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Brand Logo Design: How does Brand Name and Logo Naturalness Influence Consumers' Cognitive and Affective Responses?

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Brand Logo Design: How does Brand Name and Logo Naturalness Influence Consumers' Cognitive and Affective Responses?

Final Dissertation presented to Universidade Católica Portuguesa to obtain the marter's degree in Marketing

by

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Abstract

The name and logo are the most important brand identity signs, as they can help identify a product or brand, provide differentiation from competition and influence consumers' choices. As such, firms spend extensive amounts of resources in selecting an appropriate name and logo. Therefore, proper selection guidelines are critical in helping firms make decisions that will help them achieve their strategic objectives.

This study explores how brand name and logo design influence consumer's cognitive and affective responses. In particular, this research aims to determine if the level of naturalness of brand names and logos, has a significant effect on brand recall, recognition and associations and on affect.

First, a comprehensive literature review is presented, where the variables investigated in this research are analysed. Following that, a research model and research hypotheses were developed. In order to test the hypotheses, a quantitative research was conducted through an online survey, among the Portuguese population. This study used, as stimuli, a sample of fictitious and manipulated logos, ranging from very abstract to very natural. Respondents were randomly divided into nine experimental groups, with a total sample of 275 respondents. The results suggest that naturalness in name and logos significantly increases recall, recognition, associations and affect, and that, within natural names and logos, organic ones are the ones that obtain the best performance, as organicity significantly improves recall and affective responses.

Keywords: brand logo; brand name; logo design; naturalness; organicity; consumer response.

Resumo

O nome e o logótipo são os sinais de identidade da marca mais importantes , pois podem facilitar a identificação do produto ou marca, contribuir para diferenciar a marca da concorrência e influenciar as escolhas dos consumidores. Como tal, as empresas investem grandes quantidades de recursos na escolha apropriada de um nome e logótipo. Assim, é essencial desenvolver diretrizes de seleção para ajudar as empresas a tomarem decisões que as ajudem a atingir os seus objetivos estratégicos.

Este estudo explora a forma como o design do nome e logótipo da marca influencia as respostas cognitivas e afetivas do consumidor. Em particular, este estudo analisa se o nível de naturalidade dos nomes e logótipos tem um efeito positivo na recordação, no reconhecimento e nas associações e na resposta afetiva dos mesmos.

De forma a responder aos propósitos desta investigação, é apresentada uma revisão da literatura, onde são analisadas as variáveis em estudo. De seguida, é apresentado um modelo de investigação e são formuladas hipóteses. De forma a testar as hipóteses, é desenvolvido um estudo quantitativo, através de um questionário online realizado entre a população Portuguesa. O estudo tem como base um conjunto de nove logótipos fictícios e manipulados, que variam de muito abstratos a muito naturais. Os inquiridos foram aleatoriamente distribuídos por nove grupos experimentais, contando com um total de 275 participantes. Os resultados sugerem que a naturalidade do nome e do logótipo aumenta significativamente a recordação, o reconhecimento, as associações e a resposta afetiva, e que, entre os nomes e logótipos naturais, os orgânicos são os que obtém os melhores resultados em termos de recordação e de resposta afetiva.

Palavras-chave: logótipo; nome da marca; design do logótipo; naturalidade; organicidade; resposta do consumidor.

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Chapter I
Introduction

1.1. Theme of research and relevance of the topic

Nowadays, a product or service cannot exist without a brand. Brands are one of the most important intangible assets available to firms, and can significantly affect firm performance (Klink, 2003; Park et al., 2013). For a long time, literature has suggested that constructing and communicating a strong and clear brand identity can be the key to a firm's success (Gardner and Levy, 1955). Research states that the value of a product is enhanced when it is connected to a brand name (Belén del Río, 2001b), and the more positive judgements a consumer has about a product, the more positively they perceive the respective brand (Hillenbrand et al., 2013). Positive brand perceptions created by the brand identity signs can increase awareness and loyalty, which translate to significant competitive advantage (Belén del Río et al., 2001b). Therefore, brand verbal and visual elements are essential in creating any type of brand strategy, whether it is to create differentiation, loyalty, or gain competitive advantage, as they can shape the consumers' perceptions and judgements about a brand (Henderson et al., 2003).

As one of the most prevalent elements of brand communication, the brand name and logo are key components of a brand identity (Henderson and Cote, 1998). The brand name is regarded as the main point of interaction between the consumer and the brand, and as such, acts as the placeholder for any judgements the consumer has made about a product (Hillenbrand et al., 2013). A powerful and well-known brand name can allow brands to increase sales, practice higher margins, and have an overall greater advantage over competitors (Chay, 1991), which ultimately means that a product's value can be significantly enhanced when it is associated with a brand name (Belén del Río et al., 2001b).

Originally, and similarly to brand names, the intended purpose of logos was to help the consumer differentiate a brand from competitors. Throughout history, individuals and groups have used logos as an identification tool (Park et al., 2013). For instance, citizens of Ancient Greece used stamps with animal designs to sign documents, and a 'coat of arms' was used in medieval Europe to identify friendly or enemy armies while at war. However, more recently, literature has highlighted the

fact that logos do not only serve as a mean of identification- they can communicate what the individual or group stands for (Park et al., 2013). Nowadays, logos serve to illustrate the brands' general image and meaning (Henderson and Cote, 1998), they can affect a firm's reputation (Fouroudi et al., 2014), and due to their visual nature, logos can help firms cross international barriers (Kohli et al., 2002). Moreover, nowadays brand names and logos can be seen everywhere- from product packaging, to TV commercials, business cards, outdoors and social media. Consequently, companies have been investing an increasing amount of resources in selecting, designing and updating their logos (Henderson and Cote, 1998). Despite this, some brands still have logos that fail to accomplish the desired responses because they are difficult to memorize or fail to communicate any meaning (Henderson and Cote, 1998). Hence, marketing managers would greatly profit from following specific guidelines when selecting or modifying their brands' name and logo.

In this study, we aim to explore how brand identity signs can impact consumers' perceptions and reactions to the brand. More specifically, the focus is on analysing the effect that brand name and logo naturalness can have on improving memorability, on generating more positive brand associations, and on influencing consumers' affective response to the brand. Accordingly, this study aims to provide brands with guidelines on how to select names and design logos in order to achieve their desired strategic outcomes, in terms of consumer response to the brand.

1.2. Identification of Research Gaps

Considering that brands are one of the most important intangible assets for firms (Klink, 2003), several authors state that communicating a strong and cohesive brand identity can be the key to generating value for a business (e.g., Gardner and Levy, 1955; Belén del Río et al., 2001b; Round and Roper, 2017). Some studies highlight the importance of following brand name and logo selection guidelines in order to achieve strategic marketing objectives (e.g., Hillenbrand et al., 2013; Henderson and Cote, 1998; Klink, 2003). However, there is limited research on what specific guidelines should be followed (Jiang et al., 2016). In an increasingly saturated marketplace, the brand name and logo allow consumers to easily recognize and remember the brand (Kohli et al., 2002). Several authors recognize the importance of

brand identity design and marketing aesthetics, (e.g., Reimann et al., 2010) however, there is a significant lack of research on how logo design can influence memorability, among other cognitive and affective reactions (Machado et al., 2015). The same can be said for the brand name element, despite it is regarded as a key source of brand equity (Round and Roper, 2017), as there is little research on how different types of names affect consumer responses. Additionally, despite the importance of positive brand associations in establishing brand equity, there is little empirical research that analyses the importance and effect of brand name associations (Belén del Río et al., 2001a) and brand logo associations in consumer response.

Henderson and Cote (1998) highlight the importance of establishing logo design guidelines, and the authors were among the first to analyze the concept of naturalness and how this design dimension can improve recognition and create positive affect. However, the authors highlight the need for further research on the use of words in logos, considering the extent of brand logos that include the brand name in its design. Additionally, the authors underline that it is necessary to examine how brand logos improve brand recall, as their study focuses only on recognition. In conclusion, there is a significant gap in research focused on analyzing the effect of name and logo design on consumers' cognitive and affective responses.

Considering the findings of previous research (Henderson and Cote, 1998; Machado et al., 2015; Torres et al., 2019), we will analyze how the level of naturalness in brand names and logos influences consumers' cognitive and affective responses, specifically in terms of recall, recognition, brand associations and affect. Furthermore, we will assess if and how the different types of naturalness (i.e., organicity and culturalness) can affect the variables previously mentioned.

1.3. Research Questions

This research explores the effect of brand identity signs on consumer response by addressing the following questions:

1) How does brand name and logo design influence consumer's cognitive and affective response?

1.1. Does the use of specific types of natural names and logos (i.e., organic and cultural) improve recall and recognition?

1.2. Does the use of specific types of natural names and logos (i.e., organic and cultural) help generate more brand associations?

1.3. Does the use of specific types of natural names and logos (i.e., organic and cultural) improve affective response?

Chapter II
Literature Review

2.1. The Brand Identity Signs

A brand is defined by Aaker (1991) as "a distinguishing name and/or symbol (…) intended to identify the goods or services of either one seller or a group of sellers, and to differentiate those goods or services from those of competitors" (p. 21). A brand is a fundamental tool for consumers to distinguish among products which may be similar, facilitating purchase decisions. In addition, a brand can simplify the search for product information by communicating the identity and meaning of a product to the consumer, in a quick and convenient way. This is even more helpful when it comes to intangible products or services, as it is more difficult to physically evaluate product characteristics and benefits (Hillenbrand et al., 2013).

Brand identity, described as "the visual picture and meaning derived from the visual impact of the brand" (Zaichkowsky, 2010, p. 3), can create equity and it is regarded as one of the most valuable intangible assets for firms (Keller and Lehmann, 2006). It is usually defined as the perceptions and attributes that consumers attach to the brand, which can be compatible with the reality of the products or completely imagined (Zaichkowsky, 2010). In this research, the term brand identity will be used to refer to identity signs that the brand uses to identify and differentiate itself.

According to the findings of prior studies, brand identity signs can affect how consumers perceive the brand, their knowledge, awareness, as well as their attitude towards it (Alserhan and Alserhan, 2012). While brand identity can be established through the use of different elements such as typeface, symbol, color, shape, packaging, product design, or even unique selling points (Zaichkowsky, 2010), the name and logo are considered the two primary vehicles for communicating the brand's general image and meaning (Aaker, 1991; Henderson and Cote, 1998). They are often used in conjunction with each other, and each identity sign can help improve the awareness and associations linked to the other identity signs (Kohli et al., 2002).

2.1.1. The Brand Name

Often, the brand name- the "part of a brand which can be vocalized" (Kotler, 1991, p.442)- is the first identifying element experienced by the consumer (Round and Roper, 2015), and, therefore, a "key source of the equity provided to the consumer by the branded entity" (Round and Roper, 2017, p. 2119). As such, it is considered the most fundamental and valuable brand element, as it is the basis for all communication and awareness efforts (Aaker, 1991). However, the brand name does not exist solely for the identification of the company's products: it captures the core theme (Letchumanan and Sam, 2016), holds meaning, represents personality traits (Keller and Richey, 2006), and represents several attributes associated with functional, emotional and symbolic values (Keller, 2003). Companies spend significant resources trying to establish a well-suited name for their brand, as the brand name can have an enormous influence on a consumer's purchase decision and can be one of the most valuable elements of marketing and positioning strategies (Alserhan and Alserhan, 2012). For example, it has been shown that consumers' evaluations of a product can dramatically differ from when the brand name is not shown to when it is revealed (Aaker, 1991). In order to further understand the potential effects that brand names can have, we are going to explore how different types of brand names can influence consumer's cognitive responses, specifically in terms of recall, recognition and associations.

When it comes to choosing a brand name, firms are faced with a complex task. Generally, a good brand name should be short, easy to spell, pronounce and remember, while being distinctive, free of negative connotations and suggestive of benefits associated with the product (Turley and Moore, 1995). Firms can choose to adopt a name based on existing or invented words, ranging from very descriptive names to names not even suggestive of the character and quality of the product (Zaichkowsky, 2010). A highly descriptive name might be chosen when there is the intention of suggesting that the brand outperforms competition in relation to a specific product benefit, while a non-word name has the advantage of being more flexible in the associations that can be made (Lerman and Garbarino, 2002).

2.1.1.1. Brand name recall, recognition and associations

Substantial research has been done to understand what comes to their mind when consumers think about a brand. As a result, the notion of brand knowledge is established as "consisting of a brand node in memory to which a variety of associations are linked" (Keller, 1993, p.3), which is determined by both brand awareness and brand image (Keller, 1993).

Brand name awareness is a desired strategic outcome for firms, so it is pertinent to understand what are the characteristics of brand names which enhance awareness. Brand awareness is present when a consumer is able to form a link between a brand and a product category and can be measured through recall and recognition. The lowest level of brand awareness is recognition (Aaker, 1991), which refers to consumers' ability to confirm previous exposure to a brand, when the brand is presented as a cue. The following level of awareness is recall, which reflects consumers' ability to mentally retrieve a brand that was experienced before, when given cues such as the product category (Keller, 1993). Prior research shows that consumers will often select a product of a brand they recognize over an unknown one (Aaker, 1991). However, false recognition can also take place. It occurs when consumers believe they recognize a name or logo when they do not. Some companies, in particular the ones with lower communication budgets, may intentionally use a name or logo similar to competitors, in order to create a feeling of familiarity, resulting in false recognition (Henderson et al., 2003).

Consumers' understanding of a brand's image is highly influenced by the associations generated from brand identity signs, mainly from the brand name (Aaker, 1991). Brand image is defined as the "perceptions about a brand as reflected by the brand associations held in consumer memory"(Keller, 1993, p.3). From consumers' previous experiences with the brand, result a multitude of "informational nodes linked to the brand node"(Keller, 1993, p.3), known as brand associations, which hold the meaning of the brand for consumers (Belén del Rio et al., 2001a).

Several authors note that brand associations are positively linked to brand equity (Aaker, 1996; Schmitt, 2011; Wang, 2015). Brand associations can positively affect the consumer's response to the brand and its products, and, therefore, influence consumer choice, acceptance of a price premium and of brand extensions,

generating considerable value for the firm (Belén del Rio, 2001a). Accordingly, producing strong and distinctive associations is a key strategy for differentiation from competitors (Aaker, 1996). Having said that, the set of associations that a firm aims to create in consumer's minds is not necessarily congruent with the brand image developed by the consumer, as each consumer's experience with the brand is different, and the activation of associations is usually of automatic nature (Camiciottoli et al., 2014). Brand associations can vary according to favorability, strength and uniqueness, and include product-related and non-product-related attributes; functional, experiential and symbolic benefits; and brand attitudes (Keller, 1993). According to Romaniuk and Sharp (2013), any information that consumers associate with a brand is connected to brand name recall. Therefore, the more associations are established in relation to the brand, the more it will be remembered by consumers.

Researchers have found that certain brand names can influence the characteristics consumers associate with the brand. For instance, Klink (2000) proposes that higher-frequency sounding names can evoke associations of lightness, softness, quickness and coldness, and Davis and Herr (2014) conclude that brand names containing the word "bye" trigger purchase-related associations, as it resembles the word "buy". Additionally, Ahn and La Ferle (2008) explain that using familiar words in brand names generates stronger associations, which facilitates recall.

2.1.2. The Brand Logo

The logo is the graphical element that a company uses to identify itself or its products (Machado et al., 2015), and serves as a tool to effectively communicate the company's strategy and identity to internal and external stakeholders (Foroudi et al., 2017). As a key visual brand identity sign, the logo is the basis for various direct and indirect non-verbal communication efforts, such as advertisements, packaging and other promotional materials (Henderson and Cote, 1998). Foroudi et al (2017) also highlight that, as a key element of the brand's visual identity, the logo increases the knowledge consumers have about a brand, which creates competitive advantage (especially in current crowded marketplaces). Often consumers might not even be aware of the presence of brand logos, but they have processed them subconsciously

and this can affect their attitude and behavior towards the brand (Saaksjarvi et al., 2015).

A logo can be composed of different typeface and graphic elements, which can be used in conjunction with each other or by themselves, therefore ranging from word-driven (i.e., wordmark, letterform) to image-driven (i.e., emblem, pictorial mark, symbolic mark) (Wheeler, 2003). When it comes to logo design, there are two facets to take into account: content and style. Content refers to the different elements that are incorporated in the logo, while style refers to the way these elements are arranged and presented. Because people seek meaning in logos, content should be the major driver of logo design (Kohli et al., 2002).

2.1.2.1. Brand logo recall, recognition and associations

The logo has an essential role in creating recognition and increasing familiarity with the brand (Henderson and Cote, 1998), since pictures are perceived faster than words and even brief indirect exposure to logos can have an impact on consumers (Henderson et al., 2003). Brand logos can also help consumers remember the brand name (Kohli et al., 2002), since these two elements are strongly connected. Logo recognition occurs when consumers remember having previously seen the logo, whereas logo recall involves consumers remembering the brand name when seeing the logo without the name (Henderson et al., 2003). For brand logos, false recognition might also occur and is regarded as a relevant strategy to generate brand awareness (Henderson and Cote, 1998).

Several studies show how logo design elements can affect consumer's perceptions of a brand, and what different associations they evoke. For instance, Hynes (2009) found that cool colours are associated with peace and nurture, and Jiang et al (2016) conclude that round shapes are associated with harmony, softness and femininity, whereas angular shapes in logos are generally associated with conflict, dynamism and masculinity. Nevertheless, Keller (1993) highlights the importance of communicating a harmonious brand meaning through the brand identity signs. The author notes that if the different signs do not convey a consistent message, brand associations might be perceived as weaker, less favorable and be subject to change more easily.

2.1.3. Affect towards the brand name and logo

Similarly to brand awareness, positive affect is a universal goal for brands and, therefore, firms spend significant resources trying to increase it (Henderson and Cote, 1998, Henderson et al., 2003). Brand affect is defined by Chaudhuri and Holbrook (2001) as a "brand's potential to elicit a positive emotional response" (p. 82) as a result of the experience with that brand. In other words, affect is related to the feelings that a brand evokes in consumers (Dick and Basu, 1994). Literature shows that a sense of familiarity evokes feelings of comfort and pleasure, which means brand awareness is closely associated with positive affective responses (Hoyer and Brown, 1990), which in turn, influence brand attitude (Henderson and Cote, 1998) and increase brand loyalty (Chaudhuri and Holbrook, 2002; Kabadayi and Alan, 2012).

Brand identity signs can have a critical role in stimulating strong affective responses which are easily transferred to the product or the brand (Henderson and Cote, 1998, Henderson et al., 2003). Previous research has shown that, for instance, an aesthetic logo design tends to elicit strong positive affective responses (Bloch, 1995). In many purchase decisions, especially low involvement ones, the affect attached to the brand logo is one of the only cues that provide brand differentiation (Hoyer and Brown, 1990). As the current marketplace becomes increasingly crowded, firms can make use of brand identity signs to stand out from competition and increase recognition among the public. Accordingly, it is important to determine what brand name and logo attributes can promote higher brand awareness and stimulate brand associations, as well as generate positive affective responses.

2.2. Naturalness and its effect on brand name and logo memorability and affect

Previous research in brand name strategy has shown that meaningful brand names evoke a larger number of associations, leading to higher recall (Kanungo, 1969), and high-imagery brand names, i.e., concrete brand names, generate significantly higher recall and recognition, as opposed to abstract names (Robertson,

1987). The level of abstractness in brand identity signs has since become a topic of discussion, as authors claim that brand signs should evoke consistent meaning across different people (Henderson and Cote, 1998), and transmit an easily interpretable message (Keller, 1993), as is the case of natural designs.

Marketers can imbue a brand name or logo with meaning through naturalness, which is referred to as figurativeness in the semiotics literature. According to semiotics, figurativeness and its endpoint abstractness, reflect the degree to which a sign depicts objects from the real world: a sign is abstract when there is no link to the real world (at its limit, total abstraction does not provide any cue about what is intended to be represented) and in the opposite situation we would say the sign is figurative (Greimas and Courtés, 1993). Natural or figurative signs have deep and consensually held real-word meanings, they are frequently used and have multiple connections within semantic networks, as such they demand a lower learning effort and will be more easily recognized and recalled (Keller et al., 1998; Lencastre, 1997; Lowrey et al., 2003; Meyers-Levy, 1989). According to Henderson and Cote (1998, p.16), naturalness reflects "the degree to which the design depicts commonly experienced objects".

Naturalness, along with elaborateness and harmony were found to be the main drivers of logo recall and recognition (Henderson and Cote, 1998). These authors conclude that logos high in naturalness generate higher recognition, along with shorter recognition time. Additionally, in more recent studies, it was demonstrated that natural logos are generally preferred over abstract logos. This is because natural design elements are not restrained by culturally derived judgments (Machado et al., 2015, Torres et al., 2019). Moreover, Henderson et al (2003) determined that natural logos are more likely to induce a common set of associations among consumers, as opposed to abstract logos, which are less likely to evoke similar meaning across different people.

Apart from increasing memorability, several studies found that natural logos more effectively generate positive brand affect, as they hold more meaning than abstract ones (Henderson and Cote, 1998; Henderson et al., 2003; Machado et al., 2015; Torres et al., 2019). This can be explained by the theory that natural designs tend to be biologically preferred, as humans have evolved to co-exist with animals, plants and other natural elements (Norman, 2004). Moreover, natural logos were shown to significantly improve affect throughout different countries despite cultural

differences, revealing that naturalness is a universally appealing dimension, as design responses are innate to individuals (Torres et al., 2019).

2.2.1. Organicity and its effect on brand name and logo memorability and affect

Within natural identity signs, Machado et al. (2015) distinguish between organic and cultural signs: organic signs refer to objects from the biological or sensitive world (e.g., flowers, fruits, animals, landscapes, people), while cultural signs represent objects that do not have a direct biological origin, ranging from manufactured objects (e.g., house, table, boat) to cultural symbols (e.g., punctuation marks or the Christian cross). It is increasingly relevant to study the distinction between organic and cultural signs, as previous studies have been shown that organic designs are preferred over cultural designs (Machado et al., 2015).

		Natural	
	Abstract	Cultural	Organic
	A logo that has no connection with the real world is artificially constructed and non-representative (i.e. squares, rectangles, triangles, horizontal or vertical stripes, circles and dots, ovals, arcs, swooshes, etc.)	A logo representing manufactured objects (i.e. buildings, furniture, transport vehicles, everyday objects) or other cultural symbols (i.e. written symbols)	A logo representing objects from the natural world (i.e. flowers, fruits, vegetables, animals, faces, bodies, landscapes, etc.)
Known			
Unknown			

Figure 1: Definition and examples of logos comprehended in each category of naturalness
Source: Machado et al. (2015)

Semiotics theory states that organic objects evoke more positive affective responses than cultural objects, as they are biologically derived, and accordingly, easily recognizable for their sensitive properties (Greimas and Cortés, 1993; Lencastre, 1997). Moreover, Henderson and Cote (1998) show that objects with widely recognized meanings lead to correct recognition, and positive affect,

reinforcing that natural logos evoke a more familiar meaning among consumers. As the first studies that analyse organicity in logo design, Machado et al (2015) and Torres et al (2019) found that organic logos trigger significantly higher positive affective responses than cultural logos. Additionally, the authors have shown that organic logos are able to produce the same level of affect as well-known abstract logos, suggesting that new brands who use organic logo designs will achieve the same level of affect as established brands using abstract logos.

Despite the relevance that the logo and name have on influencing brand awareness and image, there is not substantial literature that examines the impact of these two closely connected brand identity signs on brand associations. Klink (2003) highlights the lack of literature on the relationship between brand name and logo, despite noting that consistency between the two can facilitate the communication of a cohesive brand meaning. Since brand name awareness cannot be disconnected from the brand's logo awareness (Aaker, 1996), in this study we will focus on examining word-driven logos, where the brand name is a focal element of the design.

Considering the findings of previous research, we propose a set of hypotheses related with the three types of cognitive response analyzed (i.e.,, recall, recognition, and associations), as well as with affective response, and which are detailed as follows:

H1.1: Natural names and logos will generate a greater recall than abstract ones.

H1.2: Within natural names and logos, organic ones will generate a greater recall than cultural ones.

H2.1: Natural names and logos will generate a greater recognition than abstract ones.

H2.2: Within natural names and logos, organic ones will generate a greater recognition than cultural ones.

H3.1: Natural names and logos will generate more associations than abstract ones.

H3.2: Within natural names and logos, organic ones will generate more associations than cultural ones.

H4.1: Natural names and logos will evoke more positive affective responses than abstract ones.

H4.2: Within natural names and logos, organic ones will evoke more positive affective responses than cultural ones.

Chapter III
Methodology

3.1. Conceptual Framework and Research Design

Previous literature has highlighted the role of the brand name in the firm's performance (Belén del Río et al., 2001b; Hillenbrand et al., 2013; Round and Roper, 2017), as well as the importance of the brand logo in the achievement of strategic marketing objectives, such as differentiation (e.g., Henderson and Cote, 1998; Kohli et al., 2002; Park et al., 2013; Jiang et al., 2016). Nonetheless, no significant research has focused on studying the combined effect of the brand name and logo. This is particularly relevant as the brand name and logo are regularly used together, and since the brand name can be one of the main components of brand logos (Henderson and Cote, 1998).

The importance of establishing guidelines for designing and selecting logos is accepted in the literature, however, little research has been conducted on what specific rules firms should follow. Henderson and Cote (1998) have introduced a set of logo design guidelines, highlighting that naturalness is one of the main visual characteristics of logos that evoke positive affect, familiar meaning and correct and false recognition. Additionally, Machado et al (2015), Torres et al (2019) and Machado et al (2020) have provided further research on the influence of the different types of natural designs (i.e., organic and cultural) on affective response. However, these studies do not cover relevant variables, such as recall and brand associations, and focus only on studying pictorial brand logos, which do not include the brand name as a design element. The present study intends to add to previous literature by studying the brand name and logo in combination, and by analysing their effect on four different and relevant outcomes, i.e., recall, recognition, associations and affect.

Primarily based on Henderson and Cote's (1998) brand logo design guidelines and further literature exploring the effects of naturalness on the brand logo (Machado et al., 2015; Torres et al., 2019), this study expects brand name and logo naturalness, and, in particular, organicity, to positively affect name and logo recall

and recognition, to generate more brand associations and to enhance affective responses.

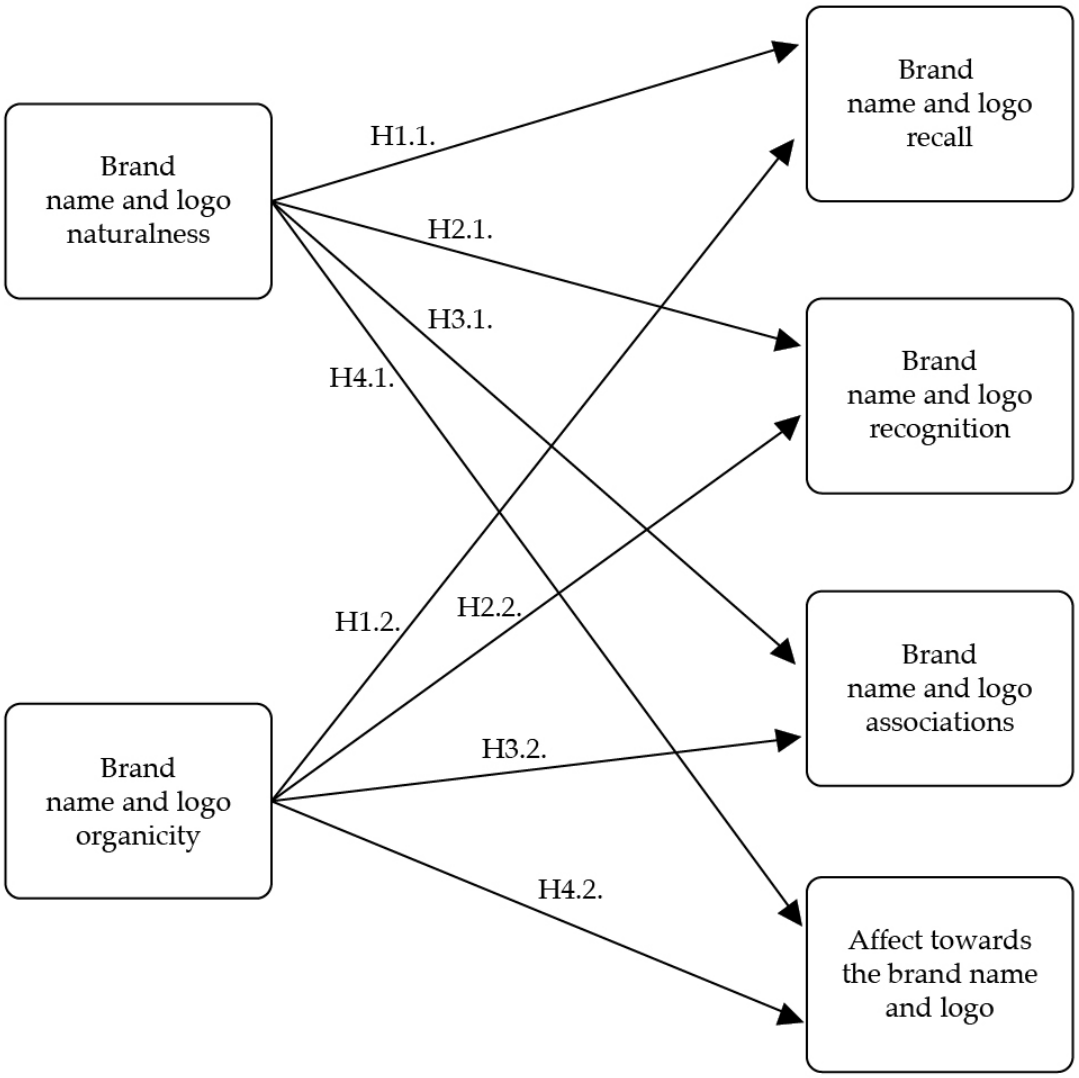

Figure 2: Research Model

As the conceptual model illustrates (figure 2), the design elements analysed are naturalness and organicity, thus these are independent variables of this study. The four dependent variables are, as mentioned, name and logo recall, name and logo recognition, name and logo associations and affect towards the name and logo.

3.2. Stimuli Selection

This study used unknown names and logos as stimuli (please see figure 5). These names and logos were used in a previous study by Lencastre (1997) and updated by a professional designer to guarantee their design would still be actual. The selection of the stimuli is based on Lencastre's (1997) decision trees (figure 3 and 4), which describe the different types of names and logos, according to their level of naturalness (or figurativeness). In the decision trees, brand names and logos are categorized ranging from completely abstract to completely figurative (or natural).

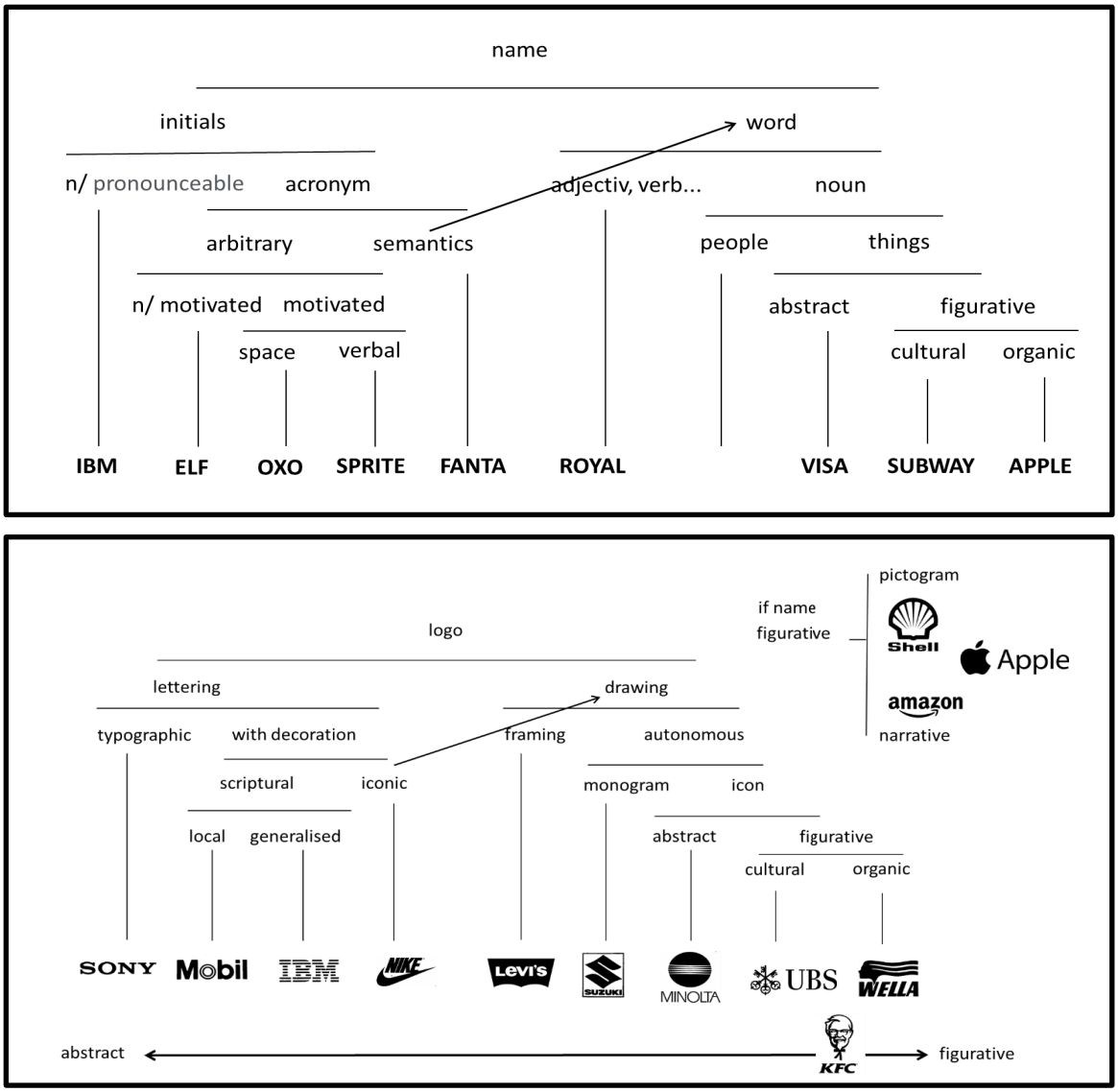

Figure 3 and 4: Decision trees for brand names and logos

Source: Lencastre (1997)

For this experiment, we used nine variants of a fictitious brand name and logo, which has as its matrix the name "TOMATE", which means "tomato" in Portuguese (this experiment was done using Portuguese brand names, as the participants were Portuguese native speakers). These 9 variants were created based on the decision tree by Lencastre (1997), and changed progressively from abstract to natural.

Concerning the name, the nine stimuli vary, following a sequence of MTE/MATE/TOMATE: MTE is a set of unpronounceable initials with no predefined meaning; MATE is an acronym that can have different meanings in the Portuguese language, such as an adjective that means 'lack of brightness' or a tense of the verb 'matar' ('kill'); TOMATE is a natural organic word which means 'tomato'. In regard to the logo, the nine stimuli range from completely typographic to pictogram. The last group (group 0/6) was created in order to test the combination of a completely abstract name ('MTE') with a natural logo. We created 9 experimental groups of stimuli, each one corresponding to one of the 9 variants of the logo 'TOMATE'.

Figure 5: Brand names and logos used in the experimental groups

In addition to the main stimulus (the nine variants of the logo 'TOMATE'), two sets of different logos were used as auxiliary stimuli. These logos similarly range from very abstract to very natural, according to Lencastre's (1997) decision trees.

3.3. Measures and Procedure

Each stimulus was exposed to at least 30 respondents. Each experimental group was composed by different respondents to avoid experience effects. Data were collected through an online questionnaire, using Qualtrics.

To ensure that all questions were clear and easily understood by the respondents, a pre-test was conducted. Both the pre-test and the final questionnaires were translated into Portuguese, as the respondents were Portuguese native speakers.

After conducting the pre-test, we decided to eliminate one of the two questions on name and logo associations, as we concluded that the second question was perceived as repetitive and respondents tended to give similar answers to the two questions.

Nine different versions of the questionnaire were created (see Appendix 1 for an example), since each respondent was presented with one of the nine variants of the fictitious brand "TOMATE", as previously explained. Despite the different versions of the questionnaire containing different stimuli, the questions were all the same.

3.3.1. Structure of the Questionnaire

At the beginning of the questionnaire, each respondent was presented with a plaque containing ten logos: the experimental stimulus, plus other nine unknown auxiliary logos (see example in Figure 6). All respondents were exposed to the same auxiliary stimuli, with only the experimental stimulus differing for each group.

Figure 6: First plaque displayed in experimental group 7.

Participants observed this plaque for 15 seconds, before it was removed. The respondents were then asked to write the name of the brands which they could remember seeing. Next, a second plaque appeared, containing the same experimental stimuli of the first plaque, plus nine different auxiliary logos, which were also unknown. Respondents were asked to select, from this plaque, the logos that they remembered seeing in the previous plaque. The first and second questions aimed to measure, respectively, recall and recognition.

Figure 7: Second plaque displayed in experimental group 7.

Following, respondents were exposed again to the first plaque, and were asked which of the brands they previously knew. This question aimed to measure false recognition. The next questions all refer to the first plaque of logos.

The following section of the questionnaire aimed to gather information on brand associations. First, respondents were asked to state which word or short phrase they associated with each logo, and then to indicate whether that association was positive, neutral or negative.

The subsequent section of the questionnaire aimed to evaluate affective responses. Respondents were asked to indicate their level of agreement with six statements, for each of the ten logos. Using a seven-point Likert-type scale, where 1= "strongly disagree" and 7="strongly agree", including the items most often used to measure affect or attitude towards brand identity signs (I consider this logo to be interesting; I consider this logo to be distinctive; I like this logo; I consider this logo to be good; I consider this logo to be of high quality) (Aggarwal, 2004; Chaudhuri and Holbrook, 2001; Grohmann, 2009; Grossman and Till, 1998; Henderson and Cote, 1998; Walsh et al., 2010). In order to avoid bias resulting from response fatigue (Egleston et al., 2011), we randomized the order in which the stimuli were displayed in this question, using Qualtrics software. Because this study was conducted with Portuguese respondents, the scales were translated from English to Portuguese. To ensure reliability and measure the internal consistency of our model, the Cronbach's Alpha (α) was estimated. With a value of (α=0,965), which is above the recommended value of 0,7 (Hair et al., 1998), we can conclude that our model has an excelent level of internal consistency.

The final part of the questionnaire questions related with socio-demographic information, namely, respondents' sex, age, educational background, profession and area of residence.

Chapter IV
Results

4.1. Sociodemographic characteristics of the sample

Throughout a period of one month, the survey reached a total of 442 respondents. However, 167 (37,8%) respondents submitted an incomplete survey, and 275 (62,2%) respondents completed the survey. The total of 275 respondents was divided equally throughout the nine experimental groups, with each group consisting of 30 respondents, with the exception of group 3 and group 0-6 which had 31 respondents, and group 6, which had 33 respondents.

In terms of biological sex, the sample consists of 119 (43,3%) male and 156 (56,7%) female. Regarding age, respondents ranged from 16 to 82 years old, with the majority of respondents ranging from 20 to 30 years old (30,2%), followed by 40 to 50 (23,3%), and 50 to 60 years old (20,7%).

In terms of educational background, the majority of the respondents have a university education (76,4%), and most of them possess a bachelor's degree (50,9%). A total of 22,9% of respondents have primary or high school education, with only 0,7% of respondents choosing to answer "other" in this question.

Concerning the respondents' professional occupations, 26,9% are either students or working students, 24,7% are connected to the management and financial sector, 10,2% work in marketing and sales, 7,3% are in the education sector, and 6,9% work in arts and design. Lastly, a portion of our sample (24,0%) are grouped in an "other" category, as they either did not specify or they work in a variety of different sectors.

Regarding the sample's geographic distribution, the majority of respondents reside in Lisbon (59,3%). The following most relevant districts of residence are Setúbal (14,5%), Faro (7,6%) and Porto (4,0%) (see Table 1).

Table 1

Sample characteristics

	Frequency (n=275)	Percentage (%) (n=275)
Sex		
Male	119	43,3
Female	156	56,7
Age		
15-34	118	42,9
35-64	152	55,3
65+	5	1,8
Education		
Elementary School	4	1,5
High School	59	21,5
Bachelor's Degree	140	50,9
Post-Graduate's Degree	20	7,3
Master's Degree	46	16,7
PhD	4	1,5
Other	2	0,7
Profession		
Arts and Design	19	6,9
Education	20	7,3
Management and Finances	68	24,7
Marketing and Sales	28	10,2
Student/ working student	74	26,9
Other	66	24,0

Table 1 (continued)

	Frequency (n=275)	**Percentage (%) (n=275)**
Aveiro	5	1,8
Braga	5	1,8
Castelo Branco	1	0,4
Coimbra	1	0,4
Évora	1	0,4
Faro	21	7,6
Funchal	2	0,7
Guarda	4	1,5
Leiria	8	2,9
Lisboa	163	59,3
Ponta Delgada	1	0,4
Porto	11	4,0
Santarém	6	2,2
Setúbal	40	14,5
Vila Real	1	0,4
Viseu	5	1,8

In Table 2 we present a simplified representation of each experimental group's sociodemographic characteristics. In the following section we will analyse if the groups differ significantly regarding age, sex and educational level.

Table 2

Experimental groups' characteristics

Experimental Groups	Sex		Age			Education		Total
	Male	Female	15-34	35-64	65+	Elementary / High School	University	
Group 0	15	15	13	16	1	7	23	30
Group 0-6	13	18	10	21	-	11	20	31
Group 1	9	21	11	19	-	5	25	30
Group 2	15	15	9	18	3	12	18	30
Group 3	11	20	14	17	-	7	24	31
Group 4	16	14	17	13	-	4	26	30
Group 5	11	19	19	11	-	4	26	30
Group 6	19	14	11	21	1	6	27	33
Group 7	10	20	14	16	-	7	23	30
Total	119	156	118	152	5	63	212	**275**

4.2. Statistical Analysis

First, the data from the questionnaires was edited in order to properly conduct the statistical analysis, using SPSS.

Then, three chi square tests of independence were performed in order to explore possible differences in sociodemographic variables, between the experimental groups. The results show that there was no significant association between the experimental groups and sex ($\chi^2(8) = 9{,}78$; $p = .281$), educational level ($\chi^2(8) = 11{,}33$; $p = .184$), nor age ($p = .073$, Monte Carlo test). Thus, we conclude that the experimental groups are not biased regarding sociodemographic characteristics, and these variables will not be included in the regression models that follow.

4.2.1. Hypothesis Testing

Firstly, three of the four dependent variables (brand name and logo recall, brand name and logo recognition and brand name and logo associations) were dichotomized (0=No; 1=Yes). Then, we performed three independent binomial logistic regressions in order to analyse the differences between the nine experimental groups, along with separate McNemar tests to compare the different auxiliary stimuli.

Following that, we carried out a single linear regression in order to predict our fourth dependent variable (affect towards the name and logo), based on the experimental groups. Additionally, a Wilcoxon signed-rank test was performed in order to test the differences between the auxiliary stimuli.

In the following sections, we present the results and analyse them in detail.

4.2.1.1. Recall

A binomial logistic regression was used to test H1.1. The results indicate that the model explains 10,6% of the variance and that it is statistically significant ($x2(8) = 21,114$; $p< 0,01$). In Table 3 we present the percentage of positive responses for each of the experimental groups, along with the main results from the regression.

Table 3

Experimental groups' recall binary response (%) and regression model

Experimental Groups	Recall				
	%	B	SE	OR	95% CI
Group 0: Initials (ref. category)	**17%**	-	-	**-**	-
Group 0-6: Initials + Figurative drawing	**10%**	-0,62	0,78	**0,56**	0,116-2,473
Group 1: Acronym	**20%**	0,22	0,67	**1,25**	0,336-4,644
Group 2: Figurative noun	**17%**	0	0,69	**1**	0,257-3,888
Group 3: Decorated lettering	**35%**	1,01	0,62	**2,75**	0,820-9,219
Group 4: Framed lettering	**27%**	0,6	0,64	**1,82**	0,518-6,382
Group 5: Abstract drawing	**40%**	1,20	0,62	**3,33***	0,998-11,139
Group 6: Figurative drawing	**39%**	1,18	0,61	**3,25**	0,991-10,653
Group 7: Pictogram	**47%**	1,48	0,61	**4,37***	1,320-14,504
$x2(8) = 21,114$; $p< 0,01$; Nagelkerke $R^2 = 0,106$					
n = 275; *p < .05; **p < .01; ***p < .001; Dependent variables coding: 0=No; 1=Yes					

Participants from Group 5 and Group 7, show a statistically significant increase in the odds of recalling the name and logo (3,33 and 4,37 respectively), in comparison to participants from Group 0. Other experimental groups did not show a statistically significant difference in respect to Group 0. For this reason, we can only partially support *H1.1: Natural names and logos will generate a greater recall than abstract ones.*

In order to test our next hypothesis, H1.2, Cochran's Q test was used to determine if there are differences in recall between the nine auxiliary stimuli. The test determined that there are statistically significant differences (χ^2 (8) = 229,53; p < .001). Following, separate McNemar tests were conducted to determine the differences between the cultural stimuli (VIOLINO and CABANA) and the rest of the stimuli, using a Bonferroni-adjusted α = .006. The percentages of positive recall responses and the results of the tests are shown in Table 4 and Table 5.

Table 4

Auxiliary stimuli's recall binary response (%) and McNemar test output

Auxiliary Stimuli	%	OR	95% CI
VIOLINO (ref. category)	**19%**	**-**	-
AVM	**24%**	**2,41**	1,260 – 4,588
PURO	**21%**	**3,04**	1,575 – 5,880
LAVRADOR	**32%**	**1,93****	1,038 – 3,579
CABANA	**21%**	**1,92**	0,972 – 3,773
CARACOL	**34%**	**1,16****	0,618 – 2,176
ORQUÍDEA	**19%**	**1,525**	0,746 – 3,117
CEREJA	**37%**	**1,19****	0,640 – 2,202
SARDINHA	**64%**	**1,33****	0,697 – 2,551

Table 5

Auxiliary stimuli's recall binary response (%) and McNemar test output

Auxiliary Stimuli	%	OR	95% CI
CABANA (ref. category)	**21%**	**-**	-
AVM	**24%**	**2,4**	1,286 – 4,490
PURO	**21%**	**1,41**	0,718 – 2,775
LAVRADOR	**32%**	**1,688***	0,928 – 3,070
VIOLINO	**19%**	**1,92**	0,972 – 3,773
CARACOL	**34%**	**1,38****	0,759 – 2,510
ORQUÍDEA	**19%**	**2,34**	1,205 – 4,544
CEREJA	**37%**	**0,866****	0,472 – 1,590
SARDINHA	**64%**	**0,75****	0,414 – 1,353

In comparison with the two cultural logos (VIOLINO and CABANA), all the organic stimuli, with the exception of ORQUÍDEA, showed a statistically significant increase in recall. It is important to note that ORQUÍDEA is the only organic name that was accompanied by an abstract design. Thus, the data partially supports *H1.2: Within natural names and logos, organic ones will generate a greater recall than cultural ones*, as we could not support this hypothesis in the case of the stimuli combining an organic name with an abstract logo.

4.2.1.2. Recognition

In order to test our next hypothesis, another binomial logistic regression was conducted. The model was statistically significant (x2(8) = 25,213; p < 0.01) and explained 12,2% of the variance. In Table 6 the percentage of positive recognition responses and the regression results are presented.

Table 6

Experimental groups' recognition binary response (%) and regression model

Experimental Groups	Recognition				
	%	B	SE	OR	95% CI
Group 0: Initials (ref. category)	**57%**	-	-	**-**	-
Group 0-6: Initials + Figurative drawing	**65%**	0,33	0,53	**1,39**	0,496-3,898
Group 1: Acronym	**40%**	-0,67	0,52	**0,51**	0,183-1,424
Group 2: Figurative noun	**50%**	-0,27	0,52	**0,77**	0,277-2,114
Group 3: Decorated lettering	**77%**	0,96	0,57	**2,62**	0,865-7,949
Group 4: Framed lettering	**87%**	1,6	0,65	**4,97***	1,387-17,816
Group 5: Abstract drawing	**73%**	0,74	0,55	**2,10**	0,711-6,221
Group 6: Figurative drawing	**70%**	0,57	0,53	**1,76**	0,624-4,955
Group 7: Pictogram	**80%**	1,12	0,59	**3,06**	0,969-9,657

x2(8) = 25,213; p < 0.01; Nagelkerke R^2 = 0,122

n = 275; *p < .05; **p < .01; ***p < .001; Dependent variables coding: 0=No; 1=Yes

The results show that only participants in Group 4 had a statistically significant higher likelihood of recognizing the name and logo (4,97), in comparison to Group 0. For this reason, we partially support the hypothesis that *H2.1: Natural names and logos will generate a greater recognition than abstract ones*.

For the purpose of determining if there are differences in recognition between the auxiliary stimuli, a Cochran's Q test was conducted, which showed statistical significance (χ^2 (8) = 118,782; p < .001). Subsequently, we conducted separate McNemar tests, to test the differences between the other nine auxiliary stimuli, using a Bonferroni-adjusted α = .006. The results are presented in Table 7.

Table 7
Auxiliary stimuli's recognition binary response (%) and McNemar test output

Auxiliary Stimuli	%	OR	95% CI
BALÕES(ref. category)	**1%**	**-**	**-**
JBF	**6%**	**0,94****	0,909 – 0,967
NOVO	**4%**	**0,96**	0,937 – 0,983
ATLETA	**1%**	**0,99**	0,977 – 1,001
PELICANO	**14%**	**0,86****	0,817 – 0,900
FALCÃO	**5%**	**0,95**	0,927 – 0,978
ROSETA	**1%**	**0,99**	0,983 – 1,003
JARDIM	**1%**	**0,99**	0,977 – 1,001
OCEANO	**2%**	**0,98**	0,966 – 0,998

n = 275; *p < .006, **p< .001

The percentages of binary response in terms of recognition was very low. Only one of the organic stimuli (PELICANO) showed statistically significant higher recognition than the cultural stimulus (BALÕES). For this reason, we cannot support *H2.2: Within natural names and logos, organic ones will generate a greater recognition than cultural ones.*

4.2.1.3. Associations

To test the next hypothesis, we performed a third binomial logistic regression. The regression model was statistically significant (x2(8) = 52,865; p < 0.001) and explained 24,6% of the variance. In Table 8 the results of the regression are presented, along with the percentages of positive responses regarding associations.

Table 8
Experimental groups' associations binary response (%) and regression model

Experimental Groups	Associations				
	%	B	SE	OR	95% CI
Group 0: Initials (ref. category)	**27%**	-	-	**-**	-
Group 0-6: Initials + Figurative drawing	**81%**	2,44	0,61	**11,46*****	3,439-38,181
Group 1: Acronym	**37%**	0,47	0,56	**1,59*****	0,531-4,775
Group 2: Figurative noun	**63%**	1,56	0,56	**4,75****	1,584-14,245
Group 3: Decorated lettering	**81%**	2,44	0,61	**11,46*****	3,439-38,181
Group 4: Framed lettering	**80%**	2,40	0,62	**11*****	3,292-36,751
Group 5: Abstract drawing	**87%**	2,88	0,68	**17,88*****	4,738-67,434
Group 6: Figurative drawing	**85%**	2,73	0,64	**15,4*****	4,416-53,704
Group 7: Pictogram	**77%**	2,2	0,6	**9,04*****	2,802-29,134
x2(8) = 52,865; p < 0.001; Nagelkerke R^2 = 0,246					
n = 275; *p < .05; **p < .01; ***p < .001; Dependent variables coding: 0=No; 1=Yes					

All experimental groups exposed to the natural stimuli had statistically significantly higher odds to generate associations, in comparison to the ones exposed to abstract stimuli (Group 0 and Group 1). This supports our hypothesis that *H3.1: Natural names and logos will generate more associations than abstract ones.*

To test our next hypothesis, a Cochran's Q test was conducted to compare our sample's responses for the different stimuli. The test was statistically significant (χ^2 (8) = 363,82; p < .001). Following, separate McNemar tests were conducted in order to test the differences between the stimuli, using a Bonferroni-adjusted α = .006. In Table 9 and Table 10, the percentages of positive responses and results of the tests are presented.

Table 9

Auxiliary stimuli's associations binary response (%) and McNemar test output

Auxiliary Stimuli	%	OR	95% CI
VIOLINO (ref. category)	**58%**	**-**	-
AVM	**36%**	**7,97****	4,207 – 15,111
PURO	**50%**	**8,40**	4,811 – 14,667
CABANA	**59%**	**8,47**	4,893 – 14,665
CARACOL	**47%**	**13,86****	7,477 – 25,692
ORQUÍDEA	**57%**	**12,429**	6,989 – 22,102
LAVRADOR	**81%**	**12,21****	5,469 – 27,280
CEREJA	**66%**	**11,51**	6,342 – 20,869
SARDINHA	**84%**	**12,67****	5,132 – 31,262

n = 275; *p < .006, **p< .001

Table 10

Auxiliary stimuli's associations binary response (%) and McNemar test output

Auxiliary Stimuli	%	OR	95% CI
CABANA (ref. category)	**59%**	**-**	**-**
AVM	**36%**	**12,54****	6,107 – 25,738
PURO	**50%**	**10,46***	5,869 – 18,622
VIOLINO	**58%**	**8,47**	4,893 – 14,665
CARACOL	**47%**	**14,856****	7,926 – 27,846
ORQUÍDEA	**57%**	**6,83**	3,999 – 11,658
LAVRADOR	**81%**	**9,15****	4,347 – 19,238
CEREJA	**66%**	**7,68**	4,374 – 13,469
SARDINHA	**84%**	**10,57****	4,505 – 24,805

n = 275; *p < .006, **p< .001

The data shows that some of the organic stimuli had statistically significant higher odds of generating associations than the cultural stimuli (LAVRADOR and SARDINHA). However, the natural stimulus CARACOL showed a significantly lower likelihood of inducing associations, compared to the cultural ones. For this reason, we can partially support our hypothesis that *H3.2: Within natural names and logos, organic ones will generate more associations than cultural ones.*

4.2.1.4. Affect

A simple linear regression was used to predict affect based on the different experimental groups. For this procedure, the experimental groups were coded into dummy variables, and all the required assumptions were checked: there were no significant outliers, all observations were independent, the data showed homoscedasticity and the residuals were all approximately normally distributed. The results indicate that the model explains 20,2% of the variance and that the model is significant ($F(8, 266) = 8{,}42$, $p < .001$). In table 11 we present the mean values and standard deviation for each of the experimental groups, along with the results found in our regression model.

Table 11

Experimental groups' affect response and regression model

Experimental Groups	Affect				
	M	SD	B	SE	β
Group 0: Initials (ref. category)	**2,63**	1,32	-	-	**-**
Group 0-6: Initials + Figurative drawing	**3,59**	1,30	0,95	0,37	**0,19****
Group 1: Acronym	**3,46**	1,33	0,83	0,37	**0,16***
Group 2: Figurative noun	**3,13**	1,52	0,5	0,37	**0,1**
Group 3: Decorated lettering	**4,36**	1,50	1,73	0,37	**0,35*****
Group 4: Framed lettering	**3,71**	1,63	1,07	0,37	**0,21****
Group 5: Abstract drawing	**4,56**	1,24	1,93	0,37	**0,38*****
Group 6: Figurative drawing	**4,57**	1,66	1,937	0,36	**0,40*****
Group 7: Pictogram	**4,85**	1,25	2,217	0,37	**0,44*****

$F(8, 266) = 8{,}42$; $p < .001$; $R^2 = 0{,}202$.

n = 275; *p < .05; **p < .01; ***p < .001

All of the experimental groups, with the exception of Group 2, were statistically significantly different from Group 0. The linear regression established that the natural stimuli could significantly predict higher affect scores, except for the natural noun (Group 2). This partially supports hypothesis *H4.1: Natural names and logos will evoke more positive affective responses than abstract ones.*

In order to test our last hypothesis, a Friedman test was conducted, which indicated that there was a significant difference in affect scores, depending on the stimuli (χ^2 (8) = 690,734; p < .001). A post hoc analysis was conducted with separate Wilcoxon signed-rank tests, using a Bonferroni-adjusted α = .006. The results are shown in Table 12 and Table 13.

Table 12
Auxiliary stimuli's affect response and Wilcoxon signed-rank test output

Auxiliary Stimuli	M	SD
VIOLINO (ref. category)	**3,50**	1,50
AVM	**2,67****	1,31
PURO	**3,42**	1,47
CABANA	**3,99****	1,45
CARACOL	**3,33**	1,43
ORQUÍDEA	**3,60**	1,48
LAVRADOR	**4,42****	1,48
CEREJA	**3,58**	1,64
SARDINHA	**5,75****	1,32

n = 275; *p < .006, **p< .001

Table 13
Auxiliary stimuli's affect response and Wilcoxon signed-rank test output

Auxiliary Stimuli	M	SD
CABANA (ref. category)	**3,99**	1,45
AVM	**2,67****	1,31
PURO	**3,42****	1,47
VIOLINO	**3,50****	1,50
CARACOL	**3,33****	1,43
ORQUÍDEA	**3,60****	1,48
LAVRADOR	**4,42****	1,48
CEREJA	**3,58****	1,64
SARDINHA	**5,75****	1,32

n = 275; *p < .006, **p< .001

The data shows that two of the organic stimuli (LAVRADOR and SARDINHA) showed a statistically significant difference in affect scores, compared to the two cultural stimuli (VIOLINO and CABANA). However, the same cannot be said for the remaining organic logos. Thus, results partially supports the hypothesis *H4.2: Within natural names and logos, organic ones will evoke more positive affective responses than cultural ones.*

Chapter V
Discussion

The results show that brand name and logo design have an influence on consumer's cognitive and affective response. As we theorized, we found that the use of natural names and logos improve recall, recognition, associations and affect, and that the use of organic names and logos generates greater recall, associations and affective responses (**H.1.1, H.1.2, H.2.1, H.3.1, H.3.2, H.4.1** and **H.4.2**). However, some of our hypotheses were only partially supported. Furthermore, contrary to what was hypothesized, we found that the use of specific types of natural names and logos (organic ones) did not generate greater recognition (**H.2.2**).

The results of our data analysis indicate that natural names and logos tend to generate a greater recall than abstract ones. Our findings show that the use of a drawing in combination with a natural name had a significant influence on recall. However, a natural name combined with a natural drawing did not guarantee a greater recall than a natural combined with an abstract drawing. Additionally, the use of a pictogram (Group 7) proved to be most beneficial, as it generated the highest level of recall. Although the result cannot be considered statistically significant, it is interesting to note that the addition of a natural drawing to a set of initials (Group 0-6) did not generate more recall - the result was the opposite. This suggests that a natural logo is not able to improve recall for an abstract name.

In terms of types of naturalness, the results show that organic names and logos significantly improve recall, when compared to cultural ones. We found that simple organic names and organic names with organic drawings generated significantly higher recall than cultural logos. However, it is relevant to mention that the combination of an organic name with an abstract drawing (ORQUÍDEA) did not improve recall at all, as this specific logo produced the same level of recall as the cultural logos.

According to relevant literature (Henderson and Cote, 1998) and to what was hypothesized, our findings show that high levels of naturalness can result in greater recognition in names and logos, especially when a natural name is decorated with a framing (Group 4). We suppose that this specific logo had the most significant result in terms of recognition, as a frame might be a way to bring focus and attention to

the name, thus making it easier to identify among others. Additionally, it is worth mentioning that, when compared to an abstract name, such as a set of initials or an acronym, a simple wordmark composed by a natural noun with no type of decoration or drawing (Group 2) did not improve recognition. On the other hand, a natural drawing paired with a set of initials (Group 0-6) did generate greater recognition. The results indicate that, in order to improve recognition, it is beneficial to combine the name, whether it is organic or abstract, with some type of decoration or drawing.

Opposite to what was hypothesized, we did not find any indication that organic names and logos generate greater recognition than cultural ones. This result may stem from the fact that the stimuli used in this specific question in the questionnaire were different from the rest, and this resulted in the use of a more limited set of stimuli. Therefore, we will need to further test the effect of organicity in a future study, including a wider range of cultural and organic names and logos, to verify if there is indeed a positive relationship between organicity and recognition. Despite this, one interesting finding is that the meaningless set of initials (Group 0) was significantly more recognized than almost all other logos. We assume that this result was due to this being such a non-distinctive and meaningless combination of letters that it may have lead participants to mistakenly confound it with another stimulus to which they had previously been exposed to. This result fits with the findings of Henderson and Cote (1998), who established that the use of abstract logos is more likely to induce false recognition, due to the lack of distinctiveness and uniqueness.

In line with what was hypothesized, we found that the use of natural names and logos helps generate more associations. While there was a significant positive difference between the meaningless set of initials (Group 0) and the acronym (Group 1), the biggest improvement is seen when any type of decoration or drawing is added to a natural or abstract name. This suggests that, although a natural name helps increase associations, the addition of a drawing or decoration is much more decisive.

An organic logo can also be decisive for generating associations, as we found that every organic name that was combined with an organic drawing had significantly more associations than the cultural ones. Moreover, what also stands out in our findings is that the cultural logos had almost the same number of associations as the organic name with an abstract drawing (Group 5). Additionally,

the cultural logos generated more associations than the simple organic name, which had no drawing or decoration. In line with our previous finding, this indicates that, if the goal is to increase associations, the key is to use an organic drawing in conjunction with the name.

This analysis also supports the theory that the use of natural names and logos significantly improves affect, which is in line with the findings of previous authors (Henderson and Cote, 1998; Machado et al., 2015; Torres et al., 2019). Our results indicate that the more natural the name and logo is, the more positive the affective response towards it is. However, the data revealed that there might be an exception - the logo composed by a natural name in a standardized lettering (Group 2) resulted in a lower affect score than most of the abstract names (Group 1 and Group 0-6), although this difference was not statistically significant. From these results, we conclude that a name, whether natural or abstract, can generate significantly better affective reactions when we add a natural or abstract drawing.

Finally, our analysis shows that organic names and logos can achieve better affective responses than cultural ones. However, the data reveals this is not always true, as only certain logos (LAVRADOR and SARDINHA) had significantly higher affect scores, in comparison to the cultural ones. In this case, ORQUÍDEA, CARACOL and CEREJA generated significantly lower affective responses than the cultural logos. These results contradict previous research (Machado et al., 2015; Torres et al., 2019), however, we acknowledge that various factors can influence consumers' perceptions, such as design elements like the font used for the lettering (Grohmann et al., 2012), which are beyond the scope of this study.

These results build on existing evidence that different types of brand names and logos have a great impact on recall, recognition, associations and affective reactions. Henderson and Cote (1998) have highlighted how naturalness can enhance consumers' cognitive responses, and authors such as Machado et al. (2015) and Torres et al. (2019) emphasize how it can influence consumers' affective reactions. Thus, it is essential that marketing managers understand and capitalize on the potential of natural brand identity signs, in order to improve memorability, stimulate positive affect and encourage consumers to develop associations to their brand, and, thereby, to achieve their desired strategic outcomes.

Chapter VI
Conclusions

This chapter summarizes the research that was conducted and describes the main results, as well as some implications of our findings. Additionally, we discuss the main limitations of this study, alongside some suggestions for further research.

6.1. Summary and Implications

It has been established that consumers apply judgements generated from the brand name and logo, to the brand or company itself (Henderson et al., 2003; Hagtved, 2011; Hillenbrand et al., 2013). As every single company and brand uses a name and logo to identify itself and they are critical communication cues, selecting and designing such identity signs is one of the most important decisions that every company has to make. Despite aesthetic appeal being a main concern in designing a brand logo, and personal preferences often being a determinant factor, it is of great relevance that a set of clear guidelines is established so that designers and managers can make informed decisions about the identity signs that represent their brands. Nonetheless, there is little research on how companies can choose a logo and name in order to achieve their desired strategic objectives.

Literature suggests that naturalness in the brand name and logo can have a big role in achieving memorability and positive affect (Henderson and Cote, 1998; Machado et al., 2015; Torres et al., 2019). Based on this, we conducted an in-depth analysis of the existing relevant literature on brand identity signs, focusing on a specific characteristic of brand name and logo design, namely naturalness (within names and logos with a natural design we further distinguished between organic and cultural ones), and how it can affect consumers' cognitive and affective responses, in terms of recall, recognition, associations and affect.

A quantitative study was conducted, with a sample of 275 survey responses, based on a set of fictitious manipulated logos. The data was analysed using a

combination of logistic and linear regression models, and McNemar and Wilcoxon signed-rank tests, depending on the type and format of the data that was collected.

The main outcomes of this research confirm that there are benefits in using natural brand names and logos, as previous literature suggested (Henderson and Cote, 1998; Machado et al., 2015; Torres et al., 2019). Through our results, we found that these two natural brand identity signs generate significantly higher recall than abstract ones (H.1.1), although it was noted that a natural drawing in itself cannot improve recall for an abstract name. Instead, the combination of a natural drawing with a natural name yields the most beneficial results. Additionally, we found that organic identity signs generate higher recall than cultural ones (H.1.2). Concerning recognition, we found that natural names and logos are more recognized than abstract ones (H.2.1), with results showing that a natural drawing can significantly improve recognition for an abstract name. Contrarily to what was expected, we could not find a significant indication that organic names and logos improve recognition, in comparison to cultural ones (H.2.2). Regarding associations, our results demonstrate that natural brand identity signs, as well as organic ones, are highly beneficial (H.3.1 and H.3.2). However, natural drawings were shown to improve the number of associations much more than a natural name alone. Lastly, our study indicates that natural names improve affective responses (H.4.1), once more noting that the combination of a natural name with a natural drawing has an even more positive effect than a single natural name. In addition, we found that organic brand identity signs can significantly improve affect (H.4.2), however, our results were not homogeneous, as two different cultural stimulus generated different outcomes.

One of the main contributions of this study relies in the fact that brand names and logos were analysed as a single stimulus - this is relevant as these two brand identity signs are almost always used in conjunction and are inherently related to each other (Klink, 2003).

This research reveals important insights regarding how brands can make more informed decisions when they choose or update their name and logo. Managers should avoid choosing brand names which are composed of initials, acronyms or abstract words, and instead choose brand names which are highly natural, and when possible, organic over cultural, as organicity has been shown to significantly improve the memorability of the brand, stimulate brand associations and increase positive affective reactions. As an optimal solution, brands should

make sure that both the name and the logo are highly natural, however, as it is extremely challenging for an established brand to change its name (Keller, 2003), logos are an easier way to update and rejuvenate a brand's image. For this reason, either new brands or established brands should take into consideration designing or updating their logos, using highly natural drawings or visual elements, such as decorated lettering and framed lettering. When the brand name is not natural, managers can still benefit from updating their logos, as our results show that a natural logo can increase recognition, associations and affect for an abstract brand name.

6.2. Limitations and Further Research

The findings of this study are, to some extent, constrained by some limitations, which provide opportunities for further research.

First and foremost, it is essential to mention that this study was based on a convenience sample that is not representative of the Portuguese population, which increases the possibility of results bias.

Secondly, response fatigue during the completion of the questionnaire may be a barrier to this study, as a considerable amount of respondents did not complete the questionnaire. In order to address this, future research could be done by analysing each of the four dependent variables in different experimental groups, thus resulting in shorter questionnaires for each respondent.

Additionally, as this research was based on fictitious names and logos, it can be relevant to study the effects of brand names and logos in consumers' cognitive and affective responses, when they are familiarized with the brands. This will possibly bring more insight into the power that familiar brands can have on consumers' responses, in comparison to unfamiliar brands.

This study was conducted with a sample of strictly Portuguese respondents, and Portuguese brand names were used as stimuli, thus, it was not possible to conduct a cross-linguistic analysis of the effect of the brand name on consumer cognitive and affective response. In earlier studies, LeClerc et al. (1989) and LeClerc et al. (1994) provide evidence that differences in pronunciation of foreign brand names can influence consumers' perceptions of brands and products, and the type of associations that are generated. For this reason, and because of the increasing

internationalization of brands, expanding this study by taking into account the cross-linguistic aspect of branding is likely to result in valuable insights in the logo design field.

Finally, there are other aspects in the design of logos that can have an influence of the outcome of this research, such as the type of lettering (Grohmann et al., 2012), style of the drawing or interaction between the name and the drawing. For this reason, it can be valuable to take into consideration the impact of these logo design elements in consumers' cognitive and affective response in future studies.

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Appendix

Appendix 1- Questionnaire- Example

Este questionário é parte de um Trabalho Final de Mestrado em Marketing, de uma aluna da Católica Porto Business School, que tem como objetivo analisar a resposta dos consumidores relativamente a um conjunto de marcas.

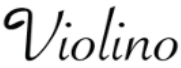
Não existem respostas certas ou erradas. Acima de tudo estamos interessados na sua opinião. Todas as respostas são confidenciais e anónimas, e serão usadas apenas com o propósito desta investigação. As suas respostas são essenciais para o desenvolvimento da nossa pesquisa. A duração do questionário será de aproximadamente 10 minutos.

Gostaríamos de agradecer antecipadamente a sua disponibilidade e participação neste estudo!

Por favor avance para a próxima página para iniciar o questionário.

Vamos-lhe pedir para observar com toda a sua atenção um conjunto de logótipos durante 15 segundos. Quando estiver preparado avance para a próxima página.

Por favor, observe com toda a sua atenção, durante 15 segundos, os seguintes logótipos.



1. Por favor, entre as marcas que observou, escreva os nomes das que se lembra:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

2. Por favor selecione, entre as marcas abaixo apresentadas, qual(quais) a(s) que se recorda de ter observado no início do questionário.

3. As marcas que observou no início do questionário são as abaixo apresentadas.

Já conhecia alguma destas marcas antes de responder a este questionário? Se sim, seleccione a(s) que conhece.

4. Relativamente às marcas apresentadas, a quais é que associa algo? Escreva, por favor, essa associação. Por favor assinale se essa associação é positiva, neutra ou negativa

		Positiva	Neutra	Negativa
AVM	_____	○	○	○
CABANA	_____	○	○	○
LAVRADOR	_____	○	○	○
TOMATE	_____	○	○	○
SARDINHA	_____	○	○	○
CARACOL	_____	○	○	○
Igreja	_____	○	○	○
Violino	_____	○	○	○
ORQUÍDEA	_____	○	○	○
Puro	_____	○	○	○

5. Indique por favor o seu grau de concordância perante as seguintes afirmações, tendo em conta os sentimentos ou emoções que este logótipo lhe provoca. Responda de acordo com uma escala de sete pontos, em que 1= "discordo totalmente" e 7="concordo totalmente"

AVM

	1- discordo totalmente	2	3	4	5	6	7- concordo totalmente
Eu considero que este logótipo é agradável.							
Eu considero que este logótipo é interessante.							
Eu considero que este logótipo é distintivo.							
Eu gosto deste logótipo.							
Eu considero que este logótipo é bom.							
Eu considero que este logótipo é de elevada qualidade.							

CABANA

	1- discordo totalmente	2	3	4	5	6	7- concordo totalmente
Eu considero que este logótipo é agradável.							
Eu considero que este logótipo é interessante.							
Eu considero que este logótipo é distintivo.							
Eu gosto deste logótipo.							
Eu considero que este logótipo é bom.							
Eu considero que este logótipo é de elevada qualidade.							

	1- discordo totalmente	2	3	4	5	6	7- concordo totalmente
Eu considero que este logótipo é agradável.							
Eu considero que este logótipo é interessante.							
Eu considero que este logótipo é distintivo.							
Eu gosto deste logótipo.							
Eu considero que este logótipo é bom.							
Eu considero que este logótipo é de elevada qualidade.							

	1- discordo totalmente	2	3	4	5	6	7- concordo totalmente
Eu considero que este logótipo é agradável.							
Eu considero que este logótipo é interessante.							
Eu considero que este logótipo é distintivo.							
Eu gosto deste logótipo.							
Eu considero que este logótipo é bom.							
Eu considero que este logótipo é de elevada qualidade.							

SARDINHA

	1- discordo totalmente	2	3	4	5	6	7- concordo totalmente
Eu considero que este logótipo é agradável.							
Eu considero que este logótipo é interessante.							
Eu considero que este logótipo é distintivo.							
Eu gosto deste logótipo.							
Eu considero que este logótipo é bom.							
Eu considero que este logótipo é de elevada qualidade.							

CARACOL

	1- discordo totalmente	2	3	4	5	6	7- concordo totalmente
Eu considero que este logótipo é agradável.							
Eu considero que este logótipo é interessante.							
Eu considero que este logótipo é distintivo.							
Eu gosto deste logótipo.							
Eu considero que este logótipo é bom.							
Eu considero que este logótipo é de elevada qualidade.							

	1- discordo totalmente	2	3	4	5	6	7- concordo totalmente
Eu considero que este logótipo é agradável.							
Eu considero que este logótipo é interessante.							
Eu considero que este logótipo é distintivo.							
Eu gosto deste logótipo.							
Eu considero que este logótipo é bom.							
Eu considero que este logótipo é de elevada qualidade.							

	1- discordo totalmente	2	3	4	5	6	7- concordo totalmente
Eu considero que este logótipo é agradável.							
Eu considero que este logótipo é interessante.							
Eu considero que este logótipo é distintivo.							
Eu gosto deste logótipo.							
Eu considero que este logótipo é bom.							
Eu considero que este logótipo é de elevada qualidade.							

	1- discordo totalmente	2	3	4	5	6	7- concordo totalmente
Eu considero que este logótipo é agradável.							
Eu considero que este logótipo é interessante.							
Eu considero que este logótipo é distintivo.							
Eu gosto deste logótipo.							
Eu considero que este logótipo é bom.							
Eu considero que este logótipo é de elevada qualidade.							

Puro

	1- discordo totalmente	2	3	4	5	6	7- concordo totalmente
Eu considero que este logótipo é agradável.							
Eu considero que este logótipo é interessante.							
Eu considero que este logótipo é distintivo.							
Eu gosto deste logótipo.							
Eu considero que este logótipo é bom.							
Eu considero que este logótipo é de elevada qualidade.							

6. Para terminar, responda por favor a algumas questões sobre si:

6.1. Sexo: F___ M___
6.2. Idade: ___
6.3. Escolaridade (especifique por favor o último grau obtido):

Ensino Básico ___

Ensino Secundário ___

Licenciatura ___

Pós-Graduação / Mestrado ___

Outro _____

6.4. Profissão: _____
6.5. Distrito de residência: _____

Muito obrigada pela sua colaboração neste estudo!