



Original Research

The Personality of Visual Elements: A Framework for the Development of Visual Identity Based on Brand Personality Dimensions

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Received: 07/13/2023; **Accepted:** 11/28/2023; **Published:** 02/12/2024

Abstract: In order to be successful in today's competitive environment, brands must have well-established identities. Therefore, during the branding process it is necessary to attribute personality traits and visual elements that best represent the desired identity of the brand. With the recent advances in communication, scholars have analyzed how different visual elements (e.g., logo, typography, color) can visually represent the desired brand personality. However, these elements are typically analyzed separately, since few studies show the association of personality traits with the set of visual elements of the brand (the well-known "visual identity"). Therefore, this work aims to develop a methodological framework that allows the design of visual identity based on the Dimensions of Brand Personality, by assigning a set of visual elements (colors, typographies, and shapes) to each dimension (Sincerity, Excitement, Competence, Sophistication and Ruggedness) suggested by Aaker in 1997. Through a quanti-quali approach, the associations suggested in the proposed framework were duly tested through the application of a questionnaire to a sample of consumers, to gather information about their perceptions. Preliminary results suggest that the proposed framework can successfully generate the desired brand personality perception in consumers, according to the design elements used for the creation of the visual brand identity.

Keywords: Brand Identity, Brand Personality, Visual Brand Identity, Brand Design, Branding

Introduction

Among several definitions, a brand can be understood as a "name, term, design, symbol, or any other feature that identifies one seller's goods or services as distinct from those of other sellers" (American Marketing Association [AMA], n.d.). In order to create consumer perceptions and influence purchase decision processes, brands must present identities that promote competition differentiation (Kapferer 2008; Aaker 2012), enabling a better positioning in the market and, therefore, a greater competitive advantage (Janonis, Dovalienė, and Virvilaitė 2007). The concept of brand identity can be understood as the way in which "a company is being identified" (Mindrut, Manolica, and Roman 2015, 395), and it comprises six main facets—physique, personality, culture, self-image, reflection, and relationship (Kapferer 2008)—that act simultaneously and relate to each other, constituting

a “live system of elements, possessing internal and external sides and determining possible limits for brand development and variation” (Janonis, Dovalienė, and Virvilaitė 2007, 73).

Regarding the personality facet, similar to humans, brands can present personality traits that act toward their differentiation process. According to Aaker (1997, 347), brand personality is “the set of human characteristics associated with a brand,” and it serves as an effective marketing tool to generate emotional and symbolic connections with consumers (Goldsmith and Goldsmith 2012), which influence the creation and maintenance of competitive advantages (Keller 2003; Kang, Bennett, and Peachey 2016). In 1997, Aaker proposed five dimensions for brand personality: sincerity, excitement, competence, sophistication, and ruggedness.

Consequently, a large volume of studies has emerged with the aim of understanding the relationship of influence between the personality and the visual elements of the brand. However, despite the growing scope of the subject, these studies each analyze only a particular visual element, for example, logos (van Riel and van den Ban 2001; Ribeiro 2021), colors (Clarke and Costall 2008; Labrecque and Milne 2012), typographies (Mackiewicz and Moeller 2004; Shaikh 2007), and shapes (Adır, Adır, and Pascu 2012; Mehtälä 2021). Therefore, it is noticeable that there is a scarcity of studies that analyze these elements acting together, the so-called the “brand visual identity”, a concept defined as a collection of visual elements that can define the personality of a brand (Strunck 2012).

Thus, this research aims to create a framework that will enable the development of visual identity based on the desired brand personality dimension. The proposed framework assigns a set of visual elements to each brand personality dimension proposed by Aaker (1997), namely, colors, typographies, and shapes, which best represent the desired personality traits. In this way, the proposed framework aims to become a potential guide tool for professionals in the field of design and/or marketing/advertising in terms of brand design within the branding process. Furthermore, the proposed model is intentionally generalist, so that it can be used for any brand, without the limitations of market segmentation.

This article is organized as follows: the first section presents a summarized review of the main concepts explored in this research, including brand personality and brand visual identity; the second section presents the attribution of the visual elements to brand the personality dimensions based on a bibliographic review of the analyzed elements; the third section describes the proposed Dimensions of Brand Visual Identity framework; the fourth section presents the methodology of the research; the fifth section presents the results of the data collected upon testing of the proposed framework with a sample of consumers from Brazil and Portugal; and the last section presents general discussion and conclusions.

The Essence of the Brand: Personality and Visual Identity

In 1997, Aaker suggested a scale to provide a basis for building a theory on the symbolic use of brands, opening the way for researchers to suggest that brands, like people, assume characteristics of human personality (Keller 2003; Freling and Forbes 2005). Basing her research on psychologists' studies of human personality (Azoulay and Kapferer 2003), Aaker sought to define the concept of brand personality and to develop a methodological framework to measure it. Starting mainly from the theory of human personality dimensions, based on the Five Factor Model commonly known as the Big Five (Geuens, Weijters, and De Wulf 2009; Kaplan et al. 2010), Aaker developed through her scale five dimensions of brand personality: sincerity, excitement, competence, sophistication, and ruggedness (see Figure 1).

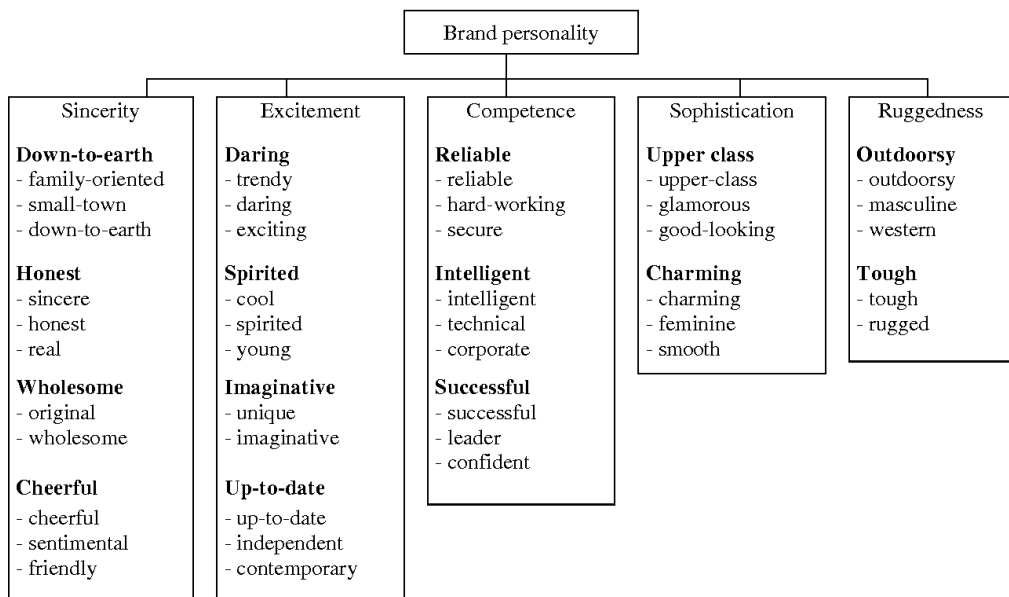


Figure 1: Dimensions of Brand Personality

Source: Muniz and Marchetti 2012

Through Aaker's (1997, 348) scale, "the different types of brand personalities can be distinguished, and the multiple ways in which the brand personality construct influences consumer preference may be understood better." In this way, Aaker formalized the identification of brand personality dimensions and brought greater interest to the topic by presenting a multidimensional model, duly tested and, therefore, reliable (Davies et al. 2018).

Thus, considering that brand personality could be an essential factor to predict and understand consumers' inclinations (Molinillo et al. 2017; Gordon, Zainuddin, and Magee 2016; Hultman et al. 2015), when developing a brand's visual identity, professionals in the communication field should think: To what extent can the brand's design elements visually

translate its identity to consumers? In what way is it possible to develop the brand visual identity based on the desired brand personality dimensions?

The visual identity is considered one of the brand's main elements. Strunck (2012, 81) had suggested a generalized definition of brand visual identity, which was adopted as the concept basis for this research:

The visual identity is the set of graphic elements that will formalize the visual personality of a name, idea, product or service. These elements act more or less like people's clothes and ways of behaving. They must inform, substantially, at first sight. Establish, with those who see them, an ideal level of communication.

Since communication is a conditional factor for the existence of brand identity (Kapferer 2008), from the moment consumers interact with brands, they are exposed to visual stimuli and other elements that make up the brand image (Schroeder 2004; McQuarrie and Phillips 2008). In general, these stimuli are presented in the literature as logo, colors, typography, shapes, language, and slogan (van Nes 2012; Wrona 2015; Wheeler 2017), and the visual identity is defined as a set of these and other elements that act as visual representatives of the brand identity.

However, over the course of the twenty-first century, new approaches have emerged with reference to the concept of brand visual identity, by attributing greater generality to the elements that compose it. Initially, although the concept had a greater focus on the representation of the logo, more recent studies propose that the visual identity becomes increasingly comprehensive, going beyond just a graphic symbol and encompassing various elements that represent the brand, to generate knowledge and recognition to consumers (Melewar, Bassett, and Simões 2006).

As technologies have advanced, visual elements have gained a more significant role in advertising (McQuarrie and Phillips 2008), making brand communication increasingly reliant on visual processes (Schroeder 2004). Faced with this phenomenon researchers suggest that through the visual component of brands in advertising, impressions about the brands and their personalities can be communicated more effectively. Therefore, consumers are more likely to complete a positive decision-making process toward the brand compared with when only verbal advertisements are employed (Manic 2015). In this context, it is proposed in the literature that visual brand identity can be defined as "the holistic look and feel of a brand, manifest as consistency among the brand, its strategy, and all its individual visual elements, ongoing over time" (Phillips, McQuarrie, and Griffin 2014a, 318).

Thus, this work seeks to establish how brand design elements can visually translate the brand personality, since these elements are perceived as tools that not only serve to identify and differentiate a brand from its competition but also generate the desired perception of the brand personality (Keller 2003).

Therefore, associations already made in previous works referring to the representation of personality traits by visual elements were analyzed. Within the scope of this research, the elements color, typography, and shape are the objects of study, which are considered by researchers to be among the main elements of brand design, alongside the logo (Walsh, Winterich, and Mittal 2011; Kauppinen-Räsänen and Luomala 2010). However, the logo will not be studied in this work, since the logo is an element that can encompass in itself other visual elements of the brand, such as colors and typography, once it is “the logical place to start in selecting visual elements to create a new ad execution” (Phillips, McQuarrie, and Griffin 2014a, 324). Furthermore, it is understood that the brand’s visual identity goes beyond just the logo, representing a selection of elements and, even more, an essence and a general feel of the brand’s personality (Phillips, McQuarrie, and Griffin 2014b).

Association of Brand Design Elements with Personality Traits

Color

Color is a visual element widely studied in the literature. As a marketing tool, this element is considered an important brand attribute, since it can assign different symbolic meanings that are used to create and maintain the desired brand image (Madden, Hewett, and Roth 2000; Bottomley and Doyle 2006; Clarke and Costall 2008). In the context of advertising, color is considered an effective persuasion tool that can attract consumers and form perceptions (Labrecque and Milne 2012), influencing the process of decision-making (Eckman, Damhorst, and Kadolph 1990). Through colors, brands can establish a consistent visual identity that contributes to the effective positioning and differentiation of the brand from its competition (Labrecque and Milne 2012).

It is possible to verify in the literature the direct association of colors with brand personality dimensions (see Table 1). Based on the research of Labrecque and Milne (2012) and Jabbar (2014), it is possible to make associations between colors and brand personality dimensions, as shown in Table 1.

Table 1: Color Association with Brand Personality Dimensions by Researchers

<i>Brand Personality Dimension</i>	<i>Labrecque and Milne (2012)</i>	<i>Jabbar (2014)</i>
Sincerity	White, yellow, and pink	Red
Excitement	Red, orange, and yellow	Orange and yellow
Competence	Blue and brown	Blue
Sophistication	Black, purple, and pink	Purple
Ruggedness	Brown and green	Green

A single incongruity is seen, with the color red being associated by Jabbar (2014) with the sincerity dimension, while it is associated by Labrecque and Milne (2012) with the excitement dimension. However, according to Jabbar (2014), red highlights symbolic characteristics such as fun, passion, dynamism, and animation, which on their own terms may be more aligned with the excitement dimension, as proposed by Labrecque and Milne (2012).

Furthermore, although the colors pink and brown are not associated by Jabbar (2014) with any brand personality dimension, the symbolic attributions to pink—truth, justice, protection, homely, and stable—can be associated with the sincerity dimension, especially with reference to the facet “down-to-earth,” due to the “stability” trait, and the facet “honest,” due to the “truth” and “justice” traits. The symbolic attributions to brown—homely, dependable, warm, earthy, and nature—can be associated with the ruggedness dimension, with reference to the facet “outdoorsy,” due to the “earthy” and “nature” traits, and the facet “tough,” due to the “reliable” trait. In short, these associations for the colors pink and brown are congruent with the associations proposed by Labrecque and Milne (2012).

Thus, considering the studies in Table 1 and the justifications given in the two previous paragraphs of this section, this research suggests the associations shown in Figure 2. These associations constitute the first set of elements of the proposed framework.

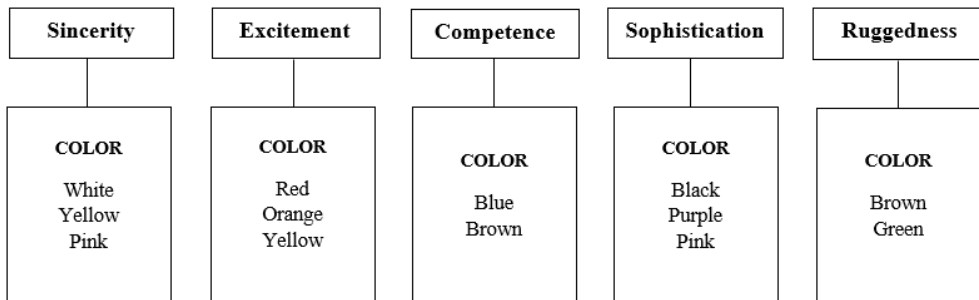


Figure 2: Color Association with Brand Personality Dimensions

Typography

Perceived as an art by the fields of psychology and design, typography can be considered as “the craft of endowing human language with a durable visual form, and thus with an independent existence” (Bringhurst 2004, 11).

In the advertising context, it is stated in the literature that typography acts on the legibility and memorability of advertisements (McCarthy and Mothersbaugh 2002; Childers and Jass 2008) and influences consumers’ perceptions of the personality of brands (Batra, Lehmann, and Singh 1993). According to researchers, the symbologies of the visual language of typography can represent different effects, such as sonority, connecting the writer to the reader through the desired tone of voice (Spiekermann and Ginger 2003); visual texture;

humor; and rhetorical posture, which can be serious, energetic, colloquial, or friendly (Kostelnick 1990). In the context of brands, the choice of appropriate typography is essential to generate the desired message tone, as this element has the ability to attribute emotional connections to the text (Saltz 2009). In summary, these associations can be exemplified as illustrated in Figure 3.



Figure 3: Typography Symbologies

Source: Tiryakioğlu as Cited in Nakilcioğlu 2013, 39

These symbologies are generated by the visual differences between the different types of typography, a means by which consumers can generate perceptions about brands (Henderson, Giese, and Cote 2004). Typically, typographies are represented by categories called families, which consist of a group of typographies related to each other through similar physical characteristics (Shaikh 2007). However, there is a vast diversity of classifications for typographies in the literature, since over the years “type has not evolved in a tidy and logical progression” (Shaikh 2007, 10) and, currently, due to the advancement of technologies such as Google Fonts¹, the number of existing typographies grows exponentially every day. According to White (2005), there are eight categories of typography: serif, sans serif, geometrics, humanists, script, glyphic, blackletter, monospaced, decorative e symbols.

When analyzing the perceptions of personality traits of typographies, some level of congruence between researchers is observed. Using as a basis for this research the studies by McCarthy and Mothersbaugh (2002); Shaikh, Chaparro, and Fox (2006); and Shaikh (2007), it appears that only the first was carried out in the context of brands, which may justify the attribution of negative associations to certain typographies and/or categories of typographies, as evidenced in Shaikh (2007) and Shaikh, Chaparro, and Fox (2006). Furthermore, despite the eight categories of typography proposed by White (2005), considering the four out of the total that were duly examined in the studies by Shaikh (2007); Shaikh, Chaparro, and Fox

¹ <https://fonts.google.com/>

(2006); and McCarthy and Mothersbaugh (2002), in this research these four typography categories—serif, sans serif, script, and monospaced—will be analyzed. In addition, the display category will also be analyzed, which, although not suggested by White (2005), was duly studied according to the perceptions of personality traits by Shaikh (2007) and Shaikh, Chaparro, and Fox (2006).

Serif typefaces were perceived as “stable,” “practical,” “mature,” and “formal” (Shaikh, Chaparro, and Fox 2006). On the other hand, they were also associated with “delicate,” “beautiful,” and “old fashion” (Shaikh 2007). However, “professional” and “formal” were also personality traits suggested by McCarthy and Mothersbaugh (2002), verifying a predominance of these traits.

Sans serif typefaces were perceived more neutrally compared with the other categories. In Shaikh, Chaparro, and Fox (2006), no relevant associations were attributed to this category. Older studies suggest that typefaces in the sans serif category are typically perceived as having a cleaner, more modern look (Kostelnick and Roberts 1998), particularly in comparison to the serif category. On the other hand, in the study by Shaikh (2007), overall the sans serif typeface were associated with the traits “robust,” “cheap,” “ugly,” “cool,” and “young”; however, these perceptions were not as consistent as verified in the other typography categories analyzed by the sample.

According to Shaikh (2007), among the analyzed sans serif typographies two obtained considerable associations: *Century Gothic* was attributed the personality trait “feminine,” and *Berlin Sans* was attributed the personality traits “active,” “exciting,” “noisy,” “strong,” and “warm.” However, it is observed that both typefaces, despite being categorized as sans serif, have a more evident physical aspect, which is the rounded shape of the letters. According to Parker (1997), typographies with more rounded features are typically evidenced as friendly and youthful.

Typographies in the script category are perceived as “youthful,” “happy,” “creative,” “rebellious,” “feminine,” “casual,” and “cuddly” (Shaikh, Chaparro, and Fox 2006) and as “friendly,” “fun,” and “unprofessional” (Mackiewicz and Moeller 2004). However, the attribution of the traits “elegant” (Rowe 1982), “sophistication” and “dramatic” (McCarthy and Mothersbaugh 2002), and “valuable” and “delicate” (Shaikh 2007) is also verified. This small convergence between the attributions can be explained by the fact that there is a differentiation between two group types of script typographies used in the aforementioned studies: (1) typefaces considered more decorative, which show off more physical details and, usually, have letters with a more rounded shape (e.g., *Gigi*, *Comic Sans*, *Kristen*), and (2) typefaces considered to mimic handwriting, which usually feature letters with an italic effect, more elongated, and resembling the handwriting of ancient letters (e.g., *Vivaldi*). In Mackiewicz and Moeller’s (2004) research, for example, sample participants described *Comic Sans* typography as useful for “friendly,” “childish,” “casual,” and “unserious” writing, while *Vivaldi* typography was perceived by most of the sample as “elegant.”

Monospaced typefaces were perceived as “simple,” “unimaginative,” “boring,” and “conforming” (Shaikh, Chaparro, and Fox 2006). However, when analyzing the effect of monospaced typography in advertising, McCarthy and Mothersbaugh (2002) suggested that greater spacing between letters could connote the simplicity or purity of a brand.

Display typefaces were perceived as “masculine,” “assertive,” “rude,” “sad,” and “coarse” (Shaikh, Chaparro, and Fox 2006) and as “ugly,” “cheap,” and “bad” (Shaikh 2007). Interestingly, according to Shaikh (2007) the *Curlz* typeface was perceived in the study as the most feminine typeface in the display category, and it gathered different attributions from those verified for its category, being associated with “soft,” “delicate,” “relaxed,” “active,” “exciting,” “happy,” “warm,” and “young” personality traits. This phenomenon can be justified in view of the decorative characteristics of the *Curlz* typeface, which fit the description of the group n.º (1) of the script typographies, evidenced in the previous paragraphs. In contrast, *Impact* typography was perceived as the most “masculine,” “rough,” “rugged,” and “stiff” in the display category, which can be explained by the fact that heavier typographies—in matters of stroke width and thickness—are typically perceived as stronger, more aggressive, and more masculine, while lighter typefaces—with finer strokes—are perceived as “delicate,” “gentle,” and “feminine.”

In conclusion, the associations addressed in this section are gathered in Table 2. In addition to the five typography categories mentioned in the previous paragraphs—serif, sans serif, script, monospaced, and display—the decorative category can also be found in Table 2. This categorization was also carried out according to the distinguished physical characteristics of the typographies. This is due to the fact that, according to the studies analyzed (Parker 1997; Shaikh, Chaparro, and Fox 2006; Shaikh 2007), it can be observed that certain physical characteristics of a typeface appear to exert a greater influence on the perception of its personality traits than its designated category. This makes it possible for a script typeface usually associated with traits such as professionalism, formality, elegance, and old age (Rowe 1982; McCarthy and Mothersbaugh 2002; Shaikh 2007) to be associated with considerably different traits such as “young,” “unprofessional,” “cheerful,” and “fun” (Mackiewicz and Moeller 2004; Shaikh, Chaparro, and Fox 2006), as it is the case of the *Comic Sans* typeface, for example, in Mackiewicz and Moeller’s (2004) research. The same occurrence was verified for the *Curlz* typeface in Shaikh’s (2007) research, which, although a display typeface, generated perceptions similar to those of the *Comic Sans* typeface.

Due to this phenomenon, Table 2 shows six categories of typographies, considering their most predominant physical characteristics and their respective associations with the personality traits verified in the literature.

Table 2: Typography Association with Personality Traits

<i>Typography</i>	<i>Physical Characteristics</i>	<i>Traits Associated</i>
Serif	Squarer letters	Professionality, formality, stable, practical, mature, delicacy, beauty, and old age
Sans Serif	Slightly rounded letters	Clean and modern
Script	Tendency to italics, mimics a “traditional” old style handwriting	Sophistication, dramatic, valuable, elegant, and delicate
Monospaced	Spaced letters	Simplicity and purity
Display	Thicker strokes	Masculine, rough, rugged, strong, noisy, and warm
Decorative	More rounded letters, intensity of serifs in curvature and prolonged on the exterior of the letters	Young, happy, creative, girly, rebellious, casual, cute, friendly, fun, unprofessional, active, and lively

In view of the associations summarized in Table 2, it is possible to suggest associations of the categories of the typographies with the dimensions of brand personality.

Serif typefaces can be associated with the competence dimension, since the personality traits highlighted, such as “professional,” “formal,” and “stable” (Mackiewicz and Moeller 2004; Shaikh, Chaparro, and Fox 2006), are similar to the traits in this dimension, such as “hardworking,” “corporate,” “reliable,” and “secure.” The typefaces in the sans serif category can be associated with the excitement dimension, since their personality traits “clean” and “modern” are possibly similar to the “up-to-date” and “contemporary” traits of the competence dimension.

Script typefaces, regarding specially the group n.^o (2) mentioned in paragraph six of this section, can be associated with the sophistication dimension, since one of the personality traits in this category refers to the name of the dimension itself (McCarthy and Mothersbaugh 2002). Furthermore, the remaining traits highlighted—“dramatic,” “valuable,” “elegant,” and “delicate”—can also be similar to the remaining personality traits of the sophistication dimension, highlighting the traits “glamorous” of the upper-class facet and “smooth” of the charming facet.

Monospaced typefaces can be associated with the sincerity dimension, since the attributed personality traits, “simplicity” and “purity,” are similar to the traits “down-to-earth” and “small town” of the down-to-earth facet and “real” of the honest facet.

Display typefaces can be associated with the ruggedness dimension, since the personality traits “masculine,” “rough,” “rugged,” and “stiff” attributed to the category (Shaikh, Chaparro, and Fox 2006; Shaikh 2007) are similar to the traits “masculine” of the outdoorsy facet and “tough” and “rugged” of the tough facet.

Finally, decorative typefaces can be associated with two dimensions: sincerity and excitement. Regarding the association with the sincerity dimension, the personality traits “friendly,” “active,” and “lively” associated with this category are similar to the traits of the cheerful facet, namely, “cheerful” and “friendly.” On the other hand, regarding the association with the excitement dimension, the traits “young,” “creative,” “rebellious,” “active,” and “lively” attributed to the decorative category are similar to the traits “daring,” “spirited,” “young,” and “imaginative” with reference to three of the four facets of the dimension (“daring,” “spirited,” and “imaginative”). Other typographies that display the physical characteristics of the decorative category, such as the group n.º (1) of the script typography mentioned in paragraph six of this section, could also be considered as decorative since it is likely that they will be associated with its personality traits.

In summary, based on the aforementioned possibilities and the examination of previous studies on typography elements, the suggested associations for serif, sans serif, script, monospaced, display, and decorative categories can be found in Figure 4.

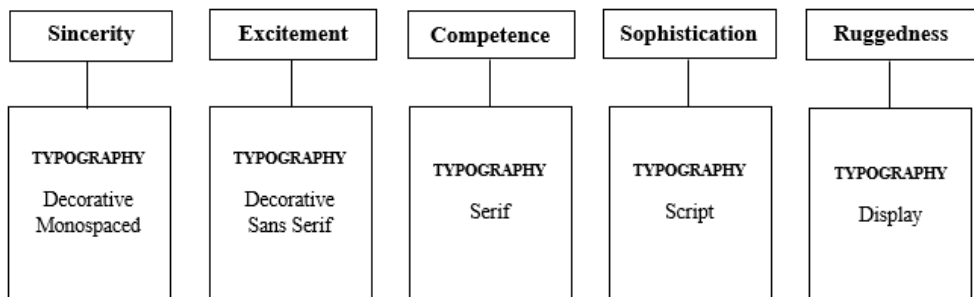


Figure 4: Typography Association with Brand Personality Dimensions

Shape

Within the scope of psychology, it is studied how different shapes and figures can generate perceptions in consumers, in association with other visual elements. A shape can be understood as “a finite arrangement of geometric elements such as points, lines and planes, each with a definite boundary and finite, but non-zero extent” (Prats et al. 2009, 4). In marketing, it is proposed that comprehending the symbolic significance of shapes and their impact on consumers' memory can indeed shape consumers' perceptions (Peck, Barger, and Webb 2013), since shapes are considered as important elements for brand identity strategies (Adir, Adir, and Pascu 2012).

In general, in the literature there are symbolic associations with three specific shapes: circular, triangular, and square. Circular shapes are associated with the concepts of “union,” “generosity,” “harmony,” and “femininity” (Tinga 2019; Moura 2020; Pahwa 2023). One of

the physical aspects perceived as positive by consumers is the symmetry that these shapes have (Henderson and Cote 1998). In logo design studies, it is evident that the use of round shapes and the absence of straight lines can attribute to the logo the symbolism of “lightness” (Larson, Aronoff, and Steuer 2012; Jiang et al. 2016), “balance” (Adîr, Adîr, and Pascu 2012), and “sincerity” (Grohmann as cited in Gold 2019), due to the mental stimulus of comfort these forms generate when presented visually, generating a natural disassociation with the characteristic of robustness of a brand (Jiang et al. 2016). Furthermore, compared with asymmetric shapes, they are commonly perceived as less exciting (Luffarelli, Stamatogiannakis, and Yang 2019). With reference to character design studies, the more rounded shapes are associated with the concepts of “youth,” “innocence,” and “kindness”; these associations are supported by the Baby-Face Bias principle, which states that “people and things with round features, large eyes, small noses, high foreheads, short chins, and relatively lighter skin and hair are perceived as babylike and, as a result, as having babylike personality attributes: naivet , helplessness, honesty, and innocence” (Lidwell, Holden, and Butler 2010, 34). According to Naghdi (n.d.), this is due to the presence of circular shapes in places such as clouds, foliage, and other areas that, commonly, are perceived as welcoming and kind by humans.

Triangular shapes are associated with the concepts of “intelligence” and “power” (Tinga 2019; Moura 2020; Pahwa 2023). According to Henderson and Cote (1998), these shapes are at some level symmetrical, due to a general asymmetry generated by their angular characteristic—three points of connection between the lines. This asymmetry can generate perceptions of “confidence,” “sharpness,” “agility,” “danger,” “aggressiveness” (Batchelor as cited in Meht l  2021), and “excitement” (Luffarelli, Stamatogiannakis, and Yang 2019). When associated with personality traits, triangular shapes are perceived as “outdoorsy” and “tough,” which generates an association with the ruggedness personality dimension (Prats et al. 2009). Furthermore, Larson, Aronoff, and Steuer (2012) suggest that the most angular point of a triangular shape—the balance point between the other two lateral points—can generate more negative perceptions when pointed downwards and more positive perceptions when pointed upwards.

Square shapes are associated with the concepts of “stability,” “reliability,” and “technology” (Tinga 2019; Moura 2020; Pahwa 2023). According to Meht l  (2021), these shapes can attribute to characters personality traits such as “strength,” “seriousness,” “calm,” and “confidence.” Frutiger and Bluhm (1998) suggest that these perceptions can be generated from the constant use of square shapes to represent limits on properties, such as a floor or wall, which can be unconsciously associated with the concepts of seriousness and reliability.

Regarding other types of shapes, there is a lack of studies dedicated to a greater variety of analyses, which, thus, constitutes a theme yet to be explored with greater amplitude in the academic area. Exceptionally, Ad r, Ad r, and Pascu (2012) suggest in their logo design research a greater range of different shapes, considering in their analysis shapes such as

rectangle, ellipse, and spiral and regarding variations in dimensionality characteristics (2-D and 3-D), variations of circle, square, and triangle shapes to, respectively, sphere, cube, and pyramid shapes. These associations are shown in Table 3.

Table 3: Suggestive Induction of Shape Association in Logo Design

<i>Geometric Shape</i>	<i>Suggestive Induction</i>
Circle	Perfection, balance
Square	Stability, power
Rectangle	Duration, progress
Ellipse	Continue searching
Triangle	Harmony, urge towards
Spiral	Advancement, detaching
Sphere	Perfection, finality
Pyramid	Integration, convergence
Cube	Stability, integrity

Source: Adir, Adir, and Pascu 2012

It is also possible to verify a strong congruence of associations made on digital platforms by various professionals in the field of graphic design and multimedia, in educational blogs, creative industry agencies, and online professional courses. Through an analysis of these platforms, it is possible to verify that these professionals commonly make similar associations with the same elements when developing projects of graphic design. When it comes to spiral shapes, for example, it appears that these shapes are commonly used to represent the idea of “cycles,” “growth,” “vitality,” “modernity,” and “creativity.” Organic shapes—that is, shapes usually found in objects of nature and often curvilinear in appearance—are commonly used to represent nature and originality and are symbolically associated with “fresh,” “organic,” and “ecological,” which generates consumer perceptions of connection with the natural environment (Tinga 2019; Moura 2020; Tailor Brands, n.d.; Iakovlev, n.d.).

In conclusion, the associations addressed in this section—with reference to the circular, square, triangular, spiral, and organic shapes—are gathered and organized in Table 4.

Table 4: Shape Association with Personality Traits

<i>Shapes</i>	<i>Traits Associated</i>
Circular	Perfection, balance, union, generosity, harmony, femininity, lightness, sincerity, youth, innocence, and kindness
Triangular	Harmony, strong drive, intelligence, power, confidence, sharpness, agility, danger, aggressiveness, excitement, outdoorsy, and tough
Square	Stability, reliability, technology, strength, seriousness, and calm
Spiral	Advancement, detachment, cycles, growth, vitality, modernity, and creativity
Organic	Nature, originality, fresh, organic, and ecological

Finally, limitations arise in the face of the analysis of the personality traits of the shapes, since the literature encompasses a limited variety of analyzed shapes, with previous studies having a greater focus on circular, triangular, and square shapes. However, from the attribution of personality traits to shapes proposed in previous studies, as shown in Table 4, it is possible to suggest the association of the aforementioned shapes with the respective dimensions of brand personality.

Circular shapes can be associated with two dimensions: sincerity and sophistication. Regarding the sincerity dimension, in addition to the personality trait “sincerity” associated with this category of shapes and being directly representative of the name of the dimension, the traits “perfection,” “balance,” “union” (Tinga 2019; Moura 2020; Pahwa 2023), and “kindness” (Luffarelli, Stamatogiannakis, and Yang 2019) attributed to circular shapes are similar to the traits “wholesome,” “down-to-earth,” “family oriented,” and “friendly,” respectively, of the sincerity dimension. This is because these traits can generate similar perceptions, such as the sense of “unity” and “family oriented” and of “kindness” and “friendly.” Regarding the sophistication dimension, the personality traits “femininity” (Tinga 2019; Moura 2020; Pahwa 2023) and “lightness” (Larson, Aronoff, and Steuer 2012; Jiang et al. 2016) associated with circular shapes are similar to the “feminine” and “smooth” traits of the dimension.

Triangular shapes can also be associated with two dimensions: excitement and ruggedness. Regarding the excitement dimension, in addition to the personality trait “excited” associated with this category of shapes (Luffarelli, Stamatogiannakis, and Yang 2019) and representing the name of the dimension, the traits “urge towards” (Adır, Adır, and Pascu 2012) and “danger” and “agility” (Batchelor as cited in Mehtälä 2021), also associated with triangular shapes, are similar to the traits “daring” and “spirited” attributed to the dimension. Regarding the ruggedness dimension, the traits “outdoorsy” and “tough” associated with triangular shapes are equivalent to the traits “outdoorsy” and “tough” attributed to the dimension. In addition, the “aggressiveness” trait associated with this

category of shapes (Batchelor as cited in Mehtälä 2021) is similar to the “rugged” trait of the ruggedness dimension.

Square shapes can be associated with the competence dimension, since the personality traits attributed to this category of shapes, such as “stability,” “reliability” (Tinga 2019; Moura 2020; Pahwa 2023), “strength” and “seriousness” (Mehtälä 2021), are similar to the traits “reliable,” “secure,” “confident” and “hardworking,” attributed to the respective dimension.

Spiral shapes can be associated with the excitement dimension, along with triangular shapes. This is because the traits “detachment,” “vitality,” “modernity,” and “creativity” associated with spiral shapes are similar to the traits “independent,” “spirited and young,” “up-to-date and contemporary,” and “imaginative” of the dimension.

Organic shapes can be associated with the sincerity dimension along with circular shapes since the personality trait “originality” attributed to this category of shapes is equivalent to the trait “original” of the dimension. Furthermore, the trait “real” of this dimension is similar to the trait “organic” associated with organic shapes, since it could represent the sense of something natural, truthful, and unaltered.

Figure 5 summarizes the suggested associations of the analyzed shapes with brand personality dimensions.

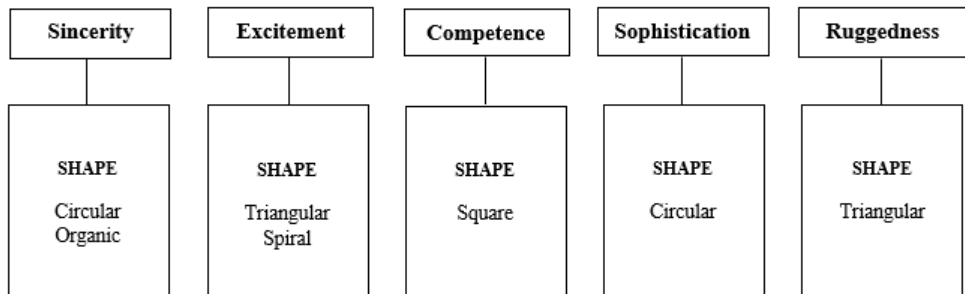


Figure 5: Shape Association with Brand Personality Dimensions

The Proposed Framework: Dimensions of Brand Visual Identity

Considering previous studies on visual elements and their respective associations with brand personality dimensions, this research suggests a new framework—Dimensions of Brand Visual Identity (Figure 6)—involving a set of visual elements for each dimension of the brand personality (Aaker 1997), with the aim of generating more effectively the perception of personality traits of the desired dimension.

However, it is important to highlight that the association of this set of visual elements does not suggest the exclusive use of these elements for the successful generation of perception of the desired brand personality dimension, since the creative process of developing a brand’s visual identity is a complex process in itself and is inherent to each professional. Rather, it is suggested

that employing a combination of these elements or increasing the utilization of specific elements within the highlighted visual identity, even when incorporated with other elements outside the set, may enhance the visual representation of the specified brand personality traits, generating the desired perceptions in consumers.

Sincerity	Excitement	Competence	Sophistication	Ruggedness
COLOR White Yellow Pink	COLOR Red Orange Yellow	COLOR Blue Brown	COLOR Black Purple Pink	COLOR Brown Green
TYPOGRAPHY Decoratives Monospaced	TYPOGRAPHY Decoratives Sans Serif	TYPOGRAPHY Serif	TYPOGRAPHY Script	TYPOGRAPHY Display
SHAPE Circular Organic	SHAPE Triangular Spiral	SHAPE Square	SHAPE Circular	SHAPE Triangular

Figure 6: Dimensions of Brand Visual Identity

Methodology Used for the Evaluation of the Proposed Framework

Sample Description

To evaluate the proposed framework, a questionnaire was applied online between April 19 and May 4, 2023, through the Microsoft Forms platform. Participants were invited to answer it through social media messages containing a link with direct access to the questionnaire. The sample was composed of a total of 127 random participants ($N = 127$), of predominantly Brazilian (78%) and Portuguese (21%) nationalities, with an average age of 31.3 years (standard deviation of 8.4), with most of the sample (55%) being between 20 and 30 years old. Profession and/or educational qualifications were not considered as determinants for participation.

Procedure

The questionnaire was developed and applied with the objective of analyzing whether the sample would perceive and associate the visual identities with the expected brand personality dimension.

Thus, ten visual identities of fictitious brands were created by the researchers of the present study, with two visual identities being assigned to each of the five brand personality dimensions of Aaker’s framework (1997). The visual identities developed were represented through a banner containing the following branded merchandising materials: a mug, a business card, a notebook, and a bag (see Table 6). To avoid biased experiences, the names of all brands were defined the same, that being “Brandname,” with only its visual composition being changed according to the visual elements used for its creation. Finally, since all the brands had the same name, they were identified through a numeric identification, according to their order of appearance in the questionnaire. To avoid biased experiences, the brands assigned to the same personality dimension were placed in a non-sequential order in the questionnaire, as shown in Table 6.

However, as previously explained, the proposed framework does not suggest the use of all the visual elements combined in the same visual identity for the successful association with the respective dimension, but rather suggests the combination of some of the visual elements or the use of some of these elements highlighted in the created visual identities, even if combined with other visual elements outside of the framework. Since the element color is the one with the greatest number of variations assigned in the framework compared with the other two elements—typography and shape—(see Figure 6), a pair of visual identities were created to enable the analysis of all the elements suggested in the framework. This categorization is presented descriptively in Table 5.

Table 5: Visual Elements Applied to the Developed Brand Visual Identities

<i>Dimension</i>	<i>Brand (No.)</i>	<i>Elements of the Framework Used</i>		
		<i>Color</i>	<i>Typography</i>	<i>Shape</i>
<i>Sincerity</i>	1	White, yellow, and pink	Decorative	Organic
	4	Yellow	Monospaced	Circular
<i>Excitement</i>	5	Red	Sans serif	Triangular
	8	Red and orange	Decorative	Spiral
<i>Competence</i>	3	Blue and brown	Serif	Square
	10	Blue	Serif	Square
<i>Sophistication</i>	6	Black and purple	Script	Circular
	9	Pink	Script	Circular
<i>Ruggedness</i>	2	Green	Display	Triangular
	7	Brown and green	Display	Triangular

Table 6: Categorization of the Developed Brand Visual Identities

<i>Dimension</i>	<i>Brand No.</i>	<i>Banner</i>
<i>Sincerity</i>	1	
	4	
<i>Excitement</i>	5	

	8	
Competence	3	
	10	

<p><i>Sophistication</i></p>	<p>6</p>	 <p>A brand identity set for 'Sophistication' featuring a black mug, a black business card, a black spiral notebook, and a black tote bag. The brand name 'BrandName' is written in a white cursive font. The background of the items is black with subtle purple swirl patterns.</p>
<p><i>Sophistication</i></p>	<p>9</p>	 <p>A brand identity set for 'Sophistication' featuring a white mug with pink circles, a pink business card, a pink spiral notebook, and a pink tote bag. The brand name 'BrandName' is written in a white cursive font. The background of the items is pink with white circle patterns.</p>
<p><i>Ruggedness</i></p>	<p>2</p>	 <p>A brand identity set for 'Ruggedness' featuring a white mug with green geometric lines, a green business card, a green spiral notebook, and a green tote bag. The brand name 'BrandName' is written in a white bold sans-serif font. The background of the items is green with white geometric line patterns.</p>



Thus, the ten visual identities were presented in a questionnaire comprising seventeen questions, seven of which were sociodemographic and ten related to brand analysis. For the latter, through the use of a Likert scale, participants were asked to classify each visual brand on a scale of 1 (most associable) to 5 (least associable) considering the five brand personality dimensions. Each dimension was presented with its set of personality traits to provide context of the dimensions for the participants.

Results and Discussion

A total of 127 valid responses were obtained through the application of the questionnaire, which will be analyzed in this section. When asked to classify the dimensions of brand personality of the fictitious brands presented, for seven out of the ten brands (Brands No. 2, 3, 6, 7, 8, 9, and 10), the highest percentage of participants selected as “most associable” the expected brand personality dimension defined according to the proposed methodological framework. However, for three brands (Brands No. 1, 4, and 5), the highest percentage of responses did not correspond to the expected brand personality dimension. This result indicates that only the sincerity dimension displayed different results from those evidenced in the literature. The same was evidenced for the excitement dimension, although to a lesser extent, since one of its brands (No. 5) presented some inconclusive results. The percentages of responses for each brand are presented in Table 7 and Figure 7.

Curiously, in the case of Brands No. 1 and 4, although both brands belonged to the sincerity dimension, both had the highest percentage of responses on the association scale for the excitement dimension (44% for Brand No. 1 and 64% for Brand No. 4). This may have occurred because the visual elements assigned to these dimensions were similar, that is, the color yellow and the decorative typography. The color yellow, for example, assigned to both dimensions was presented as the predominant color of Brand No. 4, which may have contributed to the incorrect association. However, in both cases, the sample consistently ranked sincerity as the second most associated dimension with the respective brands. This

indicates that, to some extent, these visual elements continue to influence consumers' perception of the sincerity dimension.

Regarding Brand No. 5, the highest percentage of responses (30%) identified competence as the most associated dimension, while participants placed the correct dimension, excitement, in second place (25%). It is observed, therefore, that for brand No. 5, as well as for Brands No. 1 and 4, the sample was faced with difficulties regarding the visual translation of the excitement dimension (see Table 7 and Figure 7).

Table 7: Percentage of Responses for Each Brand (No.)

Brands (No.)	<i>Associations with Each Dimension (from Most to Least Associable)</i>				
	<i>1 (Most Associable)</i>	2	3	4	<i>5 (Least Associable)</i>
1	Excitement (44%)	Sincerity (28%)	Sophistication (23%)	Competence (5%)	Ruggedness (0%)
2	Ruggedness (46%)	Competence (32%)	Sincerity (16%)	Excitement (5%)	Sophistication (1%)
3	Competence (44%)	Ruggedness (33%)	Sincerity (9%)	Sophistication (9%)	Excitement (6%)
4	Excitement (64%)	Sincerity (20%)	Sophistication (9%)	Competence (6%)	Ruggedness (1%)
5	Competence (30%)	Excitement (25%)	Sophistication (18%)	Sincerity (14%)	Ruggedness (13%)
6	Sophistication (52%)	Ruggedness (23%)	Competence (14%)	Sincerity (6%)	Excitement (5%)
7	Ruggedness (43%)	Competence (27%)	Sincerity (16%)	Excitement (13%)	Sophistication (2%)
8	Excitement (67%)	Sincerity (18%)	Sophistication (7%)	Competence (6%)	Ruggedness (2%)
9	Sophistication (46%)	Excitement (33%)	Sincerity (17%)	Competence (2%)	Ruggedness (2%)
10	Competence (40%)	Ruggedness (28%)	Sincerity (16%)	Sophistication (10%)	Excitement (6%)

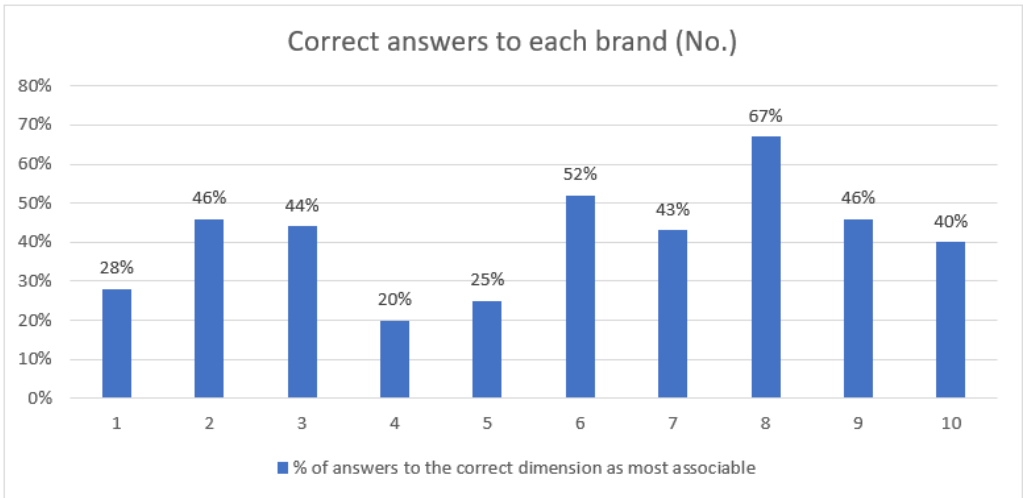


Figure 7: Percentage of Correct Answers for Each Brand (No.)

In order to analyze the effect of participants’ age on the results, a two-way analysis of variance (ANOVA) was conducted. For this test, the participants were divided into five age groups: Group 1: 20–25 ($N = 42$), Group 2: 26–30 ($N = 28$), Group 3: 31–35 ($N = 18$), Group 4: 36–40 ($N = 22$), and Group 5: 41+ ($N = 17$). For the analysis of the results, a significance level $p = 0.050$ was used. The results revealed a statistically significant difference in mean between at least two groups ($F(4, 122) = 2.800, p = 0.029$) for Brand No. 5 (see Table 8). A post hoc comparison using the Tukey HSD analysis revealed a significant effect of age on the answers for Groups 2 and 5 ($p = 0.029, 95\% \text{ C.I.} = [-0.75, -0.03]$) and for Groups 3 and 5 ($p = 0.034, 95\% \text{ C.I.} = [-0.82, -0.02]$) (see Table 9). Out of those, the participants within Group 5 had a larger percentage of correct answers (47%) than the participants within Group 2 (14%) and Group 3 (11%). Therefore, it is possible to assume that older participants (+41 years old) tended to identify the brand personalities better than the younger participants.

Table 8: ANOVA Analysis of Participants’ Age Groups for Brand No. 5

ANOVA					
	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Between Groups	2.013	4	0.503	2.800	0.029
Within Groups	21.924	122	0.180		
Total	23.937	126			

Table 9: Tukey HSD Analysis of Participants' Age Groups for Brand No. 5

<i>Multiple Comparisons</i>						
<i>Tukey HSD</i>						
<i>(I) Group</i>	<i>(J) Group</i>	<i>Mean Difference (I-J)</i>	<i>Std. Error</i>	<i>Sig.</i>	<i>95% Confidence Interval</i>	
					<i>Lower Bound</i>	<i>Upper Bound</i>
1	2	0.119	0.103	0.779	-0.17	0.41
	3	0.151	0.119	0.714	-0.18	0.48
	4	-0.011	0.112	1.000	-0.32	0.30
	5	-0.268	0.122	0.188	-0.60	0.07
2	1	-0.119	0.103	0.779	-0.41	0.17
	3	0.032	0.128	0.999	-0.32	0.39
	4	-0.130	0.121	0.819	-0.46	0.20
	5	-0.387*	0.130	0.029	-0.75	-0.03
3	1	-0.151	0.119	0.714	-0.48	0.18
	2	-0.032	0.128	0.999	-0.39	0.32
	4	-0.162	0.135	0.752	-0.53	0.21
	5	-0.418*	0.143	0.034	-0.82	-0.02
4	1	0.011	0.112	1.000	-0.30	0.32
	2	0.130	0.121	0.819	-0.20	0.46
	3	0.162	0.135	0.752	-0.21	0.53
	5	-0.257	0.137	0.336	-0.64	0.12
5	1	0.268	0.122	0.188	-0.07	0.60
	2	0.387*	0.130	0.029	0.03	0.75
	3	0.418*	0.143	0.034	0.02	0.82
	4	0.257	0.137	0.336	-0.12	0.64

*The mean difference is significant at the 0.05 level.

In order to analyze the correlation between the answers reported by participants and their nationalities, an Independent-Samples *t*-Test analysis was conducted. The participants were divided into two groups: Group 1: Brazilian (*N* = 100) and Group 2: Portuguese (*N* = 27). The *t*-Test analysis revealed a significant effect of nationality on the answers for brands: No. 1 ($t(125) = -2.62, p = 0.01$), with the mean score for Group 1 ($M = 0.23, SD = 0.43$) being lower than the mean score for Group 2 ($M = 0.48, SD = 0.50$); No. 3 ($t(125) = -2.71, p = 0.007$), with the mean score for Group 1 ($M = 0.38, SD = 0.48$) being lower than the mean score for Group 2 ($M = 0.67, SD = 0.48$); No. 4 ($t(125) = -3.02, p = 0.002$), with the mean score for Group 1 ($M = 0.15, SD = 0.35$) being lower than the mean score for Group 2 ($M = 0.41, SD = 0.50$); No. 6 ($t(125) = -2.64, p = 0.009$), with the mean score for Group 1 ($M = 0.46, SD = 0.50$) being lower than the mean score for Group 2 ($M = 0.74, SD = 0.44$); and No. 10 ($t(125) = -$

2.31, $p = 0.022$), with the mean score for Group 1 ($M = 0.35$, $SD = 0.47$) being lower than the mean score for Group 2 ($M = 0.59$, $SD = 0.50$). As can be seen from the results, the participants within Group 2 had higher rates of correct answers for the brand associations to the brand personality dimensions than the participants of Group 1. However, these results cannot be considered as conclusive due to the noticeable difference in the number of participants within each group ($N = 100$ for Group 1 and $N = 27$ for Group 2), which may have a significant influence on the results.

Overall, through the analyzed data it is possible to conclude that the proposed framework displays some level of accuracy in relation to the generation of perception of the desired brand personality according to the elements presented in its visual identity. Among the sets of visual elements associated with the five dimensions of brand personality (see Figure 6), it is observable that only one of the sets, that is, one of the dimensions—sincerity—presented different results from those of the studies analyzed in the literature review. This specific result, however, generates opportunities for future research to refine the visual elements associated with the sincerity brand personality dimension. Nonetheless, it is observable that the remaining sets of visual elements, associated with the remaining dimensions, were to some extent confirmed as accurate by the results evidenced through the data obtained in this study.

General Conclusions

This research was conducted with three main objectives in mind: (1) to obtain a better and more comprehensive understanding about the visual representation of brand personality and about the process of attributing meaning to the visual elements of a brand through branding; (2) to organize and gather all the information segregated in the literature about the visual representation of brand personality traits through brand design elements so that this information could be united in a single work; and (3) from this union to develop a methodological framework that can identify, according to what was studied in the bibliographic review of other scholars, which elements of a brand's visual identity—specifically in this research, colors, typographies and shapes—can visually represent the personality dimension desired by the brand, according to their respective personality traits.

Indeed, it is observed that the desired objectives were successfully achieved. Objectives 1 and 2 were achieved through the literature review, not only with regard to the concepts of brand personality and brand visual identity, but also the main elements studied in this research—color, typography, and shape—which occurred despite certain limitations. As a result of the union of this highly segregated information in the literature regarding the visual representation of brand personality, it was then possible to achieve Objective 3 through the testing of the proposed framework.

This is evident from the results of the research. Ten visual identities of fictitious brands were developed, that is, brands that consumers could not have any kind of prior assumptions

about. In addition, these brands lacked any indications of their product, market segment, or communication style. Despite this, and although the sample had no other information about the brands, for about 70 percent of the developed visual identities most consumers perceived the personality traits that were intended for them to perceive. These results highlight the influence power that brand design has in generating brand personality perception, even before consumers can deepen their knowledge about a brand through any other type of engagement with it.

These results demonstrate a certain level of accuracy in the findings from the extensive bibliographic review conducted earlier in this research and in the association of certain visual elements with brand personality dimensions by the researchers of the present study. As previously mentioned, it could be said that, out of the five brand personality dimensions, the sincerity dimension is the only one in which the attribution of elements may require further and more precise research, considering, though, the similarity of these elements with the excitement dimension. However, as verified by the results, the correct dimension, sincerity, was selected by the sample as the second dimension most associated with both brands that had another dimension selected as “most associable” by the sample, which shows a certain level of influence of these elements for the successful generation of this perception.

Regarding the limitations, in general it appears that a greater volume of studies about the association of personality traits with some of the visual elements, that is, typographies and shapes, could have a positive impact on the accuracy of the proposed framework. Furthermore, in order to provide non-biased experiences to the participants, it was necessary to present in the questionnaire the entire set of words—personality traits—while referring to each dimension since these represent the different facets that constitute the dimension and so as not to influence the participants’ response by excluding certain specific traits. However, the wide variety of different words gathered in the option of each brand dimension in the questionnaire may have had negative effects on the sample, generating some level of confusion in the moment of choosing the most associable dimensions, since the very set of words within the dimensions may have different meanings due to the several facets that a single dimension has.

Finally, future research can explore other possibilities of brand design elements that make up a brand’s visual identity in order to make the proposed methodological framework even more comprehensive. However, it may also be possible to explore additional elements within the categories already studied in this research, namely, colors, typographies, and shapes. With the advances in studies in the communication and design fields, the possibilities for renewing and updating the work of this research are countless. In addition, the application of the methodological framework for the development of the visual identity of brands may also be explored in the future, given its levels of usefulness and applicability by professionals in the fields of brand design and branding.

AI Acknowledgment

Generative AI or AI-assisted technologies were not used in any way to prepare, write, or complete essential authoring tasks in this manuscript.

Informed Consent

The authors obtained informed consent from all participants.

Conflict of Interest

The authors declare that there is no conflict of interest.

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