax rotation

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