



# Brand logo and brand gender: examining the effects of natural logo designs and color on brand gender perceptions and affect

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## Abstract

This paper examines how a critical dimension of logo design, namely naturalness, along with logo color, influences brand gender perceptions, and whether brand-design-induced gender perceptions ultimately impact affective reactions to logos. Data were collected from a sample of 260 participants, using a set of 24 unknown, manipulated logos as stimuli. Results suggest that while cultural logo designs effectively convey brand masculinity, organic logo designs enhance femininity perceptions. Using dark blue and light pink logo colors reinforce masculinity and femininity perceptions, respectively. Both logo masculinity and logo femininity have a positive effect on the affective response toward logos. Furthermore, this research analyzed the moderation effect of color on the link between logo design and logo gender perceptions, as well as the moderation effect of consumers' gender in the link between logo gender perceptions and affect toward the logo. However, none of these moderation effects were supported by the data. This is the first research to empirically test the effect of natural logo designs on brand gender perceptions and, thereby, on affective reactions toward the logo. The findings provide practical guidelines about the design of a gendered logo using the naturalness of logo design and logo color, thereby facilitating gender targeting efforts.

**Keywords** Brand gender · Brand logo · Logo design · Color · Consumer response

## Introduction

In recent decades, relevant social, economic and technological forces have changed the stereotypes applied to men and women (Neale et al. 2015), and there has been a relaxation of prohibitions associated with cross-sexed behaviors (Settle and Alreck 1987). Hence, some researchers argue that we live in a period in which the boundaries that have historically divided men's and women's consumption activities are blurring (Firat 1994; Patterson and Elliott 2002). These

arguments are supported by studies suggesting that females who work outside the home increasingly identify with masculine traits (Kacen 2000) and recognizing an increased femininity among men (Martin and Gnoth 2009). Despite these findings, research underlines that traditional roles for men and women have not been completely abandoned (Fugate and Phillips 2010) and that gender identity remains an essential construct for understanding consumer behavior (Avery 2012). Moreover, prior studies show that, even though women are likely to accept masculine brands, men tend to reject feminine brands (Jung and Lee 2006; Neale et al. 2015), as they are still affected by the cultural stigma that using a brand associated with femininity might threaten their gender identity (Azar et al. 2018; Vacas-de-Carvalho et al. 2020). Ultimately, research suggests that masculine and feminine identity markers and, thereby, gendered consumptions may become more valuable to consumers in an era in which gender roles are considered as more permeable (Avery 2012). Thus, prior research indicates that gender identity continues to significantly shape consumer behavior in the postmodern society.

Furthermore, recent research has underlined the relevance of brand gender; that is, the set of human personality traits

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associated with masculinity and femininity that are both applicable and relevant to brands (Grohmann 2009) for their success. Indeed, consumers use masculine or feminine brands to convey their masculinity/femininity (Aaker 1997; Belk 1988; Fournier 1998) and respond more favorably to brands that are congruent with their gender identity (Grohmann 2009). Since consumers use brand gender to reinforce their social identity, brand gender positioning can lead to essential affective and behavioral consumer brand responses (Grohmann 2009; Machado et al. 2019) and strengthen brand equity (Lieven et al. 2014; Lieven and Hildebrand 2016).

Considering the importance of brand gender for consumer self-expression and the creation of critical brand-related outcomes, it is a relevant endeavor to understand how brands should choose and manage their visual brand identity signs to influence brand gender perceptions. Prior studies suggest that brand identity signs influence consumer perceptions of brand personality (Batra et al. 1993; Grohmann et al. 2012) and may induce brand gender associations (Grohmann 2016; Lieven et al. 2015; van Tilburg et al. 2015a, b). Brand logos are the “primary design elements of a company’s visual branding strategy” (Henderson et al. 2003, p. 298). Logos are critical communication cues that have become even more central in a world overwhelmed with imagery (Torres et al. 2019; Phillips et al. 2014). Within logos, design is a key dimension, as it can evoke strong product or brand associations (Jiang et al. 2016; Rahinel and Nelson 2016) and generate affective reactions (Machado et al. 2015; Torres et al. 2019). Moreover, since logos are physical representations of brand meaning (Henderson and Cote 1998), logo design characteristics might influence assessments of brand masculinity and femininity (Lieven et al. 2015). For instance, the typeface, as a relevant element of logo design, has been proven to influence perceptions of masculinity and femininity (Grohmann 2016; Lieven et al. 2015). However, research on the impact of logo design and color on brand gender perceptions is still in its infancy.

Therefore, our research will focus on these relevant and unexplored topics and attempt to clarify how a critical dimension of logo design, naturalness, and logo color influence brand gender perceptions and, consequently, impact consumer affective reactions to the logo. The focus on natural logo designs (i.e., logo designs that depict commonly experienced objects) is a relevant theoretical and managerial endeavor, since prior research highlights the aesthetic primacy of natural forms in design. Indeed, prior studies underline that naturalness is a critical universal design dimension that influences consumers’ cognitive and affective responses to not only the logo (Henderson and Cote 1998; Machado et al. 2015), but also to the typeface design and packaging (Henderson et al. 2004; Orth and Malkewitz 2008) or to architectural design. However, despite the acknowledged advantages related with the use

of designs embodying natural forms, the effects of natural logo designs on brand gender personality traits have not yet been empirically tested. Hence, the current study builds on prior literature, but goes a step further by empirically addressing the impact of different types of natural designs on brand gender perceptions and, thereby, on consumer affective responses to the logo.

This research adopts an evolutionary psychology (EP) perspective to explain the impact of physical brand design characteristics on perceptions of brand masculinity and femininity. EP refers to the way in which evolution by selection resulted in psychological factors that influence human preferences and behavior (Buss 1994) and, thus, establishes a connection between gender dimensions of personality (i.e., masculinity and femininity) and aesthetic preference and physical features (Lieven et al. 2014, 2015; van Tilburg et al. 2015a, b). Indeed, recent marketing research has proven that EP-based theories extend knowledge of the influence of brand design elements on consumer responses (van Tilburg et al. 2015a, b; Lieven et al. 2015).

By examining the influence of brand design elements on brand gender perceptions, and ultimately on affective reactions to the logo, this study contributes to the literature in several ways. First, despite the high managerial relevance and important research on brand design (e.g., Henderson et al. 2003; Torres et al. 2019; Reimann et al. 2010) and on brand gender (e.g., Grohmann 2009, 2016; Guevremont and Grohmann 2015; Lieven et al. 2015; Ulrich 2013; van Tilburg et al. 2015a, b), little systematic research has been undertaken to link brand logo design with brand gender. Moreover, it remains unclear how different gender-typed cues, such as design naturalness and color, can interact and affect consumer perceptions and attitudes (Hess and Melnyk 2016). Furthermore, to our knowledge, there is no empirical research that effectively links the different types of natural logo designs (i.e., organic and cultural designs) with perceptions of femininity and masculinity. Likewise, the ability of logo colors to elicit brand gender perceptions still needs further research (Labrecque and Milne 2012; Lieven et al. 2015). From a managerial standpoint, by understanding the influence that specific brand design elements have on affective responses to the logo, companies can facilitate the creation of strong, positive emotions toward their brands (Van der Lans et al. 2009), ensure consumer commitment and improve firm performance (Park et al. 2013; Sääksjärvi et al. 2015). As many firms have incorporated natural designs in a variety of ways in their brand identity signs, examining the impact of the naturalness of logo design becomes even more relevant from a managerial standpoint.

The structure of the paper is as follows: we begin by reviewing relevant brand gender and logo literature; then, we present the research methodology used; subsequently, we



present the results and discuss their implications; and finally, the limitations and further research avenues are outlined.

## Theoretical background and hypotheses

### Brand gender

Research suggests that consumers perceive brands as living, animated and human-like entities, and, hence, tend to attach human characteristics such as age, sex and personality traits to brands (Aaker 1997; Fournier 1998; Grohmann 2009; Puzakoa et al. 2009). This approach is sustained through early marketing literature suggesting that consumers are influenced not only by functional aspects, but also by psychological factors and highlighting the importance of assigning personalities to brands (Levy 1959). In this paper, we focus on brand gender, an essential brand personality characteristic that complements Aaker's model of brand personality (Aaker 1997; Grohmann 2009). Brand gender is defined as the "set of human personality traits associated with masculinity and femininity applicable and relevant to brands" (Grohmann 2009, p. 106).

Grohmann (2009) defined the concepts of masculine brand personality (MBP) and feminine brand personality (FBP) and developed the scale MBP/FBP as an essential tool for the universal measurement of the gender dimensions of brand personality. Moreover, Grohmann's (2009) research has proven that MBP and FBP are two distinct dimensions that interconnect at different levels of intensity for different individuals (Ulrich 2013). Hence, brands can be categorized as masculine (high in masculinity/low in femininity), feminine (low in masculinity/high in femininity), undifferentiated or gender neutral (low in masculinity/low in femininity) and androgynous (high in masculinity/high in femininity) (Grohmann 2009). Since Grohmann's (2009) seminal research, all reference studies focusing on brand gender adopt a bi-dimensional conceptualization of this construct. A summary of gender research can be seen in Table 1.

At this point, it is important to clearly distinguish gender from sex, as, even though these concepts are often used interchangeably, they represent different constructs (Carr 2005). Sex is a demographic trait referring to the biological sex (i.e. classifying human beings or brands as males or females), whereas gender is a social or psychological construct reflecting the degree of masculinity or femininity of an individual (or a brand) (Bem 1985; Oakley 1972; Spence and Helmreich 1978; Pryzgodna and Chrisler 2000). Hence, unlike sex, gender is not given at birth, as it is an ongoing social construction (Avery 2012). We perform our gender through symbolic social interactions (West and Zimmerman 2013) and by tailoring our actions to conform (or not) to the normative conceptions of masculinity and femininity that

exist in our culture (Gherardi 1995). As we live in a multicultural world, we need to choose from a cultural repertoire of gendered behaviors the normative conceptions that will (or not) influence our choices (Wetherell and Edley 1999). These practices, in turn, create a social gender display that reinforces (or resists) the prevailing conceptions of masculinity and femininity (Butler 1990; Lorber 1994). Even though many different forms of masculinity and femininity exist in a particular culture (Carrigan et al. 1985), one form is usually held as the established hegemonic standard. Not all individuals adhere to these hegemonic definitions, but they allow consumers to form perceptions regarding the activities of others and to know in advance how their own activities will be interpreted (Spence and Helmreich 1978).

Research has shown that consumers often create, enhance or accomplish their gender identity through the brands they choose and use (Avery 2012). Indeed, gender is regarded as one of the most noticeable and easiest personality traits to be identified and mentally processed (Dion et al. 1972), and, thus, it is often used to describe others (Lippa 2005) and brands (Grohmann 2009). Furthermore, previous studies have suggested that a clear brand gender positioning—that is, high levels of brand masculinity or brand femininity—induces favorable consumer affective, attitudinal and behavioral responses (Grohmann 2009; Lieven et al. 2015; Machado et al. 2019) and leads to higher brand equity (Lieven et al. 2014; Lieven and Hildebrand 2016). Furthermore, research also highlights that the first step to identifying someone's gender is through physical appearance; consequently, appearance became one of the most important subjects in brand gender theories (van Tilburg et al. 2015a, b).

EP is of increasing importance in this matter, since it is usually adopted to establish a connection between the gender dimensions of personality (MBP and FBP) and aesthetic preference or physical features (Lieven et al. 2014, 2015; van Tilburg et al. 2015a, b). According to EP, differences between biological sexes are aspects of human nature which reflect female and male adaptation to the different demands and circumstances that have historically affected reproductive success (Moss et al. 2008). Due to these evolutionary pressures acting over thousands of years, the aesthetic preferences of different sexes were affected (Moss et al. 2007). Moreover, according to EP, individuals from one sexual identity when searching for a mate from the opposite sex tend to look for specific cues that express femininity and masculinity and are considered desirable and attractive (Buss 1994; van Tilburg et al. 2015a, b). For example, men tend to search for features in women that demonstrate high reproductive and fertile value (Buss 1994). Since these features are not explicit and highlighted when an individual first meets a woman, there are several physical cues that can indicate the level of a woman's fertility, such as "full



Table 1 Summary of brand gender research

Author(s) and year	Definition	Research objectives	Operationalization
Grohmann (2009)	“The set of human personality traits associated with masculinity and femininity applicable and relevant to brands” (p. 106). This conceptualization results in four brand gender profiles: masculine (high in masculinity/low in femininity); feminine (high in femininity/low in masculinity); undifferentiated (low in masculinity/low in femininity); and androgynous (high in masculinity/high in femininity)	To develop a scale to measure brand gender and examine the influence of brand gender on affective, attitudinal and behavioral responses toward the brand	Bi-dimensional construct composed by masculine brand personality traits (MBP) (six items) and feminine brand personality traits (FBP) (six items)
Lieven et al. (2014)	Masculine and feminine brand personality characteristics associated with brands	To understand if MBP and FBP predict brand equity even in the presence of other brand personality dimensions	Bi-dimensional construct composed by MBP and FBP (Grohmann 2009)
Guevremont and Grohmann (2015)	Masculine and feminine personality traits that consumers associate with a brand	To analyze how the use of consonants in brand names influence perceptions of MBP and FBP, and, thereby, likelihood to recommend the brand	Bi-dimensional construct composed by MBP and FBP (Grohmann 2009)
Lieven et al. (2015)	Masculine and feminine dimensions of personality attributed to brands	To examine the effects of brand logo elements on MBP and FBP perceptions, and, consequently, on consumer brand preferences and brand equity	Bi-dimensional construct composed by MBP and FBP (Grohmann 2009)
van Tilburg et al. (2015a, b)	Masculine and feminine brand personality characteristics associated with brands	To explore the role of brand gender on consumer responses to a brand alliance	Bi-dimensional construct composed by a 7-point masculinity scale (ranging from 1-not all masculine to 7-very masculine) and a 7-point femininity scale (ranging from 1-not all feminine to 7-very feminine)
Lieven and Hildebrand (2016)	Masculine and feminine brand personality attributes	To analyze the influence of brand gender on brand equity across ten countries	Bi-dimensional construct composed by MBP and FBP (Grohmann 2009)
Azar et al. (2018)	Masculine and feminine brand personality associations	To understand if strong gendered brands, targeting both men and women, should adopt an endorsed or a branded house strategy	Bi-dimensional construct composed by MBP and FBP (Grohmann 2009)
Machado et al. (2019)	Masculine and feminine brand attributes	To analyze the underlying process explaining the impact of brand gender on consumer-based brand equity on Facebook	Bi-dimensional construct composed by MBP and FBP (Grohmann 2009)



lips, clear and smooth skin, lustrous hair, and symmetry” (Buss and Schmitt 1993, p. 208). In contrast, women tend to search for men who can protect them and therefore who exhibit physical strength and heavier facial lines, such as a wide jaw and broad chin (Grammmer et al. 2003; Buss and Schmitt 1993). Therefore, we can expect that physical cues are also relevant when judging MBP or FBP, and research in EP should help us understand how brand design elements influence consumers’ perceptions of brand gender (Lieven et al. 2014, 2015; van Tilburg et al. 2015a, b).

### The role of brand logo design in brand gender perceptions

Brand design components are defined as the signs, symbols and names that identify and differentiate the brand (Walsh et al. 2010), and marketing studies regard them as critical influencers of brand personality (Aaker 1997; Lieven et al. 2015; Phillips et al. 2014). Specifically, brand logos carry crucial importance in brand identity (Henderson and Cote 1998), since they are considered the most salient brand identity signs and significantly influence cognitive, affective and behavioral responses to the brand (Chen and Bei 2019; Jiang et al. 2016; Henderson and Cote 1998; Machado et al. 2015). In this study, we use the term logo to indicate the “graphic design that a company uses, with or without its name, to identify itself or its products” (Henderson and Cote 1998, p. 14).

Logo design is a critical component in eliciting brand perceptions in consumers’ minds (Batra et al. 1993; Rahinel and Nelson 2016), and the symbolic connotations associated with certain logo design elements, such as typeface, color and logo design, have been found to influence both specific brand perceptions and overall brand evaluations (Jiang et al. 2016; Janiszewski and Meyvis 2001). Moreover, previous research has shown that logo design generates strong brand associations (Rahinel and Nelson 2016; Schmitt and Simonson 1997; van der Lans et al. 2009), increases brand commitment (Park et al. 2013) and induces affective responses (Bloch 1995; Henderson and Cote 1998; Torres et al. 2019).

It is essential for brands to achieve positive affect for their logo, since it can influence the attitude toward the brand or company the logo represents (Foroudi et al. 2014; Henderson et al. 2003). Besides, in low involvement situations, the affect linked to the brand logo can be a key brand differentiating factor (Hoyer and Brown 1990; Leong 1993). Prior studies demonstrate that positive affect arises from natural logos, and that logos representative of objects with widely recognized and familiar meanings achieve a higher positive affect compared to more abstract logos (Henderson and Cote 1998; Machado et al. 2015). Indeed, the ease of processing familiar information leads to a feeling of liking (Phillips et al. 2014). Therefore, naturalness is regarded as a critical

design dimension in the logo strategy literature (Torres et al. 2019).

Henderson and Cote (1998) define naturalness as the degree to which the logo design depicts commonly experienced objects. Machado et al. (2015) deepened the research on this design dimension and distinguished between organic and cultural designs within natural designs. According to Machado et al. (2015), organic designs refer to “biological” objects, i.e. objects from the natural or sensitive world (i.e., flowers, fruits, animals, faces, landscapes, etc.). Cultural designs represent commonly experienced objects from our cultural environment, which do not belong to the natural world, such as “manufactured objects” (e.g., furniture buildings, boat, car, everyday objects) or other cultural symbols (e.g., punctuation marks or other written symbols or the Christian cross). Furthermore, Machado et al. (2015) found that within natural logo designs, organic designs generated more positive affective responses than cultural logos. These findings were confirmed by Torres et al. (2019) in a recent cross-cultural study that shows that organic logo designs are always preferred and that abstract designs induce the lowest level of affect. Moreover, Machado et al. (2015) found a higher preference and thus more positive affective responses, from female respondents for organic logo designs. Therefore, having the EP literature too as a basis, which links sex-typed behaviors with perceived femininity and masculinity, we assume that organic and cultural logo designs are related to femininity and masculinity perceptions, respectively.

Abstract designs were not considered in this study, as its purpose is to understand the ability of logo design to convey brand gender associations, and abstract logos have a much lower ability to evoke common associations and are more difficult to interpret (Nelson 1971; Seifert 1992; Henderson and Cote 1998). Indeed, according to semiotics, abstract designs are designs which are poor in meaning (at its limit, total abstraction does not provide any cue about what is intended to be represented) (Greimas and Courtés 1993), whereas natural designs easily evoke a common (or consensual) meaning, tend to transmit a clear message and influence brand perceptions (Henderson and Cote 1998; Orth and Malkewitz 2008). Moreover, we could not find any support in the literature on EP or design regarding the ability of abstract designs to induce brand masculinity or brand femininity perceptions.

Previous research has already attempted to understand how brand design elements influence brand gender perceptions. For example, Lieven et al. (2015) examined how markers of masculinity and femininity discussed in the EP literature could be applied to the design of new and existing brands, and their results show that certain brand design elements elicit MBP and FBP. The authors demonstrated that heavier and angular shapes in logo design influence consumers’ perceptions of brand masculinity, and, in contrast,





slender and rounder features elicit consumers' perceptions of brand femininity. Following the same line of thought, typefaces from the Script category (e.g., Monotype Corsiva, Kristen) influenced the perception of FBP. On the other hand, typefaces from the Display category (e.g., Impact, Agency FB) influenced the perception of MBP. Lieven et al. (2015) also attempted to investigate the impact of color on brand gender perceptions. However, the researchers found no empirical evidence for this relation.

In summary, research demonstrates that design preferences are highly influenced by biological sex and that females and males tend to exhibit distinct responses. Although there is a clear distinction between biological sex and perceived gender, there has always been a tendency to associate masculinity and femininity with biological sex (Lieven 2018) and, within some literature, the terms biological sex and gender are still frequently used interchangeably as indicators of masculinity or femininity present in the personality of a brand (Freeman and Knowles 2012; Fugate and Phillips 2010). Given this, some of the support for the following hypotheses has its foundation in the literature that refers to asymmetries in design preferences among males and females (Iijima et al. 2001; Moss et al. 2007; Xue and Yen 2007) which, later in life, might shape gender stereotyping and influence consumers' responses regarding brand gender (Fugate and Phillips 2010).

Moss et al. (2007) investigated whether biological sex influenced graphical production and discovered that females tend to draw less technical drawings than males. Moreover, they state that girls tend to depict people, flowers, butterflies and other natural details, while boys tend to depict machinery, technology or vehicles. In addition, Machado et al. (2015) found a higher preference among females for organic logo designs. Therefore, having as a basis the preferences of different biological sexes, we propose that cultural logo designs and organic logo designs will evoke masculine and feminine traits of brand personality, respectively.

Therefore, we propose the following hypotheses:

**H1.1** Cultural brand logo designs elicit higher masculine brand gender perceptions.

**H1.2** Organic brand logo designs elicit higher feminine brand gender perceptions.

Color also plays an essential role in any visual branding strategy (Hynes 2009; Madden et al. 2000). Part of the reason lies in the fact that consumers' purchase decisions are highly influenced by visual sensory cues and color is one of the most influential visual elements (Amsteus et al. 2015). Colors allow companies to stand out and differentiate themselves from their competitors (Labrecque and Milne 2012) and have become core indicators of quality

(Singh 2006). Moreover, research in psychology suggests that color can elicit specific meanings (Labrecque and Milne 2012; Schmitt and Simonson 1997), so that the mere perception of a color is sufficient to produce affect, cognition and a behavior consistent with that meaning (Elliot and Niesta 2008; Labrecque et al. 2013). Moreover, consumers can relate colors to particular product categories (Bottomley and Doyle 2006) and decide whether a color is adequate or not for a certain brand (Amsteus et al. 2015). In the case of logo selection, the choice of color is a complex process, since the color needs to reflect the brand visual identity properly, elicit the desired brand image in the minds of consumers and contribute to the creation of brand awareness (Abril et al. 2009; Labrecque and Milne 2012; Amsteus et al. 2015). Additionally, once a color is selected to represent a brand, it is often extremely difficult to change it afterwards (Labrecque et al. 2013).

The relation between color and gender is often investigated in the light of gender-related stereotyping (Cunningham and Macrae 2011; Picariello et al. 1990; Pomerleau et al. 1990). Gender stereotypes are culturally imbued in society from an early age. In fact, Cunningham and Macrae (2011) argue that children's environments are saturated with gender-typed hues, such as blue items being essential for boys and pink items for girls, which shape the application of gender stereotypes later in life. Moreover, Picariello et al. (1990), Ellis and Ficek (2001) and Cohen (2013) refer to men being more likely to prefer blue, while women are more likely to prefer pink.

In addition, the EP literature found a link between color value—that is, the degree of lightness or darkness present in the color—and gender perceptions. Indeed, women tend to possess lighter skin tones due to higher levels of estrogen in their blood, whereas men are more likely to have darker skin tones (Jablonski 2004; Jablonski and Chaplin 2000), and this may have led to an unconscious association of lighter pigmentations with females and darker ones with males (Semin and Palma 2014). Likewise, mate selection theory notes that lighter skin tones are considered more attractive in female faces, since they are regarded as signs of a woman's fertility, and that darker skin tones are favored in men (van den Berghe and Frost 1986). Considering the findings of previous EP studies, Lieven et al. (2015) and van Tilburg et al. (2015a, b) demonstrated that products with lighter tones are perceived as more feminine and those with darker tones as more masculine. Schnurr (2018) found that a packaging design using light colors tends to be perceived as more feminine and a design using dark colors as more masculine. Thus, based on the findings of previous studies, we posit the following hypotheses:

**H2.1** The presence of a dark blue color in brand logos elicits higher masculine brand gender perceptions.



**H2.2** The presence of a light pink color in brand logos elicits higher feminine brand gender perceptions.

While there is growing research on the impact of individual visual elements on consumers' responses (Labrecque and Milne 2012; Torres et al. 2019), empirical studies on how different visual elements combine into a cohesive brand image, and on how consumers respond when these elements are all processed at the same time, are still scarce. This is a particularly important endeavor, as previous studies suggest that the congruency of the various logo design elements leads to more favorable emotional responses and that consumers tend to evaluate the different logo design elements together (Salgado-Montejo et al. 2014). For that reason, it is extremely relevant to study the combined effect of gender-typed cues present in logos (Phillips et al. 2014). In line with those thoughts, some studies state that gender-typed cues when combined (i.e., brand logo design and color) contribute to the enhancement of the perceived brand gender dimensions (Labrecque and Milne 2012; van Tilburg et al. 2015a, b), increasing the congruity of a brand's visual brand identity (Phillips et al. 2014). As such, we hypothesize that:

**H3.1** Cultural logo designs in combination with dark blue enhance the perception of a brand logo's masculinity.

**H3.2** Organic logo designs in combination with light pink enhance the perception of a brand logo's femininity.

Previous research has suggested that a clear brand gender positioning (i.e., high levels of masculinity or femininity) positively influences critical consumer responses to the brand (Grohmann 2009; Lieven and Hildebrand 2016; Lieven et al. 2014; Machado et al. 2019). For instance, Grohmann (2009) demonstrated that strongly gendered brands positively influence brand preference and brand loyalty, and Lieven et al. (2014) showed that high levels of brand masculinity or femininity trigger stronger and more favorable consumer affective responses and contribute to brand equity above and beyond other brand personality dimensions. Furthermore, Machado et al. (2019) found that brands that are able to build a strong gender identity, either feminine or masculine, will encourage brand love. These findings complement previous studies highlighting the influence of brand personality on brand affect and preference (Sirgy 1982; Sung and Kim 2010) and on brand love (Roy, Khandeparkar and Motiani 2016). Thus, considering the findings of prior research, we propose that the greater the extent to which consumers perceive logos as feminine or masculine, the more favorable will be their affective responses to these logos. Therefore, we propose the following hypotheses:

**H4.1** Brand logo perceived masculinity has a positive effect on affective responses toward the logo.

**H4.2** Brand logo perceived femininity has a positive effect on affective responses toward the logo.

Gender plays an important role in consumers' self-concept (Avery 2012; Fournier 1998; Grohmann 2009), and, therefore, consumers may use brands and brand identity signs that reflect their gender and function as symbolic gender identity markers (Avery 2012; Fournier 1998; Sirgy 1982). Indeed, prior studies show that brands and products have long been perceived as relevant means to create or reinforce social identity (Aaker 1997; Belk 1988; Fournier 1998) and that consumers tend to prefer brand identity signs that are congruent with their self-concepts (Bettels and Wiedmann 2019; Underwood 2003). In this respect, Lee et al. (2015) show that brand logos can be used by consumers as means to display positive, intangible attributes about themselves, and Bettels and Wiedmann (2019) suggest that brand logo associations should be in congruence with consumer's self-concept to enhance logo liking. Moreover, Grohmann (2009) demonstrated that the congruence between consumers' gender identity and the gender dimension of the brand favorably influences consumers' responses, leading to favorable brand attitudes, greater positive brand affect and brand preference, brand trust and a higher attitudinal and behavioral brand loyalty.

The current research will extend previous findings by investigating if the congruence between consumers' perceived gender and the perceived gender of the brand logo positively influences affective responses to the brand logo. Considering the findings of prior studies, we formulate the following hypotheses:

**H5.1** The positive impact of perceived logo masculinity on affect toward the logo is amplified by consumer's masculinity (i.e. the impact is stronger for consumers with high masculinity than for those with low masculinity).

**H5.2** The positive impact of perceived logo femininity on affect toward the logo is amplified by consumer's femininity (the impact is stronger for consumers with high femininity than for those with low femininity).

Figure 1 depicts the overall hypothetical model.

## Methodology

Data were collected in Portugal through an online survey, developed with Qualtrics, a licensed survey software with advanced functionalities. For efficiency reasons, a



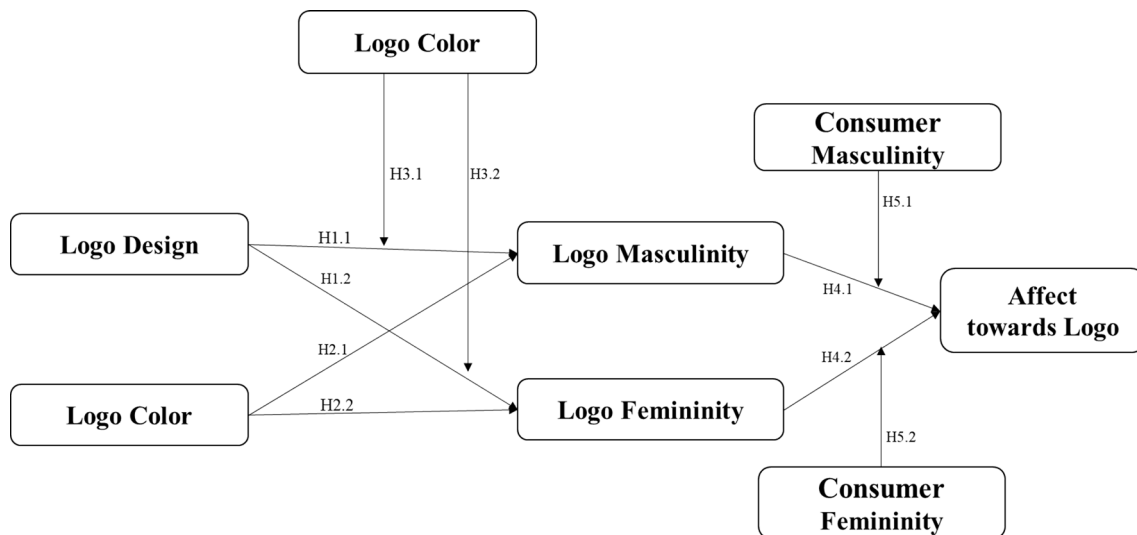


Fig. 1 Conceptual model

combination of volunteer, convenience and snowball sampling was used. The invitation and web link to the survey were shared with the researchers' contacts through email and social networking sites. These were also asked to share the survey with their own contacts, whenever possible. Although for practicality reasons, random sampling was not possible, with these procedures, we were able to collect data from a diverse sample in terms of age, education and occupation, avoiding the homogeneity that characterizes much behavioral and social science research, exclusively carried out in student samples (Burnett and Dune 1986; Peterson and Merunka 2014).

The analysis was based on a sample of 240 individuals that remained after the elimination of all the responses with missing values in the main variables (those included in the conceptual model). Two-thirds—that is, 160 respondents—are female. Ages range from 16 to 67 years old (mean = 33.9; SD = 12.5), with a greater predominance (49%) of respondents in their 20 s. The majority have a higher education degree, either a bachelor's (42%) or a master's/PhD (40%). Most respondents are full-time workers (53.3%) or students (25%).

The survey had three different parts. In the first section, the respondents were asked to appraise a set of unfamiliar logos regarding gender-related attributes and to report the affect induced by each of these logos. In the second section, the participants were requested to characterize themselves regarding the same gender-related attributes used for the logos. The third section was devoted to the collection of demographic information. Moreover, respondents were asked if they were colorblind in order to remove the subjects who were, avoiding data collection bias (Gorn et al. 1997).

## Stimuli





Before building the survey, the researchers collected and manipulated a set of unfamiliar logos to be used as stimuli for the analysis. To guarantee that the logos were unknown in the Portuguese market and that they were correctly classified as organic and cultural designs, a total of 12 brand logos—6 cultural and 6 organic—were selected from the database of organic and cultural logos created in the study of Machado et al. (2015). That study categorized a large number of logos as cultural and organic, following a semiotic classification of design as well as logo strategy terminology (Machado et al. 2015). After this selection, in order to be able to test the conceptual model of the present study, all the logos were manipulated to assume light pink and dark navy blue colors, so that, in the end, 24 different stimuli were obtained (12 logos  $\times$  2 colors). For the color hue of blue, the reference used was RGB [0, 0, 128], whereas for the color hue of pink it was RGB [255, 171, 183], which is in line with previous research in this area (Lieven et al. 2015). Also consistent with previous research (Labrecque and Milne 2012), the saturation levels were kept constant across colors (100%). Table 2 presents examples of logos representative of each category.

To avoid possible bias resulting from response fatigue (Egleston et al. 2011), each respondent was presented with four logos from the total set of 24 different stimuli created. In order to prevent potential bias that might arise from the construction of pre-defined fixed blocks of logos, the four stimuli displayed to each respondent were randomly selected from the total set by Qualtrics software, assuming the following constraints: a) each logo design could only appear to the respondent in one color (either blue or pink); b) each





Table 2 Stimuli examples

Example of cultural logo	
Pink	Blue
	
Example of organic logo	
Pink	Blue
	

respondent was necessarily presented with two organic and two cultural logos.

## Measures

In order to assess gender perceptions evoked by each logo—hereafter, *logo masculinity* and *logo femininity*—we used the scale created by Grohmann (2009) to measure gender dimensions of brand personality: MBP—masculine brand personality and FBP—feminine brand personality. Therefore, for each depicted stimulus, respondents were asked the question: “If this logo was a person, how would you describe it?” A list of 12 personality traits (6 regarding each gender personality dimension) were presented along with a 7-point Likert-type scale, from “strongly disagree” (1) to “strongly agree” (7). *Affect toward logo* was assessed through a purpose fully constructed scale that combines the items that are most often used to measure affect or attitude toward logos or other brand identity signs (Aggarwal 2004; Bouten et al. 2011; Kim et al. 1996; Henderson and Cote 1998; Grossman and Till 1998; Samu et al. 1999; Chaudhuri and Holbrook 2001; Grohmann 2009; Walsh et al. 2010). To assess consumers’ gender personality—hereafter *consumer masculinity* and *consumer femininity*—the MBP and FBP items (Grohmann 2009), that were previously used to characterize logos, were also adopted, but preceded by the question “How do you describe yourself regarding the following traits?”

## Data preparation and analysis

The data were analyzed with the statistical software IBM SPSS together with the module AMOS Graphics, a visual

program for structural equation modeling (SEM), a statistical methodology that takes a confirmatory (i.e., hypothesis testing) approach to the analysis of a structural theory regarding a given phenomenon (Byrne 2010). A maximum likelihood estimation method was used.

Before testing the hypothetical model, some preliminary procedures were performed. First, each stimulus was classified according to its naturalness and color. As logo naturalness and color are dichotomous variables, they were coded as dummy (0 = cultural, 1 = organic; and 0 = blue, 1 = pink). Next, as the hypothetical model under analysis includes, not only manifest variables (as naturalness and color), but also latent variables, the psychometric quality of the multi-item scales used to measure those latent variables were previously assessed. For that, we run exploratory factor analysis (EFA) with oblique rotation in SPSS and confirmatory factor analysis (CFA) in AMOS. Based on the results of this analysis, some slight changes were implemented in order to improve the quality of the measurement model.

Finally, the hypothetical model was tested using two different procedures. MANOVA with SPSS was, initially, applied to test the first six hypotheses (H1.1 to H3.2) and, subsequently, the overall model was tested using SEM with AMOS. In order to conduct MANOVA, total scores of the latent variables *logo masculinity* and *logo femininity* were estimated through regression-based imputation (Estabrook and Neale 2013) in AMOS. Given its potential to examine a series of dependence relationships between observed and/or latent variables simultaneously (Hair et al. 2014), SEM in AMOS was then applied to test the overall hypothetical model. To prepare data for moderation analysis in AMOS, all the observed exogenous

variables (naturalness and color) and indicators of latent exogenous variables were first standardized in SPSS to reduce problems associated with multicollinearity (Frazier et al. 2004; Hayes 2017; Marsh et al. 2012). Then, three interaction terms were computed: a) *logonaturalness* × *logocolor*, to test the moderating effect of color on the link between logo naturalness and perceived logo masculinity (H3.1) and femininity (H3.2); b) *logo masculinity* × *consumer masculinity*, to test the moderating effect of consumer masculinity on the impact of perceived logo masculinity on the affect toward logo (H5.1); c) and *logo femininity* × *consumer femininity*, to test the effect of consumer femininity on the impact of perceived logo femininity on the affect toward logo (H5.2). Since the moderators—*consumer masculinity* and *consumer femininity*—are latent variables, the creation of interaction terms followed an unconstrained product indicators approach, using matching pairs, as recommended by Marsh et al. (2012).

## Results

### Measurement model

The results of EFA confirmed the existence of three different latent factors explaining 72% of variance of the data relating to consumers' responses toward logos. Subsequent CFA results corroborate the results of EFA but suggest that some changes to the original model might improve measurement quality as some fit indices were out of the acceptable range. The observation of both EFA loadings and CFA standardized estimates led to the elimination of two items: “aggressive,” from the MBP scale and “fragile,” from the FBP scale. Besides being the items with the lowest loadings in each of the scales, they were already problematic in previous studies conducted in the French culture (Lieven and Hildebrand 2016; Machado et al. 2019). The final measurement model (Table 3) presented a reasonable fit ( $\chi^2/101 = 2.755$ , Tucker–Lewis index [TLI] = 0.944, confirmatory fit index [CFI] = 0.955, relative fit index [RFI] = 0.915, incremental fit index [IFI] = 0.955, normed fit index [NFI] = 0.931,

**Table 3** Construct measurements—psychometric properties assessment

Scales	Mean	SD	EFA loadings	CFA stand. loadings	Cronbach alpha ( $\alpha$ ) Composite reliability (CR) Average variance extracted (AVE)
<b>MBP (adapted from Grohmann 2009)</b>					
Adventurous	3.83	1.77	0.81	0.78	$\alpha = 0.86$
Brave	3.69	1.72	0.87	0.79	CR = 0.80
Daring	3.22	1.62	0.75	0.78	AVE = 0.56
Dominant	3.58	1.66	0.80	0.77	
Sturdy	3.55	1.70	0.61	0.60	
<b>FBP (adapted from Grohmann 2009)</b>					
Expresses tender feelings	3.49	1.79	0.87	0.90	$\alpha = 0.92$
Graceful	3.83	1.71	0.71	0.64	CR = 0.92
Sensitive	3.59	1.72	0.84	0.81	AVE = 0.70
Sweet	3.49	1.72	0.84	0.88	
Tender	3.60	1.73	0.91	0.92	
<b>Affect (adapted from Aggarwal 2004; Kim et al. 1996; Henderson and Cote 1998; Grossman and Till 1998; Samu et al. 1999; Chaudhuri and Holbrook 2001; Grohmann 2009; Walsh et al. 2010)</b>					
I consider this brand logo to be pleasant.	4.36	1.53	0.74	0.81	
I consider this brand logo to be interesting.	4.13	1.55	0.83	0.89	$\alpha = 0.96$
I consider this brand logo to be distinctive.	3.96	1.59	0.82	0.85	CR = 0.96
I like this brand logo.	4.10	1.61	0.88	0.93	AVE = 0.78
I consider this brand logo to be good.	4.10	1.57	0.82	0.95	
I consider this brand logo to be of high quality	3.68	1.53	0.86	0.88	

Measurement model fit:

$\chi^2/101 = 2.755$ , TLI = 0.944, CFI = 0.955, RFI = 0.915, IFI = 0.955, NFI = 0.931, GFI = 0.896, RMSEA = 0.086, SRMR = 0.078



goodness-of-fit index [GFI] = 0.896, root mean square error of approximation [RMSEA] = 0.086, standardized root mean square residual [SRMSR] = 0.078), considering existing recommendations (Iacobucci 2010). Finally, we examined convergent and discriminant validity. Convergent validity is supported by the nonexistence of standardized factor loadings lower than 0.5 and by the fact that most of them lie above the 0.7 threshold, as is desirable. Moreover, the values of construct reliability (CR) are all above the recommended threshold of 0.7 and all the average variance extracted (AVE) values lie above the recommended threshold of 0.5 (Hair et al. 2014).

Discriminant validity was tested by comparing the AVE (Table 3) values for any two constructs with the square of the correlation estimate between the two constructs ( $r_{MBP\_FBP}^2 = 0.00$ ,  $p > 0.10$ ;  $r_{MBP\_Affect}^2 = 0.29$ ,  $p < 0.01$ ;  $r_{FBP\_Affect}^2 = 0.19$ ,  $p < 0.01$ ). The analysis shows that all AVE estimates are greater than the squared correlation estimates, hence supporting the presence of discriminant validity (Hair et al. 2014).

### Effects of logo naturalness and color on gender perceptions

We investigated the main effects as well as the interaction effects of logo naturalness and color on masculinity and femininity perceptions about the logo through MANOVA. The results of this analysis point to significant effects of both naturalness (Wilk's  $\Lambda = 0.787$ ,  $F(2235) = 31.881$ ,  $p < 0.01$ , partial  $\eta^2 = 0.213$ ) and color (Wilk's  $\Lambda = 0.952$ ,  $F(2235) = 5.945$ ,  $p < 0.01$ , partial  $\eta^2 = 0.048$ ) on gender

perceptions, with a clearly larger effect of naturalness. The interaction effect naturalness  $\times$  color (Wilk's  $\Lambda = 0.992$ ,  $F(2235) = 1.006$ ,  $p > 0.10$ , partial  $\eta^2 = 0.008$ ) was not supported by the results of MANOVA. For a deeper understanding of MANOVA results, descriptive statistics and separate ANOVAs were conducted for each dependent variable. In regards to logo masculinity, significant differences were found between cultural and organic logos ( $F(1236) = 4.162$ ,  $p < 0.05$ , partial  $\eta^2 = 0.017$ ) and between blue and pink logos ( $F(1236) = 4.162$ ,  $p < 0.10$ , partial  $\eta^2 = 0.012$ ), supporting both H1.1—cultural logos ( $M = 2.62$ ;  $SD = 0.97$ ) evoke higher perceptions of masculinity than organic logos ( $M = 2.40$ ;  $SD = 0.91$ ) and H2.1—blue logos ( $M = 2.59$ ;  $SD = 1.01$ ) evoke higher perceptions of masculinity than pink logos ( $M = 2.41$ ;  $SD = 0.86$ ). Concerning logo femininity, significant differences were found between cultural and organic logos ( $F(1236) = 56.512$ ,  $p < 0.01$ , partial  $\eta^2 = 0.193$ ) and between blue and pink logos ( $F(1236) = 8.218$ ,  $p < 0.01$ , partial  $\eta^2 = 0.034$ ), giving support to H1.2—organic logos ( $M = 4.18$ ;  $SD = 1.52$ ) generate higher perceptions of femininity than cultural logos ( $M = 2.89$ ;  $SD = 1.28$ )—and to H2.2—pink logos ( $M = 3.74$ ;  $SD = 1.63$ ) generate higher perceptions of logo femininity than blue logos ( $M = 3.36$ ;  $SD = 1.45$ ).

Although descriptive data, depicted graphically in Fig. 2, might suggest the existence of interaction effects (given the non-parallel lines), we could not find statistical evidence for H3.1 and H3.2, i.e., we are neither able to state that the combination of cultural logo designs with dark blue logo colors reinforces masculinity perceptions ( $F(1236) = 0.306$ ,  $p > 0.10$ ) nor that organic designs combined with light pink

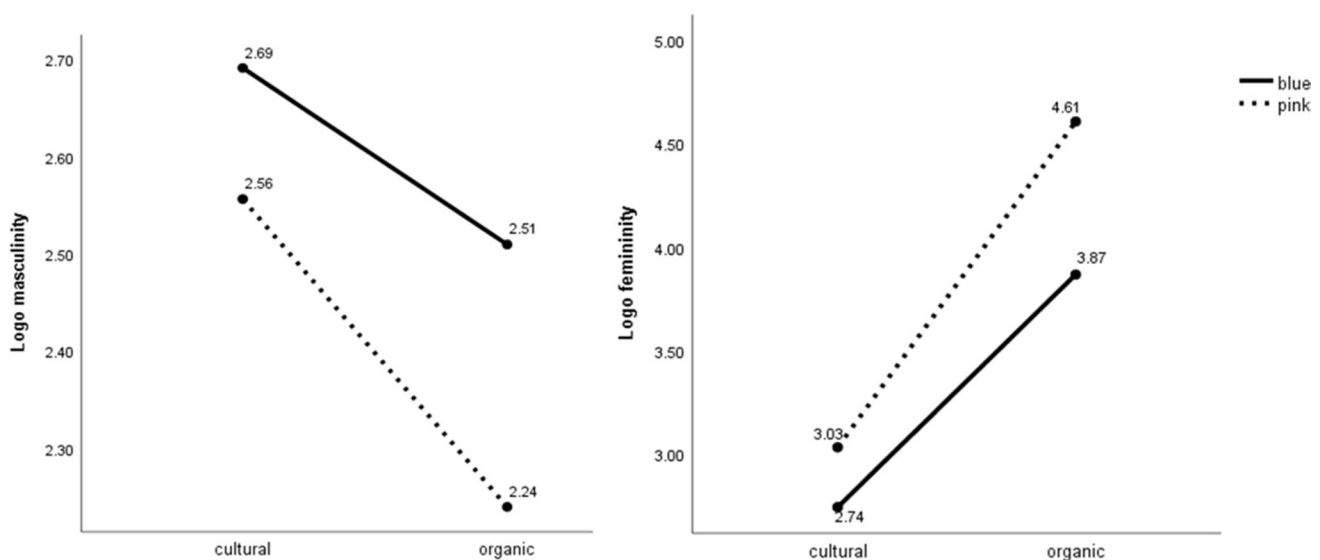


Fig. 2 Effects of logo naturalness (cultural vs. organic) on perceived logo masculinity and perceived logo femininity by color (blue vs. pink)



logo colors enhance femininity perceptions ( $F(1236) = 2.116, p > 0.10$ ).

### Overall structural model

The results of testing the overall structural model (Table 4) indicate that the proposed relationships provide an appropriate fit to the data ( $\chi^2/669 = 3.109, TLI = 0.912, CFI = 0.920, RFI = 0.875, IFI = 0.921, NFI = 0.888, GFI = 0.900, RMSEA = 0.047, SRMR = 0.062$ ). Findings corroborate all the MANOVA results, showing that cultural logo designs generate higher levels of masculinity perceptions when compared to organic logos ( $\beta = -0.160; p < 0.01$ ), supporting H1.1, and organic logo designs evoke higher levels of feminine perceptions than cultural logos ( $\beta = 0.406; p < 0.01$ ), supporting H1.2. Simultaneously, in relation to logo color, and supporting H2.1, dark blue logos generate higher perceived masculinity ( $\beta = -0.120; p < 0.01$ ), and light pink logos leads to higher femininity perceptions ( $\beta = 0.209; p < 0.01$ ), supporting H2.2. As with MANOVA, we could not find statistical support to H3.1 and H3.2, i.e., There is no evidence to state that the combination of cultural logo designs with dark blue logo colors reinforces masculinity perceptions ( $\beta = -0.012; p > 0.10$ ). The same applies to the hypothesis stating that organic designs combined with light pink logo colors significantly enhance femininity perceptions ( $\beta = 0.023; p > 0.10$ ).

Regarding the relationships that were not tested through MANOVA, the positive effects of both perceived logo masculinity ( $\beta = 0.456; p < 0.01$ ) and perceived logo

femininity ( $\beta = 0.508; p < 0.01$ ) on affect toward logo (H4.1 and H4.2, respectively) were supported. However, it was not possible to find support for the moderation effect of consumer masculinity (H5.1) and consumer femininity (H5.2) on those relationships. There is no empirical evidence that congruence between logo perceived gender and individual gender might amplify the positive effect of perceived logo masculinity ( $\beta = 0.006; p > 0.10$ ) and perceived logo femininity ( $\beta = 0.025; p > 0.10$ ) on the consumer affective response toward a logo. The plots (Fig. 3) of simple slopes regarding conditional effects (Frazier et al. 2004; Hayes 2017) of perceived logo masculinity on affect toward logo at different levels of consumer masculinity ( $\theta_{lowM} = 0.626, p < 0.01; \theta_{averageM} = 0.663, p < 0.01; \theta_{highM} = 0.700, p < 0.01$ ) and of perceived logo femininity on affect toward logo, at different levels of consumer femininity ( $\theta_{lowF} = 0.532, p < 0.01; \theta_{averageF} = 0.550, p < 0.01; \theta_{highF} = 0.567, p < 0.01$ ), offer enlightenment to these findings (Fig. 3).

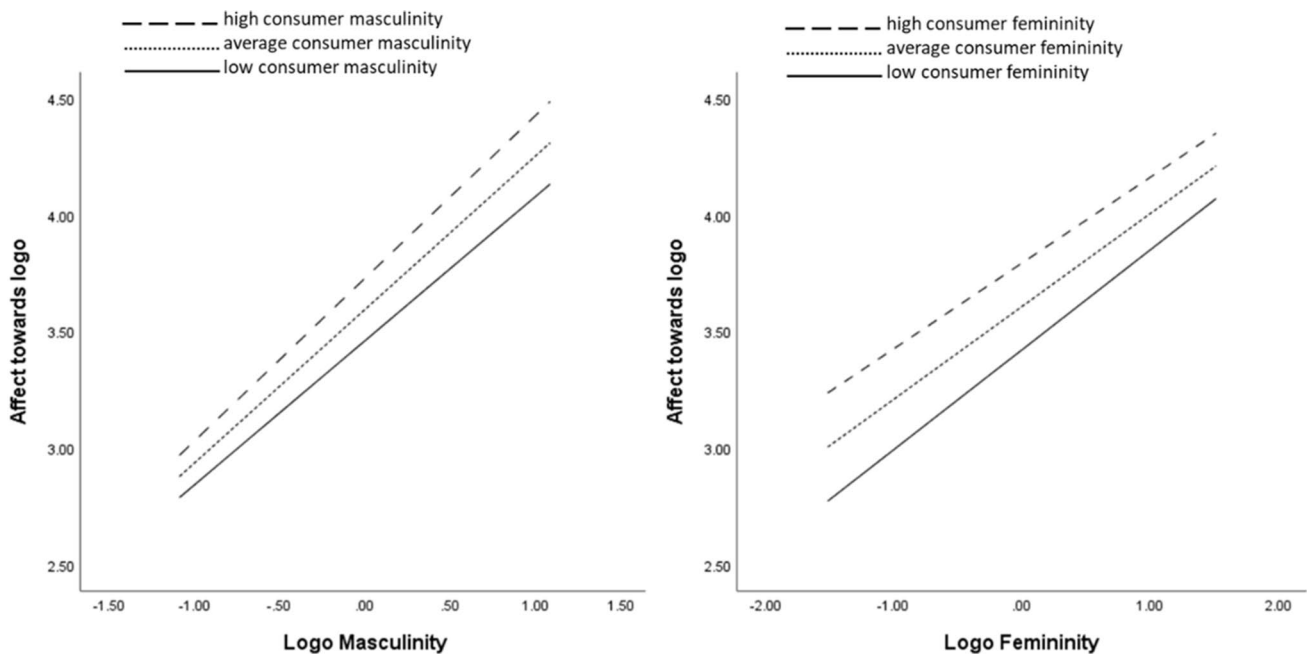
Finally, to investigate whether perceived logo masculinity and femininity significantly mediate the impact of logo naturalness and color on the affective response toward the logo, we applied a bootstrapping procedure using 1500 subsamples (Preacher and Hayes 2008). As we show in Table 5, while all four indirect effects are significant, the direct effects are both non-significant, supporting the existence of full mediation in all the cases. These results confirm the relevance of both logo masculinity and femininity as mediators of the relationship between logo design elements and the affective response toward it.

**Table 4** Results of structural model testing

Paths	Standardized estimates	Conclusion
Naturalness (organic) → Logo masculinity	-0.160**	H1.1 supported
Naturalness (organic) → Logo femininity	0.406**	H1.2 supported
Color (pink) → Logo masculinity	-0.120**	H2.1 supported
Color (pink) → Logo femininity	0.209**	H2.2 supported
Naturalness (organic) × Color (pink) → Logo masculinity	-0.012	H3.1 not supported
Naturalness (organic) × Color (pink) → Logo femininity	0.023	H3.2 not supported
Logo masculinity → Affect	0.508**	H4.1 supported
Logo femininity → Affect	0.456**	H4.2 supported
Consumer masculinity → Affect	0.075*	
Consumer femininity → Affect	0.077*	
Logo masculinity × consumer masculinity → Affect	0.006	H5.1 not supported
Logo femininity × Consumer femininity → Affect	0.025	H5.2 not supported
Structural model fit: $\chi^2/669 = 3.109, TLI = 0.912, CFI = 0.920, RFI = 0.875, IFI = 0.921, NFI = 0.888, GFI = 0.900,$ $RMSEA = 0.047, SRMR = 0.062$		

\*\* $p \leq 0.01$  \* $p \leq 0.05$





**Fig. 3** Slopes of the impacts of perceived logo masculinity on affect toward logo, considering different consumer masculinity levels (low, average and high) and of perceived logo femininity on affect toward logo, considering different levels of consumer femininity (low, average, high)

**Table 5** Mediation analysis, using bootstrapping with bias corrected confidence intervals

Path	Standardized effect	95% confidence interval	
		Lower bound	Upper bound
<b>Direct effects</b>			
Naturalness (organic) → Affect	-0.002	-0.051	0.049
Color (pink) → Affect	-0.046	-0.091	0.003
<b>Indirect effects</b>			
Naturalness(organic) → Logo masculinity → Affect	-0.080**	-0.107	-0.035
Naturalness(organic) → Logo femininity → Affect	0.183**	0.150	0.216
Color (pink) → Logo masculinity → Affect	-0.060**	-0.093	-0.049
Color (pink) → Logo femininity → Affect	0.094**	0.071	0.123

\*\* $p \leq 0.01$  \* $p \leq 0.05$

## Discussion and implications

This research investigated the impact of logo naturalness and logo color on brand gender perceptions and, thus, on affective reactions to the logo. In the following, we discuss the main theoretical and managerial implications of our study.

### Theoretical implications

The present study offers important contributions to the current body of literature on brand gender and brand logo design, but also on EP. First, this is the first empirical

study testing the effect of the naturalness of logo designs—cultural versus organic designs—on brand gender perceptions and, thereby, on affective reactions to the logo, which leads to important insights. The focus on natural logo designs is particularly relevant, since naturalness is a critical universal design dimension which can lead to key consumer–brand-related responses (Henderson et al. 2003; Torres et al. 2019). A central finding of this research is that within natural designs, cultural logo designs evoke masculinity perceptions and organic logo designs induce femininity perceptions. This finding extends prior work on EP and on sex differences in design preference (e.g., Griskevicius and Kenrick 2013; Iijima et al. 2001; Moss et al. 2007; Xue and Yen 2007). This literature suggests that assumptions regarding masculinity and femininity are





based on physical cues and deeply rooted in evolutionary pressures that have shaped aesthetic preferences in design. This research therefore contributes to extending the predictions of EP, by showing that logo designs embodying elements from the sensitive world (e.g., plants, faces, animals) convey femininity, whereas logo designs representing vehicles, buildings or other cultural objects evoke masculinity. Moreover, the current research advances research on logo strategy (Henderson and Cote 1998; Machado et al. 2015; van der Lans et al. 2009) by establishing a link between natural logo designs and consumers' brand gender perceptions.

Second, this study extends prior work examining the relationship between logo color and Aaker's (1997) brand personality dimensions (Labrecque and Milne 2012) or product color and brand gender perceptions (Lieven et al. 2015; van Tilburg et al. 2015a, b) and contributes to the scarce marketing research on color and consumer behavior. This study provides further evidence for the influence of color on brand gender perceptions, such that dark blue logos convey masculinity perceptions and light pink logos evoke femininity perceptions, highlighting the role of color in the brand's visual identity. However, the findings of this study also indicate that, at least in regards to logos, the importance of naturalness (cultural vs. organic) seems to be higher to explain consumer perceptions of both masculinity and femininity than that of color, despite the choice of the gender-typed colors pink and blue for this specific research. This result highlights the relevance of the present study as the first to explore the effect of logo naturalness on gender perceptions about brands. Moreover, despite the extant literature indicating that the combination of gender-typed cues might contribute to the enhancement of gender perceptions (Labrecque and Milne 2012; van Tilburg et al. 2015a, b), we were not able to find enough statistical support for that. While this was an unexpected result, it is worth noting that Lieven et al. (2015) obtained similar results when testing the impact of brand type font (bold/angular vs. slender/round) and product color (dark vs. light) on gender perceptions. The authors found support for the effects of both type font and product color, but not of their interaction, on brand gender perceptions.

Third, the results underline the advantages of a clear brand gender positioning (Grohmann 2009; Lieven et al. 2014; Machado et al. 2019), showing that gender has a significant impact on consumer responses to the brand logo. In this respect, the results show that logos with a clear brand gender positioning (i.e., perceived as highly masculine or highly feminine) trigger more favorable affective responses. However, we were not able to demonstrate that congruence between consumer's and brand logo's gender personality significantly impacts affect toward the logo. These results were, somehow, unexpected as consumers are likely to prefer

brands with personalities congruent to their own self-concept (Aaker 1997; Avery 2012; Belk 1988; Fournier 1998; Grohmann 2009). A possible reason for this result is the use of an outcome variable—*affect* toward *the logo*—which is not self-related, as would be other possible response variables, such as brand preference or use/purchase intention. In fact, prior studies indicate that individuals operationalize their desire to communicate who they are (or who they want to be) by using signs embedded in everyday life and strengthen their self-concept by being associated with signs whose images tend to be congruent with the most relevant aspects of their own (Belk 1988; Bettels and Wiedmann 2019; Schembri et al. 2010; Underwood 2003). Nevertheless, in this study, consumers were not asked about their willingness to use the logo or a brand/product with that logo. They were rather asked to, generally, judge the interest, quality and uniqueness of the logo, independently of their intention to use it themselves.

### Managerial implications

Since companies invest significant amounts of time and money in selecting the right logo for their brands (Colman et al. 1995; Henderson and Cote 1998), it is essential for them to understand the principles of logo design. This could significantly simplify the logo selection process and help them create or reinforce their desired positioning in the market.

This study provides brand managers and designers some enlightenment about the relevance of a critical universal dimension of logo design, naturalness (in combination with color), for the development a gendered logo. Moreover, this study highlights that a clear logo gender positioning is a key driver of consumer affective responses to the logo and should lead to more favorable affective responses to the brand the logo represents. Therefore, brands should design their logos using the appropriate gender cues to achieve their desired brand gender positioning, and this study offers managers and designers useful insights in this regard. The findings show that the use of cultural logo designs enhances masculinity perceptions and that the use of organic logo designs effectively shape femininity perceptions. Additionally, the findings suggest that dark blue and light pink logo colors reinforce masculinity perceptions and femininity perceptions, respectively. Hence, brand gender positioning should be considered in the light of the congruence between the different elements that compose the logo. Knowledge about the impact of logo design and color on brand gender perceptions seems to be particularly useful for marketing managers, since consumers tend to strongly attach designs and colors to brands. It is important to mention that these insights on logo design facilitate not only initial brand gender positioning, but also repositioning of established brands



that want to appeal to new consumer segments in respect to gender.

### Limitations and suggestions for further research

Like all research studies, the present study has limitations. The first is the sampling method, as a convenience, non-random sampling technique was used, which raises some issues of generalizability. It is, however, worth noting that despite the general notion that quantitative research requires representative samples, the problem of non-representativeness is more significant in descriptive research than in explanatory research, as is this case (Babbie 2008; Highhouse and Gillespie 2012). Moreover, this research lacks cultural diversity as it was solely conducted in one country. We cannot ignore the different meanings of visual elements, as colors (e.g., Madden et al. 2000), symbols (e.g., Hoye and Ruth 2006) and images (e.g., Callow and Schiffman 2002) in different cultures. Simultaneously, the meanings attached to femininity and masculinity are culturally constructed (Segal 2003), but these cross-cultural differences are still understudied. Hence, further studies should investigate potential cultural differences on the relationships between logos' visual elements, gender perceptions and affective responses toward logos. For instance, it would be interesting to compare countries displaying different degrees of masculinity/femininity according to Hofstede's (1980, 2001) cultural index. Besides studying cross-country variations, exploring age and generational differences may also add new insights into the subject addressed in this study, as different generations live different cultural experiences and, consequently, assign different meanings to masculinity and femininity. Additionally, our focus was on natural logo designs. Given that several companies incorporate abstract symbols in their visual identity, further research should also explore the ability of abstract designs to evoke brand gender perceptions. Furthermore, we focused our analysis on one specific consumer outcome that could result from the inclusion of gendered design elements in logo design. Affect toward the logo plays a critical role, since it can influence affective and behavioral responses to the brand the logo represents (Foroudi et al. 2014; Henderson et al. 2003; Rahinel and Nelson 2016); however, future studies should analyze the impact of the gendered brand logo elements on other important consumer outcomes, such as brand preference and purchase intention.

In addition, in this study we did not study any product category in particular, since the purpose was to analyze the influence of natural logo designs and colors on logo gender perceptions in general. Future research could consider specific product categories, since product categories have strong associations with the gender dimensions of masculinity and femininity (Azar 2013; Grohmann 2009), and this could provide a more realistic appraisal of the influence of a logo's

gendered cues on consumer responses. Besides, research states that brand–product category congruence—that is, a feminine or masculine brand inserted into a feminine or masculine product category—might generate more favorable consumer brand perceptions, which could encourage positive responses to the brand (Lieven et al. 2014). Therefore, further research could consider the effects of product category congruence on affective reactions to logos. Furthermore, considering the findings of color theory and the EP literature, we decided to focus on the ability of color—light pink and dark blue—to evoke masculine and feminine brand gender perceptions. Although we reached relevant findings, it would be important to examine the combined effects of different dimensions of color—such as color hue, color value and color saturation—on perceived logo masculinity and perceived logo femininity. Finally, in this study, the impacts of logo masculinity and femininity on consumer affective responses are separately addressed. In future studies, the interaction between these two variables should also be considered. Hence, the impact of brand logo gender neutrality (with low masculinity and low femininity levels) and brand logo androgyny (both highly masculine and highly feminine) on affective responses toward logos should be explored.

### Compliance with ethical standards

**Conflict of interest** On behalf of all authors, the corresponding author states that there is no conflict of interest.

### References

- Aaker, J.L. 1997. Dimensions of brand personality. *Journal of Marketing Research* 34(3): 347–356. <https://doi.org/10.1177/002224379703400304>.
- Abril, P.S., A.M. Olazábal, and A. Cava. 2009. Marketing and the law. *Journal of the Academy of Marketing Science* 37(3): 375–380. <https://doi.org/10.1007/s11747-009-0159-8>.
- Aggarwal, P. 2004. The effects of brand relationship norms on consumer attitudes and behavior. *Journal of Consumer Research* 31(1): 87–101. <https://doi.org/10.1086/383426>.
- Amsteus, M., S. Al-Shaabani, E. Wallin, and S. Sjöqvist. 2015. Colors in marketing: A study of color associations and context (in) dependence. *International Journal of Business and Social Science* 6(3): 32–45.
- Avery, J. 2012. Defending the markers of masculinity: Consumer resistance to brand gender-bending. *International Journal of Research in Marketing* 29(4): 322–336. <https://doi.org/10.1016/j.ijresmar.2012.04.005>.
- Azar, S.L. 2013. Exploring brand masculine patterns: Moving beyond monolithic masculinity. *Journal of Product & Brand Management* 22(7): 502–512. <https://doi.org/10.1108/jpbm-09-2013-0386>.
- Azar, S.L., I. Aimé, and I. Ulrich. 2018. Brand gender-bending. *European Journal of Marketing* 52(7/8): 1598–1624. <https://doi.org/10.1108/ejm-04-2017-0278>.



- Babbie, E. 2008. *The Basics of Social Research*. Boston, MA: Cengage Learning.
- Batra, R., D. Lehmann, and D. Singh. 1993. The brand personality component of brand goodwill: Some antecedents and consequents. In *Brand Equity & Advertising: Advertising's Role in Building Strong Brands*, ed. D.A. Aaker and A.L. Biel, 83–96. New Jersey: Lawrence Erlbaum Associates.
- Belk, R.W. 1988. Possessions and the extended self. *Journal of Consumer Research* 15(2): 139–168. <https://doi.org/10.1086/209154>.
- Bem, S. 1985. Androgyny and gender schema theory: A conceptual and empirical integration. In *NE Symposium on Motivation: Psychology and Gender*, 32, ed. T. Sonderegger, 179–226. Lincoln and London: University of Nebraska Press.
- Bettels, J., and K.-P. Wiedmann. 2019. Brand logo symmetry and product design: The spillover effects on consumer inferences. *Journal of Business Research* 97: 1–9. <https://doi.org/10.1016/j.jbusres.2018.12.039>.
- Bloch, P.H. 1995. Seeking the ideal form: Product design and consumer response. *Journal of Marketing* 59(3): 16–29. <https://doi.org/10.1177/002224299505900302>.
- Bottomley, P.A., and J.R. Doyle. 2006. The interactive effects of colors and products on perceptions of brand logo appropriateness. *Marketing Theory* 6(1): 63–83. <https://doi.org/10.1177/1470593106061263>.
- Bouten, L.M., D. Snelders, and E.J. Hultink. 2011. The impact of fit measures on the consumer evaluation of new co-branded products. *Journal of Product Innovation Management* 28(4): 455–469. <https://doi.org/10.1111/j.1540-5885.2011.00819.x>.
- Buss, D.M. 1994. *The Evolution of Desire: Strategies of Human Mating*. New York, NY: Basic Books.
- Buss, D.M., and D.P. Schmitt. 1993. Sexual strategies theory: An evolutionary perspective on human mating. *Psychological Review* 100(2): 204–232.
- Burnett, J.J., and P.M. Dune. 1986. An appraisal of the use of student subjects in marketing research. *Journal of Business Research* 14(4): 329–343. [https://doi.org/10.1016/0148-2963\(86\)90024-X](https://doi.org/10.1016/0148-2963(86)90024-X).
- Butler, J. 1990. *Gender Trouble: Feminism and the Subversion of Identity*. New York, NY: Routledge.
- Byrne, B.M. 2010. *Structural Equation Modeling with AMOS*. New York, NY: Routledge Taylor & Francis.
- Callow, Michael A., and Leon G. Schiffman. 2002. Over-reading into the visual print ad: The development of weak implicatures among consumers from the United States, Spain, and the Philippines. In *NA - Advances in Consumer Research* 29, ed. S.M. Broniarczyk and K. Nakamoto, 49. Valdosta, GA: Association for Consumer Research.
- Carr, C.L. 2005. Tomboyism or lesbianism? Beyond sex/gender/sexual conflation. *Sex Roles* 53(1–2): 119–131.
- Carrigan, T., B. Connell, and J. Lee. 1985. Toward a new sociology of masculinity. *Theory and Society* 5: 551–604. <https://doi.org/10.1007/BF00160017>.
- Chaudhuri, A., and M.B. Holbrook. 2001. The chain of effects from brand trust and brand affect to brand performance: The role of brand loyalty. *Journal of Marketing* 65(2): 81–93. <https://doi.org/10.1509/jmkg.65.2.81.18255>.
- Chen, Y.A., and L. Bei. 2019. Free the brand: How a logo frame influences the potentiality of brand extensions. *Journal of Brand Management* 26: 349–364. <https://doi.org/10.1057/s41262-018-0142-0>.
- Cohen, P.N. 2013. Children's gender and parents' color preferences. *Archives of Sexual Behavior* 42(3): 393–397. <https://doi.org/10.1007/s10508-012-9951-5>.
- Colman, A.M., J.M. Wober, and C.E. Norris. 1995. Sight bites: A study of viewers' impressions of corporate logos in the communication industry. *Market Research Society Journal* 37(4): 1–9. <https://doi.org/10.1177/147078539503700405>.
- Cunningham, S.J., and C.N. Macrae. 2011. The colour of gender stereotyping. *British Journal of Psychology* 102(3): 598–614. <https://doi.org/10.1111/j.2044-8295.2011.02023.x>.
- Dion, K., E. Berscheid, and E. Walster. 1972. What is beautiful is good. *Journal of Personality and Social Psychology* 24(3): 285–290. <https://doi.org/10.1037/h0033731>.
- Estabrook, R., and M. Neale. 2013. A comparison of factor score estimation methods in the presence of missing data: Reliability and an application to nicotine dependence. *Multivariate Behavioral Research* 48(1): 1–27. <https://doi.org/10.1080/00273171.2012.730072>.
- Egleston, B.L., S.M. Miller, and N.J. Meropol. 2011. The impact of misclassification due to survey response fatigue on estimation and identifiability of treatment effects. *Statistics in Medicine* 30(30): 3560–3572. <https://doi.org/10.1002/sim.4377>.
- Elliot, A.J., and D. Niesta. 2008. Romantic red: Red enhances men's attraction to women. *Journal of Personality and Social Psychology* 95(5): 1150–1164. <https://doi.org/10.1037/0022-3514.95.5.1150>.
- Ellis, L., and C. Ficek. 2001. Color preferences according to gender and sexual orientation. *Personality and Individual Differences* 31(8): 1375–1379. [https://doi.org/10.1016/s0191-8869\(00\)00231-2](https://doi.org/10.1016/s0191-8869(00)00231-2).
- Firat, A.F. 1994. Gender and consumption: Transcending the feminine? In *Gender Issues and Consumer Behavior*, ed. J.A. Costa. Thousand Oaks, CA: Sage.
- Foroudi, P., T.C. Melewar, and S. Gupta. 2014. Linking corporate logo, corporate image, and reputation: An examination of consumer perceptions in the financial setting. *Journal of Business Research* 67(11): 2269–2281. <https://doi.org/10.1016/j.jbusres.2014.06.015>.
- Fournier, S. 1998. Consumers and their brands: Developing relationship theory in consumer research. *Journal of Consumer Research* 24(4): 343–353. <https://doi.org/10.1086/209515>.
- Frazier, P.A., A.P. Tix, and K.E. Barron. 2004. Testing moderator and mediator effects in counseling psychology research. *Journal of Counseling Psychology* 51(1): 115–134. <https://doi.org/10.1037/0022-0167.51.1.115>.
- Freeman, J., and K. Knowles. 2012. Sex vs gender: Cultural competence in health education research. *American Journal of Health Studies* 27(2): 122–125.
- Fugate, D.L., and J. Phillips. 2010. Product gender perceptions and antecedents of product gender congruence. *Journal of Consumer Marketing* 27(3): 251–261. <https://doi.org/10.1108/0736376101038329>.
- Gherardi, S. 1995. *Gender, Symbolism and Organizational Cultures*. Thousand Oaks, CA: Sage.
- Grossman, R.P., and B.D. Till. 1998. The persistence of classically conditioned brand attitudes. *Journal of Advertising* 27(1): 23–31.
- Gorn, G.J., A. Chattopadhyay, T. Yi, and D.W. Dahl. 1997. Effects of color as an executional cue in advertising: They're in the shade. *Management Science* 43(10): 1387–1400. <https://doi.org/10.1287/mnsc.43.10.1387>.
- Grammmer, K., B. Fink, A.P. Miller, and R. Thornhill. 2003. Darwinian aesthetics: Sexual selection and the biology of beauty. *Biological Reviews* 78(3): 385–407. <https://doi.org/10.1017/s1464793102006085>.
- Greimas, A.J., and J. Courtés. 1993. *Sémiotique: Dictionnaire Raisonné de la Théorie de Langage*. Paris: Hachette Supérieur.
- Griskevicius, V., and D.T. Kenrick. 2013. Fundamental motives: How evolutionary needs influence consumer behavior. *Journal of Consumer Psychology* 23(3): 372–386. <https://doi.org/10.1016/j.jcps.2013.03.003>.
- Grohmann, B. 2009. Gender dimensions of brand personality. *Journal of Marketing Research* 46(1): 105–119. <https://doi.org/10.1509/jmkr.46.1.105>.





- Grohmann, B. 2016. Communicating brand gender through type fonts. *Journal of Marketing Communications* 22(4): 403–418. <https://doi.org/10.1080/13527266.2014.918050>.
- Grohmann, B., J.L. Giese, and I.D. Parkman. 2012. Using type font characteristics to communicate brand personality of new brands. *Journal of Brand Management* 20(5): 389–403. <https://doi.org/10.1057/bm.2012.23>.
- Guevremont, A., and B. Grohmann. 2015. Consonants in brand names influence brand gender perceptions. *European Journal of Marketing* 49(1/2): 101–122. <https://doi.org/10.1108/ejm-02-2013-0106>.
- Hair, J.F., W.C. Black, B.J. Babin, and R.E. Anderson. 2014. *Multivariate Data Analysis*, 7th ed. Harlow: Pearson Education.
- Hayes, A.F. 2017. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. New York, NY: Guilford Publications.
- Henderson, P.W., and J.A. Cote. 1998. Guidelines for selecting or modifying logos. *Journal of Marketing* 62(2): 14–30. <https://doi.org/10.2307/1252158>.
- Henderson, P.W., J.L. Giese, and J.A. Cote. 2004. Impression management using typeface design. *Journal of Marketing* 68(4): 60–72.
- Henderson, P.W., J.A. Cote, S.M. Leong, and B. Schmitt. 2003. Building strong brands in Asia: Selecting the visual components of image to maximize brand strength. *International Journal of Research in Marketing* 20(4): 297–313. <https://doi.org/10.1016/j.ijresmar.2003.03.001>.
- Hess, A.C., and V. Melnyk. 2016. Pink or blue? The impact of gender cues on brand perceptions. *European Journal of Marketing* 50(9/10): 1550–1574. <https://doi.org/10.1108/ejm-11-2014-0723>.
- Highhouse, S., and J.Z. Gillespie. 2012. Do samples really matter that much? In *Statistical and Methodological Myths and Urban Legends*, ed. C.E. Lance and R.J. Vandenberg, 247–265. New York, NY: Routledge Taylor & Francis Group.
- Hoye, L.F., and K. Ruth. 2006. The migration and reconstruction of a symbol: An exploration in the dynamics of context and meaning across cultures. Linguistic LAUD Agency, Essen: Universitat Duisberg-Essen. Series A, Paper No. 662: 1–29.
- Hofstede, G. 1980. *Culture's Consequences: International Differences in Work-Related Values*. London: SAGE Publications.
- Hofstede, G. 2001. *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*, 2nd ed. London: SAGE Publications.
- Hoyer, W.D., and S.P. Brown. 1990. Effects of brand awareness on choice for a common, repeat-purchase product. *Journal of Consumer Research* 17(2): 141–148. <https://doi.org/10.1086/208544>.
- Hynes, N. 2009. Colour and meaning in corporate logos: An empirical study. *Journal of Brand Management* 16(8): 545–555. <https://doi.org/10.1057/bm.2008.5>.
- Iacobucci, D. 2010. Structural equations modelling: Fit indices, sample size, and advanced topics. *Journal of Consumer Psychology* 20(1): 90–98. <https://doi.org/10.1016/j.jcps.2009.09.003>.
- Iijima, M., O. Arisaka, F. Minamoto, and Y. Arai. 2001. Sex differences in children's free drawings: A study on girls with congenital adrenal hyperplasia. *Hormones and Behavior* 40(2): 99–104. <https://doi.org/10.1006/hbeh.2001.1670>.
- Jablonski, N.G. 2004. The evolution of human skin and skin color. *Annual Review of Anthropology* 33(1): 585–623. <https://doi.org/10.1146/annurev.anthro.33.070203.143955>.
- Jablonski, N.G., and G. Chaplin. 2000. The evolution of human skin coloration. *Journal of Human Evolution* 39(1): 57–106. <https://doi.org/10.1006/jhev.2000.0403>.
- Janiszewski, C., and T. Meyvis. 2001. Effects of brand logo complexity, repetition, and spacing on processing fluency and judgment. *Journal of Consumer Research* 28(1): 18–32. <https://doi.org/10.1086/321945>.
- Jiang, Y., G.J. Gorn, M. Galli, and A. Chattopadhyay. 2016. Does your company have the right logo? How and why circular- and angular-logo shapes influence brand attribute judgments. *Journal of Consumer Research* 42(5): 709–726. <https://doi.org/10.1093/jcr/ucv049>.
- Jung, K., and W. Lee. 2006. Cross-gender brand extensions: Effects of gender of the brand, gender of consumer, and product type on evaluation of cross-gender extensions. *Advances in Consumer Research* 33(1): 67–74.
- Kacen, J.J. 2000. Girrrl power and boyyy nature: The past, present, and paradisaal future of consumer gender identity. *Marketing Intelligence & Planning* 18: 345–355.
- Kim, J., C.T. Allen, and F.R. Kardes. 1996. An investigation of the mediational mechanisms underlying attitudinal conditioning. *Journal of Marketing Research* 33(3): 318–328. <https://doi.org/10.1177/002224379603300306>.
- Labrecque, L.I., and G.R. Milne. 2012. Exciting red and competent blue: The importance of color in marketing. *Journal of the Academy of Marketing Science* 40(5): 711–727. <https://doi.org/10.1007/s11747-010-0245-y>.
- Labrecque, L.I., V.M. Patrick, and G.R. Milne. 2013. The marketers' prismatic palette: A review of color research and future directions. *Psychology & Marketing* 30(2): 187–202. <https://doi.org/10.1002/mar.20597>.
- Lee, J., E. Ko, and C.M. Megehe. 2015. Social benefits of brand logos in presentation of self in cross and same gender influence contexts. *Journal of Business Research* 68(6): 1341–1349. <https://doi.org/10.1016/j.jbusres.2014.12.004>.
- Leong, S.M. 1993. Consumer decision making for common, repeat-purchase products: A dual replication. *Journal of Consumer Psychology* 2(2): 193–208. [https://doi.org/10.1016/s1057-7408\(08\)80024-1](https://doi.org/10.1016/s1057-7408(08)80024-1).
- Levy, S.J. 1959. Symbols for sale. *Harvard Business Review* 37(4): 117–124.
- Lieven, T. 2018. *Brand Gender: Increasing Brand Equity Through Brand Personality*. Cham: Palgrave Macmillan.
- Lieven, T., B. Grohmann, A. Herrmann, J.R. Landwehr, and M. van Tilburg. 2015. The effect of brand design on brand gender perceptions and brand preference. *European Journal of Marketing* 49(1/2): 146–169. <https://doi.org/10.1108/ejm-08-2012-0456>.
- Lieven, T., B. Grohmann, A. Herrmann, J.R. Landwehr, and M. van Tilburg. 2014. The effect of brand gender on brand equity. *Psychology & Marketing* 31(5): 371–385. <https://doi.org/10.1002/mar.20701>.
- Lieven, T., and C. Hildebrand. 2016. The impact of brand gender on brand equity. *International Marketing Review* 33(2): 178–195. <https://doi.org/10.1108/imr-08-2014-0276>.
- Lippa, R.A. 2005. *Gender, Nature, and Nurture*. New York, NY: Psychology Press Taylor & Francis. <https://doi.org/10.4324/9781410612946>.
- Lorber, J. 1994. *Paradoxes of Gender*. New Haven, CT: Yale University Press.
- Machado, J.C., L. Vacas-de-Carvalho, A. Torres, and P. Costa. 2015. Brand logo design: Examining consumer response to naturalness. *Journal of Product & Brand Management* 24(1): 78–87. <https://doi.org/10.1108/jpbm-05-2014-0609>.
- Machado, J.C., L. Vacas-de-Carvalho, S.L. Azar, A.R. André, and B.P. dos Santos. 2019. Brand gender and consumer-based brand equity on Facebook: The mediating role of consumer-brand engagement and brand love. *Journal of Business Research* 96: 376–385. <https://doi.org/10.1016/j.jbusres.2018.07.016>.
- Madden, T.J., K. Hewett, and M.S. Roth. 2000. Managing images in different cultures: A cross-national study of color meanings and preferences. *Journal of International Marketing* 8(4): 90–107. <https://doi.org/10.1509/jimk.8.4.90.19795>.



- Marsh, H.W., Z. Wen, B. Nagengast, and K.-T. Hau. 2012. Structural equation models of latent interaction. In *Handbook of Structural Equation Modelling*, ed. R.H. Hoyle, 436–458. New York, NY: Guilford Publications.
- Martin, B.A.S., and J. Gnoth. 2009. Is the Marlboro man the only alternative? The role of gender identity and self-construal salience in evaluations of male models. *Marketing Letters* 20(4): 353–367. <https://doi.org/10.1007/s11002-009-9069-2>.
- Moss, G.A., R.W. Gunn, and K. Kubacki. 2008. Gender and web design: The implications of the mirroring principle for the services branding model. *Journal of Marketing Communications* 14(1): 37–57. <https://doi.org/10.1080/13527260701717214>.
- Moss, G., C. Hamilton, and N. Neave. 2007. Evolutionary factors in design preferences. *Journal of Brand Management* 14(4): 313–323. <https://doi.org/10.1057/palgrave.bm.2550073>.
- Neale, L., R. Robbie, and B. Martin. 2015. Gender identity and brand incongruence: When in doubt, pursue masculinity. *Journal of Strategic Marketing* 24(5): 347–359. <https://doi.org/10.1080/0965254x.2015.1011203>.
- Nelson, K.E. 1971. Memory development in children: Evidence from non-verbal tasks. *Psychonomic Science* 25(December): 346–348.
- Oakley, A. 1972. *Sex, Gender and Society*. London: Temple Smith.
- Orth, U.R., and K. Malkewitz. 2008. Holistic package design and consumer brand impressions. *Journal of Marketing* 72(3): 135–144.
- Park, C.W., A.B. Eisingerich, G. Pol, and J.W. Park. 2013. The role of brand logos in firm performance. *Journal of Business Research* 66(2): 180–187. <https://doi.org/10.1016/j.jbusres.2012.07.011>.
- Patterson, M., and R. Elliott. 2002. Negotiating masculinities: Advertising and the inversion of the male gaze. *Consumption Markets & Culture* 5: 231–256. <https://doi.org/10.1080/10253860290031631>.
- Peterson, R.A., and D.R. Merunka. 2014. Convenience samples of college students and research reproducibility. *Journal of Business Research* 67(5): 1035–1041. <https://doi.org/10.1016/j.jbusres.2013.08.010>.
- Phillips, B.J., E.F. McQuarrie, and W.G. Griffin. 2014. The Face of the brand: How art directors understand visual brand identity. *Journal of Advertising* 43(4): 318–332. <https://doi.org/10.1080/00913367.2013.867824>.
- Picariello, M.L., D.N. Greenberg, and D.B. Pillemer. 1990. Children's sex-related stereotyping of colors. *Child Development* 61(5): 1453. <https://doi.org/10.2307/1130755>.
- Pomerleau, A., D. Bolduc, G. Malcuit, and L. Cossette. 1990. Pink or blue: Environmental gender stereotypes in the first two years of life. *Sex Roles* 22(5–6): 359–367. <https://doi.org/10.1007/bf00288339>.
- Preacher, K.J., and A.F. Hayes. 2008. Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods* 40(3): 879–891. <https://doi.org/10.3758/BRM.40.3.879>.
- Pryzgoda, J., and J.C. Chrisler. 2000. Definitions of gender and sex: The subtleties of meaning. *Sex Roles* 43(7/8): 553–569.
- Puzakoa, M., H. Kwak, and J. Rocereto. 2009. Pushing the envelope of brand and personality: Antecedents and moderators of anthropomorphized brands. *Advances in Consumer Research* 36: 413–420.
- Rahinel, R., and N.M. Nelson. 2016. When brand logos describe the environment: Design instability and the utility of safety-oriented products. *Journal of Consumer Research* 43(3): 478–496. <https://doi.org/10.1093/jcr/ucw039>.
- Reimann, M., J. Zaichkowsky, C. Neuhaus, T. Bender, and B. Weber. 2010. Aesthetic package design: A behavioral, neural, and psychological investigation. *Journal of Consumer Psychology* 20(4): 431–441. <https://doi.org/10.1016/j.jcps.2010.06.009>.
- Roy, P., K. Khandeparkar, and M. Motiani. 2016. A lovable personality: The effect of brand personality on brand love. *Journal of Brand Management* 23(5): 97–113. <https://doi.org/10.1057/s41262-016-0005-5>.
- Sääksjärvi, M., E. van den Henden, R. Mugge, and N. van Peursem. 2015. How exposure to logos and logo varieties fosters brand prominence and freshness. *Journal of Product & Brand Management* 24(7): 736–744. <https://doi.org/10.1108/JPBM-06-2014-0648>.
- Salgado-Montejo, A., C. Velasco, J. Olier, J. Alvarado, and C. Spence. 2014. Love for logos: Evaluating the congruency between brand symbols and typefaces and their relation to emotional words. *Journal of Brand Management* 21: 635–649. <https://doi.org/10.1057/bm.2014.29>.
- Samu, S., H.S. Krishnan, and R.E. Smith. 1999. Using advertising alliances for new product introduction: Interactions between product complementarity and promotional strategies. *Journal of Marketing* 63(1): 57–74. <https://doi.org/10.1177/002224299906300105>.
- Schembri, S., B. Merrilees, and S. Kristiansen. 2010. Brand consumption and narrative of the self. *Psychology & Marketing* 27(6): 623–637. <https://doi.org/10.1002/mar.20348>.
- Schmitt, B.H., and A. Simonson. 1997. *Marketing Aesthetics*. New York, NY: Free Press.
- Schnurr, B. 2018. What's best for whom? The effect of product gender depends on positioning. *European Journal of Marketing* 52(1/2): 367–391. <https://doi.org/10.1108/ejm-03-2017-0207>.
- Segal, L. 2003. Thinking like a man? The cultures of science. *Women: A Cultural Review* 14(1): 1–19. <https://doi.org/10.1080/0957404032000081674>.
- Seifert, L.S. 1992. Pictures as means of conveying information. *Journal of General Psychology* 119(3): 279–287.
- Semin, G.R., and T.A. Palma. 2014. Why the bride wears white: Grounding gender with brightness. *Journal of Consumer Psychology* 24(2): 217–225. <https://doi.org/10.1016/j.jcps.2013.09.003>.
- Settle, R.B., and P.L. Alreck. 1987. Marketing to male fantasies. *Marketing Communications* 12: 13–18.
- Singh, S. 2006. Impact of color on marketing. *Management Decision* 44(6): 783–789.
- Sirgy, M.J. 1982. Self-concept in consumer behavior: A critical review. *Journal of Consumer Research* 9(3): 287. <https://doi.org/10.1086/208924>.
- Spence, J., and R. Helmreich. 1978. *Masculinity and Femininity: Their Psychological Dimensions, Correlates, and Antecedents*. London: University of Texas Press.
- Sung, Y., and J. Kim. 2010. Effects of brand personality on brand trust and brand affect. *Psychology and Marketing* 27(7): 639–661. <https://doi.org/10.1002/mar.20349>.
- Torres, A., J.C. Machado, L. Vacas-de-Carvalho, M. van de Velden, and P. Costa. 2019. Same design, same response? Investigating natural designs in international logos. *Journal of Product & Brand Management* 28(3): 317–329. <https://doi.org/10.1108/jpbm-10-2017-1632>.
- Ulrich, I. 2013. The Effect of consumer multifactorial gender and biological sex on the evaluation of cross-gender brand extensions. *Psychology & Marketing* 30(9): 794–810. <https://doi.org/10.1002/mar.20646>.
- Underwood, R.L. 2003. The communicative power of product packaging: Creating brand identity via lived and mediated experience. *Journal of Marketing Theory and Practice* 11(1): 62–76. <https://doi.org/10.1080/10696679.2003.11501933>.
- Vacas-de-Carvalho, L., S.L. Azar, and J.C. Machado. 2020. Bridging the gap between brand gender and brand loyalty on social media: Exploring the mediating effects. *Journal of Marketing Management* 36(11–12): 1125–1152. <https://doi.org/10.1080/0267257X.2020.1740293>.





- van den Berghe, P.L., and P. Frost. 1986. Skin color preference, sexual dimorphism and sexual selection: A case of gene culture co-evolution? *Ethnic and Racial Studies* 9(1): 87–113. <https://doi.org/10.1080/01419870.1986.9993516>.
- van der Lans, R., J.A. Cote, C.A. Cole, S.M. Leong, A. Smidts, P.W. Henderson, C. Bluemelhuber, P.A. Bottomley, J.R. Doyle, A. Fedorikhin, J. Moorthy, B. Ramaseshan, and B.H. Schmitt. 2009. Cross-national logo evaluation analysis: An individual-level approach. *Marketing Science* 28(5): 968–985. <https://doi.org/10.1287/mksc.1080.0462>.
- van Tilburg, M., T. Lieven, A. Herrmann, B. Grohmann, and T. Lieven. 2015a. The effects of brand gender similarity on brand-alliance fit and purchase intention. *Marketing* 1(1): 5–13.
- van Tilburg, M., T. Lieven, A. Herrmann, and C. Townsend. 2015b. Beyond “pink it and shrink it” perceived product gender, aesthetics, and product evaluation. *Psychology & Marketing* 32(4): 422–437. <https://doi.org/10.1002/mar.20789>.
- Walsh, M.F., K.P. Winterich, and V. Mittal. 2010. Do logo redesigns help or hurt your brand? The role of brand commitment. *Journal of Product & Brand Management* 19(2): 76–84. <https://doi.org/10.1108/10610421011033421>.
- West, C., and Zimmerman, D.H. 2013. Doing gender. In *Doing Gender, Doing Difference: Inequality, Power, and Institutional Change*. <https://doi.org/10.4324/9780203615683-8>.
- Wetherell, M., and N. Edley. 1999. Negotiating hegemonic masculinity: Imaginary positions and psycho-discursive practices. *Feminism and Psychology* 9: 335–356. <https://doi.org/10.1177/0959353599009003012>.
- Xue, L., and C.C. Yen. 2007. Towards female preferences in design—A pilot study. *International Journal of Design* 1(3): 11–27.

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