

UNIVERSITY OF TWENTE

MASTER THESIS

A Logo that Speaks for Itself: The Interplay between Logo Designs and Textual Elements

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“Logos and branding are so important. In a big part of the world, people cannot read French or English – but are great at remembering signs.”

Karl Lagerfeld

Abstract

A brand logo is a crucial part of brand and corporate communication as it not only influences consumers' responses to the logo, but also responses to the brand, and the organization. Logos can differ greatly in the degree of realism of the design in which the presence of a textual element may clarify the design. Considering that research on the combination between logo design characteristics and text is lacking, the current study aims to investigate the interactive effects between (sports apparel) brand logos' level of representativeness and textual clarifications. A 3 (logo design representativeness: descriptive versus suggestive versus abstract) \times 3 (textual element: none versus brand name versus slogan) between-subjects factorial design was employed. A questionnaire in English, embedded into an online survey, assessed brand associations, attitudinal evaluations, and recognition arising from brand advertising material for a fictitious organization among 251 participants. The results showed that there are differences in evaluations between the levels of logo representativeness, however, the analyses did not reveal any main effects for the textual element levels. Overall, the suggestive logo designs received the most favourable evaluations compared to the descriptive and abstract logo designs. Interestingly, logo representativeness appeared to influence the attitude towards the brand and the logo via brand attractiveness. The results illustrate that minor differences in logo design's visual appearance can affect associations and evaluations of the logo as well as the brand and its personality. For practitioners and academics in the field of marketing communication, the findings confirm the importance of a thorough understanding of design elements as a tool to generate favourable associations and create correct or preferred brand associations, leading to more informed logo design decisions.

Keywords: brand, logo design, representativeness, textual element

Preface

This thesis is written for the master's degree in Communication Science at the University of Twente. After finishing the bachelor's degree in International Business Communication at Radboud University, I decided that I wanted to gain more in-depth knowledge about marketing communication in particular as my interests has always been in organizations and the design of advertising materials, may it be commercials, posters, or brand logos. The interesting courses and lectures as well as the final master thesis have contributed greatly to my knowledge in the field of marketing communication and design.

First and foremost, I would like to express special gratitude to my supervisor Thomas van Rompay, who guided me throughout the process of developing this thesis. I would like to thank you very much for your valuable feedback, advice, support, and involvement. I would also like to give thanks to my second assessor, Joyce Karreman, for bringing new insights and providing additional feedback.

In truth, writing my thesis required more than academic support, therefore last but definitely not least, I am grateful for everyone who participated in the pre-test and main study by sacrificing their time to fill out the questionnaire. Without your contribution, this thesis would not have been possible.

Table of Contents

Abstract.....	iii
Preface.....	iv
Table of Contents.....	v
List of Tables and Figures.....	vii
1. Introduction.....	1
2. Prior Literature and Conceptual Framework	4
2.1. A Brand and Its Personality	4
2.2. A Brand Element: The Logo and Its Many Functions	5
2.3. Logo Structure: Typology and Typography.....	7
2.4. Logo Design Characteristic(s): Representativeness.....	8
2.5. Research on the Effects of Logo Designs	9
2.6. Brand Elements: Logo Designs and Textual Elements.....	12
3. Research Method	15
3.1. Research Design.....	15
3.2. Stimulus Materials and Pre-test	16
3.3. Participants.....	20
3.4. Procedure.....	21
3.5. Measures	22
4. Results.....	26
4.1. General Results	26
4.1.1. Categorical Association and Manipulation Check	26
4.1.2. Brand Associations.....	28
4.1.3. Attitude towards the Brand.....	29
4.1.4. Brand Personality Dimensions	31
4.1.5. Attitude towards the Logo	35

4.1.6. Logo Recognition	37
4.2. Analyses per Logo Design	37
4.3. Overview of the Hypotheses	39
5. Discussion	41
5.1. Main Findings and Reflections on Literature.....	41
5.1.1. Brand Associations ($H_{1,2,3,4 a}$).....	41
5.1.2. Attitude towards the Brand ($H_{1,2,3,4 b}$)	42
5.1.3. Attitude towards the Logo ($H_{1,2,3,4 c}$).....	43
5.1.4. Brand uniqueness (H_{1d} and H_{2d}).....	44
5.1.5. Additional Findings	45
5.2. Limitations and Recommendations for Future Research	45
5.3. Theoretical and Practical Implications.....	47
5.4. Conclusion.....	48
References.....	49
Appendix A. Pre-test Stimuli	57
Appendix B. Results from the Pre-test	58
Appendix C. Dependent Variables and Items.....	60
Appendix D. Brand Associations.....	62
Appendix E. Separate Analyses for the First and Second Logo Design.....	66

List of Tables and Figures

Tables

Table 1. The distribution of the logo representativeness and textual element.....	21
Table 2. Percentage of the number of correct associations with sport(s)(wear) as a function of the textual element levels.....	27
Table 3. Percentage of the number of correct associations with sport(s)(wear) as a function of the logo representativeness and textual element levels.....	28
Table 4. Univariate analysis for the attitude towards the brand as a function of the logo representativeness and textual element levels.....	30
Table 5. Mediation analyses for the attitude towards the brand	31
Table 6. Univariate analysis for the brand personality dimension ‘uniqueness’ as a function of the logo representativeness and textual element levels.....	34
Table 7. Univariate analysis for the attitude towards the logo as a function of the logo representativeness and textual element levels.....	36
Table 8. Mediation analyses for the attitude towards the logo	37
Table 9. The effects of the univariate analyses for the first (1) and second (2) logo design ...	38
Table 10. Overview of the supported or rejected hypotheses.....	40

Figures

Figure 1. The evolution of the Nike logo (i.e., dressing down the logo)	2
Figure 2. Different types of brand logos.....	7
Figure 3. Different types of brand logos based on the representativeness.....	9
Figure 4. Research model	16
Figure 5. Logo designs used in the main study.....	19
Figure 6. Textual elements used in the main study.....	20
Figure 7. Interaction logo representativeness × textual element for brand competence.....	32

1. Introduction

The importance of creating a unique brand that stands out among the rising market competition has grown tremendously (Schechter, 1993). To an increasing extent, the marketplace is concerned with the production and consumption of signs in which the brand is not only the marker of identification but also a product in itself (Salzer-Mörling & Strannegård, 2004). Organizations use a variety of elements such as logos, symbols, slogans, and packages, that represent what the brand stands for and contribute to the brand image. Consequently, visual elements play a critical role in building brand equity (the “added value” of a brand; Keller, 2013).

Apart from products’ packaging, the brand logo is the most salient visual brand element and one of the first elements customers are exposed to (Schechter, 1993; Walsh et al., 2010; Cian et al., 2014). A brand logo is a crucial part of the brand identity since it is often an organization's first impression; one that can impact consumer brand perception. Not only does a logo influences consumers’ response to the logo itself (e.g., Henderson & Cote, 1998; Cian et al., 2014), but it also affects responses to the brand (Schechter, 1993; Kohli et al., 2002), and the organization (Stafford et al., 2004). A logo can offer numerous benefits: it can trigger interest and an emotional response among (potential) consumers (Robertson, 1989; Henderson & Cote, 1998), help an organization stand out from competitors (Hoyer & Brown, 1990; Leong, 1993), boost brand recognition (Edell & Staelin, 1983; Peter, 1989), and explain what the brand is about (Henderson & Cote, 1998; Kohli et al., 2002). Hence, a good logo design should be unique, memorable, and attractive while at the same time reflect the brand’s values.

Notably, and partly the inspiration of this research, is that today many major brands, such as Coca-Cola, Nike Inc., and Apple Inc. have redesigned their logo opting for a more simplistic look. The purpose of this approach is letting individuals make up their own mind of

what the brand logo represents and what the company stands for (Dai et al., 2016; see Figure 1 for an example). Visual design features of a brand logo generate symbolic associations that people relate back to the brand (Fajardo et al., 2016). For example, Schechter (1993) showed that consumers form impressions that are transferred to the accompanying organization based on the logo. Although people may know nothing about a brand, its logo will evoke certain associations that may make consumers more or less likely to choose to use/purchase a particular product or service. Consequently, each brand heavily relies on what the graphical element(s) connotes or means symbolically in the eyes of individuals (Durgee & Stuart, 1987; Henderson & Cote, 1998; Hynes, 2009). Not surprisingly, organizations spent considerable amounts on (re)designing and communicating their logo.



Figure 1. *The evolution of the Nike logo (i.e., dressing down the logo)*

According to preceding research, logo design features can have a considerable influence on brand equity (Henderson & Cote, 1998; Keller, 2013). For example, logo designs may differ in representativeness (i.e., the degree of realism in the design). One danger is that consumers may not understand what the logo design is intended to represent without a significant textual brand element to explain its meaning. To reduce logo designs' ambiguity, graphic designers can use textual elements such as a brand name or slogan to clarify and

explain the design by summarizing the intent of the brand in one or a few words or phrases (Keller, 2013).

In the past, researchers either focused on studying the shape of logo icons (e.g., Henderson & Cote, 1998; Hynes, 2009; Machado et al., 2014; etc.), or on brand names and typefaces (e.g., Childers & Jass, 2002; Bottomley & Doyle, 2006; Wang & Chou, 2011), yet there is little research on the interplay between these elements. Consequently, the present study aims to fill the existing research gap, advance the literature on logo design features, and provide practitioners and academics with relevant insights regarding perceptions of logo designs; it focusses on brand logos as an important brand element and empirically tests the interactive effects between logos' visual design characteristic 'representativeness' and textual clarifications. Therefore, the present study seeks to address the main research question:

'To what extent do the level of logo representativeness and the presence of a textual element affect people's attitudes and cognitive responses?'

The present study is particularly relevant for start-up companies since consumers' perceptions of their logo (including a textual element or not) rely exclusively on the intrinsic properties (i.e., deriving from the graphic design) of the logo (Van Riel & Van den Ban, 2001). Furthermore, understanding the principles of designing logos (including a textual element or not) can be considerably beneficial for brand managers in the process of designing and selecting the 'right' logo that influences customers' experience and generates favourable evaluations and correct (or preferred) associations in people's minds.

2. Prior Literature and Conceptual Framework

The theoretical framework provides insights into the relevant topics available, aiding the research design. First, important characteristics of a brand, its personality, and a logo are reviewed; followed by the different types of logo designs; relevant research on descriptive and abstract logos; and finally, the influence of brand elements on evaluations.

2.1. A Brand and Its Personality

A brand is defined by the American Marketing Association (AMA) as a “name, term, sign, symbol, or a combination of them, intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of competition.” Within this view, Keller (2013, p. 30) indicated that: “technically speaking, whenever a marketer creates a new name, logo, or symbol for a new product, he or she has created a brand.” Brand elements such as a name, logo, symbol, package design, etc., identify a product or service and distinguish it from others. Marketers provide labels for their products or services (i.e., means to identify the product or service) and insert the brand with meaning (i.e., why it is special/different from others), intending to provide momentum for brand creation (Keller, 2013). Brand creation is the cultivation of a certain image in consumers’ minds, of which the brand image is the actual result of the marketing efforts successful or unsuccessful. Thus, a brand is something that resides in the minds of consumers. All interactions that consumers have with a brand, either direct or indirect, influence perceptions of brand personality (Su & Tong, 2015). Aaker (1997, p. 347) defined brand personality as “the set of human characteristics associated with a brand.” A brand personality enables consumers to identify themselves with a brand and express their own personality and “self” (Aaker, 1997; Su & Tong, 2015). This helps to create and build meaningful consumer-brand relationships. The personality traits associated with a brand are relatively enduring and help to leverage a set of

unique and favourable brand images that, in turn, can enhance the brand equity (Su & Tong, 2015). Especially, when a new brand is created and brand equity is absent, the logo becomes a crucial element of the brand strategy in gaining consumers' affect and trust (Machado et al., 2014).

2.2. A Brand Element: The Logo and Its Many Functions

A logo is a brand identity sign that communicates information about the brand's or organization's marketing efforts visually, while at the same time, it is an identifiable sign that acts as the primary visual representation of the brand or corporate identity (Henderson & Cote, 1998; Mburu et al., 2013; Dai et al., 2016). Early studies showed that logos are among the most powerful brand elements because of their impact on brand knowledge, and therefore, brand equity (e.g., Henderson & Cote, 1998). A logo has two basic, yet necessary, functions: differentiation (a marker for finding a specific offering) and identification (differentiate products/services from that of the competition) (Farhana, 2012; Mburu et al., 2013). Several broad criteria are useful for choosing and designing brand elements to build brand equity.

First, a logo should trigger people to build associations by conveying information about the nature of the brand. Brand elements (e.g., colours, objects, symbols, etc.) can be interpreted differently (Henderson & Cote, 1998). For example, a single colour can have many different meanings across different cultures, ages, and genders (see De Bortoli & Maroto, 2001). Nonetheless, a logo can evoke similar associations. Although the Adidas logo is abstract, portrayed in different colours (e.g., black, white, and blue), formats (i.e., three parallel stripes, trefoil, mountain, and circle) and products (e.g., shoes and casual apparel), people may have a consensually held association: Adidas and sports. Unique and distinct

brand associations also help consumers to choose a particular brand (Keller, 2013). Though, for meanings to arise, if at all, the brand logo must be seen.

A second criterion is that a logo should be easily recognizable. One of the benefits of selecting a descriptive logo design with a consensually held meaning is that it improves correct recognition (Henderson & Cote, 1998; Kohli et al., 2002). The literature emphasizes that a logo should evoke the same intended meaning across people (e.g., Durgee & Stuart, 1987) and should communicate one clear message that is difficult to misinterpret (Keller, 2003). Also, a logo facilitates the speed of recognition of an organization or brand as pictures are perceived faster than words (Edell & Staelin, 1983; Peter, 1989), and can enhance the memory of the accompanying brand or organization (Henderson & Cote, 1998; Kohli et al., 2002). This is especially relevant as many (marketing) communications are only seen for a brief time.

Finally, a logo should evoke a positive affective response (Peter, 1989; Robertson, 1989; Henderson & Cote, 1998). Crucial to a logo's success is that it should generate a positive emotional response because research showed that evaluations of a logo (with or without a brand name) can transfer to the product, brand and/or organization with little to no processing (Schechter, 1993). When a consumer is emotionally attached to a brand, they will choose to purchase this product instead of a product from another brand. Especially in low-involvement decisions, the logo is one of the few cues that differentiate offerings from each other (Hoyer & Brown, 1990; Leong, 1993). Logo designs also influence consumers' perception of brand personality. For example, brands are perceived as more exciting when they use highly natural, elaborate, and coherent logo designs (Grohmann, 2008).

2.3. Logo Structure: Typology and Typography

Brand logos range from written corporate names and trademarks to completely unrelated (abstract) graphic designs (Wheeler, 2003; Buttle & Westoby, 2006; Machado et al., 2014). Many logos fall between these two extremes; some logos are literal representations of the brand name, whereas others can be less descriptive in nature. A logo has various important design elements that contribute to its effectiveness, including shape, image, style, size, and colour(s) (Hynes, 2009). A distinction is made between three different types of logos: graphic – a graphic representation: emblem, symbol, sign, or object (e.g., *Apple Inc.*), wordmark/typographic – only using written text (e.g., *Vans*), and a combination mark – a symbol in combination with a text (e.g., *Adidas*) (Budermann et al., 2010; Adir et al., 2012; see Figure 2).



Figure 2. *Different types of brand logos*

The typeface, also called the font, with features such as size, proportion, stroke thickness, and distance between words and lines, is an important design element for marketing materials such as logos (Henderson et al., 2004). Typefaces can generally be placed into two classes, namely serif (decorative stroke) and sans serif (no decoration). The typeface does not only influence the appearance of the font, but it also conveys meaning (Wang & Chou, 2011). Tantillo et al. (1995), for example, showed that serif fonts (e.g., Times New Roman and Georgia) were perceived as elegant, charming, and interesting,

whereas sans serif fonts (e.g., Arial and Helvetica) were considered as powerful, readable, and loud.

Childers and Jass (2002) found that the typeface generates semantic associations that are transferred to the brand: a brand is considered as more luxurious when a formal font (Don Casual) is featured, whereas when a more casual font (Empire Script) is used, it is considered as more practical. McCarthy and Mothersbaugh (2002) took it a step further and argued that the semantic associations of a typeface that consumers derive from the text go beyond the actual content, indicating that the typeface can alter the meaning of the message or brand. Thus, organizations can influence consumers' perceptions by the font they use (Bottomley & Doyle, 2006).

2.4. Logo Design Characteristic(s): Representativeness

Henderson and Cote (1998) examined 13 design characteristics, i.e., activity, balance, cohesiveness, complexity, depth, durableness, organism, parallelism, proportion, repetition, representativeness, roundness, and symmetricity, and showed that these design characteristics influence cognitive (i.e., meaning consensus, recognition, subjective familiarity) and affective (i.e., like/dislike, good/bad, distinctive/not distinctive, and interesting/uninteresting) responses to logo design. Explicitly, specific design characteristics can achieve specific communication objectives. For example, Henderson and Cote (1998) suggested that more elaborate logos (a function of design characteristics: complexity, active, and depth) will evoke more positive affective evaluations and liking over time, whereas more simplistic logos will evoke fewer positive responses.

As follows, logo designs can differ in terms of the degree of realism in the design, also called logo 'representativeness.' Representativeness resembles the semiotics view of logos as part of the sign system an organization uses to communicate the degree to which a

logo depicts objects from the real world (Henderson & Cote, 1998; Machado et al., 2014).

The opposite of a representative logo is an abstract logo. When a logo is completely representative, everybody can see in an instance what it is supposed to represent, whereas when a logo is abstract there is no linkage to the real world.

Van de Laar and Van den Berg-Weitzel (2004) distinguished between three levels of logo representativeness (see Figure 3): descriptive - easily recognizable shapes (e.g., *PUMA*), suggestive - shapes that are more difficult to depict and whose symbolism is harder to identify (e.g., *Mizuno Corporation*), and abstract - unrelated, undefinable shapes used in unfamiliar combinations (e.g., *Nike, Inc.*).



Figure 3. *Different types of brand logos based on the representativeness*

2.5. Research on the Effects of Logo Designs

Previous research on logo designs has demonstrated the advantages of using descriptive logos, as consumers can easier recognize objects that represent familiar meanings as opposed to abstract logos with no conditioned meaning (Schechter, 1993; Henderson & Core, 1998; Dai et al., 2016). Familiar meanings exist when people within the same culture assign the same meaning to the logo. Examples of descriptive logo designs include depictions of personas, places, animals, fruits, or any other object of the sensitive worlds that demand low learning effort because of their familiar meaning (Machado et al., 2014). Henderson and

Cote (1998) found that highly representative logos with familiar and wider held meanings are more effective in contributing to the formation of common brand associations, correct recognition, and positive responses, compared to abstract logos. Also, Schechter (1993) showed that descriptive logos are better liked, transfer more positive feelings towards the organization, and are better recognized than logos with ambiguous meanings. Machado and colleagues (2015) even mentioned that abstract logos were found to induce lower levels of recognition and liking, and thus, to maximise logos' correct recognition and liking, brands should choose logos with highly representative designs. Consequently, descriptive logo designs appear to be the most effective in generating positive attitudes, whereas abstract logos appear to add the least value. Though, using highly descriptive logo designs can have a disadvantage: since the shapes are not unique, it can be more difficult to create intimate, subjective, associations with a particular brand or organization (Van de Laar & Van den Berg-Weitzel, 2004). Therefore, it is expected that:

- H₁: A descriptive (as opposed to an abstract) logo design (a) supports the formation of common brand associations, elicits (b) more positive brand and (c) logo attitudes, but (d) causes people to perceive the brand as less unique.

A widely held belief among marketers and researchers is that a logo should evoke the same intended meaning across consumers, which implies that a logo should be unambiguous. Nonetheless, extant literature has provided examples of favourable consumer responses arising from ambiguous logos. For example, the study by Van Rompay and Veltkamp (2014) showed that something as ambiguous as metaphors can implicitly communicate product and brand benefits, steering brand personality impressions. Symbolic associations resulting from abstract logo designs may lead consumers to perceive a brand as having abstract properties that it may or may not possess (Farjardo et al., 2016).

It is important to consider that when the information provided by marketers is left ambiguous, consumers attempt to fill in the blanks themselves by searching for an explanation (Hagvedt, 2011) and if individuals enjoy the cognitive activity of decoding a design's symbolism, the process may be intrinsically rewarding, resulting in a favourable attitude towards the product or brand (McQuarrie & Mick, 1992; Brennan & Bahn, 2006). Contrary, when individuals do not want to put effort into unravelling the ambiguous logo design, the logo design is less likely to elicit positive responses (Brennan & Bahn, 2006). Since abstract logos are highly ambiguous, it is unlikely that people will be able to unravel the logo design, and therefore, it is assumed that it will result in less positive attitudes. For example, according to Henderson and Cote (1998), abstract logos were generally found to be not always liked. Miller and Kahn (2005) agree that if a brand logo is left ambiguous, the consumer has room to fill in the blanks themselves. Yet, the logo design may prompt people to take a closer look at it, which enforces involvement with the brand; it increases the perception of a personalised message creating opportunities for (subjective) interpretation (without presenting the answer provided by a textual clarification) (Van Rompay & Veltkamp, 2014); and it possibly results in a positive overall perception of the brand logo (Miller & Kahn, 2005).

Furthermore, abstract logos require more time and more market support to take hold in consumers' minds than descriptive logos, because people do not immediately relate to them (Schechter, 1993). Contrary, Van de Laar and Van den Berg-Weitzel (2004) found that abstract logos that use specific undefinable shapes and have low complexity require fewer fixations and take less time to embed in people's mind. While abstract logos may be more difficult to recognize as familiar objects than descriptive logos (e.g., Nelson, 1971; Seifert, 1992; Schechter, 1993), the undefinable, distinctive shapes can emphasize the creativity and

uniqueness of the logo, and subsequently, this can translate into perceptions of the brand or organization. Hence, it is hypothesized that:

H₂: An abstract (as opposed to descriptive) logo design (a) impedes the formation of common brand associations, elicits (b) less positive brand and (c) logo attitudes, but (d) causes people to perceive the brand as more unique.

2.6. Brand Elements: Logo Designs and Textual Elements

Meanings connotated through (visual) logo designs require at least some cognitive interpretation (Van Rompay & Veltkamp, 2014). The use of only visual elements in a logo (i.e., logos without text) requires more thinking for the consumer which in turn increases the consumer's attention and allows for a more personal understanding of what the brand logo represents (Dai et al., 2016; Perez, 2016). In addition, logos without a brand name are perceived as less intrusive (Dai et al., 2016), shield the organization from miss-spellings and multiple-perceived meanings when operating in different cultures (Nurton, 2013), and increases a brand's innovativeness and interestingness as the lack of a textual mark opens up for interpretation (Hagvedt, 2011). Nonetheless, as communication influences perceptions of trust and trustworthiness, unclear communication through (somewhat) ambiguous logos (without a brand name) may influence the perceived trustworthiness and reliability of the organization behind the brand (Hagvedt, 2011).

To guide people in recognizing ambiguous logo designs and to ensure that their meaning comes across as intended, a textual element such as a brand name or slogan can provide clarification. Like a brand logo, a brand name is a key component of brand identity (Schechter, 1993; Kohli et al., 2002). A (descriptive) brand name is important as it is a compact form of communication that can capture the central theme or key associations of a product or service in one (or a few) single word(s) (Keller, 2013). Another means used to

clarify logo designs is the use of a slogan. A slogan is defined as a “short phrase that communicates descriptive or persuasive information about the brand” (Keller, 2013, p. 158). Similar to a brand name, a slogan is a powerful branding device because of its ability to summarize the intent of an organization in a few short words or phrases, whereas for consumers, a slogan helps them to grasp the meaning of a brand (Keller, 2013).

The effects of the use of logos accompanied by a textual element can depend on the degree of realism of the logo design. Explicitly, logo representativeness and the presence of a textual element may influence people’s perceptions and cognitive responses. Previous research showed that presenting a short description or title together with an artwork increases perceived meaningfulness (Russell, 2003) and understanding (Leder et al., 2006) compared to an artwork alone. Additionally, a logo accompanied by a brand name resulted in a higher perceived attractiveness (Bottomley & Doyle, 2006) compared to a brand name or logo icon only. For example, Russel (2003) investigated whether the amount of information portrayed together with paintings would increase a paintings’ perceived meaningfulness and hedonic value by presenting a total of twelve abstract and semi-abstract paintings accompanied by variations in the amount of information (no information, a title and artist’s name, or a title, artist’s name, and description) to participants. While the study showed that presenting the paintings with or without information does not influence a painting’s hedonic value, either a title or description increased its perceived meaningfulness. Corresponding, Franklin, Becklen, and Doyle (1993) examined whether titles contribute to the meaning attached to paintings. In their study, participants saw one of the two paintings with one of the two titles and were asked to describe the painting. The findings show that the title affected what the participant said about the painting, and thus, titles functioned as guides to interpretation.

Due to its high representativeness, a descriptive logo may already allow for common associations and familiar meaning so that a title, or in this case a brand name or slogan, may

not be necessary to explain the design. Thus, for descriptive logos, the value of adding a textual element may be lacking. However, if the logo is not identified as an object and thus be unfamiliar to the consumer, which is the case for abstract logo designs, then a textual element might be valuable (Buttle & Westoby, 2006; Van Rompay & Velkamp, 2014). Once again, if people find it difficult to understand or unravel the ambiguous logo design, a textual element may guide people in the unravelling process, possibly resulting in a positive overall attitude. Seen the low realism of abstract logos, explanatory information to facilitate sense-making of the design is required for positive effects (i.e., logo and brand liking). Drawing on the preceding literature, the following is hypothesized:

- H3: Adding a textual clarification to a descriptive logo design does not affect (a) the formation of common brand associations and people's attitude towards the (b) brand and (c) logo.
- H4: Adding a textual clarification to an abstract logo design (a) supports the formation of common brand associations and positively affects people's attitude towards the (b) brand and (c) logo.

3. Research Method

The following section focusses on the method behind the research. First, the research design was developed. Second, a pre-test was conducted to investigate the fit between the logo design and the level of representativeness and the fit between the brand name and slogan and the association with sport(s)(wear). Based on the pre-test, the (main) stimuli were developed, and the main quantitative study was conducted.

3.1. Research Design

Considering the importance of brand logos in marketing communication, as discussed previously, research on the effectiveness of using a certain type of logo and the presence of a textual element is incomplete. Therefore, the present study assesses the effects of brand logo design and the presence of a textual element on consumers' attitudes and cognitive responses. As the middle point between the two extreme levels of representativeness (descriptive and abstract), a third level of representativeness, suggestive, was added. A suggestive logo should neither be too straightforward nor too ambiguous or complex. Like abstract logos, the design of suggestive logos is unique, yet it is generally more complex and can be more difficult to recognize than descriptive logos as they posit insufficient reference points to be immediately named and identified (Van de Laar & Van den Berg-Weitzel, 2004). Seen the fact that only a few researchers empirically studied this fairly specific logo design characteristic, little information is available to form specific hypotheses. Nonetheless, this makes suggestive logo designs an interesting dimension to take into consideration in the study.

Furthermore, no hypotheses were formed based on the different textual elements (brand name and slogan) since they both aim to clarify the logo design, either by presenting a single word (i.e., brand name) or a few words (i.e., slogan). Nonetheless, it is interesting to examine whether both textual elements are able to explain the logo to the same degree.

Therefore, these two textual element levels were used in the study. Accordingly, to examine the research question and the hypotheses, a 3 (logo design representativeness: descriptive versus suggestive versus abstract) \times 3 (textual element: none versus brand name versus slogan) between-subjects factorial design is employed (see the research model in Figure 4).

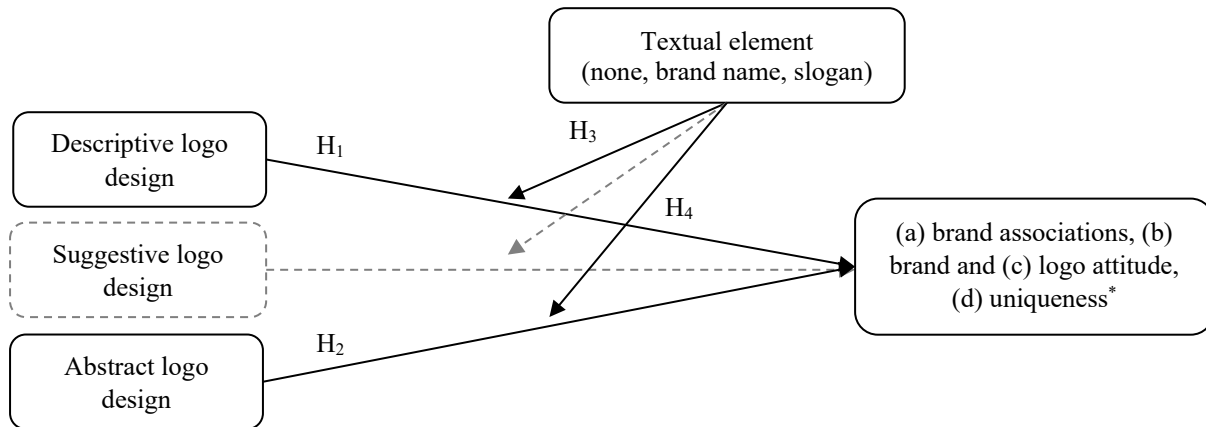


Figure 4. *Research model*

3.2. Stimulus Materials and Pre-test

The focus of the current study is on (dynamic) sportswear brand logos as the sportswear market is tremendously booming because of the rising participation in sports activities (Janoskova & Kral, 2020). Also, the sportswear market is one of the most heavily branded areas in the global apparel market (Tong & Hawley, 2009; Su & Tong, 2015). Within the sportswear industry, consumers' purchasing choices are frequently determined by the brand(s) that they aspire to wear (Tong & Hawley, 2009). Therefore, sportswear brands are dedicated to creating strong brand equity by generating strong and distinctive brand associations when people are exposed to an organization's brand elements.

One manner by which brand designers attempt to create brand meaning is by associating animal symbols with the product or service (Spears et al., 1996). People are

naturally attracted to animals as they resonate with people and are a source of symbolism (Hirschman, 1994; McCutchen, 2005). For instance, organizations are named after animals (e.g., Jaguar, Dove, Puma), products are pitched by animals (e.g., Tony the Tiger from Kellogg's Frosted Flakes, Honey B from Honey Pops), the packaging is designed with monkeys or elephants, and animals are portrayed in logo designs (e.g., Firefox, Evernote, WWF), in the beliefs that the brand absorbs the animal's characteristics. Animals mannerism can reflect characteristics of the brand as well as imply human personality traits (McCutchen, 2005). For example, a lion is known to symbolize strength, courage, and pride, whereas a deer is associated with gentleness, innocence, and sensitivity. The meaning of the animal is then transferred to the product or brand by creating associative linkages between the symbol (i.e., the animal) and the product or brand (Spears et al., 1996). Thus, organizations can use animals to bring their brand to life, to inject their products or services with meaning, and to guide stakeholders in interpreting what they stand for.

A pre-test was conducted among 20 Dutch participants (age: $M = 32.45$, $SD = 16.99$; range 20 – 80; 80.0% female) to examine the fit between the logo design and the level of representativeness (either descriptive, suggestive, or abstract) and the fit between the brand name and slogan and the association with sport(s)(wear). As past research showed that wild animals, as opposed to domestic animals, are more frequently used to market services and durable products (i.e., Spears et al., 1996), both the descriptive and suggestive logos were designed to represent one of the three wild animals: fox, panther, or wolf. Also, their symbolism is in line with characteristics of sports apparel brands (a fox: persistence, attractiveness, and playfulness; a panther: power, strength, and beauty; and a wolf: playfulness, warrior, and teamwork; Spirit Animal, n.d.).

To examine the representativeness of logo designs, eighteen fictitious logo designs (six per degree of representativeness) were developed (see Appendix A for all the logo

designs). For each logo design, participants were asked to rate the presented logo on a semantic differential scale from 1 (abstract) to 7 (descriptive). To answer this question, participants were given definitions of abstract, suggestive, and descriptive logos accompanied by example images. Logo's appearance was also measured with one 7-point Likert scale item: "This logo looks good" (1 = strongly disagree, and 7 = strongly agree). After displaying the logo designs, the fit between the (five) brand names and slogans and the association with sport(s)(wear) was investigated. Participants were asked to answer a series of questions concerning to what extent the five brand names (GymPact, Sportic, FITwear, Athletix, and JustGym) and five slogans ("Workout. Better. Faster. Stronger.," "Fit. Healthy. Happy.," "Work hard, train smart.," "Commit to be fit. Energize your life.," and "Work it out to work it off.") represented a sports apparel brand: "This brand name/slogan represents a sports/activewear brand," and brand name/slogan liking: "This brand name/slogan is good," measured on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Appendix B shows the results following the pre-test.

Based on the preliminary research, the six logos, of which two per level of representativeness also suggesting two different animals, that fit the levels of representativeness best were used as the stimuli in the main study: 'Fox 2' (from now on called fox) and 'Panther 2' (from now on called panther). Figure 5 shows the logo designs used in the main study. Similarly, the one brand name and slogan that was evaluated the highest, and thus represented a sports brand name or slogan best was used as a stimulus: the brand name "Athletix," and the slogan: "Work hard, train smart."

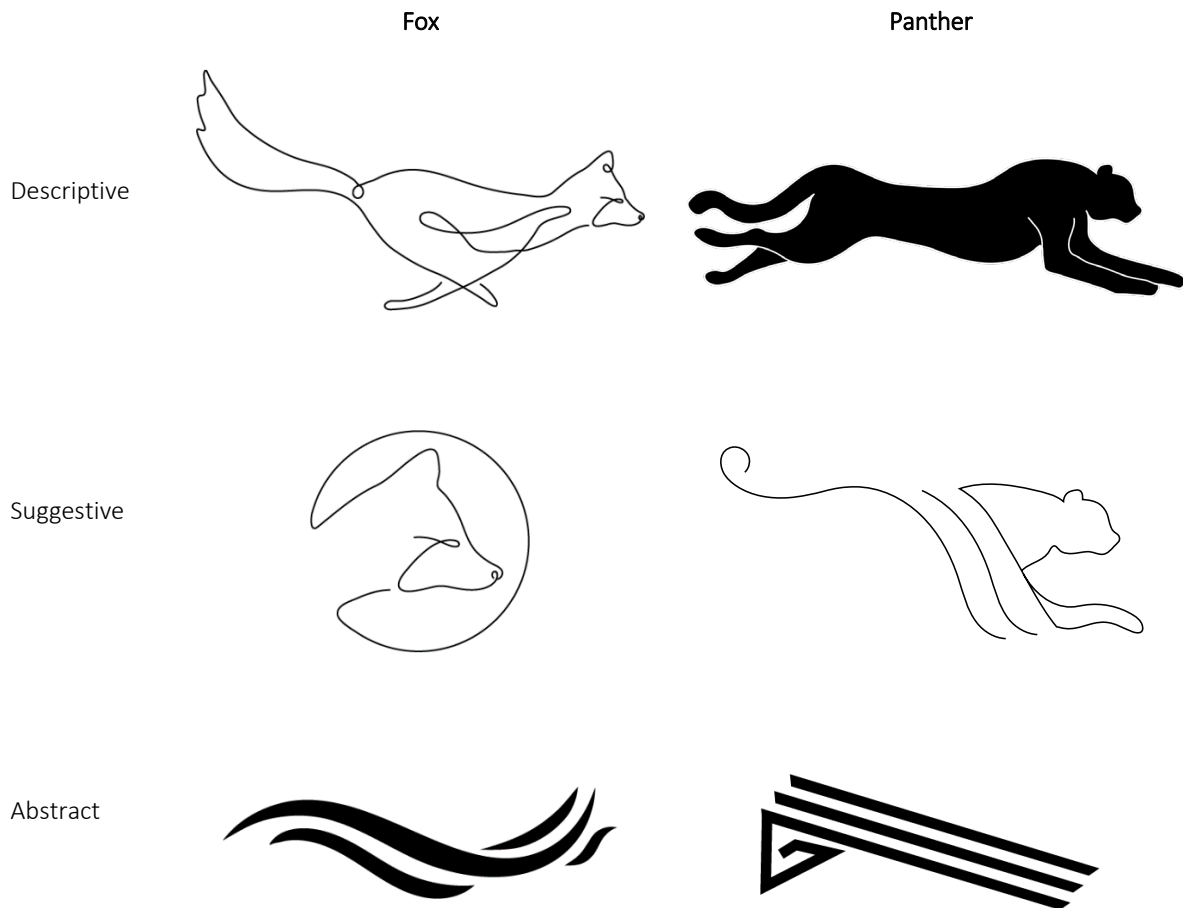


Figure 5. *Logo designs used in the main study*

The logo designs were displayed without a context (no poster, product, or service) to avoid biased evaluations. The textual element (if involved) was shown in a stylish but basic (sans serif) font also for the reason that every font can be perceived differently and determine to a large extent how consumers perceive the organization (see Figure 6; Henderson et al., 2004). Also, the logos were displayed in black and white since the use of colours can influence perceptions of movement (Cian et al., 2014), elicit certain emotions (e.g., red is exciting, and blue is relaxing; Gorn et al., 1997), affect (subjective) liking (i.e., personal preference for certain colours), and generate specific associations (e.g., red and green for Christmas and orange and black for Halloween; Gorn et al., 1997).

ATHLETIX Work hard, train smart.

Figure 6. *Textual elements used in the main study*

3.3. Participants

A total of 251 participants (age: $M = 28.10$, $SD = 11.34$; range 16 – 67; 65,4% female), took part in the study. Since (sports) brand logos usually have an international outlook and are presented to the entire population through both online and offline media, participants did not necessarily have to be interested in sport(s)(wear) brands. The nationalities of the participants were diverse (all continents except for Antarctica were represented) of which the three most common nationalities were Dutch (51.4%), American (11.6%), and British (6.0%). The highest completed educational level of the participants varied from primary education to a university degree: primary education (elementary school) (1.6%), secondary education (high school) (14.3%), secondary vocational (MBO) (9.6%), University of Applied Science (HBO) (21.9%), University (Bachelor/Master) (50.6%), and other (2.0%).

Each participant was randomly assigned to one of the nine conditions in which each participant was asked to evaluate two logo designs. Table 1 shows the number of participants divided across the different conditions. To examine whether there were differences in the distribution of gender, educational level, and age between the different conditions, several Chi-square tests and one-way analyses of variances were conducted. Across the nine conditions, a Chi-square test did not show a significant difference between the conditions and the distribution of gender ($\chi^2(16) = 21.04$, $p = .177$), educational level ($\chi^2(40) = 35.66$, $p = .666$), and nationality ($\chi^2(392) = 397.45$, $p = .414$). Also, a one-way analysis of variance did not show a significant difference between the nine conditions and the distribution of age ($F(8,$

239) = 1.14, $p = .339$), and brand consciousness ($F(8, 242) = .991$, $p = .444$). Concluding, the analyses show that the demographics were equally distributed across the different conditions.

Table 1

The distribution of the logo representativeness and textual element

Condition	Representativeness	Textual element	<i>n</i>
1	Descriptive	None	31
2	Descriptive	Brand name	28
3	Descriptive	Slogan	30
4	Suggestive	None	30
5	Suggestive	Brand name	27
6	Suggestive	Slogan	25
7	Abstract	None	25
8	Abstract	Brand name	26
9	Abstract	Slogan	29

3.4. Procedure

People were invited to participate in an online (self-completion) questionnaire, in English, via email, social media, and different online platforms. The data were collected using Qualtrics, an online survey tool. The participants were not explicitly informed about the purpose of the study only that the effectiveness of different logo designs was investigated.

The questionnaire started with a brief introduction about the study, followed by an informed consent: participation is voluntary and on an individual basis, and they had the opportunity to end the questionnaire at any point in time. After agreeing with this, an

imaginative scenario (regardless of the condition) was introduced: a fictitious organization is looking to brand their organization using a logo. Hereafter, the participants saw the first (and second) logo for at least 10 seconds before they could continue with the questions. The participants could only look at the logo design once, and thus, were not able to go back.

At the end of the questionnaire, the participants provided some demographic data and if they required further information, they could contact the researcher. The questionnaire was designed to not to be too long, hence, filling out the questionnaire took about 8 minutes ($M = 7.81$, $SD = 4.36$).

3.5. Measures

To examine to what extent the level of logo design representativeness and the presence of a text element (either little information using a brand name or more information using a brand slogan) affect people's attitudes and cognitive responses, several dependent variables were used. First, brand associations were measured; followed by brand-specific questions (attitude and brand personality traits); next, items relating to the attitude towards the logo were asked; and lastly, the questionnaire obtained information about demographics followed by the variable logo recognition. A summary of the items that measured the dependent variables can be found in Table C1 in Appendix C.

First, a logo design should trigger people to build associations, be highly memorable, and easily recognizable (Farhana, 2012). Brand meaning is a construct that exists in the minds of the consumer in which a brand is a cluster of perceptions (based on associations) stored in the consumer's mind (Salzer-Mörling & Strannegård, 2004). The most powerful way to profile associations is through a free association task (Keller, 2013). The brand associations that come to mind when engaging with the logo design were measured, using an open-ended question: "Please write the first three things this brand reminds you of".

Second, the logo design is likely to create expectations about the features, performance, and benefits of the brand in people's minds. To examine people's perceptions of the brand, the attitude towards the brand was measured with five items on a 7-point semantic differential scale, i.e., 'bad - good,' 'terrible - nice,' 'unfavourable – favourable,' 'undesirable - desirable,' 'unpleasant – pleasant,' anchored by the statement i.e. "I believe this brand is..." (Ahluwalia et al., 2000). Responses on the individual brand attitude items were summed and averaged ($\alpha = .91$) to arrive at a general 'attitude towards the brand' measure.

Since sportswear brands are positioned between the fashion and sports industry, the brand personality of sportswear brands is a combination between the brand personality dimensions distinguished by Aaker (1997), characteristics associated with athletes, and characteristics associated with fashion (Tong & Su, 2014). Tong and Su (2014) identified seven sportswear brand personality dimensions (and their facets), namely, competence, attractiveness, sincerity, innovation, activity, excitement, and ruggedness, and established that four of the seven personality dimensions (competence, attractiveness, sincerity, and innovation) are significant contributing factors to the creation and enhancing of sportswear brand equity. Therefore, these four sportswear brand personality dimensions were measured.

The brand personality dimension 'competence' fits sportswear brands as it may be associated with personality traits of athletes such as confident and hard-working, and therefore, was measured with four items, i.e. "I believe this brand is: determined/confident/successful/reliable" ($\alpha = .84$). The attractiveness dimension reflects the stylistic aspect of sportswear products associated with the brand and was measured with five items "I believe this brand is: up-to-date/popular/trendy/young/cool" ($\alpha = .87$). Sincerity - consumers' perceptions of quality, performance, and family-oriented image of sportswear brands (Maehle et al., 2011, as cited by Tong & Su, 2014), consisted of the four items "I

believe this brand is: honest/friendly/practical/flexible” ($\alpha = .81$). The brand personality dimension ‘innovation’ was examined with the variable uniqueness. Uniqueness can be defined as “the degree to which customers feel the logo or brand is different from competing brands” (Netemeyer et al., 2004, p. 211). A brand should be unique, easily recognizable, and stand out from the competition. Given that unique brand identity is the central feature in creating a logo, the variable uniqueness consisted of three items: “This brand is unique/innovative/different from other brands/creative” ($\alpha = .87$). Lastly, as the brand personality dimension “activity,” next to “innovation,” appeared to be specifically for sportswear brands, “activity” was also evaluated with four items, i.e. “This brand is: active/lively/dynamic/energetic” ($\alpha = .89$). All brand personality dimension items were measured on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Furthermore, the attitude towards the logo was measured with a 7-point Likert scale (1 = strongly disagree, and 7 = strongly agree) comprising of four statements: “I like the way this logo looks,” “This logo is appealing,” “This logo is attractive,” and “This logo is aesthetically pleasing” (based on Mathwick et al., 2001). Again, ratings were summed and averaged ($\alpha = .87$) to arrive at a general ‘attitude towards the logo’ measure.

Brand awareness, comprised of recognition and recall, describes the likelihood and the ease that a brand will come to mind in different situations (Keller, 2013). Logo recall was not measured because recall is based on past exposure in which images are retrieved from memory when given some related probe or cue. Since the logo designs presented in the study are fictitious and thus unfamiliar to the participants, the logo design will not be embedded in memory. However, the dependent variable logo recognition is about recognizing the logo design as being familiar can be measured since it is about whether participants have seen the brand element before. Using a variety of different logos (including the stimulus materials), recognition was evaluated with the closed-ended question: “Did this logo appear in the

questionnaire? Yes/No” (based on Henderson & Cote, 1998). Importantly, recognition was measured as the final question of the questionnaire to increase the time between exposure to the logos and the retrieval from memory.

Finally, the questionnaire elicited information about potentially relevant background variables such as age, gender, nationality, and educational level. Also, people’s brand consciousness was measured as highly brand conscious people place more importance on specific brand attributes such as the brand name, logo, or slogan (Nelson & McLeod, 2005). However, the reliability of the three items measuring brand consciousness: “I pay attention to the brand names of the clothes I buy,” “Brand names tell me something about how ‘cool’ an item of clothing is,” and “Sometimes I am willing to pay more money for clothing because of its brand name,” measured on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree) (based on Nelson & McLeod, 2005) was questionable ($\alpha < .70$). After deleting the item “Brand names tell me something about how ‘cool’ an item of clothing is,” the reliability was acceptable ($\alpha = .75$), and therefore, this item was left out of the study.

A manipulation check was conducted to examine the fit between the brand logo design and the association with sport(s)(wear), using the multiple-choice (categorical association) question: “What type of industry do you associate with this brand? (healthcare, food/beverage, hospitality/hotel, electronics/technology, clothing/shoes/accessories, other namely...),” and if chosen clothing/shoes/accessories: “What type of clothing/shoes/accessories do you associate with this brand? (casual, formal, underwear, active/sportswear, other namely)”. This question was asked at the beginning of the survey, after the brand associations question. After conducting the survey, the gathered data were analysed with the software programme IBM SPSS statistics.

4. Results

After gathering the data, the data were analysed. The result section first describes the general results (including both the first and second logo design); thereafter, it explains the findings of the separate analyses for the first (related to the fox) and second (related to the panther) logo design; and it ends with a summary of the hypotheses.

4.1. General Results

4.1.1. *Categorical Association and Manipulation Check*

The multiple-choice questions (i.e. “What type of industry do you associate with this brand?” and “What type of clothing/shoes/accessories do you associate with this brand?”) served as a manipulation check as well as a categorical association: the textual elements were designed to be associated with sport(s)(wear) (see pre-test), whereas the logo designs (descriptive, suggestive, and abstract) were not explicitly based on sportswear brands and thus for these the purpose of the questions was related to the categorical association.

To examine whether the textual element manipulations would sustain in the eventual designs, hence whether the textual elements (brand name and slogan) are more closely associated with sports, a Chi-square test was conducted. The test showed a significant relationship between the presence of a textual element and the association with sport(s)(wear) ($\chi^2(4) = 21.29, p < .001$), indicating that the logos with the brand name were less often incorrectly associated with sports (8.6%) than the logos without a textual element (23.3%) and the logos with the slogan (26.2%). Also, the logos with the brand name were more often correctly associated with sport(s)(wear) (66.7%) than the logos without a textual element (36.0%). Contrary to the expectation, the effect of the slogan compared to the no textual element level was not significant, meaning that the slogan did not aid in clarifying the link between the logo designs and sport(s)(wear) compared to the no textual element conditions.

Table 2 shows the percentages of the link with sport(s)(wear) in the function of the three textual element levels.

Table 2

Percentage of the number of correct associations with sport(s)(wear) as a function of the textual element levels

	Textual Element X Categorical Association			
	0	1	2	<i>n</i>
None	23.3%	40.7%	36.0%	86
Brand name	8.6%	24.7%	66.7%	81
Slogan	26.2%	21.4%	52.4%	84

Note. 0 = no correct association, 1 = one correct association, and 2 = both logo designs were correctly associated with sport(s)(wear)

To investigate more specifically potential differences between the logo representativeness and textual element levels, three Chi-square tests were conducted for each textual element level separately. Table 3 shows the percentages regarding the categorical association with sport(s)(wear) for the three different textual element levels in the function of the levels of logo representativeness.

For the no textual element level, a Chi-square test showed a significant relationship between the level of logo representativeness and the association with sports ($\chi^2(4) = 20.22, p < .001$), indicating that the abstract logo was more often incorrectly associated with sports apparel (52.0%) than the suggestive (16.7%) and descriptive (6.5%) logo designs. Also, the descriptive logo was more often correctly associated with sports apparel (54.0%) compared to the abstract logo design (16.0%). For the brand name level, a Chi-square test showed a significant relationship between the level of logo representativeness and the association with

sportswear ($\chi^2(4) = 11.29, p = .024$), illustrating that the descriptive logo design was less often not associated with sports apparel (0.0%) compared to the abstract logo design (19.2%), and was more often correctly associated with sport(s)(wear) (85.7%) than the abstract logo design (46.2%). Lastly, for the slogan level, a Chi-square test did not reveal a significant relationship between the level of logo representativeness and the association with sports apparel ($\chi^2(4) = 4.01, p = .405$); no distinction in (in)correctly associating the logo design with sport(s)(wear) was made between any of the logo representativeness levels.

Table 3

Percentage of the number of correct associations with sport(s)(wear) as a function of the logo representativeness and textual element levels

	No textual element (<i>n</i> = 86)			Brand name (<i>n</i> = 81)			Slogan (<i>n</i> = 86)		
	0	1	2	0	1	2	0	1	2
Descriptive	6.5%	38.7%	54.0%	0.0%	14.3%	85.7%	20.0%	16.7%	63.0%
Suggestive	16.7%	50.0%	33.3%	7.4%	15.9%	66.7%	28.0%	32.0%	40.0%
Abstract	52.0%	32.0%	16.0%	19.2%	34.6%	46.2%	31.0%	17.2%	51.7%

Note. 0 = no correct association, 1 = one correct association, and 2 = both logo designs were correctly associated with sport(s)(wear)

4.1.2. Brand Associations

Tables D1 and D2 in Appendix D show the associations evoked by the logo representativeness and the textual element levels for the first (related to the fox) and second (related to the panther) logo designs separately.

Interestingly, even the abstract logo designs (without a textual element) elicited common (sports-related) brand associations. However, in general, the suggestive and

descriptive logo designs generated more common associations related to the animal that the designs represented. Additionally, the presence of a textual element, with the use of a brand name in particular, increased the number of common associations related to sport(s)(wear), which is consistent with $H_{(1,2,3,4) a}$.

4.1.3. Attitude towards the Brand

An ANOVA was conducted with the level of logo representativeness and the presence of a textual element as independent variables and the attitude towards the brand as the dependent variable. Table 4 shows the means, standard deviations, and the number of observations for the attitude towards the brand. The main effect of the level of logo representativeness was significant ($F(2, 242) = 5.26, p = .006$), showing that the attitude towards the brand was significantly less positive for the abstract logo designs ($M = 4.57, SD = .97$) compared to the suggestive logo designs ($p = .006$, Bonferroni correction; $M = 5.03, SD = .78$). There was no significant difference between the descriptive logo designs and the abstract logo designs, not supporting H_{1b} and H_{2b} , and between the suggestive and descriptive logo designs ($p > .119$, Bonferroni correction).

Table 4

Univariate analysis for the attitude towards the brand as a function of the logo representativeness and textual element levels

	None			Brand name			Slogan			Total		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Descriptive	4.76	1.00	31	5.00	.89	28	4.45	1.20	30	4.73	1.06	89
Suggestive	4.88	.81	30	5.02	.73	27	5.22	.81	25	5.03	.78	82
Abstract	4.39	1.07	25	4.81	.88	26	4.51	.94	29	4.57	.97	80
Total	4.69	.97	86	4.95	.83	81	4.70	1.05	84	4.78	.96	251

Note. 1= very negative to 7 = very positive

Moreover, the presence of a textual element did not reach significance ($F(2, 242) = 1.90, p = .152$); none of the textual element levels generated a more positive attitude towards the brand than the other. Contrary to expectations (H3b and H4b), no significant interaction effects were obtained ($F(4, 242) < 1$), showing that none of the logo representativeness levels resulted in a more positive (or negative) brand attitude for any of the textual element levels, and vice versa.

Additionally, it was examined whether the main effect of the level of logo representativeness (the independent variable) on the attitude towards the brand (the dependent variable) is mediated by perceived 'brand attractiveness' (the mediator). That is, do consumers have a more positive attitude for a specific level of logo representativeness because they perceived the logo to be more attractive. Several mediation analyses were conducted (Baron & Kenny, 1986). The effect of the level of logo representativeness on the brand personality dimension 'attractiveness' was significant (Table 5, regression 2). Crucially, the mediator hypothesis is supported if the effect of the level of logo representativeness is no longer significant when the brand personality dimension

‘attractiveness’ is added to the regression analysis as a predictor of the attitude towards the brand, while the effect of the mediator (brand personality dimension ‘attractiveness’) should be significant (Becker et al., 2011, p. 21). The results show that these criteria are indeed met (Table 5, regression 3). Hence, these findings show that the level of logo representativeness influences the attitude towards the brand via brand attractiveness.

Table 5

Mediation analyses for the attitude towards the brand

Variable	β	t	p
<i>Regression 1 (DV: brand attitude)</i>			
The level of logo representativeness	.064	1.01	.313
<i>Regression 2 (DV: attractiveness)</i>			
The level of logo representativeness	.131	2.09	.038*
<i>Regression 3 (DV: brand attitude)</i>			
Attractiveness	.693	14.95	.000**
The level of logo representativeness	-.027	-.581	.561

*Regression is significant ($p < .050$)

**Regression is significant ($p < .010$)

4.1.4. Brand Personality Dimensions

As mentioned in the method section, several brand personality dimensions are deemed important when examining (sportswear) brand logo designs. For each of the brand personality dimensions, a univariate analysis of variance was conducted with the level of logo representativeness and the presence of a textual element as independent variables.

Competence. The main effect of the level of logo representativeness and the presence of a textual element did not reach significance for the brand personality dimension

‘competence’ (both F ’s < 1), indicating that there are no overall effects of these variables on brand competence. Nonetheless, a significant interaction was observed between the level of logo representativeness and the presence of a textual element ($F(4, 242) = 2.49, p = .044$; see Figure 7).

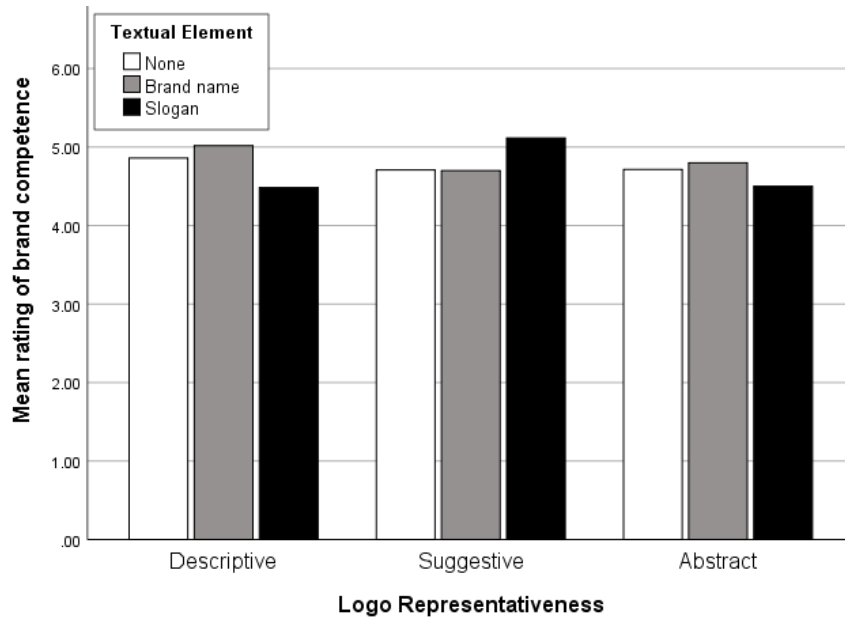


Figure 7. *Interaction logo representativeness \times textual element for brand competence*

Participants who were exposed to no textual element or a brand name did not discriminate between the level of logo representativeness (both F ’s < 1 , ns). However, participants who were exposed to the slogan evaluated the brand as more competent when they saw a suggestive logo ($M = 5.12, SD = .72; F(2, 242) = 4.47, p = .012$) than when they saw an abstract ($p = .011$, Bonferroni correction; $M = 4.50, SD = 1.00$) and descriptive logo design ($p = .008$, Bonferroni correction; $M = 4.48, SD = 1.01$). There was no significant difference between the descriptive and the abstract logo design ($p = .942$, Bonferroni correction).

Also, a marginally significant effect was found among participants who were exposed to the descriptive logo design ($F(2, 242) = 2.89, p = .057$), showing that when the logo included a brand name ($M = 4.48, SD = 1.00$), it was perceived as more competent than when

there was a slogan ($p = .021$, Bonferroni correction; $M = 5.02$, $SD = .94$). No further interaction effects were obtained. For the suggestive and abstract logo design no significant effects were found ($F(2, 242) = 1.92$, $p = .148$; $F(2, 242) < 1$).

Attractiveness. As for the brand personality dimension ‘attractiveness,’ the main effect of the level of logo representativeness was significant ($F(2, 242) = 10.87$, $p < .001$), indicating that the suggestive logo designs ($M = 4.86$, $SD = .82$) were significantly perceived as more attractive than the abstract logo designs ($p < .001$, Bonferroni correction; $M = 4.14$, $SD = 1.09$) and the descriptive logo designs ($p = .046$, Bonferroni correction; $M = 4.49$, $SD = 1.04$). There was no significant difference between the descriptive logo designs and the abstract logo designs ($p = .069$, Bonferroni correction). The main effect of the presence of a textual element did not reach significance ($F(2, 242) = 1.61$, $p = .202$), meaning that the textual element did not influence brand attractiveness. Also, no interaction effects were shown ($F(4, 242) = 1.48$, $p = .208$); none of the logo representativeness levels resulted in a higher (or lower) perceived brand attractiveness for any of the textual element levels, and vice versa.

Sincerity. An ANOVA was conducted with the level of logo representativeness and the presence of a textual element as independent variables and the brand personality dimension ‘sincerity’ as the dependent variable. The analysis revealed a main effect of the level of logo representativeness ($F(2, 242) = 4.90$, $p = .008$), illustrating that the suggestive logo designs ($M = 4.82$, $SD = .65$) were perceived as more sincere compared to the abstract logo designs ($p = .010$, Bonferroni correction; $M = 4.46$, $SD = .81$). There was no significant difference between the descriptive logo designs and the abstract and suggestive logo designs ($p > .065$, Bonferroni correction). The textual element did not show a significant main effect on sincerity ($F(2, 242) < 1$); all the textual element levels were perceived to be as sincere as the other. No interaction effects were obtained ($F(4, 242) = 1.88$, $p = .115$), showing that

none of the logo representativeness \times textual element conditions was perceived as more or less sincere than the other.

Uniqueness. For the brand personality dimension ‘uniqueness,’ the main effect of the level of logo representativeness reached significance ($F(2, 242) = 8.22, p < .001$), indicating that the suggestive logo designs ($M = 4.43, SD = 1.05$) were perceived as more unique compared to the abstract ($p < .001$, Bonferroni correction; $M = 3.75, SD = 1.18$) and the descriptive logo designs ($p = .016$, Bonferroni correction; $M = 3.96, SD = 1.00$). There was no significant difference between the descriptive logo designs and the abstract logo designs ($p = .612$, Bonferroni correction), providing no support for H_{1d} and H_{2d}. Table 6 shows the means, standard deviations, and the number of observations for brand uniqueness. The main effect of the presence of a textual element was not significant ($F(2, 242) < 1$); the textual element level did not influence brand uniqueness. In addition, no interaction effects were found ($F(4, 242) < 1$), indicating that none of the logo representativeness levels was perceived as more (or less) unique than the other for any of the textual element levels, and vice versa.

Table 6

Univariate analysis for the brand personality dimension ‘uniqueness’ as a function of the logo representativeness and textual element levels

	None			Brand name			Slogan			Total		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Descriptive	4.06	1.03	31	4.04	1.00	28	3.79	.99	30	3.96	1.00	89
Suggestive	4.43	.86	30	4.52	1.16	27	4.33	1.17	25	4.43	1.05	82
Abstract	3.72	1.22	25	3.81	1.25	26	3.72	1.13	29	3.75	1.18	80
Total	4.09	1.06	86	4.13	1.16	81	3.93	1.11	84	4.05	1.11	251

Note. 1 = very negative to 7 = very positive

Activity. An ANOVA was conducted with the level of logo representativeness and the presence of a textual element as independent variables and the brand personality dimension ‘activity’ as the dependent variable. The analysis revealed a main effect of the level of logo representativeness ($F(2, 242) = 9.95, p < .001$); the abstract logo designs ($M = 4.60, SD = 1.17$) were significantly perceived as less active compared to the suggestive logo designs ($p = .002$, Bonferroni correction; $M = 5.17, SD = .88$) and the descriptive logo designs ($p < .001$, Bonferroni correction; $M = 5.25, SD = 1.00$). There was no significant difference between the suggestive and the descriptive logo designs ($p = 1.000$, Bonferroni correction). Also, no significant main effect was found for the presence of a textual element ($F(2, 242) < 1$), indicating that the textual element did not influence perceptions of brand activity. No interaction effects were obtained ($F(4, 242) = 1.24, p = .295$); none of the logo representativeness \times textual element conditions was perceived as more or less active than the other.

4.1.5. Attitude towards the Logo

A univariate analysis of variance was conducted with the level of logo representativeness and the presence of a textual element as independent variables and the attitude towards the logo as the dependent variable. The main effect of the level of logo representativeness was significant ($F(2, 242) = 8.07, p < .001$), indicating that the attitude towards the logo was significantly more positive for the suggestive logo designs ($M = 4.70, SD = 1.08$) compared to the abstract logo designs ($p = .001$, Bonferroni correction; $M = 4.00, SD = 1.23$) and the descriptive logo designs ($p = .039$, Bonferroni correction; $M = 4.26, SD = 1.21$). There was no significant difference between the descriptive logo designs and the abstract logo designs ($p = .441$, Bonferroni correction), and therefore, it does not support H_{1c}

and H_{2c}. Table 7 describes the means, standard deviations, and the number of observations for the attitude towards the logo.

Table 7

Univariate analysis for the attitude towards the logo as a function of the logo representativeness and textual element levels

	None			Brand name			Slogan			Total		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Descriptive	4.51	1.23	31	4.47	1.08	28	3.80	1.20	30	4.26	1.21	89
Suggestive	4.36	1.16	30	4.88	.98	27	4.92	1.02	25	4.70	1.08	82
Abstract	3.83	1.11	25	4.16	1.13	26	3.99	1.43	29	4.00	1.23	80
Total	4.26	1.19	86	4.51	1.09	81	4.20	1.31	84	4.32	1.20	251

Note. 1= very negative to 7 = very positive

Additionally, the analysis did not reveal a significant main effect of the presence of a textual element ($F(2, 242) = 1.53, p = .220$), indicating that none of the textual element levels generated a more positive (or negative) attitude towards the logo than the other. In line with H_{3c} but contradicting H_{4c}, no significant interaction effects were found ($F(4, 242) = 2.25, p = .064$), showing that none of the logo representativeness levels resulted in a more positive (or negative) logo attitude for any of the textual element levels, and vice versa.

To test whether the main effect of logo representativeness on the attitude towards the logo (the dependent variable) is mediated by perceived brand attractiveness (the mediator), i.e., whether consumers have a more positive or negative attitude towards the logo for a specific level of logo representativeness because they perceived the logo to be more attractive, several mediation analyses were conducted (Baron & Kenny, 1986). The results show that mediation is supported (Table 8, regression 3). Hence, these findings show that the

level of logo representativeness influences the attitude towards the logo via brand attractiveness.

Table 8

Mediation analyses for the attitude towards the logo

Variable	β	t	p
<i>Regression 1 (DV: logo attitude)</i>			
The level of logo representativeness	.082	1.30	.196
<i>Regression 2 (DV: attractiveness)</i>			
The level of logo representativeness	.131	2.09	.038*
<i>Regression 3 (DV: logo attitude)</i>			
Attractiveness	.789	19.94	.000**
The level of logo representativeness	-.022	-. 547	.585

*Regression is significant ($p < .050$)

**Regression is significant ($p < .010$)

4.1.6. Logo Recognition

To examine participants' ability to recognize the logo, a Chi-square test was carried out, but it did not show a significant relationship between the level of logo representativeness (descriptive, suggestive, and abstract) and the number of correctly recognized logos ($\chi^2(6) = 6.27, p = .394$). This finding illustrates that the level of logo representativeness did not influence recognition.

4.2. Analyses per Logo Design

Per condition, each participant saw two different logo designs: the first one was related to a fox and the second one was related to a panther. To examine whether there were

differences in evaluations between the two logo designs, several univariate analyses of variance with the level of logo representativeness and the presence of a textual element as independent variables were conducted for the different dependent variables. Appendix E elaborates on all the analyses and Table 9 shows the additional effects regarding the hypotheses.

Table 9

The effects of the univariate analyses for the first (1) and second (2) logo design

		Logo representativeness (2, 242)		Textual Element (2, 242)		Logo representativeness X Textual element (4, 242)	
		<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
Brand attitude	1	1.49	.228	2.05	.132	1.81	.128
	2	8.44	.000*	< 1		1.53	.193
Uniqueness	1	16.63	.000**	< 1		< 1	
	2	13.51	.000**	< 1		< 1	
Logo attitude	1	4.36	.014*	1.35	.262	1.58	.181
	2	11.57	.000**	1.35	.261	7.18	.028*

*Main effect is significant ($p < .050$)

**Main effect is significant ($p < .010$)

The analyses show several additional effects. First, regarding the second logo design, the attitude toward the brand was significantly more positive for the suggestive logo design compared to the descriptive and abstract logo design. However, no difference was found between the descriptive and abstract logo designs. Second, for brand uniqueness, the analyses

of the first logo design showed that the descriptive logo design was perceived as more unique than the abstract logo design, whereas for the second logo design this was the other way around. These findings also contradict the general results as these showed that the suggestive logo was perceived to be more unique than the descriptive and abstract logo design (H_{1d} and H_{2d} are inconclusive). Lastly, for the logo attitude, the analyses of the first logo design show a more (less) positive attitude towards the logo for the descriptive (abstract) logo design (in line with H_{1c} and H_{2c}), whereas the results of the second logo design only revealed a more positive attitude towards the suggestive logo design compared to the abstract and descriptive logo design. Additionally, the analyses of the second logo design revealed a significant interaction effect; without a textual element, the descriptive logo design generated a less negative attitude towards the logo compared to the descriptive logo design with the slogan (partially rejecting H_{3c}).

4.3. Overview of the Hypotheses

Considering the previously discussed results the formulated hypotheses can be supported or rejected. Table 10 shows an overview of the hypotheses.

Table 10*Overview of the supported or rejected hypotheses*

Hypotheses	Result
H ₁ A descriptive (as opposed to an abstract) logo design (a) supports the formation of common brand associations, elicits (b) more positive brand and (c) logo attitudes, (d) but causes people to perceive the brand as less unique.	a Supported b Rejected* c Supported d Inconclusive
H ₂ An abstract (as opposed to descriptive) logo design (a) impedes the formation of common brand associations, elicits (b) less positive brand and (c) logo attitudes, but (d) causes people to perceive the brand as more unique.	a Supported b Rejected* c Supported d Inconclusive
H ₃ Adding a textual clarification to a descriptive logo design does not affect (a) the formation of common brand associations, people's attitude towards the (b) brand and (c) logo.	a Supported b Supported c Partially rejected
H ₄ Adding a textual clarification to an abstract logo design (a) supports the formation of common brand associations and positively affects people's attitude towards the (b) brand and (c) logo.	a Supported b Rejected** c Rejected**

* Although the means concerning the attitude towards the brand and logo were more positive for the descriptive logo designs than for the abstract, there was no significant difference.

** Note that while the attitude towards the brand and the logo were not significantly different when a textual element was added, the means for the abstract logo designs with a textual element (both brand name a slogan) were slightly higher.

5. Discussion

Following the results, this section focuses on the discussion of the findings and reflects on existing literature as it elaborates on the theoretical and practical implications, points out the limitations, provides suggestions for future research directions, and ends with a general conclusion.

5.1. Main Findings and Reflections on Literature

The key driver of the present study was to contribute to the understanding of the effectiveness of different logo designs. The level of logo representativeness (either descriptive, suggestive, or abstract) and the presence of a textual element (none, brand name, or slogan) were expected to result in different evaluations since prior research demonstrated that logo design characteristics (see Schechter, 1993; Henderson & Cote, 1998; Van de Laar & Van den Berg-Weitzel, 2004), as well as text (e.g. Franklin et al., 1993; Russel, 2003; Leder et al., 2006), can influence a design's perceived meaningfulness and evaluations.

5.1.1. Brand Associations ($H_{1,2,3,4} a$)

The results indicate that irrespective of the level of logo representativeness and the presence of a textual element, the logo designs allowed for some common associations: common associations arise even from abstract logo designs. Noticeable, although the abstract designs may lack a textual element, the designs were associated with sports. This finding partially contradicts the claim by Henderson and Cote (1998, p. 24) who stated that “a logo with an unfamiliar meaning will not evoke common associations across people,” indicating that to maximize familiar meaning, a unique but easy to interpret design of a familiar object should be selected.

Furthermore, in line with the hypotheses ($H_{1,2,3,4 a}$), the results indicate that brand associations vary depending on the level of logo representativeness and the presence of a textual element. The consensus in associations can be maximized by selecting more realistic designs: the more descriptive the design (resembling either the fox or panther), the more common associations the design elicited. Also, when the condition included a textual element to clarify the connection with sports, the associations were more focussed on dynamism and sports. These results build on existing evidence which showed that the presence of a textual element can contribute to the meaning and guide in interpretation (i.e., Franklin et al., 1993; Russel, 2003).

5.1.2. Attitude towards the Brand ($H_{1,2,3,4 b}$)

The current study does not reveal any difference in the attitude towards the brand for the descriptive and abstract logo designs, contradicting H_{1b} and H_{2b} . However, the results suggest that the brand attitude was significantly more positive for the suggestive logo designs compared to the descriptive and abstract logo designs. Preceding research showed that people are attracted to familiar (typical) examples of objects, while at the same time, they have always been attracted to new, unfamiliar, and original things (Hekkert, 2006). As an equilibrium between the two, Raymond Loewy (1951) proposed the MAYA (an acronym for Most Advanced, Yet Acceptable) principle. This principle asserts that the most advanced form of an object that is still recognizable as something familiar is the most effective. It is possible that the descriptive logo used in the current study may be too typical and familiar that it loses its value, whereas the abstract logo may be too new and unfamiliar. Considering that the suggestive logo designs fall in between the two extremes, neither too typical nor too unfamiliar, the suggestive logo designs elicited the most positive attitudes.

The data did not show an interaction effect between the level of logo representativeness and the presence of a textual element. Although these results are not surprising for the descriptive logo (H_{3b}), it was expected that the availability of information would at least influence perceptions regarding the abstract logo design (H_{4b}). As past research indicated that abstract logos are not intrinsically linked to an organization or brand (Schechter, 1993), the use of abstract logos might only be beneficial when an organization is active in several different fields or does not want to connect themselves to a product too closely. Otherwise, abstract logos need to be more heavily supported than other logotypes. Considering that the logos suggest an imaginative sportswear brand, the use of a brand name or slogan may not be informative/explanatory enough, leading to more positive brand attitudes.

5.1.3. Attitude towards the Logo (H_{1,2,3,4 c})

The presented results demonstrate that the suggestive logo designs generated more positive attitude towards the logo than the descriptive and abstract logo designs. In turn, the analyses of the first logo design provide support for a more (less) positive attitude towards the logo for the descriptive (abstract) logo design, confirming H_{1c} and H_{2c} and corresponding with the literature (e.g., Schechter, 1993; Henderson & Cote, 1998; Machado et al., 2014). This does not mean that abstract logos need to be avoided. For instance, Nike and Adidas demonstrate that abstract logos can be extremely effective when a brand is familiar, closely linked to an organization, and consistently supported (including being named: “swoosh” and “trefoil”) over time.

Furthermore, the data did not show a significant interaction effect for the general analysis and for first logo design. However, significant interaction effects were revealed for the second logo design, showing different attitudinal evaluations for the different

combinations; the logo attitude was significantly more positive for the suggestive logo with the brand name and slogan compared to the descriptive and abstract logo designs; the attitude towards the suggestive logo design with the brand name was more positive than that of the logo without a textual element; and the descriptive logo design without a textual element generated a less negative attitude towards the logo compared to the logo with the slogan.

It is not unforeseen that an unknown logo with a textual element generated a more positive attitude. Particularly, Bresciani and Del Ponte (2017) pointed out that the logo icon and brand name combination resulted in a higher perceived attractiveness which in turn can cause a more positive attitude. It is unexpected that for the descriptive logo opposite effects were found (contradicting H_{3c}). Since this was only found in the analysis of the second descriptive logo, it is assumed that it has to do with the logo itself and not with the format of the slogan. Taking into account that the second logo design resembles the logo of the PUMA brand (concluded from the results following the brand association task), it could be that the value of adding a textual element may be lacking. There may be incongruity between the descriptive logo design and the textual elements as the textual elements do not resemble with those of the PUMA brand. When it is incongruent, it may negatively influence attitudes (see Cian et al., 2014). Considering that the slogan consisted of more words than the brand name, the slogan may have been more prominent and did not clarify the brand meaning, but instead weakened (perceptions of) the logo design.

5.1.4. Brand Uniqueness (*H_{1d}* and *H_{2d}*)

The findings regarding the brand personality dimension ‘uniqueness’ showed a significant main effect of the level of logo representativeness, but remarkable is that the results are contradicting. The analysis of the first logo design revealed that the descriptive logo was perceived as more unique than the abstract logo, whereas for the second logo design

it was the other way around. Hence, the hypotheses (H_{1d} and H_{2d}) are neither supported nor rejected and thus inconclusive. Arguably, the second logo design resembles the logo of the PUMA (sports) brand, and therefore, it may be perceived as less unique. On the other hand, the fox logo was not related to any other well-known brand possibly resulting in higher evaluations of uniqueness.

5.1.5. Additional Findings

Noteworthy is that the predicted effects of the presence of a textual element did not clearly transpire in the results in isolation but only as part of the interaction with logo representativeness. Since Rihn et al. (2019) showed that logos capture more visual attention than text labels, possibly, the textual elements stood out less clearly than the logo and were too subtle to cause significant main effects.

Several mediation analyses have been conducted for the attitude towards the brand and the attitude towards the logo. Interestingly, the mediation analyses showed that logo representativeness influences the attitude towards the brand and logo via brand attractiveness. These findings match those observed in earlier studies. For example, Jun et al. (2008) indicated that the attractiveness of a logo is very important since it can lead to a more positive attitude towards the organization and a higher purchase intention (as cited by Bresciani & Del Ponte, 2017).

5.2. Limitations and Recommendations for Future Research

Even though this study has offered several insights into the relationship between the level of logo representativeness and the presence of a textual element on associations,

evaluations and recognition, several limitations need to be considered when interpreting the results and giving incentives for future studies on this and related topic(s).

First, it is necessary to mention that one has to be cautious with the interpretation and generalization of the results. To increase the reliability and generalizability, two different logo designs were investigated. Not surprisingly, the different designs elicited different evaluations, indicating that (some) contrasting results were found for the two different logo designs. This finding emphasizes the importance of the logo design itself as even among the descriptive, suggestive, and abstract levels of logo representativeness there are differences. Continuing existing literature, logo representativeness is one of the many visual design characteristics of logos, but within this selection, a logo can still differ (see Henderson & Cote, 1998). Related research mainly focussed on individual logo design characteristics such as roundness (Walsh et al., 2011), naturalness and abstractness (Van de Laar & Van den Berg-Weitzel, 2004; Hynes, 2009; Machado et al., 2014), dynamism (Cian et al., 2014), and complexity (Van Grinsven & Das, 2014), and therefore, it can be interesting to investigate the interplay between different design characteristics (e.g., representativeness and naturalness; Henderson & Cote, 1998). Follow-up research examining multiple logo design characteristics is recommended to increase the generalizability and allow for more consensual findings.

Second, for both the brand name and slogan, a generic (sans serif) font was used. Past research showed that the font used in a logo can affect consumers' attitudes and perception of the brand (e.g., Childers & Jass, 2002; Wang & Chou, 2011). Likewise, Doyle and Bottomley (2006) suggest that there should be congruity between the meaning conveyed by the object (in this case the logo) and the meaning conveyed by the font for the reason that congruity between visual stimuli can increase product and brand evaluations (Ludwig, 2009). For example, Osgood et al. (1957) showed that italicised fonts are perceived as more active (fast, young, lively) than regular Roman fonts (as cited by Doyle & Bottomley, 2006). Hence,

future research can assess the effects of congruity between different type fonts and the logo.

Last, relating to the imaginative nature of the logo designs, the study only examined logo recognition (“Have you seen this logo? Yes/No”) as opposed to recall (“To which brand/organization does this logo belong?”). Although recognition is the first step to recall of the accompanying brand or organization, organizations want their name to be recalled so that the logo can serve as a shorthand for the organization (Schechter, 1993). Therefore, future research could examine the relationship between the logo design and the effect it has on recall of the brand and/or organization.

5.3. Theoretical and Practical Implications

Based on the results, several theoretical and practical implications can be identified. This study showed that logo representativeness affects the formation of brand associations and people’s evaluations of the logo itself as well as the brand and its personality, whereas textual clarifications have limited influence in this context. On one hand, the outcomes of this study are in line with prior research on brand associations and logo attitudes (see the hypotheses). With this, it adds to the existing literature in the field of marketing communication. On the other hand, regarding the insufficiently researched level of logo representativeness, suggestive, this study extends the literature as it offers valuable new insights.

In terms of practical implications, the results are promising in so far as they provide practical guidelines for designing a brand logo, enabling brand managers to create the ‘right’ logo by generating correct or preferred associations. The guidelines for the design characteristic ‘representativeness’ are (still) quite flexible, in that they allow for different designs (from simple to complex) even within the different levels. Interestingly, especially the suggestive logo designs received more positive evaluations (i.e., brand attitude,

attractiveness, sincerity, activity, and logo attitude) compared to the descriptive and abstract logo designs. The abstract logos fell at the low end of the range as they received the least favourable evaluations. In view of the MAYA principle (Loewy, 1951), the most innovative, still recognizable form of an object will have the best prospects for commercial success. Thus, designers need to find a balance between innovation (novelty) and typicality (acceptable). As shown in this study, the best way to ensure more emotionally pleasing logos is to select a suggestive design.

5.4. Conclusion

Logos are tremendously influential elements of brand and corporate communications which can and do influence the brand image. A brand logo should be recognized, foster positive attitudes, and communicate the core values of the organization. Existing literature allowed for the uncovering of an important gap, namely, the majority of the studies focused on investigating logo design characteristics (e.g., roundness, naturalness, concreteness, etc.) or textual elements (e.g., brand name, title, typeface) separately, but rarely the combination. The current study shows that minor differences in visual elements of marketing communication such as the level of logo representativeness and the presence of a textual element can affect associations and evaluations of the logo, the brand, and its personality. This denotes the importance of a thorough understanding of logo design elements to academics and practitioners in the field of marketing communication. With this, the results attest the importance of the design of brand elements to give rise to positive evaluations and to create correct or preferred brand associations through informed design decisions. Brand managers need to know exactly what effect(s) their logo (including a textual clarification or not) has on people.

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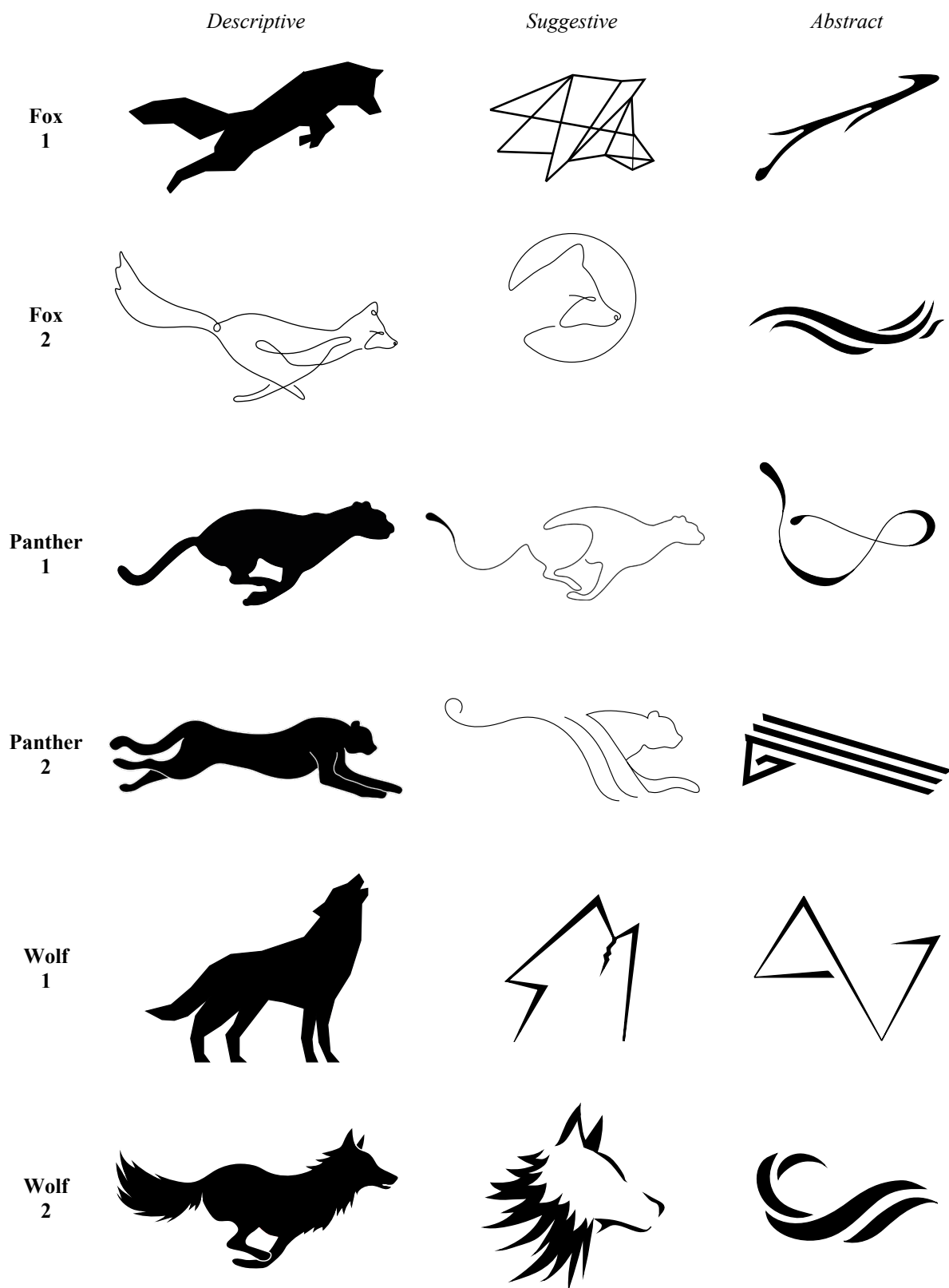
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Appendix A. Pre-test Stimuli



Appendix B. Results from the Pre-test

Table B1

Results of the analyses for the abstractness-descriptiveness of the logo designs

	Descriptive			Suggestive			Abstract		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Fox 1	5.85	1.35	20	2.30	1.46	20	1.70	1.13	20
Fox 2	5.40	1.23	20	4.75	1.29	20	1.55	.69	20
Jaguar 1	6.15	1.21	20	5.25	1.52	20	1.95	1.54	20
Jaguar 2	6.45	.61	20	4.30	1.38	20	1.45	.83	20
Wolf 1	6.50	.95	20	1.45	.69	20	1.55	.83	20
Wolf 2	6.55	.83	20	5.60	1.10	20	2.00	1.41	20

Note. 1 = abstract and 7 = descriptive

Table B2

Results of the analyses for the liking of the logo designs

	Descriptive			Suggestive			Abstract			Total		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>N</i>
Fox 1	4.85	1.76	20	3.70	1.92	20	2.95	1.32	20	3.71	1.20	20
Fox 2	4.40	1.76	20	4.85	1.63	20	4.45	1.26	20	4.38	1.41	20
Jaguar 1	4.80	1.58	20	4.45	1.70	20	4.15	1.31	20	4.42	1.02	20
Jaguar 2	4.40	1.73	20	4.05	1.47	20	3.75	1.48	20	4.07	1.06	20
Wolf 1	5.15	1.39	20	2.45	1.15	20	4.20	1.44	20	3.83	.90	20
Wolf 2	5.30	1.34	20	4.60	1.85	20	4.95	1.57	20	4.86	1.34	20

Note. 1= very negative and 7 = very positive

Table B3

Results of the analyses for the brand names and the fit with sports and brand name liking

	Fit with sports			Brand name liking		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Sportic	5.30	1.53	20	4.30	1.72	20
Athletix	5.95	.83	20	5.40	1.19	20
GymPact	4.55	1.57	20	3.75	1.77	20
FITwear	5.30	1.78	20	5.05	1.64	20
JustGym	5.05	1.73	20	4.15	1.53	20

Note. 1= very weak connection with sports to 7 = very strong connection with sports; and 1= very negative to 7 = very positive

Table B4

Results of the analyses for the slogans and the fit with sports and slogan liking

	Fit with sports			Slogan liking		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
“Commit to be fit. Energize your life.”	5.30	1.13	20	4.80	1.70	20
“Work hard, train smart.”	6.15	.75	20	6.05	1.15	20
“Workout. Better. Faster. Stronger.”	4.90	1.52	20	4.05	1.91	20
“Fit. Healthy. Happy.”	5.00	1.41	20	4.75	1.45	20
“Work it out to work it off.”	5.15	1.46	20	4.40	1.54	20

Note. 1= very weak connection with sports to 7 = very strong connection with sports; and 1= very negative to 7 = very positive

Appendix C. Dependent Variables and Items

Table C1

Dependent variables and items

Dependent variable	Items	Scale	Based on
Brand associations	“Please write the first three things this brand reminds you of.”	Open-ended question	Henderson & Cote (1998)
Type of industry	“What type of industry do you associate with this brand? (healthcare, food/beverage, hospitality/hotel, electronics/technology, clothing/shoes/accessories, other namely)”	Multiple choice	-
<i>If selected clothing/shoes/accessories:</i> Type of clothing/shoes/accessories	“What type of clothing/shoes/accessories do you associate with this brand? (casual, formal, underwear, active/sportswear, other namely)”	Multiple choice	-
Brand attitude	“I believe this brand is: bad - good, terrible - nice, unfavourable - favourable, undesirable - desirable, unpleasant - pleasant”	7-point semantic differential scale	Ahluwalia et al. (2000)

Brand personality dimension ‘competence’	“I believe this brand is: determined/confident/successful/reliable”	7-point Likert scale	Aaker (1997); Tong & Su (2014)
Brand personality dimension ‘attractiveness’	“I believe this brand is: up-to-date/popular/trendy/young/cool”	7-point Likert scale	Tong & Su (2014)
Brand personality dimension ‘sincerity’	“I believe this brand is: honest/friendly/practical/flexible”	7-point Likert scale	Aaker (1997); Tong & Su (2014)
Brand personality dimension ‘uniqueness’	“This brand is: unique/innovative/different from other brands/creative”	7-point Likert scale	Tong & Su (2014)
Brand personality dimension ‘activity’	“This brand is: active/lively/dynamic/energetic”	7-point Likert scale	Tong & Su (2014)
Logo attitude	“I like the way the logo looks” “The logo is appealing” “The logo is attractive” “This logo is aesthetically pleasing”	7-point Likert scale	Mathwick et al. (2001)
Logo recognition	“Did this logo appear in the questionnaire? Yes/No”	Closed-ended question	Henderson & Cote (1998)

Appendix D. Brand Associations

Table D1

Brand associations divided into different categories for the first logo design

Condition	Sports(wear)-related associations		Animal-related associations		Graphical associations		Characteristic associations		Other	
(1) Descriptive × None (n = 31)	Running/speed Sports	18 2	Fox Animal(s) Firefox	25 7 2	Line Black-white	5 2	Easy Minimalism Freedom	2 2 2	Nature/outdoor	
	Flexible		Dog, wolf, bird, puma, hunting		Art, design, clothing		Abstract, creativity, sophisticated, wild		Attention, eco-friendly, transport, technology, FjallRaven Kanken,	
(2) Descriptive × Brand name (n = 27)	Sport Fast/speed Athletics Running Quick	11 8 7 6 3	Fox Animal(s) Puma Racoon	14 3 2	Winter wear Clothes Shoes Design Line Art	3 2 2 2 2	Cunning/smart Stylish Simple Feminine, fresh, lightweight, luxury, loyal	2 2 2	Cold weather, outdoors, health	
(3) Descriptive × Slogan (n = 30)	Fitness/training/gym Speed Sport(s) Running Dynamic Motivation Athletics, flexibility	13 7 6 5 3 2	Fox Animal(s) Hare	12 4	Art, lines, shoes		Minimalism Abstract, elegance, flow, expensive, fluency, light, modern, playful, simplicity, smooth, smart, success	3	Nature Education Work Consultancy, self-development, results, unclear	
(4) Suggestive × None (n = 30)	Speed Sport		Animal(s) Fox Dog Wolf Cats, bear, hunting	14 14 10 7	Line/string Round Drawing, cursive, pencil, art, moon, paperclip, nose, black-white	5 2	Simple Abstract, thin, friendly, playful, sadness, slick, minimal, interested	2	Nature/outdoor Earth, Carfax	10
(5) Suggestive × Brand name (n = 27)	Sports Athletics Speed Active, athletes, running	12 2 2	Fox Animal(s) Wolf Cat Dog Predator	14 7 4 2 2	Drawing Capitals, food, grey, round, scribbles, design	2	Abstract Innovative Artsy, casual, childish, complicated, cunning, elegant, minimal, plain, quiet, simple, sleek	2 2	Nature/outdoor Tech brand Netflix, race, winter	4 2

(6)	Sport	4	Fox	10	Line	3	Minimalism	3	Nature/outdoor	7
	Quick	2	Animal(s)	6			Clever/smart	3	Work(ing)	2
Suggestive × Slogan	Training, strong		Dog	5	Art, circle,		Simple	2		
			Wolf	3	doodle,				Blog, camping,	
(n = 25)			Bear	2	drawing,		Craftiness,		study	
					design,		elegant, friendly,			
					moon,		obedience, free			
					round,		spirit, smooth,			
					shape,		trendy			
					stripes,					
					letter A					
(7)	Sport	5	Animal,		Wave(s)	16	Smooth	3	Airline,	
Abstract × None	Movement	3	bird,		Water	5	Simple	2	healthcare,	
	Nike	2	horse's		Ocean	3	Calm/serene	2	wellness,	
(n = 25)			mane		Air	3			tribal, beach	
	Adidas,				Hair	3	Creativity,		club, peace,	
	performance,				Black	3	natural, flow,		shoe brand	
	swim				Fire	2	expensive, old-			
					Wind	2	fashioned			
Seaweed										
(8)	Sport	9			Wave(s)	5	Flow	3	Fly	
Abstract × Brand name	Movement	5			Water	3	Fluidity, clean,			
	Athletic(s)	7			Air	3	modern, simple,			
(n = 26)	Nike	6			Black	3	smooth, to the			
	Adidas	5			Wella	2	point			
	Activity, fit,				brand					
	speed, running,									
	flexibility				Sea,					
	New Balance,				eyebrow,					
	Puma, Athlean X				hair, lines,					
					Nestle,					
					Umbro,					
					shoes					
(9)	Exercise/training	5	Bird		Waves	8	Efficiently, flow,		Existing brand,	
Abstract × Slogan	Movement	4			Water	6	intelligence		group,	
	Sport	4			Black	3			cigarettes	
(n = 29)	Working out	3			Sea/ River	2			brand,	
	Nike	3			Wind	2			technology,	
	Surf	2							not sure	
					Car,					
					clothing,					
					cloud,					
					coffee					
					(Nespresso					
), curls,					
					hair, lines,					
					Pantene,					
					Nivea,					
					toothpaste					
					airplane					

Note. Owing to that not every respondent provided one or more associations for each logo design, the numbers do not add up.

Table D2

Brand associations divided into different categories for the second logo design

Condition	Sport(s)(wear)-related associations		Animal-related associations		Graphical associations		Characteristic associations		Other	
(1) Descriptive × None (n = 31)	Speed/fast	8	Puma	13	Shoes	7	Agile, bold, dark, expensive, proactive, success, weird, wobbly, young	Drink, fashion	2	
	Sport(s)	7	Jaguar	4	Black	4				
	Running	7	Panther	2	Clothing	2				
	Strength/strong	6	Cat(s)	2	Silhouette, sheets, automobiles					
	Active(wear)	3								
Power(ful)	2	Animal, hunting, leopard, lynx, mammal								
	Athleisure, athletes, energetic, Nike, PUMA (brand)									
(2) Descriptive × Brand name (n = 27)	Speed/fast	8	Puma	12	Clothing	5	Aggressive	2	Health, jungle	2
	Sport(s)(wear)	8	Animal	2	Shoes	4	Massive	2		
	Running	7	Jaguar	2	Black	2	Boring, cheap, clumsy, courage, luxury, male, old, sleek, young, dark, accessible			
	Strength/strong	5	Panther	3						
	Power(ful)	3	Tiger	2	Jewellery					
	PUMA (brand)	2								
	Active, athletics, sporty									
(3) Descriptive × Slogan (n = 30)	Sport(s)	14	Puma	13	Black	3	Heavy	3	Education, nature, sponsors, work, winning	
	Speed/fast	7	Panther	4	Shoes	Big	2			
	Running	3	Animal(s)	2						
	PUMA (brand)	2								
	Strength/strong	2	Bear, cheetah, leopard, tiger							
Active, athletic wear, fitness, train, power										
(4) Suggestive × None (n = 30)	Speed/fast	10	Panther	6	Water	6	Wild	2	Nature	2
	Active	4	Puma	5	Waves	6				
	Sport(s)	3	Animal(s)	4	Shoes	3	Abstract, alternative, big, straight, unstructured, vitality			
	PUMA (brand)	3	Lion	3						
	Running	2	Tiger	2	Blanket, ocean, pencil, car					
		Cat	2							
	Exercise, movement, strong, sporty, swimming		Cheetah	2						
			Leopard	2						
		Jaguar, bear								
(5) Suggestive × Brand name (n = 27)	Speed/fast	12	Puma	10	Wave(s)	4	Wild	2	Flying, health	
	Sport(s)(wear)	9	Panther	2	Clouds, drawing, ocean, car, clothes	Modern, innovative, fresh, sleek				
	PUMA (brand)	4	Jaguar	3						
	Active	2	Animal	3						
	Athletic(s)	2								
	Sporty	2	Big cat, leopard, predator, tiger							
	Running	2								
	Nike swoosh, energetic, flexible									

(6)	Speed/fast	10	Cat(s)	6	Waves	3	Abstract, aggressive, airy, conservation, creative, effectiveness, powerful, sleek, smooth, up-to-date, young	Calligraphy, the dessert, working
	Movement	3	Puma	5	Clothes	2		
Suggestive × Slogan	Sport(s)	2	Cheetah	3	Aquafresh			
	Active, gym, training, Nike, PUMA (brand), sporty, running, strong		Panther	3	logo, circle, lines, smoke, wind, Vitesse			
(n = 25)			Animal(s)	2				
			Jaguar	2				
			Wild animals, zoo, hunters					
(7)	Sport(s)(wear)	7			Path/way	3	To the	3
	Adidas	4			Pyramid	2	point/direct	2
Abstract × None	Strong	2			Bridge	2	Rigid/stable	
	Nike, power				Triangles, arrows, black, steel, numbers, hieroglyphics, sheet music, puzzle, trigonometry, zigzags		Abstract, authority, official, cheap, clear, efficiency, bold, traditional, order, strict, industrial, weird, unbalanced	War, Illuminati, school, hospital, agriculture, hotel, Gatorade, thinking, sky, sliding, none
(n = 25)								
(8)	Sport(s)	6			Lines	2	Inflexible/solid	4
	Athletics	4			Stripes	2	Straight	2
Abstract × Brand name	Adidas	4			Triangle	2		
	Speed/fast	2			3D device, roof, bars, bench, blades, black, buildings, geometry, letter G, flag, fixtures, iron, sink, pyramid, spirals, stairs, table, walls, clothing, fist, monument		Aggressive, boring, bold, creativity, expensive, modern, new, sleek, structure	Architecture, finance, hardware, technology, nothing
(n = 26)	Athlean X, power, strength							
(9)	Adidas	7	Wolverine		Black	3	Downwards	2
	Sport(s)	5	claws		Slide	3	Hard	2
Abstract × Slogan	Work out	3			Line(s)	3		
	Gym	2			Hill	2	Abstract, big, edgy, efficiently, intelligence, negativity, static, lumber	Existing brand, g force, Greek, job, worlds, Zeus, not sure, nothing
(n = 29)	Speed/fast	2			Train track	2		
	Swimming	2						
	Training	2			Bench, NS, record player, needle, letter G, spaghetti, triangle, clothing, Disney's Hercules, Toblerone			
	Strong	2						
	Basic-Fit, Nike, dynamic, exercise, not athletic, running track							

Note. Owing to that not every respondent provided one or more associations for each logo design, the numbers do not add up.

Appendix E. Separate Analyses for the First and Second Logo Design

Results of the First Logo Design (related to the fox)

For the first logo design, several univariate analyses with the level of logo representativeness and the presence of a textual element as independent variables were conducted for the different dependent variables.

Brand Attitude

An ANOVA with the attitude towards the brand as the dependent variable did not show a significant main effect of the level of logo representativeness and the presence of a textual element ($F(2, 242) = 1.49, p = .228$; $F(2, 242) = 2.05, p = .132$); none of the logo representativeness and textual element levels was evaluated more or less positive than the other. Also, no interaction effects were obtained ($F(4, 242) = 1.81, p = .128$), indicating that none of the levels of logo representativeness resulted in a more positive (or negative) brand attitude for any of the textual element levels, and vice versa.

Brand Personality Dimensions

Competence. For the brand personality dimension ‘competence,’ the main effects of the level of logo representativeness and the presence of a textual element did not reach significance ($F(2, 242) = 1.93, p = .147$; $F(2, 242) = 1.15, p = .318$), showing that there are no overall effects of these variables on the extent to which the logo designs were evaluated as competent. However, a significant interaction effect was revealed between the level of logo representativeness and textual element on brand competence ($F(4, 242) = 2.74, p = .030$; see Figure E1), indicating that the logo accompanied by the brand name ($F(2, 242) = 5.54, p = .012$) was evaluated as more competent for the descriptive logo ($M = 5.30, SD = .95$) than for

the suggestive logo design ($p = .003$, Bonferroni correction; $M = 4.56$, $SD = .96$). For the logo with the slogan, the brand was evaluated as more competent for the suggestive logo ($M = 5.12$, $SD = .75$; $F(2, 242) = 2.29$, $p = .104$) compared to the abstract logo design ($p = .035$, Bonferroni correction; $M = 4.59$, $SD = .96$). Participants did not discriminate between the different levels of logo representativeness for the no textual element level ($F(2, 242) < 1$).

Moreover, a marginally significant effect was found for the descriptive logo design ($F(2, 242) = 2.81$, $p = .062$), indicating that when the logo included the brand name ($M = 5.30$, $SD = .95$), it was perceived as more competent than when there was no textual element ($p = .050$, Bonferroni correction; $M = 4.83$, $SD = 1.01$) and a slogan ($p = .032$, Bonferroni correction; $M = 4.78$, $SD = .91$); and for the suggestive logo design ($F(2, 242) = 2.52$, $p = .082$), showing that when the logo included a slogan ($M = 5.12$, $SD = .75$), it was perceived as more competent than when there was a brand name ($p = .028$, Bonferroni correction; $M = 4.56$, $SD = .96$). For the abstract logo design, no significant interaction effects were found ($F(2, 242) = 1.30$, $p = .274$).

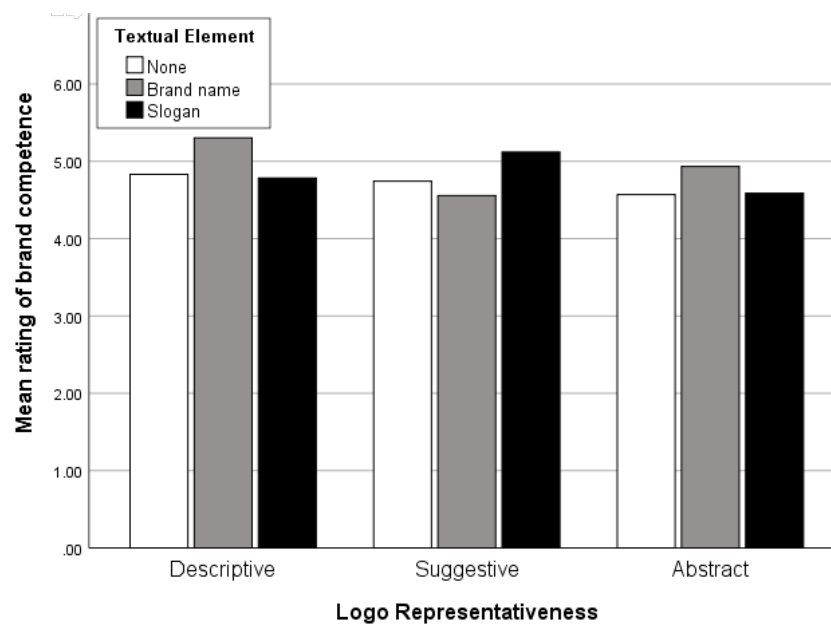


Figure E1. Interaction between the level of logo representativeness and the textual element for the brand personality dimension 'competence'

Attractiveness. The main effect of the level of logo representativeness on the brand personality dimension ‘attractiveness’ was significant ($F(2, 242) = 8.21, p < .001$); the abstract logo design ($M = 4.29, SD = 1.28$) was significantly less attractive compared to the suggestive logo design ($p = .001$, Bonferroni correction; $M = 4.96, SD = 1.08$) and the descriptive logo design ($p = .002$, Bonferroni correction; $M = 4.93, SD = 1.26$). The effect of the presence of a textual element did not show significance ($F(2, 242) < 1$). Also, no interaction effects were shown ($F(4, 242) = 1.52, p = .197$), illustrating that none of the logo representativeness levels resulted in a more positive (or negative) brand attractiveness for any of the textual element levels, and vice versa.

Sincerity. As for the brand personality dimension ‘sincerity,’ the level of logo representativeness did not influence perceptions of sincerity ($F(2, 242) = 1.42, p = .244$). The main effect of the presence of a textual element did not reach significance ($F(2, 242) < 1$), and no interaction effects were obtained ($F(4, 242) = 1.40, p = .234$); none of the conditions was perceived as more or less sincere than the other.

Uniqueness. An ANOVA was conducted with the level of logo representativeness and the presence of a textual element as independent variables and the brand personality dimension ‘uniqueness’ as the dependent variable. The main effect of the level of logo representativeness was significant ($F(2, 242) = 16.63, p < .001$), indicating that the abstract logo design ($M = 3.70, SD = 1.34$) was perceived as less unique compared to the suggestive ($p < .001$, Bonferroni correction; $M = 4.57, SD = 1.18$) and the descriptive logo design ($p < .001$, Bonferroni correction; $M = 4.72, SD = 1.11$), contradicting H_{1d} and H_{2d}. There was no significant difference between the descriptive and the suggestive logo design ($p = 1.000$, Bonferroni correction). The textual element did not show a significant main effect on uniqueness ($F(2, 242) < 1$) and no interaction effect was found ($F(4, 242) = .24, p = .914$).

Activity. As for brand activity, the univariate analysis showed a significant main effect of the level of logo representativeness ($F(2, 242) = 10.58, p < .001$), indicating that the descriptive logo design ($M = 5.65, SD = 1.05$) was perceived as more active compared to the abstract logo design ($p < .001$, Bonferroni correction; $M = 4.87, SD = 1.39$) and the suggestive logo design ($p = .005$, Bonferroni correction; $M = 5.09, SD = 1.00$). There was no significant difference between the suggestive logo design and the abstract logo design ($p = .621$, Bonferroni correction). The textual element did not show a significant main effect ($F(2, 242) < 1$). No interaction effects were obtained ($F(4, 242) = 1.73, p = .143$).

Attitude towards the Logo

An ANOVA was conducted with the level of logo representativeness and the presence of a textual element as independent variables and the attitude towards the logo as the dependent variable. The analysis revealed a main effect of the level of logo representativeness ($F(2, 242) = 4.36, p = .014$); the attitude towards the logo was significantly more positive for the descriptive logo design ($M = 5.17, SD = 1.41$) compared to the abstract logo design ($p = .015$, Bonferroni correction; $M = 4.54, SD = 1.55$), supporting hypotheses H_{1c} and H_{2c}. There was no significant difference between the suggestive logo design and the abstract and descriptive logo design ($p > .149$, Bonferroni correction). The analysis did not reveal a significant main effect of the presence of a textual element ($F(2, 242) = 1.35, p = .262$). No significant interaction was observed ($F(4, 242) = 1.58, p = .181$), indicating that none of the logo representativeness levels resulted in a more positive (or negative) perception of brand activity for any of the textual element levels, and vice versa.

Results of the Second Logo Design (related to the panther)

Similarly, for the second logo design, several univariate analyses with the level of logo representativeness and the presence of a textual element as independent variables were conducted for the different dependent variables.

Attitude towards the Brand

An ANOVA was conducted with the attitude towards the brand as the dependent variable. The level of logo representativeness showed a significant main effect ($F(2, 242) = 8.44, p < .001$); the attitude towards the brand was significantly more positive for the suggestive logo design ($M = 5.02, SD = 1.06$) compared to the descriptive ($p = .003$, Bonferroni correction; $M = 4.37, SD = 1.40$) and abstract logo design ($p = .001$, Bonferroni correction; $M = 4.31, SD = 1.27$). There was no significant difference between the descriptive logo design and the abstract logo design ($p = 1.000$, Bonferroni correction), rejecting H_{1b} and H_{2b}. The presence of a textual element did not show a significant main effect on the attitude towards the brand ($F(2, 242) < 1$). The analysis did not reveal a significant interaction effect ($F(4, 242) = 1.53, p = .193$); none of the logo representativeness levels resulted in a more positive (or negative) brand attitude for any of the textual element levels, and vice versa.

Brand Personality Dimensions

Competence. Both the main effects of the level of logo representativeness and the presence of a textual element did not reach significance ($F(2, 242) = 1.30, p = .273$; $F(2, 242) < 1$). Also, no interaction effects were obtained ($F(4, 242) = 1.89, p = .113$), showing that none of the logo representativeness \times textual element conditions was perceived as more or less competent than the other.

Attractiveness. As for the brand personality dimension ‘attractiveness,’ the univariate analysis of variance with the level of logo representativeness and the presence of a textual element as independent variables showed a significant main effect of logo design ($F(2, 242) = 8.74, p < .001$), indicating that the suggestive logo design ($M = 4.75, SD = 1.12$) was significantly more attractive compared to the descriptive ($p = .002$, Bonferroni correction; $M = 4.04, SD = 1.44$) and the abstract logo design ($p = .001$, Bonferroni correction; $M = 3.99, SD = 1.39$). There was no significant difference between the descriptive logo design and the abstract logo design ($p = 1.00$, Bonferroni correction). The textual element did not show a significant main effect ($F(2, 242) = 2.26, p = .106$). No interaction effects were observed ($F(4, 242) = 1.80, p = .130$); none of the logo representativeness levels resulted in a more positive (or negative) perception of brand attractiveness for any of the textual element levels, and vice versa.

Sincerity. The main effect of the level of logo representativeness on the brand personality dimension ‘sincerity’ reached significance ($F(2, 242) = 7.11, p = .001$), showing that the suggestive logo design ($M = 4.70, SD = .89$) was perceived to be more sincere compared to the descriptive ($p = .003$, Bonferroni correction; $M = 4.18, SD = 1.08$) and abstract logo design ($p = .005$, Bonferroni correction; $M = 4.19, SD = 1.09$). There was no significant difference between the descriptive and abstract logo design ($p = 1.000$, Bonferroni correction). The analysis did not reveal a main effect of the presence of a textual element sincerity ($F(2, 242) = 1.02, p = .361$) and no interaction effect ($F(4, 242) = 1.26, p = .285$).

Uniqueness. An ANOVA for the personality dimension ‘uniqueness’ revealed a significant main effect of the level of logo representativeness ($F(2, 242) = 13.51, p < .001$), indicating that the descriptive logo design ($M = 3.20, SD = 1.35$) was perceived as less unique compared to the suggestive ($p < .001$, Bonferroni correction; $M = 4.29, SD = 1.33$) and the abstract logo design ($p = .016$, Bonferroni correction; $M = 3.97, SD = 1.39$), supporting H1d

and H_{2d}. There was no significant difference between the abstract and the suggestive logo design ($p = .068$, Bonferroni correction). The effect of the presence of a textual element did not reach significance ($F(2, 242) < 1$). Also, no significant interaction effect was observed ($F(4, 242) < 1$), indicating that none of the logo representativeness \times textual element conditions was perceived as more or less competent than the other.

Activity. Lastly, as for the brand personality dimension ‘activity,’ a univariate analysis of variance showed a significant main effect of the level of logo representativeness ($F(2, 242) = 9.56, p < .001$); the abstract logo design ($M = 4.34, SD = 1.43$) was perceived as less active compared to the suggestive logo design ($p < .001$, Bonferroni correction; $M = 5.24, SD = 1.13$) and the descriptive logo design ($p = .038$, Bonferroni correction; $M = 4.85, SD = 1.44$). There was no significant difference between the descriptive logo design and the suggestive logo design ($p = .173$, Bonferroni correction). The presence of a textual element did not show a significant main effect ($F(2, 242) < 1$). Also, no interaction effects were obtained ($F(4, 242) = 1.73, p = .143$); none of the logo representativeness levels resulted in a higher (or lower) perceived brand activity for any of the textual element levels, and vice versa.

Attitude towards the Logo

A univariate analysis of variance with the level of logo representativeness and the presence of a textual element as independent variables and the attitude towards the logo as the dependent variable was conducted. The main effect of the level of logo representativeness was significant ($F(2, 242) = 11.57, p < .001$), illustrating that the attitude towards the logo was significantly more positive for the suggestive logo design ($M = 4.42, SD = 1.53$) compared to the descriptive ($p < .001$, Bonferroni correction; $M = 3.35, SD = 1.72$) and abstract logo design ($p = .001$, Bonferroni correction; $M = 3.46, SD = 1.64$). There was no

significant difference between the descriptive logo design and the abstract logo design ($p = 1.000$, Bonferroni correction).

The textual element did not reveal a significant main effect ($F(2, 242) = 1.35, p = .261$). However, a significant interaction effect was revealed between the level of logo representativeness and the presence of a textual element ($F(4, 242) = 7.18, p = .028$; see Figure E2), showing that for the brand name ($F(2, 242) = 7.94, p < .001$), the attitude towards the logo was significantly more positive for the suggestive logo ($M = 4.95, SD = 1.25$) compared to the descriptive ($p = .001$, Bonferroni correction; $M = 3.49, SD = 1.60$) and abstract logo design ($p = .001$, Bonferroni correction; $M = 3.39, SD = 1.44$). There was no significant difference between the descriptive and the abstract logo design ($p = .825$, Bonferroni correction). Also, for the slogan ($F(2, 242) = 7.96, p < .001$), the attitude towards the logo was significantly more positive for the suggestive logo ($M = 4.43, SD = 1.54$) compared to the descriptive ($p < .001$, Bonferroni correction; $M = 2.69, SD = 1.42$) and abstract logo design ($p = .032$, Bonferroni correction; $M = 3.48, SD = 1.92$). There was no significant difference between the descriptive and the abstract logo design ($p = .060$, Bonferroni correction). Participants who were exposed to the logo without a textual element did not discriminate between the different levels of logo representativeness ($F(2, 242) < 1$).

Moreover, for the descriptive logo design ($F(2, 242) = 4.14, p = .017$), the attitude towards the logo was significantly less negative for the no textual element level ($M = 3.85, SD = 1.93$) compared to the slogan level ($p = .005$, Bonferroni correction; $M = 2.69, SD = 1.42$), partially rejecting H_{3c}. There was no difference between the brand name level and no textual element and the slogan level ($p > .060$, Bonferroni correction). For the suggestive logo design a marginally significant effect was found ($F(2, 242) = 2.86, p = .059$), indicating that the attitude towards the logo with the brand name was more positive ($M = 4.95, SD = 1.25$) than towards the logo without a textual element ($p = .018$, Bonferroni correction; $M =$

3.93, $SD = 1.63$). No difference was found for the suggestive logo with the slogan and no textual element and the brand name ($p > .242$, Bonferroni correction). Participants who saw the abstract logo design did not discriminate between the textual element levels ($F(2, 242) < 1$), rejecting H_{4c}.

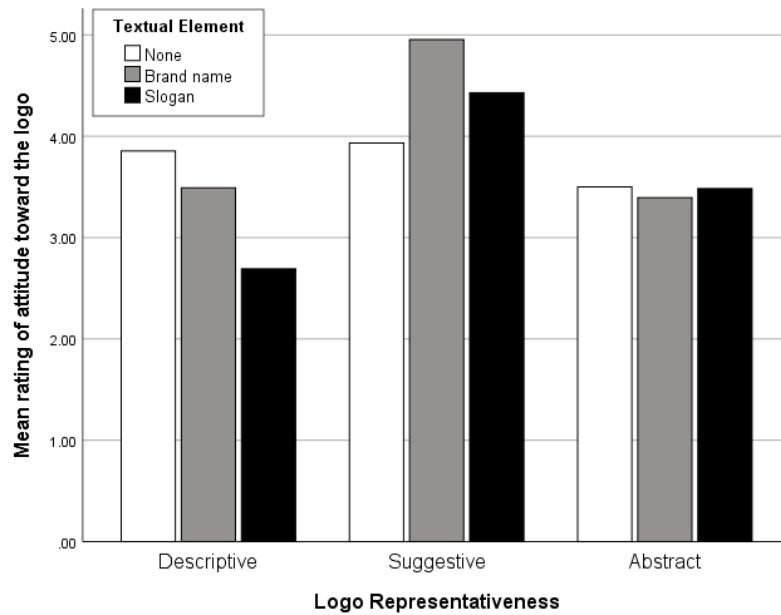


Figure E2. *Interaction between the level of logo representativeness and the textual element for the attitude towards the brand*