



Three Stripes, Three Logos:
A Consumer Centric Study of Adidas's Brand Logos and
Their Impact on Brand Equity

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ABSTRACT

Title: “Three Stripes, Three Logos: A Consumer Centric Study of Adidas’s Brand Logos and Their Impact on Brand Equity”

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This dissertation studies the impact of brand logos on brand equity exemplified by Adidas, one of the leaders in the global sportswear market. This research examines whether and how the three Adidas logos - Trefoil, Performance Logo and Badge of Sport (BOS) - are perceived differently by consumers. Utilizing Keller’s Brand Equity Pyramid, this research assesses the influence of logos on various dimensions of brand equity and the potential moderating role of product categories.

To answer these research questions, a pre-survey, in-depth interviews and a final survey were conducted. The final survey features an a/b test, which combined a typical product from one of two product categories with one of the three Adidas logos each.

A statistical analysis revealed that logos did not significantly affect overall brand equity. However, the impact of logos differed across specific parts of the Brand Equity Pyramid. The BOS was consistently linked with more positive associations compared to the other two logos. No significant moderating effect of the product category was found, although some results differed across categories. Hypotheses from marketing literature were mostly rejected. Further research is needed, especially about the impact of actual logos from well-known brands.

This dissertation contributes to both academic literature and marketing practice. The results appear to be particularly relevant to Adidas, as it apparently re-structures its brand architecture in 2024, changed its logo approach for a high-profile launch in August 2024 and phased out the BOS in contrast to positive results from this research.

Keywords: Adidas, brand logo, brand equity, product category

SUMÁRIO

Título: “Três riscas, três logótipos: Um estudo centrado no consumidor sobre os logótipos da marca Adidas e o seu impacto no património da marca”

Autor: Christian Scheble

Esta dissertação estuda o impacto dos logótipos de marca no brand equity da Adidas, líder global em vestuário desportivo. A investigação analisa se e como os três logótipos da Adidas - Trefoil, Performance Logo e Badge of Sport (BOS) - são percebidos de maneira distinta pelos consumidores, utilizando a pirâmide do valor da marca de Keller para avaliar a influência dos logótipos em várias dimensões do valor da marca e o possível papel moderador da categoria do produto.

Para isso, foram realizados um pré-inquérito, entrevistas aprofundadas e um inquérito final, que incluiu um teste A/B combinando produtos típicos de duas categorias com um dos três logótipos da Adidas. A análise estatística mostrou que os logótipos não influenciaram significativamente o valor global da marca, mas houve diferenças notáveis no desempenho de cada logótipo em segmentos específicos da pirâmide do valor da marca. O BOS foi consistentemente associado a associações mais positivas em comparação com os outros logótipos. Não se encontrou um efeito moderador significativo das categorias de produtos, apesar de algumas variações entre elas. As hipóteses da literatura de marketing foram, na sua maioria, rejeitadas. Mais pesquisas são necessárias, especialmente sobre o impacto de logótipos reais de marcas conhecidas.

Esta dissertação é relevante tanto para a literatura académica quanto para a prática de marketing, sendo particularmente pertinente para a Adidas, que aparentemente reestruturou sua arquitetura de marca em 2024 e eliminou gradualmente o BOS, apesar dos resultados positivos encontrados neste estudo.

Palavras-chave: Adidas, logótipo da marca, brand equity, categoria de produto

ACKNOWLEDGEMENTS

I will keep this short, as the dissertation is already long enough!

Still, there are many people I would like to thank. Special thanks to my supervisor, Prof. Paulo Romeiro, for his support and expertise throughout the dissertation seminar. I also want to thank Prof. Isabel Moreira for her assistance with SPSS. Thanks to everyone else at Católica Lisbon and our partner university HEC Montréal, who contributed to two incredibly exciting, inspiring and enriching years of master's studies. Last, but certainly not least, thank you to my family and friends. This dissertation would not have been possible without you – quite literally, as I would probably still be searching for additional pre-survey and final survey respondents if I had not been able to count on your help.

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GLOSSARY

BOS	Badge of Sport
OBE	Overall Brand Equity
RQ	Research Question
WTP	Willingness to Pay

CHAPTER 1: INTRODUCTION

1.1 Background and Problem Statement

“Which brand logo should we use?” At first glance, this question might often seem straightforward, perhaps it is one of the earliest marketing considerations for organizations around the world. Yet, it might not always be easy to answer. Especially, because the logo choice goes beyond aesthetic appeal, as it is deeply intertwined with the concept of brand equity. Moreover, it might be even more difficult to answer if the company in question has a rich history with several world-famous brand elements and an extensive product offer across multiple product categories. To maintain relevance and appeal for a company in a fiercely competitive market, this decision is far from trivial and of crucial importance in marketing.

This challenge is exemplified by one of the leading sportswear manufacturers in the world, Adidas. Each of the three distinct logos - the Trefoil, the Performance Logo and the Badge of Sport (BOS) – carries its own legacy and elicits different associations in consumers’ minds, as this research proves. However, most importantly, they are more than just logos. They embody the essence of Adidas’s brand equity, symbolizing a crucial part of the connection to consumers.

This dissertation deals with brand logos and their impact on brand equity, which will be exemplified by Adidas and its three brand logos. This research is “consumer-centric”, as it focuses on understanding consumer perceptions rather than discussing the topic from a company strategy perspective. The aim is to find answers to three critical research questions (RQ):

RQ1: Are the three different Adidas logos perceived differently regarding their impact on brand equity?

RQ2: How do consumer perceptions of the three different Adidas logos differ and what impact does this have on brand equity?

RQ3: Is the impact of Adidas’s brand logos on brand equity moderated by product category?

1.2 Relevance

Generally speaking, marketing literature about the impact of brand logos remains limited (e.g. Luffarelli, Mukesh, et al., 2019). The academic literature about logo design mostly deals with

generic or non-familiar brand logos (Dew et al., 2022; Henderson & Cote, 1998; Van der Lans et al., 2009).

On the one hand, this offers various advantages, as brand logos can be studied solely based on specific logos characteristics (e.g. circular logos). This makes the research easier to generalize. Existing general brand associations are reduced or eliminated by using generic or non-familiar brand logos.

On the other hand, this research approach is arguably further away from market realities, as consumers usually do not only consider the logo as the only factor when making purchase decisions. Researchers demand more clarity about the effects of familiar logos (Cian et al., 2014; Van der Lans et al., 2009). This is particularly true considering an initial indication that different logos have different effects on established brands (Van der Lans et al., 2009).

The role of product categories remains largely unknown in the context of brand logos and their impact on brand equity in marketing literature. This particularly applies to the sportswear industry and is critical, as the effectiveness of a logo may vary across different product categories.

As a consequence, the **academic relevance** of this research is based on the general lack of research about the impact of logos on brand equity, the impact of familiar logos and the role of product categories in this context.

This dissertation addresses these gaps by analyzing the distinct effects of Adidas's three logos on brand equity, considering the influence of specific product categories. By utilizing a well-known brand with a rich heritage and diverse product range, this study enhances the existing academic framework and provides a comprehensive understanding of how logos impact brand equity in real-world scenarios.

From a **managerial perspective**, the significance of logos in branding cannot be overstated. Due to its practical focus, this research provides clear, actionable insights for marketers, particularly in understanding the impact of brand logos on brand equity and the role of product categories.

This topic appears to be particularly relevant to Adidas at the moment. Adidas seems to re-structure its brand architecture in 2024, removing one of the three logos from brand communications (eliminating the "Adidas" wording). Furthermore, Adidas surprised the

industry and consumers with unexpected brand logo choices for a key product category, generating awareness and consumer engagement on social media. In August 2024 (Figure 1), Adidas re-introduced the Trefoil logo on five selected football (soccer) jerseys for the brand's most important strategic clubs in honor of Adidas's 75th anniversary (Jones, 2024). For decades, the Trefoil had not been used on sports-based products (Editorial Team, 2024), but only for lifestyle products.



Figure 1 - Adidas Jerseys August 2024
Source: <https://www.adidas.de/en/clubs-football>

By understanding how different logos perform across product categories, Adidas can make informed decisions that align with consumer associations and brand identity goals. Specifically, this study can inform product development marketing strategies as well as critical discussions about Adidas's brand architecture.

Adidas has not been the only international brand to remove the wording from the logo in the last few years. Mastercard, Audi and Starbucks could be other examples (Figure 2). Furthermore, Adidas's competitor Nike also uses different logos with and without wording (Figure 3) and occasionally re-introduces old logos to new products (Figure 4). All these examples and developments add to the managerial relevance of the topic.

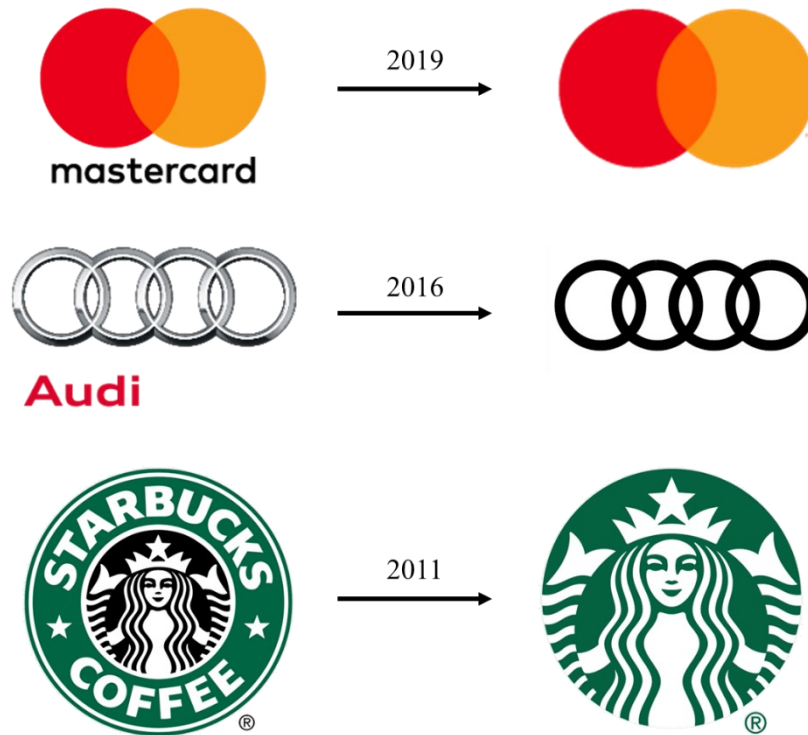


Figure 2 - Logo Examples

Sources: <https://brand.mastercard.com/content/mccom/brandcenter/more-about-our-brands/brand-history.html>,
<https://annualreport2015.volkswagenag.com/divisions/audi.html>,
<https://www.audi.com/de/company.html>,
<https://archive.starbucks.com/record/the-evolution-of-our-logo>



Figure 3 - Nike Logos

Sources: <https://www.nike.com/a/never-done-leaving-a-mark-swoosh>,
<https://www.nike.com/t/sportswear-club-mens-long-sleeve-t-shirt-LJ1QzG/AR5193-100>



Figure 4 - Nike Logo Example

Source: <https://www.soccerbible.com/performance/football-apparel/2022/02/aik-launch-royal-edition-2022-preseason-jersey/>

1.3 Research methods

A literature review explored brand logos, brand equity and their intersection. The most relevant theories and findings were selected as hypotheses. Primary data was first collected through a pre-survey and in-depth interviews, gaining initial indications. Afterward, a final survey delivered a statistically more robust foundation for addressing the research questions. Data collection was conducted online using Qualtrics for surveys and video calls for interviews. Convenience and snowball sampling methods were employed. The final survey data was analyzed using SPSS (version 28.0), focusing on ANOVAs, independent samples t-tests, factor analysis, and moderation analysis with the PROCESS macro, alongside descriptive and reliability assessments.

1.4 Dissertation outline

This dissertation comprises five chapters. The next chapter reviews marketing literature, and presents the hypotheses and the conceptual framework.

The third chapter consists of the research methodology, including data collection methods and stimuli development.

Chapter four reveals and discusses the results, especially of the hypotheses. Besides, data cleaning, sample characteristics, and reliability measures are described.

The last chapter summarizes key findings, and discusses managerial and academic implications. Furthermore, limitations and suggestions for further research will be shared.

CHAPTER 2: LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

In this chapter, existing marketing literature is analyzed and compared. This builds the foundation for the hypotheses. After definitions of brand logos and brand equity, the international sportswear brand Adidas and its logos are introduced. The analysis of the intersection of the two concepts of brand logos and brand equity in marketing literature follows, before the potential moderator, product categories, is introduced. Lastly, the conceptual framework formally describes the relationship between brand logos and brand equity.

2.1 Brand Logos

Logos are visual and textual elements identifying brands and their products (Luffarelli, Mukesh, et al., 2019). Logos can include graphic design elements, which may or may not feature the brand name (Henderson & Cote, 1998) and/or a subtext (Dew et al., 2022). Brand elements such as logos can be trademarked, differentiating and protecting the brand from competitors (Fajardo et al., 2016; Kotler & Keller, 2006). Logo redesigns often attract public attention and frequently cost companies a significant amount of money (e.g. Anson, 1988; Keller & Lehmann, 2006). Logos serve as impactful visual symbols (Wang et al., 2023), for example by representing the brand's personality or image (Bottomley & Doyle, 2006; Stafford et al., 2004; Zakia & Nadin, 1987).

The key to understanding the **importance of brand logos** is that they are not only recognized and interpreted through their formal or technical features, but can also transfer symbolic meanings as Jiang et al. (2016) summarize marketing literature (e.g. Arnheim, 1954; Berlyne, 1974; Chattopadhyay et al., 2011; Cian et al., 2014; Gorn et al., 2008; Hoegg et al., 2010; Klink, 2003; Labrecque & Milne, 2012; Patrick & Hagtvedt, 2011; Spence, 2012). Together with brand names, logos are the central element of the cognitive structure in consumers' minds, connecting associations of the brand (Punj & Hillyer, 2004). Favorable associations of the logo can be transferred by consumers to favorable associations of the company (Foroudi et al., 2014) as well as its products (Gobé, 2010).

Luffarelli, Stamatogiannakis, et al., (2019) outline that logos can influence brand perceptions (Henderson et al., 2003; Sundar & Kellaris, 2017), boost brand image (Schechter, 1993), facilitate brand identification (Henderson & Cote, 1998), lead to more positive brand attitudes (Brasel & Hagtvedt, 2016; Gupta & Hagtvedt, 2021), customer-brand relationships (Doyle & Bottomley, 2004; Müller et al., 2013), and brand evaluations (Jiang et al., 2016). As a result of

more favorable brand evaluations, logos can have a positive effect on financial brand valuations (Park et al., 2013). Representing the core of brands (Dew et al., 2022), logos can have a positive impact on brand equity (Stamatogiannakis et al., 2015), higher levels of engagement (Septianto & Kwon, 2022), brand preference (Guido et al., 2016), purchase behaviors (Baxter & Ilicic, 2018) and can increase brand recognition (Henderson & Cote, 1998), as well as sales and market share (Luffarelli, Stamatogiannakis, et al., 2019).

The importance of logos has been on the rise (Cian et al., 2014), especially considering the increasingly visual environment (Foroudi et al., 2014). More frequently, companies showcase logos across different marketing communications with minimal or no text, elevating the importance of a logo's visual component (Cian et al., 2014). Since consumers identify images faster than words, logos enable more efficient brand communication (Edell & Staelin, 1983).

2.2 Brand Equity

Brand Equity exists in various forms in literature (Datta et al., 2017). In this research, the concept of customer-based brand equity is used. It is defined as “the differential effect of brand knowledge on consumer response to the marketing of the brand” (Keller, 1993, p.8), or in Farquhar’s (1989) words, the added value endowed by the brand to the product. A brand possesses positive (or negative) brand equity if consumers have a more (or less) favorable reaction to a marketing mix component of the brand than they do to the same component linked to a product or service with a made-up or no name (Keller, 1993). Brand equity is consequently crucial when consumers process information about a product (Krishnan & Hartline, 2001). Brand equity can be reflected in consumers’ thoughts, feelings, actions, preferences, and behavior towards a brand (Kotler & Keller, 2006). Although the concept of brand equity is sometimes criticized in literature (Barwise, 1993; Faircloth et al., 2001), it has been a key concept in marketing literature.

Businesses are keen on building brand equity in today’s times (Ansary & Nik Hashim, 2018). Powerful **brands with high brand equity benefit** from multiple advantages, such as higher loyalty, competitive advantages in the marketplace, higher margins, and more effective marketing communication (Keller, 2001). Reactions to a brand’s marketing mix are more positive with a higher brand equity (Keller, 1993). Furthermore, brand equity contributes to the generation of word of mouth (Lovett et al., 2013), a higher customer lifetime value (Stahl et al., 2012), better financial performance (Aaker & Jacobsen, 1994; Mizik & Jacobsen, 2008; Rego

et al., 2009; Srivastava, 1991), and higher stock prices (Lane & Jacobsen, 1995; Simon & Sullivan, 1993). High brand equity is reflected in the ability to generate price premiums (Aaker, 1996; Keller, 1993). Yoo & Donthu (2001) summarize that nearly all marketing activities, whether effective or not, have an impact on brand equity.

Keller introduced a highly regarded model to create a better understanding of brand equity, **Keller's Brand Equity Pyramid** (Figure 5). The foundational concept of the model is that a brand's strength is rooted in the experiences, emotions, visuals, and narratives that customers associate with the brand over time (Keller, 2001), as a brand's influence is anchored in the perceptions of its customers (Keller, 2001). The components of the pyramid are brand salience, brand performance, brand imagery, consumer judgments, consumer feelings, and consumer brand resonance. Kotler & Keller (2006) describe the left side of the pyramid as more rational and the right side as more emotional.

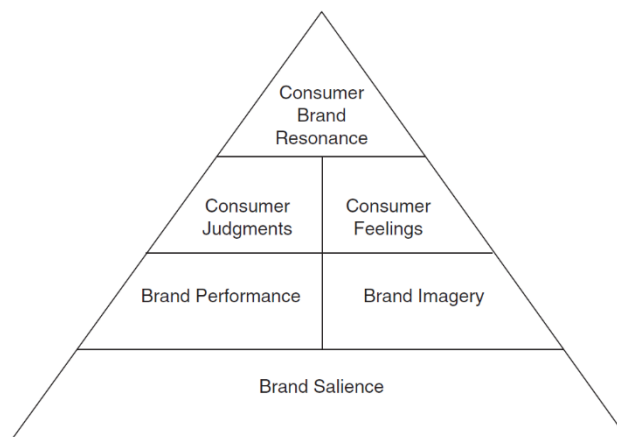


Figure 5 - Keller's Brand Equity Pyramid
Source: (Keller, 2001, p. 7)

Throughout this study, Keller's model will be used to identify the impact the different logos have on Adidas's brand equity.

2.3 Adidas Introduction

Adidas is a sportswear brand that was founded in Germany in 1949 by Adi Dassler (Adidas, n.d.-b). Adidas is currently ranked 42nd in Interbrand's Best Global Brands 2023 rating with a brand value of \$16.568 bn (Interbrand, 2024) and is the world's second-largest sportswear manufacturer behind Nike (Tighe, 2023).

Adidas itself describes its brand purpose as “through sport, we have the power to change lives” (Adidas, 2023, p.3). Key brand identity themes revolve around achievement beyond limits (“Impossible is nothing”, Adidas, 2023, p.2), inclusion (“including and uniting people in sport”, Adidas, 2024a, p.55) and sustainability (“creating a more sustainable world”, (Adidas, 2024a, p.55). During the course of the year 2024, Adidas has moved away from “Impossible is nothing” to “You got this” as a key tagline (Adidas, 2024a), highlighting the values of confidence and trust.

The brand’s roots are based on a historic and credible connection with sport through innovations and culturally relevant fashion (Adidas, 2023). So while pursuing Adidas’s mission of becoming “the best sports brand in the world” (Adidas, 2023, p.3), the brand balances sports and fashion credibility at the same time, or, as Adidas describes it “on and off the field of play” (Adidas, 2023, p.55).

This approach is also visible in Adidas’s **brand architecture** and consequently logo strategy. The brand architecture is split into three different sub-brands, each with its own logo (Figure 6). Adidas justifies the multiple logo strategy with the brand’s dynamism and expansiveness (Adidas, 2022).



Figure 6 - Adidas's Logos
Sources: <https://www.adidas.de/en>
<https://news.adidas.com/sportswear>

The **Performance Logo**, visible on products specifically “built for our athletes” and “worn for sport” (Adidas, 2023, p.53), is the newest addition to the logo portfolio. It is also Adidas’s main logo (Figure 7), the “uniting core mark that serves as an umbrella to all the brand segments” (Adidas, 2022, para.10).



adidas  [Follow](#) [Message](#) [+👤](#) [...](#)

1,126 posts 29.2M followers 830 following

adidas
#YouGotThis
Adi-Dassler-Str. 1, Herzogenaurach 91074
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141 posts 34.4M followers 1,000 following

adidas Originals
We gave the world an Original
You gave us a thousand back
[linktr.ee/adidasoriginals](#)



adidasfootball  [Follow](#) [Message](#) [+👤](#) [...](#)

2,943 posts 35.1M followers 786 following

adidas Football
#YouGotThis
[linktr.ee/adidasfootball](#)



adidasnyc  [Follow](#) [Message](#) [+👤](#) [...](#)

237 posts 192K followers 250 following

adidas NYC
#YouGotThis
[linktr.ee/adidasnyc](#)

Figure 7 - Instagram Logos
Sources: <https://www.instagram.com/adidas/>
<https://www.instagram.com/adidasoriginals/>
<https://www.instagram.com/adidasfootball/>
<https://www.instagram.com/adidasnyc/>

On the other side of the spectrum, the **Trefoil** and the Adidas Originals sub-brand “caters to lifestyle in a futuristic way and is motivated by the collective memory of sports” (Adidas, 2023, p.53). Introduced in 1972 and inspired by florals (Adidas, 2022), the so-called Trefoil is the oldest of the three logos and was modified in 2023 as the “Adidas” wording was removed.

In between these two extremes, Adidas introduced a new sub-brand in 2022, Adidas Sportswear (Adidas, 2023). Adidas Sportswear is “born from sport and worn for style” (Adidas, 2023, p.53). Its logo has the only textual element out of the three logos. Despite representing the new

sub-brand, the logo is not new. Today's version of the logo builds on the equipment logo from 1989, which was inspired by the way the Three Stripes are “seen from the inside of an Adidas shoe” (Adidas, 2022, para.8). After a visual re-branding in 1996, the Adidas Sportswear Logo is also known as the “**Badge of Sport**” (BOS) (Adidas, 2022). Adidas Sportswear is also “built for everyone” (Adidas, 2023, p.53), compared to Adidas Originals, whose positioning expands into “premium and luxury segments” (Adidas, 2023, p.53). Before the introduction of Adidas Sportswear, the BOS had been used in the same way as the Performance Logo now - on sports products.

Despite no official communication, Adidas seems to be **restructuring its brand architecture** once again in 2024. On Adidas's company profile page, only two logos remain in February 2024 (Adidas, n.d.-d). The Sportswear sub-brand now also carries the Performance Logo, with the BOS being removed. Furthermore, only the Trefoil and the Performance Logo have been used in this year's brand communications (Figure 8). The BOS has not been part of official brand communications, but it is still visible on some products in the online store (Adidas, 2024b).

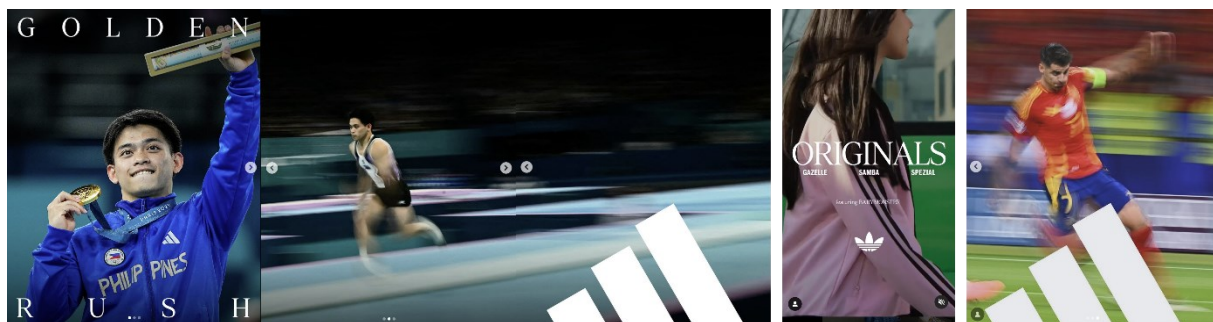


Figure 8 - Examples Adidas Communications 2024

*Sources: <https://www.instagram.com/adidas/>
<https://www.instagram.com/adidasoriginals/>
<https://www.instagram.com/adidasfootball/>*

The **Three Stripes** are a traditional trademark of the brand, which is visible on a majority of Adidas's products and is used across the three sub-brands, but they are not the particular focus of this research. Although the Three Stripes are an integral part of the brand's visual elements, the logos are the main subject of this study in order to streamline the research.

2.4 Impact of Logos on Brand Equity in Marketing Literature

Despite the high importance of logos for brands, the understanding of the impact of logo design characteristics remains limited (Balmer, 1995; Bernstein, 1986; Dew et al., 2022; Girard et al., 2013; Luffarelli, Mukesh, et al., 2019; Olavarrieta & Friedmann, 2007; Pittard et al., 2007; Van der Lans et al., 2009; Van Riel et al., 2001). Foroudi et al. (2014) and Henderson & Cote (1998) consider this surprising given the universally recognized importance of logos. However, an increasing number of studies have shed light on various facets of consumers' perceptions of visual design in recent years (Bajaj & Bond, 2018). Particularly in times of diminishing product differentiation, it is essential for researchers to take advantage of the nuanced effects of design characteristics on consumers' brand perceptions (Bajaj & Bond, 2018).

Generally, visual marketing stimuli are reported to have a substantial impact on brand equity (Bloch, 1995; Orth & Malkewitz, 2008). Kotler & Keller (2006) describe brand elements (incl. brand logos) as one of the main sets of brand equity drivers. Luffarelli, Mukesh, et al., (2019) prove that different brand logos have a different impact on brand equity. The first hypothesis of this research is:

H1: Brand logos have a significant impact on brand equity.

When consumers evaluate a product or company based on the information available to them, they automatically form mental imagery associated with that product or company (Macinnis & Price, 1987). Jiang et al. (2016) show that this imagery-generation process can be impacted by logo shapes. Knowledge about the effects of logo shapes on product and brand judgments is incomplete (Jiang et al., 2016). However, it is clear that the **shape of a brand logo** can have an impact on the perceived attributes of products or companies and the willingness to pay (WTP) (Jiang et al., 2016), and brand equity overall (Stamatogiannakis et al., 2015; Van Riel et al., 2001).

Circular logo shapes, so logos with curved lines, evoke associations with softness, which in turn leads to linked product attributes, such as comfort (Jiang et al., 2016). Angular logo shapes, so logos with straight lines and sharp corners, elicit hardness associations, which are then connected to attributes such as durability (Jiang et al., 2016).

H1a: Products that carry angular logos are perceived as more durable compared to products with non-angular logos.

H1b: Products that carry circular logos are perceived as more comfortable compared to products with non-circular logos.

Luffarelli, Stamatogiannakis, et al. (2019) prove that the **symmetry or asymmetry** of a logo can influence brand equity. Due to a higher level of arousal compared to symmetric logos, asymmetric logos result in more perceptions of excitement (Luffarelli, Stamatogiannakis, et al., 2019). This feeling of arousal from the logo is also transferred to perceptions of the brand (Bajaj & Bond, 2018).

H1c: Asymmetric logos are more associated with a feeling of excitement compared to symmetrical logos.

Brands with exciting personalities benefit from using asymmetric logos e.g. with favoring evaluations by consumers and ultimately increased financial valuations, as consumers view the logo and the brand as congruent (Luffarelli, Stamatogiannakis, et al., 2019).

Despite being static visuals, brand logos can imply a **sense of movement**, for example when the logo displays a frozen motion (Cian et al., 2014). This perceived movement can boost consumer engagement with the logo and can subsequently enhance favorable attitudes towards the brand (Cian et al., 2014). So more dynamic logos can increase engagement, as long as consumers perceive the dynamic nature of the logo as congruent with the brand's image (Cian et al., 2014). Whether and to which extent perceived movements in logos can have an impact on familiar logos has not been proven yet. However, Cian et al. (2014) assume that Adidas might have already successfully implemented their insights with the Trefoil, BOS and, the previous Neo Logo, which does not exist anymore.

H1d: Logos that are perceived as more dynamic lead to a higher engagement compared to logos that are perceived as less dynamic.

These hypotheses based on marketing literature were selected for this research as they arguably are based on the most relevant research for Adidas and this work's research questions.

Beyond these hypotheses, more insights have been gathered around the impact of logos. Luffarelli, Mukesh, et al. (2019) prove that the **descriptiveness of logos** (i.e. visually describing the brand's product in a logo) can boost a brand's evaluations, purchase intentions and financial performance, as they are simpler to understand. A key finding of Luffarelli, Mukesh, et al. (2019), which is relevant to this research, is that the positive effects of logo descriptiveness

significantly diminish for **well-known brands**. Campbell & Keller (2003) and Stammerjohan et al. (2005) provided similar insights for marketing stimuli in general. Consumers are more likely to draw conclusions from brand visuals if other relevant information about the brand is absent (Bajaj & Bond, 2018).

Other marketing research about the impact of logo characteristics includes general design dimensions (Henderson & Cote, 1998), incomplete typefaces (Hagtvedt, 2011), typefaces in general (Childers & Jass, 2002), diagonal direction of the logo (Schlosser et al., 2016), logo re-designs (Müller et al., 2013; Walsh et al., 2010), perceived cuteness (Septianto & Kwon, 2022), perceived masculinity and femininity in brand logos (Lieven et al., 2015) interstitial space in textual brand logos (Gupta & Hagtvedt, 2021), logo color (Labrecque & Milne, 2012; Sundar & Kellaris, 2017) or logo frames (Fajardo et al., 2016). Studies also showed cultural differences and similarities in perceptions of logos (Van Der Lans et al., 2008).

Furthermore, the effect of positioning brand logos in particular places on packaging (Sundar & Noseworthy, 2014) and more general concepts of visual brand elements such as colors (Gorn et al., 2004; Klink, 2000; Van Tilburg et al., 2015) and patterns have also been examined (Hagtvedt & Patrick, 2008).

A concept that regularly appears in the context of the impact of brand elements on brand equity is **processing fluency** (Luffarelli, Mukesh, et al., 2019; Novembsky et al., 2007; Orth & Malkewitz, 2008; Schlosser et al., 2016; Sundar & Noseworthy, 2014). Processing fluency describes how effortlessly information is processed (Schlosser et al., 2016). This is relevant, as stimuli that are simpler to process are perceived with greater credibility and trustworthiness (Reber & Unkelbach, 2010; Schwarz, 2004). For example, consumers can process information about a brand more fluently, and the higher the familiarity of the brand logo, the more favorable attitudes they have toward the brand (Janiszewski & Meyvis, 2001).

Congruence is a similar concept that can contribute to higher processing fluency. Consequently, it is also a common theme in marketing literature, for example when explaining the reason some brand elements work better (or worse) than others in a specific context (Bottomley & Doyle, 2006; Pang & Ding, 2021; Schlosser et al., 2016). The concept of congruence explains negative consequences if a stimulus contradicts existing knowledge in consumers' minds (Rahinel & Nelson, 2016). Consumers are also less likely to make assumptions based on logos if those logos do not match what they already know about the product (Rahinel & Nelson, 2016).

2.5 Product Category as a Moderator

Only limited research is available regarding the potential moderating role of the product category in the context of brand logos and brand equity. The term product category is used differently in the literature, e.g. referring to search and experience goods (Ansary & Nik Hashim, 2018) or essential and non-essential products (Nagpal & Gupta, 2023). In this research, the term product category is in line with Adidas's way of distinguishing between lifestyle products (e.g. streetwear) and sports products (e.g. football, running, basketball) (Adidas, n.d.-d).

Various studies in this field did not compare the effects of brand logos between different product categories (Bajaj & Bond, 2018; Cian et al., 2014; Luffarelli, Stamatogiannakis, et al., 2019), which limits the knowledge about the moderating effect of product categories in regards to brand logos and brand equity. However, Jiang et al. (2016) proved with their experiments that the effect of circular or angular logos on perceived attributes of products or companies exists regardless of two different product categories (shoes and sofas). Luffarelli, Mukesh, et al. (2019) also did not observe significant differences in regard to the effects of logo descriptiveness in different product categories, for example between a fictional basketball equipment manufacturer and a fictional running shoe brand.

Consequently, it could be argued that no moderative effect of product categories is expected.

H2: The impact of brand logos on brand equity is not moderated by product category.

Having said this, Adidas has been assigning its logos to specific sub-brands for decades (e.g. Trefoil). In 2024, the Trefoil is usually placed on Lifestyle products, e.g. hoodies, whereas the Performance Logo is visible on sports products, e.g. football jerseys. Before the introduction of the Performance Logo, the BOS was used on sports products.

2.6 Conceptual Framework

Brand logos, with the different Adidas logos as stimuli, constitute the independent variable in this model. Brand equity represents the dependent variable. This research also examines a potential moderating effect of product categories (Figure 9).

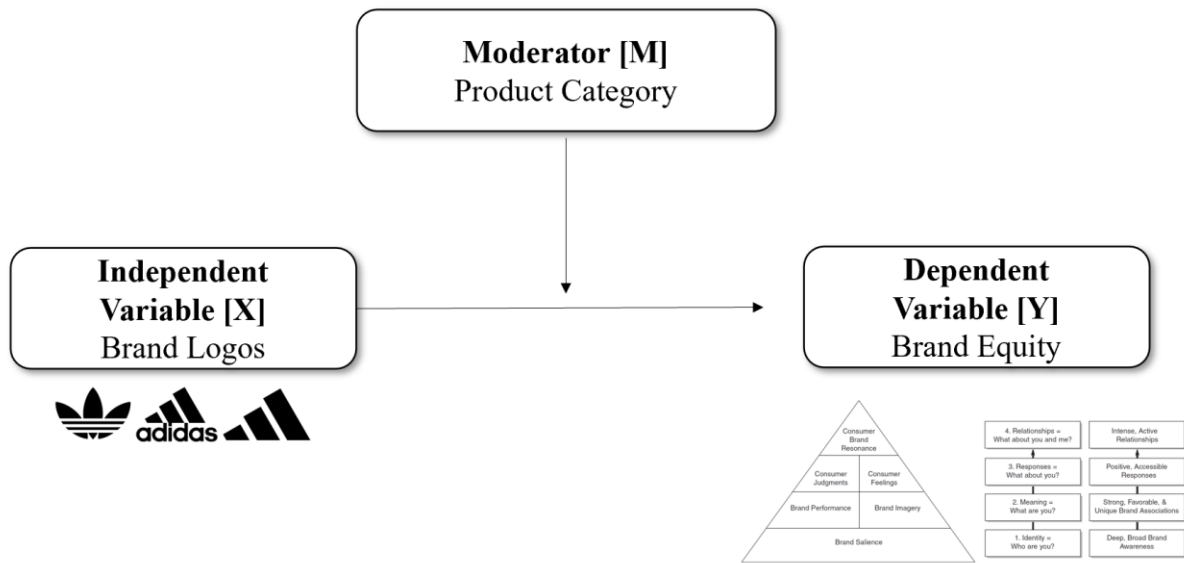


Figure 9 - Conceptual Framework

CHAPTER 3: METHODOLOGY

Three forms of primary data collection are used to answer the research questions and to examine the hypotheses from Chapter 2. For each of the three studies, the selected methods, stimuli, measurements and analysis procedures are explained.

3.1 Research Approach

Firstly, marketing literature on brand logos and brand equity was reviewed to build the foundation of all further studies and hypotheses. Afterward, quantitative and qualitative data collection methods were used.

A quantitative online pre-survey and qualitative in-depth interviews gave the first indications to RQ1 and RQ2. The interviews also played a key role in the preparation of the final round of quantitative data collection, including stimuli selection.

A final online questionnaire was employed to critically respond to RQ1, RQ2, RQ3 and to test the hypotheses. A three by two experiment design was used here, randomly assigning participants to one of two Adidas products of different product categories with one of three Adidas logos.

3.2 Primary Data

The three different approaches to collecting primary data were conducted quantitatively and qualitatively in this order: (1) pre-survey, (2) interviews, and (3) final survey.

3.3 Pre-Survey

The main objective of the pre-survey was to get a first indication of the perception of the Adidas logos. As the results were not interpreted using robust statistical tests, pre-survey results are treated as an indication for further research, but not as generalizable results.

3.3.1 Data Collection

The pre-survey was published online on Qualtrics from March 4th to March 11th, 2024. To participate, consumers must have heard of the brand Adidas. Considering Adidas is an

internationally active brand, it was not deemed appropriate to limit the demographic target. The survey ended immediately for participants unaware of Adidas. Participants were told that the objective of this study was to analyze brand logos.

A convenience sample of 165 participants responded to all 20 questions. Each participant was randomly assigned to one Adidas logo. Participants were informed that their response should specifically focus on the logo itself, not on their overall associations with the Adidas brand.

3.3.2 Stimuli Development

At the beginning of the pre-survey, every participant saw all three Adidas logos after the screening question, which proved to enhance the participants' understanding of the study in tests. Afterward, each participant was only exposed to one Adidas logo for the rest of the survey.

3.3.3 Measurement

The questions of the pre-survey were closed. The vast majority of questions used 7-point Likert scales, in order to quantify differences between logos. Four questions were dedicated to testing logo characteristics (e.g. angularity), which laid the foundation for the hypotheses.

3.3.4 Data Analysis & Results

The pre-survey suggested potential differences between Adidas logos, which gives a first indication of RQ1. Pre-survey results and interpretations have to be treated with caution, as no robust statistical tests were performed.

Associations with specific product categories seem to differ in strength for the three logos (Figure 10). The Trefoil was ranked as the most associated logo for lifestyle products, while the BOS and Performance Logo were the most associated with football and running (Figure 11). These results suggest that it is worth looking into the potential moderating role of product categories when it comes to Adidas's logos. The pre-survey also showed that the associations of the Performance Logo and the BOS were similar in regard to product categories. As a result, a 3x2 design (three logos, two categories) was planned due to alleged similarity.

In all other selected categories no considerable differences could be observed. Associations with different product types (e.g. shoes, apparel and accessories) also did not seem to differ strongly between the three logos.

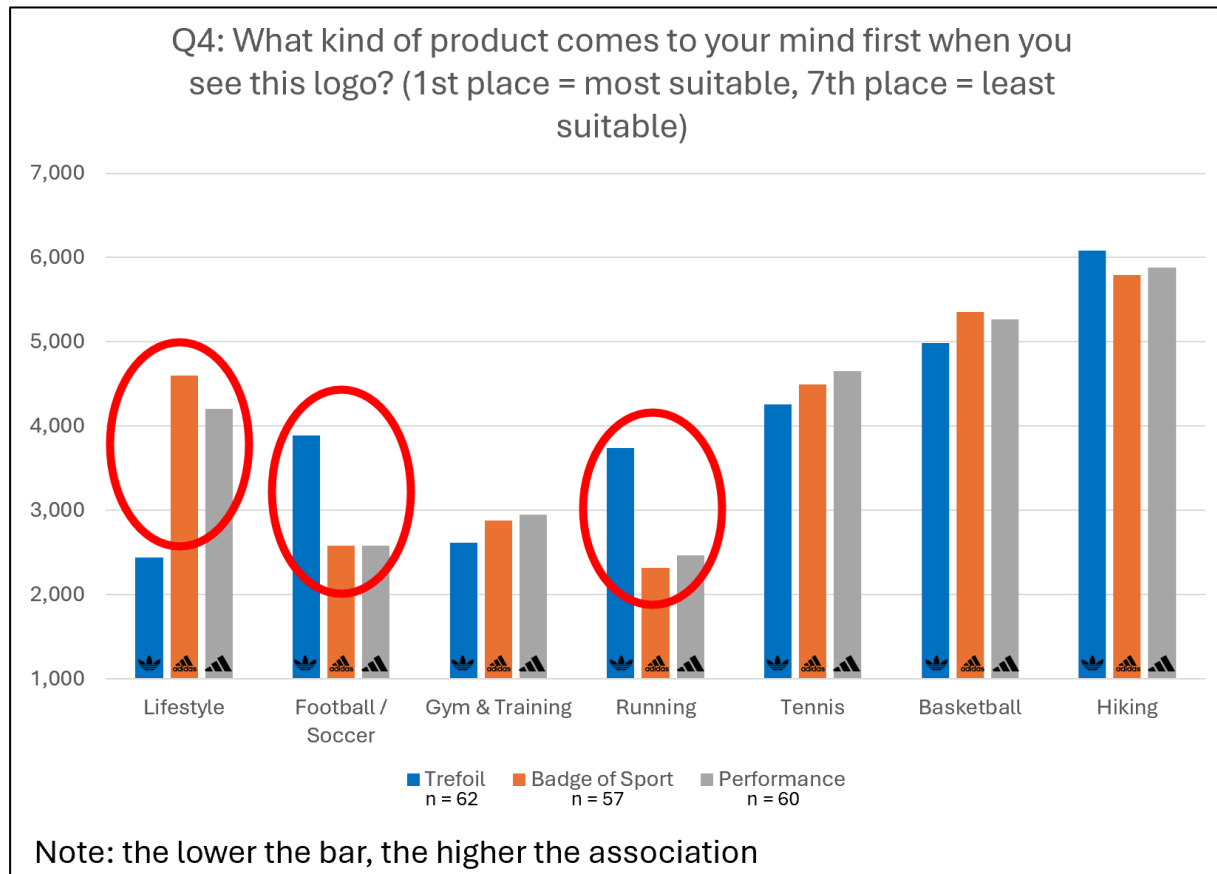


Figure 10 - Pre-Survey Results Product Categories

Product Category Association			
Question	What kind of product comes to your mind first when you see this logo?		
Number of Responses	179		
Ranking	1 = most suitable, 7 = least suitable		
			
Logo	Trefoil	Performance Logo	Badge of Sport
Lifestyle	2.44	4.20	4.57
Football / Soccer	3.89	2.58	2.58
Running	3.74	2.47	2.31

Figure 11 - Category Association

Differences in logo characteristics can be assumed between logos (Figure 12). This is relevant for hypotheses H1a to H1d.

- The BOS and the Performance Logo are perceived as rather angular logos, whereas the Trefoil scored lower in this regard. Considering hypothesis H1a, products with the BOS and the Performance Logo should consequently be perceived as more durable than products with the Trefoil.
- The Trefoil is perceived as a circular logo as opposed to the other two logos. Following H1b, products carrying the Trefoil should consequently be perceived as more comfortable than products carrying the other two logos.
- The Trefoil is perceived as a visually symmetric logo, whereas the BOS and the Performance Logo are on the asymmetric side. As asymmetric logos should be more associated with a feeling of excitement according to H1c, the BOS and the Performance Logo are expected to score higher than the Trefoil in this regard.
- The Performance Logo is perceived as more dynamic compared to the other logos. Following H1d, products with the Performance Logo are expected to elicit higher levels of engagement compared to the Trefoil and the BOS.

Logo Characteristics			
			
Logo	Trefoil	Performance Logo	Badge of Sport
Number of Responses	59	57	49
Angularity (1 = not angular at all, 7 = very angular)	3.07	6.16	5.71
Circularity (1 = not circular at all, 7 = very circular)	4.68	1.60	2.27
Symmetry (1 = very asymmetric, 7 = very symmetric)	6.29	3.56	3.41
Movement (1= not dynamic at all, 7 = very dynamic)	3.70	4.35	3.69

Figure 12 - Logo Characteristics

Other indications from the pre-survey were that differences between logos exist in various other dimensions: e.g. familiarity (Appendix 1).

Despite these alleged differences, there were multiple survey questions for which no outstanding gaps could be identified between the three logos. This includes price expectations, perceived innovativeness, feeling of excitement or general preference for one of the three logos.

3.4 Interviews

The main goal of the interviews was to identify potential stimuli and questions for the final survey. Furthermore, indications for RQ1 and RQ2 were gathered.

A crucial advantage of qualitative research is that questions are usually open and participants are allowed to answer creatively. Interviews with one participant at a time were deemed as most appropriate in this case compared to other forms, as interviews generally allow in-depth perspectives including detailed reasoning behind opinions. This stage of data collection helped efficiently prepare the questions and stimuli for the final survey.

3.4.1 Data Collection

Six participants were interviewed online after the pre-survey in March 2024. They were selected on a convenience base. The participants must have heard of the brand Adidas in order to take part in the interview. Different elements of Keller's Brand Equity Pyramid were tested in regard

to Adidas logos. Different techniques, such as the projective technique, were used to benefit the most from the relatively open and free format of semi-structured interviews.

3.4.2 Stimuli Development & Stimuli Results

One of the key goals of the interviews was to find typical product stimuli from different categories for the final survey.

As a result of the interviews, branding perceptions of Adidas footwear were highly dominated by the Three Stripes and not by logos. Footwear was consequently deemed less practicable and less relevant for this study. According to the interviews, running products were heavily associated with footwear, and there was a lack of typical running apparel associations.

Consequently, **lifestyle and football apparel** were chosen as the most practicable and relevant categories. Participants identified hoodies and jackets as typical lifestyle products, especially colorful, comfortable ones with a wider fit and color blocking. For football, participants first thought of jerseys. Following this, three products were selected out of the current Adidas collection (March 2024) available in the official web shop. This was decided as older or future products could influence the results of the study.

Interviews further highlighted an emotional connection to football jerseys linked to personal favorites or rival teams or players, which could bias survey responses. Due to this and considering that the majority of final survey respondents will most likely be non-US-citizens, three current jerseys were selected from smaller US-American teams that are not available to buy in Europe. These jerseys still featured typical football jersey features according to the interviews, e.g. a club crest, a sports brand logo, a sponsor, a “box” (rectangular) fit of the jersey, a compelling design, synthetic and functional (“breathable”) materials (Figure 13).



Figure 13 - Stimuli Selection
Sources: Adidas, 2024b

In the final step, the same interview participants were re-approached to assess whether the six selected products were typical of lifestyle and football categories, and to identify the most typical product per category.

A hoodie, originally carrying the Trefoil logo, and a Charlotte FC football jersey, originally carrying the Performance Logo, were selected by the participants.

3.4.3 Other Results

Besides the crucial input about the selection of the stimuli, the interviews also provided additional insights for RQ1 and RQ2 that were considered in the creation of the final survey questionnaire.

For example, the BOS appeared to be for an older target group, was less premium, and was cheaper to a participant than the other logos, resulting in fewer purchases of products with the BOS.

The Performance Logo was considered to be the most dynamic and modern logo, evoking associations with a young target group and sports competitions. It was considered a good fit for sports products.

The Trefoil was associated with classic and fancy urban fashion/lifestyle, as well as colorful apparel.

3.5 Final Survey

The last step of data collection aims to test the hypotheses in a quantitative manner. This enables data-driven results from a higher number of participants in an efficient way. The focus of the final survey is to examine whether scientific research about logo characteristics can be confirmed and how perceptions of Adidas logos differ.

3.5.1 Data Collection

The survey was published on Qualtrics on May 29th and closed on July 4th, 2024. The survey was shared with the author's family and friends, who were also asked to forward the survey after participating in it. Consequently, a mixture of convenience and snowball sampling was used. Furthermore, the survey was published on the platforms SurveyCircle and SurveySwap, where participants were rewarded with credits for their own research. An additional raffle among all participants (one of three €20 Amazon gift cards) was chosen to increase response rates.

3.5.2 Stimuli Development

Based on the results of the stimuli tests in the interviews, two final Adidas products were selected and presented. The manipulation was done by using picture editing software (Canva, Figure 14). Each of the products carried one of the three Adidas logos, resulting in six different stimuli (Figure 15).



Figure 14 - Stimuli Development



Figure 15 - Final Stimuli

3.5.3 Questionnaire Flow & Measurement

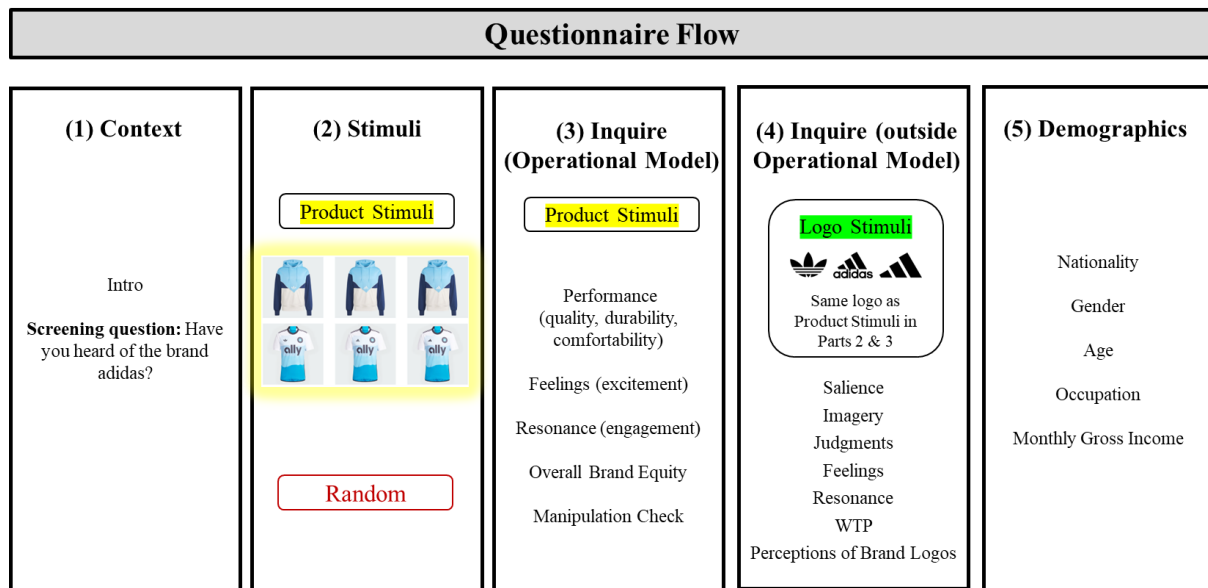


Figure 16 - Questionnaire Flow

(1) After a short instruction, indicating that the survey was about analyzing consumer perceptions, participants had to pass the screening question (Figure 16). The screening question was consistent with previous data collection from this research.

(2) Every participant who answered “yes” was randomly assigned to one of the six stimuli.

(3) Testing the **operational model** (Figure 17), participants were then asked to rate the product that they saw in regard to the four constructs taken from marketing literature. The hypotheses H1a to H1d were built on exactly the same constructs as used in the literature (Cian et al., 2014; Jiang et al., 2016; Luffarelli, Stamatogiannakis, et al., 2019). For hypotheses H1 and H2, the most suitable Overall Brand Equity (OBE) construct was selected. While Yoo & Donthu (2001) created one of the most cited OBE constructs, Lieven et al. (2014) adapted the construct by adding two items that are arguably easier to understand by respondents and contribute to a better understanding of the intangible topic.

Framework	Measure		Items	Scale	Reference	Cronbach α	Linked Hypothesis
IV	Brand Logos		Stimuli	na	na	na	
Moderator	Product Category		Stimuli	na	na	na	
DV	Brand Equity	Performance (quality, durability, comfortability)	3	7-point Likert Scale (*)	Jiang, Y., Gorn, G., Galli, M., Chattopadhyay, A. (2015)	.80	H1a H1b
		Feelings (excitement)	5	7-point Likert Scale (**)	Luffarelli, Stamatogiannakis, et al. (2019) Based on Aaker, D. (1997)	.90	H1c
		Resonance (engagement)	4	7-point Likert Scale (*)	Cian, L., Krishna, A., Elder, R. (2014)	.86	H1d
		Overall Brand Equity	6	7-point Likert Scale	Lieven, T., Grohmann, B., Herrmann, A., Landwehr, J., van Tilburg, M. (2014) Based on Yoo, Donthu, & Lee (2000)	.97	H1 H2

*The scale was adapted from the original scale from 1 to 9

**The scale was adapted from the original scale from 1 to 5

Figure 17 - Operational Model

After the questions were asked to test the constructs, additional questions about the perception of the product were asked, inspired by Keller (2001) and the interviews (e.g. target age, WTP, likelihood of buying, product-logo-fit). For example, for feelings, one adjective of each of Keller's six brand feelings was picked that was closest to the indications from the interviews.

Afterward, two manipulation check questions tested whether the participants could remember the logo on the product and were also able to identify the right product category of the product (lifestyle or football).

(4) Participants were then assigned to the same logo that they saw on the product at the beginning, but this time it was just the logo itself. Participants evaluated the logo using several dimensions of Keller's Brand Equity Pyramid, e.g., salience. Furthermore, some questions from the pre-survey were asked again, if they revealed considerable differences between logos in the pre-survey or proved to be relevant in interviews.

(5) The last part of the survey consisted of demographical questions.

The full survey can be found in Appendix 2.

3.5.4 Data Analysis

The main objectives of the data analysis were testing the presented hypotheses and reviewing the data for any other significant effects of the Adidas logos on perspectives of brand equity.

SPSS was used as a main tool to analyze the survey results. Firstly, potential outliers were identified by using the Mahalanobis distance and z-scores. By calculating Cronbach's alpha, the constructs' reliability could be evaluated. Afterward, mostly one-way and two-way ANOVAs as well as Independent Samples T-Tests were used to analyze the data. The PROCESS Model by Hayes (2018) also helped to check hypotheses.

CHAPTER 4: RESULTS AND DISCUSSION

The following chapter will cover the results of the research with a subsequent discussion of their impact.

4.1 Results

The results range from data cleaning to descriptive and inference statistics, including hypothesis testing. Throughout the data analysis, a level of significance of 5% was used. The results will be presented starting with one-way ANOVAs of logo and product stimuli first, before the statistical analysis will get slightly more complex for the hypotheses.

4.1.1 Data Cleaning

Overall, 674 participants completed the full survey. Out of this total number, seven participants did not know the brand Adidas, which disqualified them. The remaining 667 participants were then randomly assigned to one of the six stimuli (initial observations). 54 responses were removed due to repeated IP addresses.

180 responses had to be deleted due to failed **manipulation checks**, so about 27% of initial observations. Out of these 180 responses, 115 participants selected an incorrect logo compared to the stimuli. 65 participants matched the product from the stimuli with the incorrect product category compared to the Adidas website. The manipulation check errors occurred more often for some stimuli than for others. In particular, Lifestyle Performance and the Lifestyle BOS combinations had the highest amounts of errors (Figure 18), potentially impacted by processing fluency.

The **Mahalanobis Distance** was used to identify potential outliers. For each of the six stimuli, the six OBE items were checked. A comparison of the respective Mahalanobis distances with a chi-square distribution with six degrees of freedom led to a total of nine potential outliers, as the newly calculated probability variable was smaller than 0.001.

Additionally, z-scores were calculated for the items “product target age” and “product WTP”. These items were chosen as they are the only ones in the questionnaire that did not have a Likert-scale from 1 to 7, but wide scales from 0 to 100 and €0 to €250 respectively. The established threshold for outliers for z-scores of +3 or -3 respectively was used (Anderson et

al., 2008), eliminating another 15 cases. Additionally, one case which stated a product target age of three years was removed, since this would have meant the shown stimulus was a baby product.

This resulted in a total of 410 valid observations, ranging from 57 to 77 valid observations per stimulus.

									
		LT (Lifestyle Trefoil)	FT (Football Trefoil)	LP (Lifestyle Performance)	FP (Football Performance)	LBOS (Lifestyle BOS)	FBOS (Football BOS)	Sum	Share out of initial obs.
Initial Observations		113	115	110	111	108	110	667	-
Failed Screening Question (already asked as first question)		0	0	0	0	0	0	0	-
Repeated IPs		10	9	14	7	5	9	54	8%
Failed Manipulation 1 (logo)		18	14	17	28	22	16	115	17%
Failed Manipulation 2 (product category)		11	12	21	5	14	2	65	10%
Outliers		3	5	1	5	3	6	23	3%
Valid Observations		71	75	57	66	64	77	410	61%
in percent out of initial obs.		63%	65%	52%	59%	59%	70%		

Figure 18 - Observations

4.1.2 Sample Characterization

Women represented the majority of valid observations (61%). Germany accounted for 26% of the sample population, constituting the highest share of all 56 represented nationalities. Almost 86% of all participants were younger than 35 years and more than 57% were students, reflecting the convenience and snowball sample methods (Figure 19).

								
	LT (Lifestyle Trefoil)	FT (Football Trefoil)	LP (Lifestyle Performance)	FP (Football Performance)	LBOS (Lifestyle BOS)	FBOS (Football BOS)	Sum	TOTAL Share
Gender								
Female	67.6%	60.0%	59.6%	56.1%	54.7%	67.5%	251	61,2%
Male	32.4%	40.0%	36.8%	42.4%	45.3%	31.2%	155	37,8%
Non-binary	0%	0%	1.8%	1.5%	0%	1.3%	3	0,7%
Prefer not to say	0%	0%	1.8%	0%	0%	0%	1	0,2%
Nationality								
Germany	23.9%	28.0%	29.8%	25.8%	23.4%	27.3%	108	26,3%
United States	7.0%	10.7%	8.8%	6.1%	6.3%	7.8%	32	7,8%
United Kingdom	7.0%	8.0%	7.0%	6.1%	4.7%	9.1%	29	7,1%
Poland	4.2%	4.0%	10.5%	7.6%	6.3%	3.9%	24	5,9%
Netherlands	5.6%	9.3%	3.5%	3.0%	7.8%	5.2%	24	5,9%
India	5.6%	4.0%	7.0%	6.1%	1.6%	6.5%	21	5,1%
Portugal	7.0%	4.0%	3.5%	4.5%	4.7%	6.5%	21	5,1%
Other	39.7%	32.0%	29.9%	40.8%	45.2%	33.7%	151	36,8%
Age								
Under 18	1.4%	0%	0%	4.5%	1.6%	3.9%	8	2,0%
18 - 24	33.8%	32.0%	47.4%	40.9%	37.5%	37.7%	155	37,8%
25 - 34	46.5%	56.0%	38.6%	39.4%	45.3%	48.1%	189	46,1%
35 - 44	8.5%	5.3%	3.5%	7.6%	7.8%	5.2%	26	6,3%
45 - 54	4.2%	0%	5.3%	1.5%	6.3%	1.3%	12	2,9%
55 - 64	2.8%	6.7%	3.5%	4.5%	1.6%	1.3%	14	3,4%
65 - 74	1.4%	0%	0%	1.5%	0%	1.3%	3	0,7%
75 - 84	1.4%	0%	0%	0%	0%	0%	1	0,2%
85 or older	0%	0%	0%	0%	0%	0%	0	0,0%
Prefer not to say	0%	0%	1.8%	0%	0%	1.3%	2	0,5%
Occupation								
Student without job	25.4%	20.0%	17.5%	27.3%	25.0%	20.8%	93	22,7%
Student with job	26.8%	42.7%	38.6%	31.8%	28.1%	39.0%	142	34,6%
Employee	35.2%	29.3%	21.1%	24.2%	35.9%	31.2%	122	29,8%
Self-employed	7.0%	5.3%	15.8%	10.6%	3.1%	0%	27	6,6%
Unemployed	1.4%	0%	5.3%	4.5%	6.3%	5.2%	15	3,7%
Retired	2.8%	0%	0%	1.5%	0%	1.3%	4	1,0%
Prefer not to say	1.4%	2.7%	1.8%	0%	1.6%	2.6%	7	1,7%
Individual monthly gross income								
Less than 1000€	26.8%	26.7%	54.4%	40.9%	37.5%	39.0%	151	36,8%
1001 - 2000€	29.6%	33.3%	21.1%	21.2%	31.3%	23.4%	110	26,8%
2001 - 3000€	14.1%	10.7%	8.8%	12.1%	9.4%	10.4%	45	11,0%
3001 - 4000€	1.4%	9.3%	1.8%	7.6%	1.6%	7.8%	21	5,1%
4001 - 5000€	4.2%	1.3%	1.8%	4.5%	1.6%	6.5%	14	3,4%
Above 5000€	9.9%	6.7%	3.5%	7.6%	4.7%	1.3%	23	5,6%
Prefer not to say	14.1%	12.0%	8.8%	6.1%	14.1%	11.7%	46	11,2%
Valid Obs. TOTAL	71	75	57	66	64	77	410	
Share Valid Obs. TOTAL	17%	18%	14%	16%	16%	19%		

Figure 19 - Sample Characterization

4.1.3 Measure Reliability

In this research, four constructs (Quality, Excitement, Engagement and OBE) were taken from marketing literature. To examine measure reliability, **Cronbach's Alphas** of the four constructs were tested per stimulus. Overall, Cronbach's Alpha levels ranged from a minimum of .732 to a maximum of .953. (Figure 20), good to excellent degrees of reliability (Field, 2009). Furthermore, all inter-item correlations were higher than the minimum of .30 with one

exception (one of five items in LP Excitement), indicating that the respective items correlate with the overall scale (Field, 2009).

Removing single items from the constructs would not have any or only a negligible effect on Cronbach Alpha levels, which also proves the reliability of the scales (Field, 2009).

						
	LT (Lifestyle Trefoil)	FT (Football Trefoil)	LP (Lifestyle Performance)	FP (Football Performance)	LBOS (Lifestyle BOS)	FBOS (Football BOS)
Quality	.791	.816	.798	.821	.779	.732
Excitement	.816	.904	.838	.898	.913	.916
Engagement	.871	.918	.804	.903	.865	.908
Overall Brand Equity	.939	.934	.953	.929	.939	.943

Figure 20 - Cronbach's Alpha

For many of the variables in this research, **one-way ANOVAs** were performed to check for significant differences between the logos. For every one-way ANOVA (incl. for hypothesis analyses), the same procedure was followed (Appendix 3). All assumptions that had to be met for a one-way ANOVA were checked every time. This includes a metric dependent variable, a non-metric independent variable, independence of observations, no significant outliers, an approximately normally distributed dependent variable (checked with skewness and kurtosis values with a threshold of ± 1 , the histogram if this threshold was not met, and z-scores with a threshold of ± 3 as a last resort). As a last check, the homogeneity of variances was tested using Levene's test. In the case of a significant Levene's test, the Welch-test was used. Finally, post-hoc tests gave insights into the significance of differences. If Levene's test was significant, the LSD and Gabriel post-hoc tests were used (Field, 2009). If Levene's test did not lead to a significant result, the Games-Howell post-hoc test was used (Field, 2009).

4.1.4 Logo Stimuli ANOVAs

In this chapter, various one-way ANOVAs for the logo stimuli are discussed. Statistically significant results ($p\text{-value} < 0.05$) are highlighted in Figure 21. If there are no statistically significant differences between logos, the means are shown in the same color.

significantly higher	significantly medium	significantly lower
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Figure 21 - Color Meanings

A one-way ANOVA was performed to test the **familiarity** levels of the three logos (Figure 22). The histogram revealed an approximately normal distribution of the dependent variable. For this and the following analysis, all other ANOVA assumptions, such as the independence of observations, outliers, and Levene's test, were tested. In this case, Levene's test was significant (p-value <0.001), which means that the assumption of homogeneity of variances was violated. However, the Welch-test (p-value <0.001) as well as the ANOVA were significant too (p-value <0.001), so there are significant differences between the means of the different groups. The BOS turned out to be significantly more familiar to participants compared to both the Trefoil (p-value <0.001) and the Performance Logo (p-value <0.001) according to the Games-Howell post-hoc test. There was no significant difference in familiarity between the Trefoil and the Performance Logo (p-value 0.837). These results confirm the indications from the pre-survey.

Familiarity			
Question	How familiar are you with this logo of the brand adidas?		
Scale	1 = not familiar at all, 7 = extremely familiar		
Statistical Test	One-way ANOVA		
Approximately Normal Distribution	Checked using a histogram		
Levene's Test (p-value)	<0.001 (Welch-Test p-value <0.001)		
Significance ANOVA (p-value)	<0.001		
			
Logo	Trefoil	Performance Logo	Badge of Sport
Mean	5.73	5.62	6.41
Standard Deviation	1.662	1.647	0.972

Figure 22 – Familiarity

The Games-Howell post-hoc test revealed that the Performance Logo is significantly less **unique** than both other logos (Figure 23). These results are consistent with pre-survey indications.

Uniqueness			
Question	How unique is this logo?		
Scale	1 = not unique at all, 7 = extremely unique		
Statistical Test	One-way ANOVA		
Approximately Normal Distribution	Checked using a histogram & skewness & kurtosis		
Levene's Test (p-value)	<0.001 (Welch-Test p-value <0.001)		
Significance ANOVA (p-value)	<0.001		
			
Logo	Trefoil	Performance Logo	Badge of Sport
Mean	5.47	4.68	5.25
Standard Deviation	1.400	1.676	1.271

Figure 23 – Uniqueness

The Games-Howell post-hoc test showed that participants significantly agreed more with **growing up** with the BOS than with the Trefoil and Performance logos (Figure 24). The results are in line with pre-survey indications.

The participants of this survey were predominantly under the age of 35. Only 30 valid observations are available from participants older than 44 years across all three logos. Due to this small number, generalizable statements cannot be made about whether different age groups have a significant impact on this item. This should be checked in further research with a more representative age structure, as Adidas introduced the Trefoil decades before the BOS and the Performance Logo.

I grew up with this logo.			
Question	How much do you agree with this statement for this logo?		
Scale	1 = strongly disagree, 7 = strongly agree		
Statistical Test	One-way ANOVA		
Approximately Normal Distribution	Checked using a histogram		
Levene's Test (p-value)	0.026 (Welch-Test p-value <0.001)		
Significance ANOVA (p-value)	<0.001		
			
Logo	Trefoil	Performance Logo	Badge of Sport
Mean	3.75	3.95	5.42
Standard Deviation	1.900	2.032	1.699

Figure 24 - Grew up

As indicated in pre-survey results, participants significantly agree more that the BOS **brings back pleasant memories** than the other two logos according to LSD and Gabriel post-hoc tests (Figure 25). Again, this item should also be tested with a more representative age structure due to the same reasons as the last item.

This logo brings back pleasant memories.			
Question	How much do you agree with this statement for this logo?		
Scale	1 = strongly disagree, 7 = strongly agree		
Statistical Test	One-way ANOVA		
Approximately Normal Distribution	Checked using a histogram		
Levene's Test (p-value)	0.321		
Significance ANOVA (p-value)	<0.001		
			
Logo	Trefoil	Performance Logo	Badge of Sport
Mean	3.40	3.20	4.24
Standard Deviation	1.985	1.782	1.844

Figure 25 - Pleasant Memories

The LSD and Gabriel post-hoc tests confirm that participants significantly would **miss the BOS more** than the other two logos. This is in line with pre-survey indications (Figure 26).

I would miss this logo if it went away.			
Question	How much do you agree with this statement for this logo?		
Scale	1 = strongly disagree, 7 = strongly agree		
Statistical Test	One-way ANOVA		
Approximately Normal Distribution	Checked using a histogram		
Levene's Test (p-value)	0.913		
Significance ANOVA (p-value)	0.001		
			
Logo	Trefoil	Performance Logo	Badge of Sport
Mean	3.40	3.35	4.21
Standard Deviation	2.161	2.180	2.174

Figure 26 - Miss Logo

Participants would be significantly more interested in learning **more** about the BOS than the Performance Logo (Figure 27). Note that this is on a relatively low level (below the middle value of 4). The Trefoil seemed to receive the highest values in the pre-survey, but the results of the final survey do not reflect this.

I am interested in learning more about this logo.			
Question	How much do you agree with this statement for this logo?		
Scale	1 = strongly disagree, 7 = strongly agree		
Statistical Test	One-way ANOVA		
Approximately Normal Distribution	Checked using a histogram		
Levene's Test (p-value)	0.281		
Significance ANOVA (p-value)	0.012		
			
Logo	Trefoil	Performance Logo	Badge of Sport
Mean	3.04	2.77	3.47
Standard Deviation	1.893	1.846	1.973

Figure 27 – Interest

Both the LSD and the Gabriel test revealed that the BOS would be significantly more accepted as **the only Adidas logo** than the Trefoil (Figure 28), reflecting pre-survey indications. All means are lower than the middle point of 4, indicating that the participants might not have a clear favorite logo when it comes to representing the whole brand.

I think this is the only logo that Adidas needs.			
Question	How much do you agree with this statement for this logo?		
Scale	1 = strongly disagree, 7 = strongly agree		
Statistical Test	One-way ANOVA		
Approximately Normal Distribution	Checked using a histogram		
Levene's Test (p-value)	0.067 (Welch-Test p-value <0.001)		
Significance ANOVA (p-value)	0.001		
How much do you agree with this statement for this logo? (1 = strongly disagree, 7 = strongly agree)			
Logo	Trefoil	Performance Logo	Badge of Sport
Mean	2.87	3.31	3.70
Standard Deviation	1.782	2.033	1.931

Figure 28 - Only Logo

The tests of the items “**style**” and “**this logo is up-to-date**” did not reveal any significant differences between the logos based on this research (Appendix 3).

4.1.5 Product Stimuli ANOVAs

The product stimuli items were analyzed similarly to the logo stimuli. Given the importance of categories for the product stimuli, three one-way ANOVAs were conducted for each item: one comparing the lifestyle stimuli, one comparing the football stimuli and one comparing the combined means for both categories.

Additionally, two-way ANOVAs were done to test for interaction effects. The independent variables were the product category and the logos. The benefit of this approach is that both category effects and logo effects can be covered, contributing to a more comprehensive analysis.

After twelve one-way ANOVAs and a two-way ANOVA, no significant differences between the construct “**product quality**” and the three single items per category could be found between the logos (Appendix 4). Neither for the lifestyle, nor for the football category and overall comparisons. Consequently, it can be said that the logos did not have a significant impact on the perception of product quality.

Similarly, the analysis of the items “**product target age**”, “**likely to buy**” and “**WTP**” did not reveal any significant differences between logos or stimuli (Appendix 4). However, it seems to be worth noting that the means for “WTP” are much lower than the original price set by Adidas in their online shop (Appendix 4). The football jersey is sold for 100 USD, the hoodie for €75 in the official online shop (Adidas, 2024b).

For four out of the six different **feelings** (cheerful, confident, socially approved, fulfilled) no significant differences were found across one-way ANOVAs (Appendix 4).

For “**excited**”, both the LSD and the Gabriel post-hoc tests revealed that the Lifestyle Performance stimulus was perceived as significantly less exciting than one of the other logos (Figure 29).

Feeling (1/6)						
Question	If you wore this product, how likely would you be to feel...?					
Scale	not at all excited (=1) ... extremely excited (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram & skewness & kurtosis					
Levene's Test (p-value)	Both Categories: 0.027 (Welch-Test 0.066), Lifestyle: 0.569, Football: 0.098					
Significance ANOVA (p-value)	Both Categories: 0.053, Lifestyle: 0.012, Football: 0.809					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.71		3.32		3.79	
Standard Deviation (Both Product Categories)	1.624		1.785		1.576	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.66	3.75	2.96	3.62	3.77	3.81
Standard Deviation (One Product Category)	1.621	1.637	1.636	1.863	1.509	1.639

Figure 29 – Excited

Despite a significant ANOVA result for the item “**sentimental**” in the Lifestyle category, no significant differences could be confirmed in the Gabriel post-hoc tests. There were significant differences in the LSD post-hoc test, but these results have to be treated with caution.

The two-way ANOVA of the combined categories had a significant main effect for the logos (p-value 0.043) and non-significant category main effect (p-value 0.292) and interaction effect (p-value 0.433). In conclusion, there are signs that logos have a significant effect on the feeling of sentimentality. However, these statements have to be treated with caution.

The combined category one-way ANOVA of the **product-logo-fit** item was not significant (Figure 30). However, significant results could be found in both individual categories confirmed by LSD and Gabriel post-hoc tests. In the Lifestyle category, the Trefoil fit the Hoodie better than the Performance logo. In the Football category, the BOS fit the jersey better than the Trefoil.

In the two-way ANOVA, the main effect of the categories as well as the interaction effect of categories and logos were significant (Figure 31). This indicates that participants responded differently depending on the product category that they saw.

Product Logo Fit						
Question	Does Adidas's brand logo fit this product?					
Scale	not at all fitting (=1) ... extremely fitting (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.072, Lifestyle: 0.613, Football: 0.127					
Significance ANOVA (p-value)	Both Categories: 0.577, Lifestyle: 0.026, Football: 0.044					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	4.86		4.74		4.96	
Standard Deviation (Both Product Categories)	1.752		1.745		1.549	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	5.04	4.69	4.23	5.18	4.53	5.31
Standard Deviation (One Product Category)	1.776	1.724	1.783	1.597	1.593	1.426

Figure 30 - Product Logo Fit One-way ANOVA

Product Logo Fit (category & logo as independent variables)	
Question	Does Adidas's brand logo fit this product?
Scale	not at all fitting (=1) ... extremely fitting (=7)
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.116
Significance ANOVA (p-value) of Logo	Both Categories: 0.549
Significance ANOVA (p-value) of Category	Both Categories: 0.005
Significance ANOVA (p-value) of Interaction	Both Categories: 0.002

Figure 31 - Product Logo Fit Two-way ANOVA

4.1.6 Factor Analyses

As a next step, factor analyses were performed. Factors of the constructs (OBE, excitement, engagement) were used to test the hypotheses. The factor analyses were conducted for the

overall construct and then for each of the two categories. Thresholds (e.g. communality, KMO, Bartlett's test thresholds) from Field (2009) were considered to make decisions, for example whether a variable should be excluded from the factor. As they only play a minor part in the overall analysis, the results of the factor analysis can be seen in Appendix 5.

4.1.7 Hypothesis Tests

H1: *Brand logos have a significant impact on brand equity.*

The analysis of this hypothesis was carried out in three different tests to ensure that results were confirmed regardless of the approach (Appendix 6 for details).

Test A: Three one-way ANOVAs were conducted for each of the six items of the OBE construct combined across categories (Figure 32). None of these ANOVAs revealed a significant result.

Overall Brand Equity (1/6): It makes sense to buy Adidas instead of any other brand, even if they are the same.						
Question	How much do you agree with these statements?					
Scale	1 = strongly disagree, 7 = strongly agree					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.365, Lifestyle: 0.728, Football: 0.658					
Significance ANOVA (p-value)	Both Categories: 0.273, Lifestyle: 0.059, Football: 0.975					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.43		3.28		3.62	
Standard Deviation (Both Product Categories)	1.635		1.749		1.663	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.30	3.56	2.89	3.62	3.64	3.60
Standard Deviation (One Product Category)	1.616	1.654	1.749	1.689	1.767	1.583

Figure 32 - OBE Item One-way ANOVA

Test B: Nine one-way ANOVAs of the total OBE construct were conducted (example in Figure 33). This was done with the sum, the mean, and the factor of the construct for both categories combined and independently for each category. No significant results could be found.

Overall Brand Equity (Construct / Total Mean)						
Question	How much do you agree with these statements?					
Scale	1 = strongly disagree, 7 = strongly agree					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.264, Lifestyle: 0.407, Football: 0.750					
Significance ANOVA (p-value)	Both Categories: 0.475, Lifestyle: 0.197, Football: 0.969					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.54		3.36		3.59	
Standard Deviation (Both Product Categories)	1.521		1.651		1.567	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.43	3.64	3.10	3.59	3.62	3.57
Standard Deviation (One Product Category)	1.501	1.543	1.700	1.585	1.570	1.574

Figure 33 - OBE One-way ANOVA

Test C: Three two-way ANOVAs with the independent variables logos and categories were conducted following a similar pattern (example in Figure 34). No significant results were found.

Overall Brand Equity (Construct / Total Mean)	
Question	How much do you agree with these statements?
Scale	1 = strongly disagree, 7 = strongly agree
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.756
Significance ANOVA (p-value) of Logo	Both Categories: 0.416
Significance ANOVA (p-value) of Category	Both Categories: 0.164
Significance ANOVA (p-value) of Interaction	Both Categories: 0.391

Figure 34 - OBE Two-way ANOVA

Considering Tests A, B and C, the hypothesis can be rejected (Figure 35). While logos do not have a significant impact on the OBE construct, parts of the Brand Equity Pyramid can be impacted by logos, however, as seen in various tests of Chapter 4.1.4.

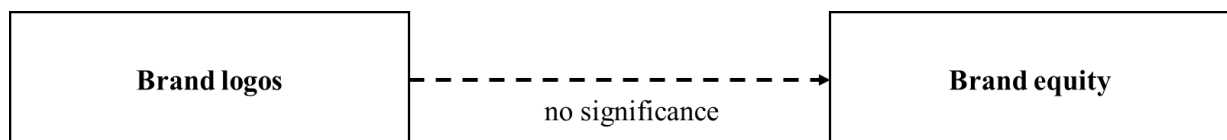


Figure 35 - H1

H1a: Products that carry angular logos are perceived as more durable compared to products with non-angular logos.

Product durability was also checked with three different tests (Appendix 6 for details).

Test A: Three one-way ANOVAs were carried out, one per category and one combining categories (example in Figure 36). In all cases, the one-way ANOVAs that were conducted were not significant.

Product Durability						
Question	This product is...					
Scale	not at all durable (=1) ... very durable (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.512, Lifestyle: 0.283, Football: 0.753					
Significance ANOVA (p-value)	Both Categories: 0.455, Lifestyle: 0.468, Football: 0.676					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	5.14		4.95		5.07	
Standard Deviation (Both Product Categories)	1.218		1.247		1.187	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	5.24	5.04	5.00	4.91	5.05	5.09
Standard Deviation (One Product Category)	1.213	1.224	1.165	1.321	1.161	1.216

Figure 36 - Durability One-way ANOVA

Test B: Independent samples t-tests were used to test the hypothesis from a different angle. While all three logos were treated separately in Test A, the pre-survey showed that both the Performance Logo and the BOS were generally perceived as angular logos, whereas the Trefoil was perceived as non-angular. This classification allowed an independent samples t-test, in which the grouping variable was angularity (“yes” for Performance Logo and BOS, “no” for Trefoil). There was no statistically significant difference in the perceived durability between the angular and non-angular logos overall and per category, as none of the results delivered significant p-values (example in Figure 37).

Durability Both Categories (angularity as grouping variables)	
Question	How much do you agree with these statements?
Scale	1 = not at all durable, 7 = very durable
Statistical Test	Independent Samples t-Test
Approximately Normal Distribution	Checked using a histogram & kurtosis & skewness values
Means	Angular: 5.02, Less Angular: 5.14
Levene's Test (p-value)	Both Categories: 0.189
Significance one-sided (p-value)	Both Categories: 0.166
Significance two-sided (p-value)	Both Categories: 0.332

Figure 37 - Durability t-Test

Test C: In the last test, two two-way ANOVAs were conducted. One featured the logo and the category as independent variables, and one featured angularity and the category as independent variables. None of these ANOVAs were significant (example in Figure 38).

Durability (category & angularity as independent variables)	
Question	How much do you agree with these statements?
Scale	1 = not at all durable, 7 = very durable
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.398
Significance ANOVA (p-value) of Angularity	Both Categories: 0.325
Significance ANOVA (p-value) of Category	Both Categories: 0.388
Significance ANOVA (p-value) of Interaction	Both Categories: 0.471

Figure 38 - Durability Two-way ANOVA 2

Based on these results, the hypothesis can therefore be rejected (Figure 39). No evidence could be found that products carrying angular logos are perceived as more durable.

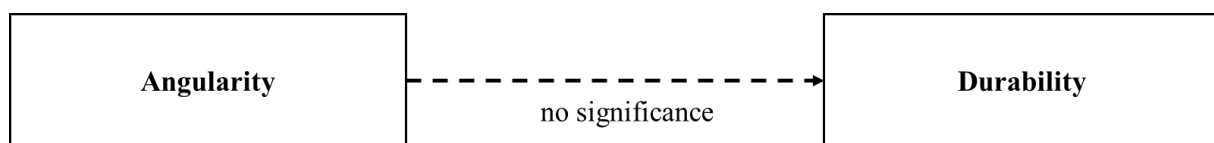


Figure 39 - H1a

H1b: Products that carry circular logos are perceived as more comfortable compared to products with non-circular logos.

Similarly to the first hypotheses, three tests were applied to examine H1b.

Test A: Three one-way ANOVAs for the **product comfort** item were conducted. The one-way ANOVA for the tested Lifestyle stimuli does not result in significant differences. This changes in regard to the football category (Figure 40). The ANOVA is significant. LSD and Gabriel post-hoc tests confirm that the Football BOS stimulus is perceived as significantly more comfortable than the Football Performance stimulus. For the combined analysis of both categories, there is also a significant ANOVA, but the Gabriel post-hoc test cannot confirm significant differences between logos.

Product Comfort						
Question	This product is...					
Scale	not at all comfortable (=1) ... very comfortable (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.601, Lifestyle: 0.939, Football: 0.490					
Significance ANOVA (p-value)	Both Categories: 0.043, Lifestyle: 0.562, Football: 0.016					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	5.55		5.20		5.53	
Standard Deviation (Both Product Categories)	1.163		1.330		1.240	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	5.70	5.40	5.47	4.97	5.53	5.53
Standard Deviation (One Product Category)	1.212	1.103	1.311	1.312	1.321	1.176

Figure 40 - Comfort One-way ANOVA

Test B: The pre-survey indicated that the Trefoil is perceived as a circular logo, whereas the other two logos are not. Consequently, the grouping variable for three independent samples t-tests was circularity (“no” for Performance Logo and BOS, “yes” for Trefoil). No significant results were found (e.g. Figure 41).

Comfort Both Categories (circularity as grouping variables)	
Question	How much do you agree with these statements?
Scale	1 = not at all comfortable, 7 = very comfortable
Statistical Test	Independent Samples t-Test
Approximately Normal Distribution	Checked using a histogram
Means	Circular: 5.55, Less-Circular: 5.38
Levene's Test (p-value)	Both Categories: 0.365
Significance one-sided (p-value)	Both Categories: 0.095
Significance two-sided (p-value)	Both Categories: 0.189

Figure 41 - Comfort t-Test

Test C: To check significant results from Test A, two two-way ANOVA were conducted (category-logo and category-circularity as independent variables, Figure 42). In both cases, the main effect of the category was significant, whereas the other main effect and both interaction effects were not significant. This indicates that participants perceived one stimulus as generally more comfortable than the other.

Comfort (category & circularity as independent variables)	
Question	How much do you agree with these statements?
Scale	1 = not at all comfortable, 7 = very comfortable
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.695
Significance ANOVA (p-value) of Circularity	Both Categories: 0.203
Significance ANOVA (p-value) of Category	Both Categories: 0.038
Significance ANOVA (p-value) of Interaction	Both Categories: 0.777

Figure 42 - Comfort Two-way ANOVA 2

The significant difference in Test A for the football category indicates that logos can impact perceptions of comfort in a specific context (the football category). However, when taking into account both categories in Test C, the overall impact of the product category was more substantial than the effect of the tested logos and their circularity. The hypothesis can therefore be rejected (Figure 43).

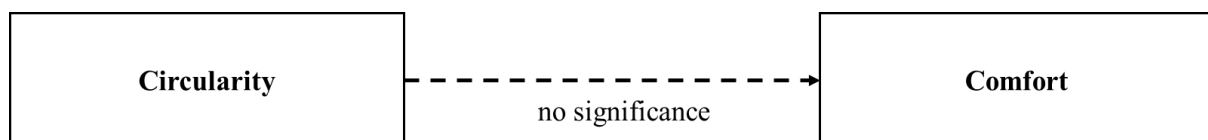


Figure 43 - H1b

H1c: *Asymmetric logos are more associated with a feeling of excitement compared to symmetrical logos.*

This hypothesis was tested in four different ways.

Test A: The construct of **excitement** and its single items (trendy, cool, daring, imaginative, and exciting) were tested in 15 one-way ANOVAs (per category and combining categories). No significant differences were found in all cases (Appendix 6).

Test B: Nine one-way ANOVAs of the overall construct (combining the five items) also did not deliver significant results (e.g. Figure 44). Here, the sum, the means and the factor of the single items were tested.

Excitement (Construct / Total Mean)						
Question	This product is...					
Scale	1 = not at all (trendy, cool, daring, imaginative, exciting), 7 = very (...)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.926, Lifestyle: 0.793, Football: 0.829					
Significance ANOVA (p-value)	Both Categories: 0.443, Lifestyle: 0.613, Football: 0.701					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	4.05		3.86		4.03	
Standard Deviation (Both Product Categories)	1.345		1.321		1.323	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	4.02	4.08	3.82	3.89	4.03	4.03
Standard Deviation (One Product Category)	1.323	1.373	1.236	1.399	1.346	1.421

Figure 44 - Excitement One-way ANOVA

Test C: Pre-survey results indicated that the Performance Logo and the BOS were more asymmetric than the Trefoil. The logos were consequently grouped in more and less asymmetric. 21 Independent samples t-tests compared the excitement means per single item and per construct for these groups across categories. No significant differences could be observed in any of these tests (p-values in Figure 45).

	lifestyle		football/soccer		combined	
	one-sided	two-sided	one-sided	two-sided	one-sided	two-sided
trendy	.178	.356	.369	.738	.184	.369
cool	.165	.330	.312	.623	.159	.319
daring	.355	.710	.262	.524	.233	.465
imaginative	.422	.845	.486	.971	.438	.877
exciting	.276	.552	.172	.345	.402	.805
SUM of construct	.319	.638	.284	.569	.232	.464
MEAN of construct	.319	.638	.284	.569	.232	.464

Figure 45 - Excitement t-Test

Test D: Lastly, two-way ANOVAs of the construct and the independent variables category-logo and category-asymmetry also did not reveal any significant differences (Figure 46).

Excitement (category & asymmetry as independent variables)	
Question	This product is...
Scale	1 = not at all (trendy, cool, daring, imaginative, exciting), 7 = very (...)
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.947
Significance ANOVA (p-value) of Asymmetry	Both Categories: 0.463
Significance ANOVA (p-value) of Category	Both Categories: 0.739
Significance ANOVA (p-value) of Interaction	Both Categories: 0.938

Figure 46 - Excitement Two-way ANOVA

Overall, no significant differences could be observed for the construct of excitement as it was defined (Luffarelli, Stamatogiannakis, et al., 2019). This contrasts with the single item “If you wore this product, how likely would you be to feel...? not at all excited (=1) extremely excited (=7)”, which was part of the feelings section in the survey. There, the Lifestyle Performance stimulus was perceived as significantly less exciting than both other Lifestyle stimuli (see Chapter 4.1.5). As the Performance Logo was considered asymmetric in the pre-survey, there still is no evidence for the hypothesis (Figure 47).

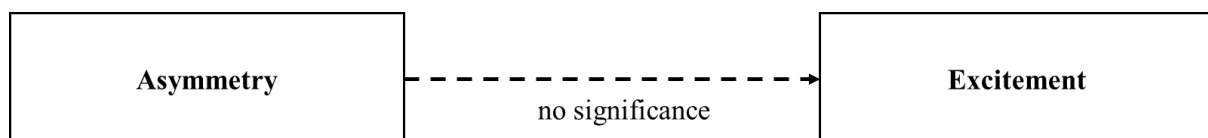


Figure 47 - H1c

H1d: Logos that are perceived as more dynamic lead to a higher engagement compared to logos that are perceived as less dynamic.

H1d was checked the same way as H1c, across four tests.

Test A: Twelve one-way ANOVAs were conducted to find differences between means per category and combining categories for the **engagement** construct's four items (involving, engaging, boring, stimulating). No significant results were found for “involving” and “engaging” (Appendix 6).

In the lifestyle category, the LSD and Gabriel post-hoc tests revealed that the Lifestyle Trefoil stimulus is significantly less **boring** than the Lifestyle Performance stimulus (Figure 48).

Product Engagement (3/4)						
Question	This product is...					
Scale	extremely boring (=1) ... not at all boring (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.828, Lifestyle: 0.733, Football: 0.400					
Significance ANOVA (p-value)	Both Categories: 0.496, Lifestyle: 0.044, Football: 0.640					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	4.38		4.15		4.23	
Standard Deviation (Both Product Categories)	1.653		1.633		1.601	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	4.55	4.21	3.84	4.41	4.31	4.16
Standard Deviation (One Product Category)	1.529	1.758	1.623	1.607	1.622	1.590

Figure 48 - Engagement One-way ANOVA 1

Furthermore, both post-hoc tests confirmed that the Lifestyle Trefoil stimulus was perceived as more **stimulating** than the Lifestyle Performance stimulus (Figure 49).

Product Engagement (4/4)						
Question	This product is...					
Scale	not at all stimulating (=1) ... very stimulating (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram, no outlier confirmed with z-score in this case					
Levene's Test (p-value)	Both Categories: 0.886, Lifestyle: 0.934, Football: 0.907					
Significance ANOVA (p-value)	Both Categories: 0.274, Lifestyle: 0.028, Football: 0.689					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	4.10		3.85		4.11	
Standard Deviation (Both Product Categories)	1.501		1.493		1.423	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	4.18	4.01	3.53	4.12	4.08	4.13
Standard Deviation (One Product Category)	1.505	1.502	1.428	1.504	1.372	1.472

Figure 49 - Engagement One-way ANOVA 2

Test B: The “engagement” construct was tested with nine one-way ANOVAs across categories. For that, the sum and means of all single items as well as the factor of the construct were transformed into three variables.

In the **lifestyle** category, the ANOVAs of the construct’s sum and mean were significant (Figure 50): The LSD and Gabriel post-hoc tests revealed that the Trefoil stimuli were perceived as more engaging than the Performance Logo stimuli. The one-way ANOVA of the factor analysis did not lead to significant results, potentially as one of the items was removed from the factor. No other significant results could be found.

Engagement (Construct / Total Mean)						
Question	This product is...					
Scale	1 = not at all (involving, engaging, stimulating) / extremely boring, 7 = very (...) / not at all boring					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.811, Lifestyle: 0.868, Football: 0.781					
Significance ANOVA (p-value)	Both Categories: 0.291, Lifestyle: 0.043, Football: 0.948					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	4.08		3.84		4.04	
Standard Deviation (Both Product Categories)	1.322		1.276		1.272	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	4.15	4.00	3.61	4.04	4.00	4.07
Standard Deviation (One Product Category)	1.281	1.364	1.155	1.350	1.193	1.341

Figure 50 - Engagement One-way ANOVA 3

Test C: The logos were grouped based on pre-survey results (Performance Logo dynamic, the other two less dynamic). 18 independent sample t-tests across the sum and mean of the construct and categories were conducted.

Four significant results in the **lifestyle** category were found. The “non-dynamic” logos were perceived as significantly less boring and significantly more stimulating compared to the dynamic logo. This was found after consulting the Levene’s test and the p-values (Figure 51). These findings were consistent with the overall sum and mean of the construct in the lifestyle category. The “dynamic” logo (mean 3.62) was perceived as less engaging than the “non-dynamic” logos (mean 4.08).

	lifestyle		football/soccer		combined	
	one-sided	two-sided	one-sided	two-sided	one-sided	two-sided
involving	.107	.213	.260	.520	.095	.191
engaging	.046	.091	.258	.515	.054	.107
not boring	.009	.019	.178	.357	.186	.372
stimulating	.004	.008	.412	.824	.054	.108
SUM of construct	.008	.016	.497	.994	.060	.120
MEAN of construct	.008	.016	.497	.994	.060	.120

Figure 51 - Engagement t-Test

Test D: Two two-way ANOVAs of the construct were done. The independent variables were category-logo and category-movement (more or less dynamic). No significant cases were found (e.g. Figure 52).

Engagement (category & movement as independent variables)	
Question	This product is...
Scale	1 = not at all (involving, engaging, stimulating) / extremely boring, 7 = very (...) / not at all boring
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.523
Significance ANOVA (p-value) of Movement	Both Categories: 0.094
Significance ANOVA (p-value) of Category	Both Categories: 0.178
Significance ANOVA (p-value) of Interaction	Both Categories: 0.097

Figure 52 - Engagement Two-way ANOVA 2

Based on the four tests there is no evidence that the logo, which is perceived as more dynamic, leads to a higher engagement than the logo that is perceived as less dynamic. Actually, in the Lifestyle category, the opposite result was found. The hypothesis can therefore be rejected (Figure 53).

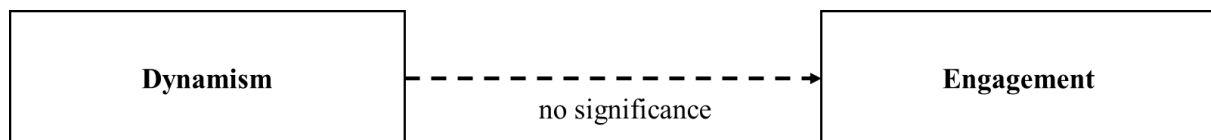


Figure 53 - H1d

H2: *The impact of brand logos on brand equity is not moderated by product category.*

Three different tests were performed to test the potential moderation of product categories (Appendix 6).

Test A: A regression was performed with the help of the PROCESS macro (Hayes, 2018). The logos were the independent variable, the mean of the brand equity construct was the dependent variable and the categories were the moderator. Regression assumptions were tested: Multicollinearity was not an issue, as Pearson's correlations were lower than 0.8 and the VIFs reached a maximum of 3.3. Residuals were approximately normal distributed and error terms were independent (Durbin-Watson: 2.1).

The model is not significant (p-value 0.403) and only 1.25% of the variance in the dependent variable is explained (Appendix 6). None of the p-values of the predictors (logos, category, interaction terms) are significant. The results show that the impact of brand logos on brand equity is not moderated by product category.

Test B: Three two-way ANOVAs with the mean and factor of the brand equity construct were done (e.g. Figure 54). None of the main effects were significant, and neither were the interaction effects.

Overall Brand Equity (Construct / Total Mean)	
Question	How much do you agree with these statements?
Scale	1 = strongly disagree, 7 = strongly agree
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.756
Significance ANOVA (p-value) of Logo	Both Categories: 0.416
Significance ANOVA (p-value) of Category	Both Categories: 0.164
Significance ANOVA (p-value) of Interaction	Both Categories: 0.391

Figure 54 - OBE Two-way ANOVA 1

Test C: Two-way ANOVAs of logo stimuli items were done to check whether participants showed significantly different behaviors for the second part of the survey (logo stimuli) depending on what they had seen in the first part of the survey (product stimuli).

For example, the answer to the question “How stylish is this logo?” from the second part differed significantly depending on whether participants had seen the Performance Logo on the Lifestyle or Football product (Figure 55).

Style (category & logo as independent variables)	
Question	How stylish is this logo?
Scale	1 = not stylish at all, 7 = extremely stylish
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.256
Significance ANOVA (p-value) of Logo	Both Categories: 0.071
Significance ANOVA (p-value) of Category	Both Categories: 0.916
Significance ANOVA (p-value) of Interaction	Both Categories: 0.027

Figure 55 - Style Two-way ANOVA

The interaction effect was significant, which meant that the impact of the logo on the perceived stylishness of the product depends on the product category that had been seen before.

An independent samples t-test was conducted to detect the differences in the shown product category. P-values were significant for the Performance Logo. The perceived style of the Performance Logo was significantly higher if the participant had seen the Performance Logo on the Football jersey before (Figure 56).

Style			
Question	How stylish is this logo?		
Scale	1 = not stylish at all, 7 = extremely stylish		
Statistical Test	Independent Samples T-Test		
Approximately Normal Distribution	Checked using a histogram & skewness & kurtosis		
			
Logo	Trefoil	Performance Logo	Badge of Sport
Levene's Test (p-value)	0.259	0.591	0.981
Significance 1-sided (p-value)	0.056	0.023	0.247
Significance 2-sided (p-value)	0.111	0.045	0.494
Mean if Lifestyle had been shown	5.34	4.82	4.86
Mean if Football had been shown	4.95	5.32	4.71

Figure 56 - Style t-Test

This effect was also found in the statements “I grew up with this logo”, “This logo brings back pleasant memories”, and “This logo is up-to-date” (Appendix 6). In all three cases, the logo-category-interaction effect and the independent sample t-test p-values were also significant. For all three statements, the mean of the Performance Logo was higher if the participant had seen

the Football jersey compared to the Lifestyle hoodie. This confirms congruency and processing fluency theories, as Adidas's football jerseys carry the Performance Logo in real life.

However, one exception was found: For the statement "This logo brings back pleasant memories" the mean of the BOS was higher if the participant had seen the Lifestyle hoodie compared to if the participant had seen the Football jersey.

In conclusion, the hypothesis that the impact of brand logos on brand equity is not moderated by product category was confirmed by Tests A and B (Figure 57). However, Test C showed that the logo-category combination did have a significant impact on consumer perceptions during the course of the survey.

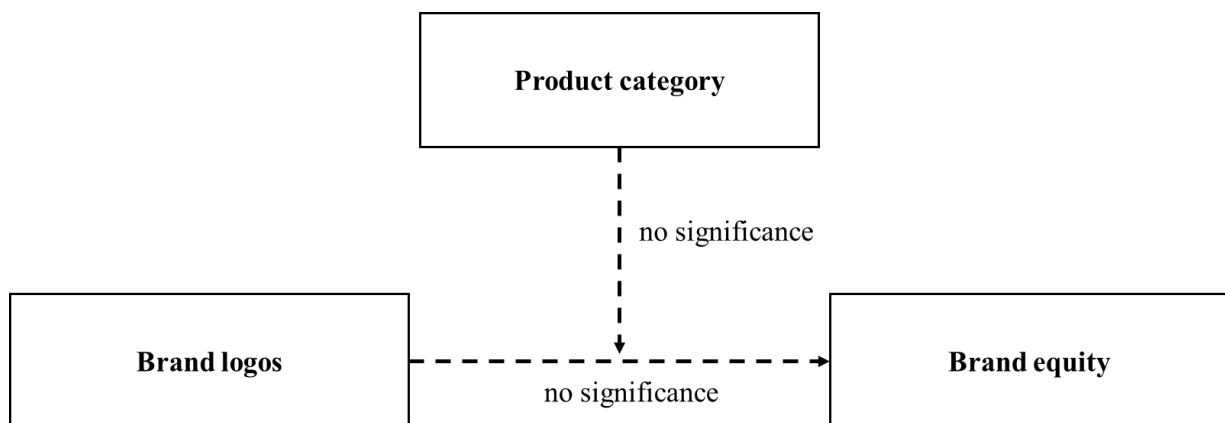


Figure 57 - H2

4.2 Discussion

Generally speaking, the effect of brand logos on OBE is not significant in this research, but there are individual cases within the Brand Equity Pyramid, where significant differences between logo perceptions were revealed.

Several hypotheses from the literature were rejected, reinforcing the notion that the effects of specific logo characteristics diminish for brands with well-known logos (Luffarelli, Mukesh, et al., 2019). Consumers tend to rely more on brand visuals when other relevant brand information is lacking (Bajaj & Bond, 2018). Having said that, this research showed that well-known logos can still significantly impact perceptions, confirming the first indications (Van der Lans et al., 2009).

This research indicates that the **BOS** positively impacts every aspect of Keller's Brand Equity Pyramid compared to other logos (Figure 58). The BOS's higher familiarity potentially leads to higher processing fluency and overall positive attributes, as indicated by (Janiszewski & Meyvis, 2001). Particularly in the Brand Resonance and Imagery sections, the BOS has created an arguably stronger and deeper relationship with consumers compared to the other two logos.

Due to the BOS's overall positive performance, Adidas's decision to phase out the BOS may raise questions, as this appears to be a bold and risky move. However, there were no significant differences regarding the OBE and a host of other criteria (e.g. product quality, WTP).



Brand Resonance

- Participants **would miss**  **more than** 
- Participants would be **more interested to learn more** about  than about 
-  **more accepted as only Adidas logo** than 

Judgments

-  **more unique** than 

Feelings

- Lifestyle: Participants felt **more excited** about  than about 

Performance

- Football:  **more comfortable** than 
- Football:  **fit better** than 

Imagery

- Participants agree more with **growing up** with  than with 
- Participants agree more that  **brings back pleasant memories** vs 

Salience

-  **more familiar** than 

Figure 58 - BOS Pyramid

Despite this, the removal of the BOS appears risky since it consistently outperforms other logos. Especially the **Performance Logo**, which now represents the whole brand e.g. on social media profiles, could negatively affect Adidas's brand equity in comparison (Figure 59). However, this strategic move might refresh the brand's image, attract a different demographic than this research and considering processing fluency (Janiszewski & Meyvis, 2001), results might look different after more exposure and higher familiarity.



Brand Resonance

- Participants **would miss**  **less** than 
- Participants **less interested to learn more** about 
vs 

Judgments

- **Less unique** than  
- Lifestyle:  **more boring, less stimulating, less engaging** than 

Feelings

- Lifestyle: Participants felt **less excited** about  vs  

Performance

- Lifestyle:  **fit less** than 
- Football:  **less comfortable** than 

Imagery

- Participants **agree less with growing up** with  vs 
- Participants **agree less that**  **brings back pleasant memories** vs 

Salience

-  **less familiar** than 

Figure 59 - Performance Logo Pyramid

The **Trefoil** was perceived better than the Performance Logo (Figure 60). Especially in the judgment and feelings section of Keller's Brand Equity Pyramid and particularly in the lifestyle category, the Trefoil has its strengths.



Brand Resonance

- Participants would **miss**  **less** vs 
-  **more accepted as only Adidas logo** than 

Judgments

-  **more unique** than 
- Lifestyle:  **less boring, more stimulating and more engaging** than 

Feelings

- Lifestyle: Participants felt **more excited** about  than about 

Performance

- Lifestyle:  **fit better** than 
- Football:  **fit less** than 

Imagery

- Participants agree **less with growing up** with  vs 
- Participants agree **less that**  **brings back pleasant memories** vs 

Salience

-  **less familiar** than 

Figure 60 - Trefoil Pyramid

It can be stated that the two logos that had been used on Adidas products for the last decades in the respective categories were perceived as significantly better fitting: the Trefoil on the Lifestyle hoodie compared to the Performance Logo and the BOS on the Football jersey compared to the Trefoil. This indicates that processing fluency might have affected the results.

While **product category** does not moderate the impact of logos on OBE (confirming findings from literature), categories do influence perceptions of specific attributes (e.g. product

comfort). Furthermore, the logo-category combination from the first part of the survey impacted answers in the second part. Drawing to fluency theory again, higher scores were achieved when Adidas used to use this logo-category combination in the past in most cases.

CHAPTER 5: CONCLUSIONS AND LIMITATIONS

In this last chapter, the main findings of the research will be consolidated. Afterward, managerial and academic implications will be analyzed. Finally, the limitations of this research and recommended areas for further research will be presented.

5.1 Main Findings & Conclusions

RQ1: Are the three different Adidas logos perceived differently regarding their impact on brand equity?

The pre-survey and the in-depth interviews initially suggested that the three Adidas logos are perceived differently in terms of their impact on brand equity. The findings from the final survey present a more nuanced view. While there are no significant differences between the logos concerning their impact on OBE, significant differences did emerge in a wide range of survey items across all dimensions of Keller's Brand Equity Pyramid. This complexity emphasizes the need for a differentiated approach when evaluating the influence of logos on brand equity.

RQ2: How do consumer perceptions of the three different Adidas logos differ and what impact does this have on brand equity?

Consumer perceptions of the three different Adidas vary significantly across all dimensions of Keller's Brand Equity Pyramid. The BOS holds no significant disadvantage compared to the other two logos in the whole pyramid. It often performed equally or better, contributing to a positive influence on brand equity. The Trefoil is perceived more favorably than the Performance Logo in the Lifestyle category, where it excels in the feelings and judgments part of the pyramid. The Performance Logo does not impact Adidas's brand equity in a positive way compared to the other two logos in this research. Findings do not support various hypotheses from marketing literature about the impact of specific logo characteristics on brand equity. This emphasizes the difficulty of transferring theory into a real-world scenario, where consumers might draw information from more than just a logo stimulus.

RQ3: Is the impact of Adidas's brand logos on brand equity moderated by product category?

To determine if the impact of Adidas's brand logos on brand equity is moderated by product category, the findings are nuanced. Statistical analysis using the PROCESS model found no moderation by product category on OBE, confirming the hypothesis from the literature. However, various items revealed significant differences between logos in one product category and not in the other category. This suggests that logo impact does vary by product category for specific dimensions of Keller's Brand Equity Pyramid. Furthermore, participants' responses were influenced by previous exposure to logo-category pairings at the start of the survey. Despite one exception, logos historically used in certain categories were generally perceived as more positive and more fitting. This indicates that processing fluency might shape perceptions in this context.

5.2 Managerial & Academic Implications

The results of this study suggest Adidas may want to **reassess its logo strategy** to benefit from the strong performance of the BOS. In this study, the Performance Logo performed significantly worse than the BOS from various perspectives. While this can be a strategic decision in favor of a target demographic that was potentially underrepresented in this research, results from this data analysis back up a re-introduction of the BOS. It is clear that this also bears risks such as inconsistency and confusion from a consumer perspective.

The BOS performed particularly well in terms of brand resonance, salience and nostalgia in this research. Consequently, Adidas could capitalize on consumers' emotional connection and familiarity with BOS in future marketing campaigns. The storytelling could work well with Adidas's new tagline ("**You got this**") from 2024 brand communications. In most of these communications, athletes gather strength and confidence from within in high pressure situations. In a new version featuring the BOS, this strength from within could come from positive memories from the past: e.g. football training as a child in a retro Adidas product (from the beginning of the 2000s based on the age group from this research). This would emphasize the insight that the BOS is more associated with growing up and pleasant memories than the other logos in this study.

This research indicates that distinct logos for specific product categories can have advantages. For example, the **Trefoil – Lifestyle association** seems to work well compared to other Adidas

logos in this category. As a result, a managerial recommendation would be for Adidas to continue to strengthen the association between the logo and the category, e.g. by highlighting the logo even more on products and on brand communications.

Considering this and the overall results of this study, it is clear that the success of the **football jerseys with the Trefoil**, which were launched in August 2024 by Adidas, needs to be analyzed carefully. This research did not reveal any associated benefits if the jersey carried the Trefoil. However, given the Trefoil – Lifestyle association, the launch of the Trefoil football jerseys could help Adidas to position the Third jerseys of their biggest football partners in the lifestyle segment (e.g. worn by the pool, not on-pitch in Figure 1).

When it comes to **academic implications**, this study contributes to a field in which marketing literature is relatively limited – the impact of brand logos on brand equity. This research adds further insights into how different logos can influence brand equity and delivers reasons to believe that processing fluency can play an important role here, confirming literature (Janiszewski & Meyvis, 2001; Rahinel & Nelson, 2016).

It became apparent that this practical, **real-world case** differs significantly from most studies in a logo context. So far, marketing literature has mainly focused on generic or non-familiar brand logos in their research. Insights from generic logo characteristics studies (e.g. Cian et al., 2014; Jiang et al., 2016; Luffarelli, Stamatogiannakis, et al., 2019) were tested with well-known logos and mostly could not be supported. This indicates that it can be complicated and difficult to transfer insights from generic logos in literature into the real world, at least in the case of Adidas. This is consistent with other initial findings (Bajaj & Bond, 2018; Luffarelli, Mukesh, et al., 2019).

Further research needs to be done to prove why the results differed from the hypotheses. An assumption could be that consumers perceive Adidas's logos as more than just logos, rather as symbol of various associations with the brand. This supports the idea of logos being the element that connects various brand associations (Punj & Hillyer, 2004).

5.3 Limitations & Further Research

Various limitations of this research need to be considered for future research. Firstly, due to its nature as a master thesis, this research faced **time and budget restrictions**. This influenced the methodology; for example, two online surveys were conducted. While this approach saved time

and costs, it led to disadvantages. For example, participants were asked to evaluate the durability and comfort of the different stimuli without having access to the physical products. This could have influenced their responses.

Secondly, the used **sampling techniques** resulted in a non-representative sample. A higher representation of older age groups might have led to different results to items like “I grew up with this logo”, especially since the Trefoil was introduced 24 years earlier than the BOS. A larger and more representative sample would lead to more reliable and precise results.

Thirdly, the study was **limited to Adidas brand logos**. This excluded other key brand elements such as the Three Stripes. The research could have been expanded to stimuli with and without the Three Stripes, especially in combination with the different logos. Adidas’s new tagline “You go this” was out of scope too, despite its high visibility in the research time frame of February to August 2024, e.g. on Adidas’s social media profiles. Including these elements could provide a more comprehensive understanding of Adidas’s brand perception.

Additionally, the research was confined to only two **product categories** and only one product per category, limiting the broader application of the findings.

The **data collection** took place when the BOS was no longer featured in Adidas’s brand communications. Consequently, the Trefoil and especially the relatively new Performance Logo were more visible during that time, e.g. the Performance Logo on jerseys for the European Football Championship 2024 in Germany. Potentially different results would have been obtained if the data collection had taken place at another time or over a longer period.

Furthermore, the final survey was designed to be relatively brief to minimize participant fatigue and reduce dropout rates. This restricted the range of questions about **logo characteristics** (e.g. “How circular / angular is this logo?”). Ideally, pre-survey findings about these characteristics could have been confirmed in the final survey, which would have enhanced the study’s reliability.

Future research should continue exploring the impact of brand logos on brand equity and the role of processing fluency and congruence in this context. Ideally, more real-world examples across different companies and industries would be examined. A case study of e.g. Mastercard, a brand that recently also removed the wording from the logo, would be interesting to compare effects on brand equity. Furthermore, the re-introduction of the Trefoil on football jerseys in August 2024 offers a unique opportunity to closely monitor and compare results.

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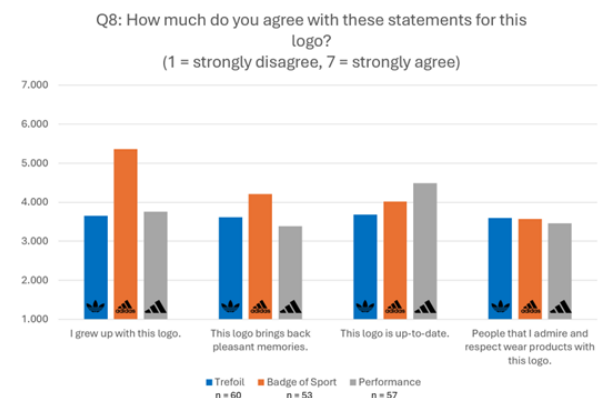
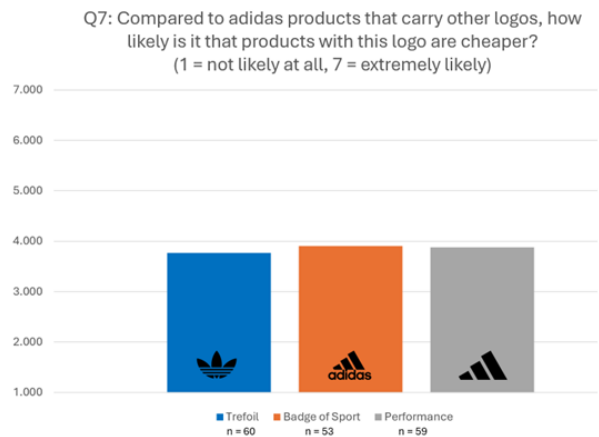
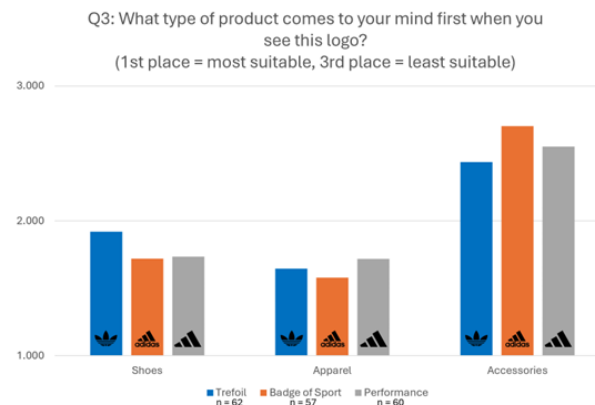
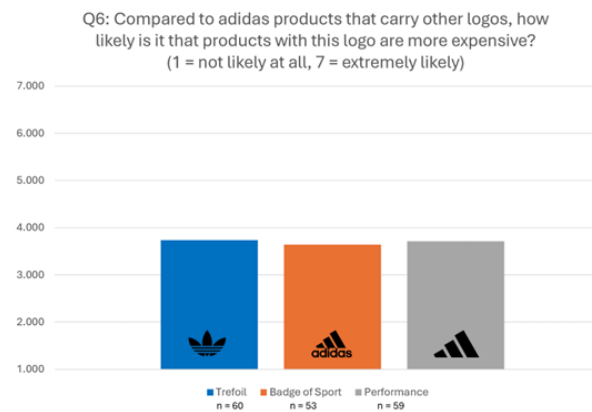
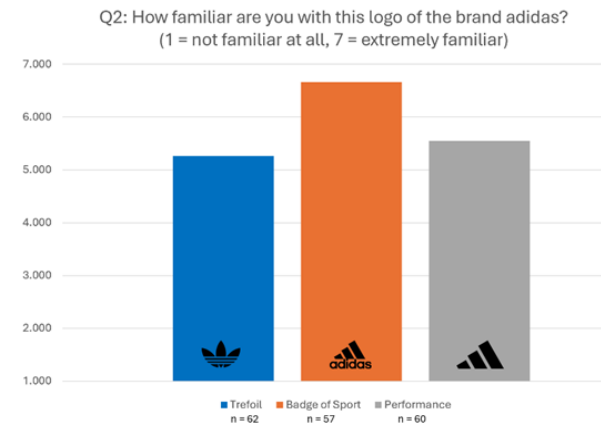
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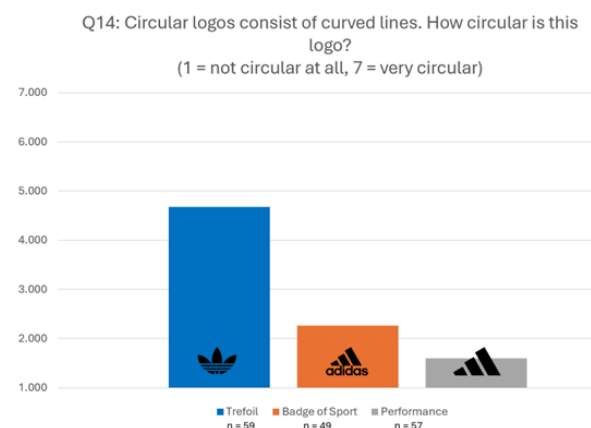
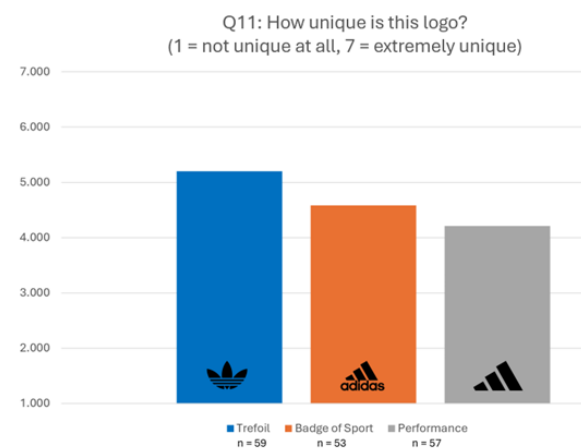
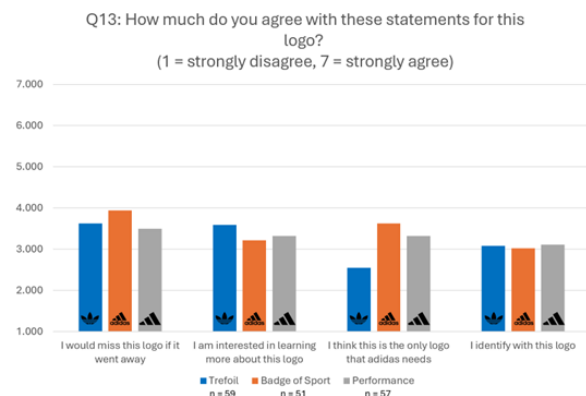
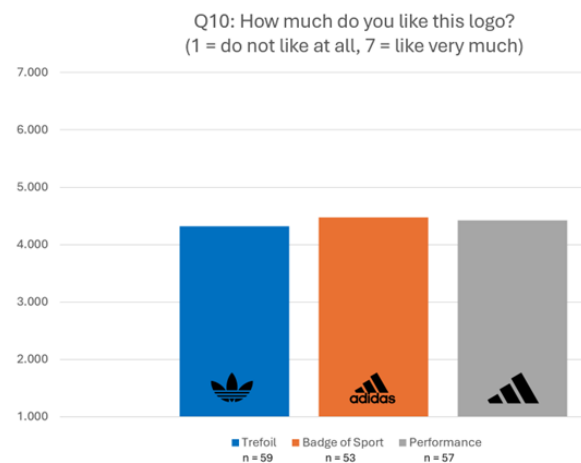
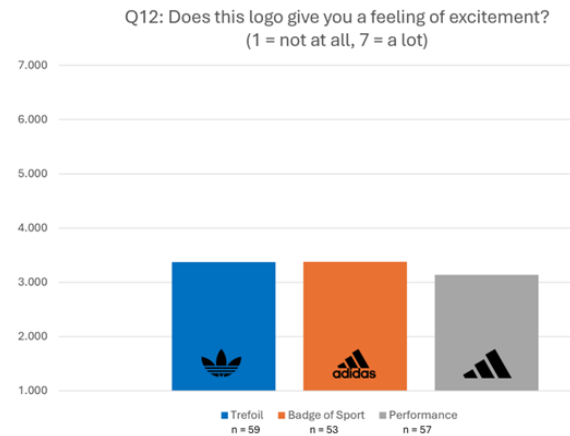
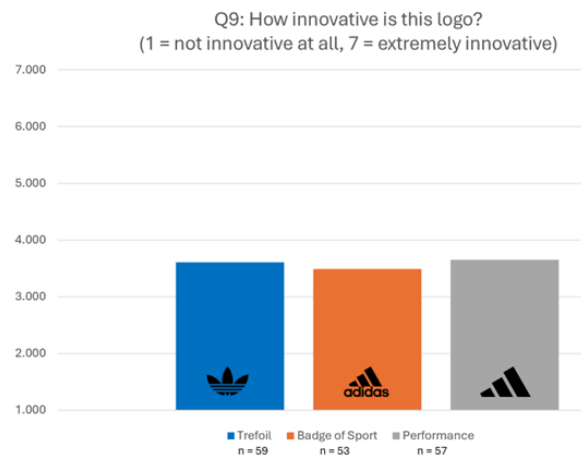
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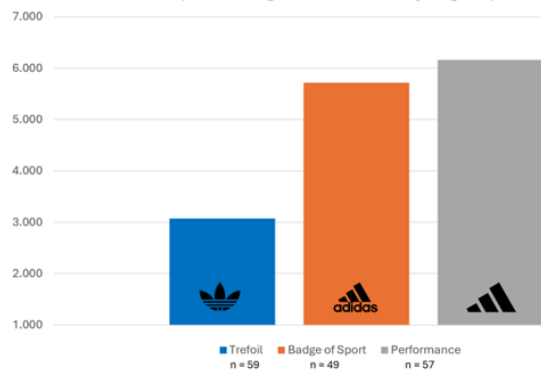
APPENDICES

Appendix 1: Pre-Survey Results

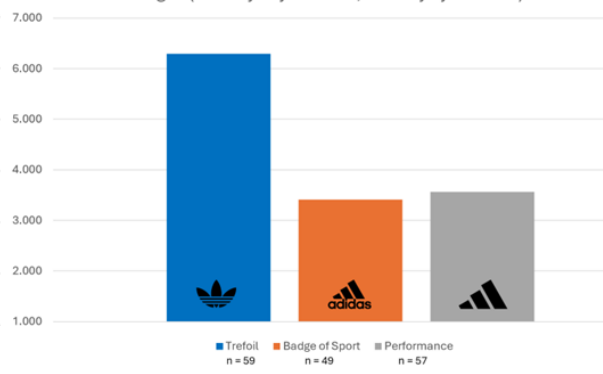




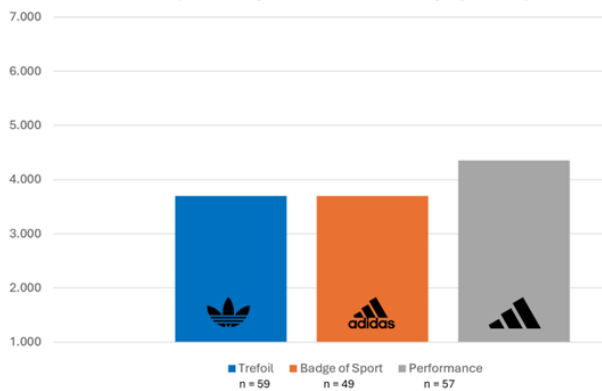
Q15: Angular logos consist of straight lines and sharp corners.
How angular is this logo?
(1 = not angular at all, 7 = very angular)



Q16: Visually symmetric logos keep their shape when they are reflected about a central axis. How visually symmetric is this logo? (1 = very asymmetric, 7 = very symmetric)



Q17: To what extent does this logo convey a sense of movement?
movement?
(1 = not dynamic at all, 7 = very dynamic)



Appendix 2: Final Survey

1



Dear participant,

this research study is part of a master thesis at Católica Lisbon School of Business and Economics. The goal of the study is to analyze consumer perceptions.

This survey is expected to take between five and seven minutes to complete. Your participation is voluntary. The data will be used in an anonymous and confidential way. Your responses are only used for research purposes. Please respond honestly in order to gather the most accurate data possible.

At the end of the survey, you will have the option to participate in a raffle for a chance to win one of three €20 Amazon gift cards. The winners will be randomly selected and notified as soon as the survey closes.

This survey contains credits from SurveyCircle. Please do not hesitate to reach out to me in case of questions via s-cscheble@ucp.pt.

Please continue if you are at least 18 years old and if you agree to participate in the survey.

Thank you!
Christian Scheble

Have you heard of the brand adidas?

☐ Yes

☐ No

Please have a careful look at this product.



Please evaluate your perceptions of this product for the following items using a scale from 1 to 7: This product is...

	1	2	3	4	5	6	7	
bad (=1)	☐	☐	☐	☐	☐	☐	☐	good (=7)
unattractive (=1)	☐	☐	☐	☐	☐	☐	☐	attractive (=7)
of poor quality (=1)	☐	☐	☐	☐	☐	☐	☐	of good quality (=7)
not at all comfortable (=1)	☐	☐	☐	☐	☐	☐	☐	very comfortable (=7)
not at all durable (=1)	☐	☐	☐	☐	☐	☐	☐	very durable (=7)

2

Please evaluate your perceptions of this product for the following items using a scale from 1 to 7: This product is...

	1	2	3	4	5	6	7	
not at all trendy (=1)	☐	☐	☐	☐	☐	☐	☐	very trendy (=7)
not at all cool (=1)	☐	☐	☐	☐	☐	☐	☐	very cool (=7)
not at all daring (=1)	☐	☐	☐	☐	☐	☐	☐	very daring (=7)
not at all imaginative (=1)	☐	☐	☐	☐	☐	☐	☐	very imaginative (=7)
not at all exciting (=1)	☐	☐	☐	☐	☐	☐	☐	very exciting (=7)

Please evaluate your perceptions of this product for the following items using a scale from 1 to 7: This product is...

	1	2	3	4	5	6	7	
not at all involving (=1)	☐	☐	☐	☐	☐	☐	☐	extremely involving (=7)
not at all engaging (=1)	☐	☐	☐	☐	☐	☐	☐	extremely engaging (=7)
extremely boring (=1)	☐	☐	☐	☐	☐	☐	☐	not at all boring (=7)
not at all stimulating (=1)	☐	☐	☐	☐	☐	☐	☐	extremely stimulating (=7)

How much do you agree with these statements? (1 = strongly disagree, 7 = strongly agree)

1 2 3 4 5 6 7

It makes sense to buy adidas instead of any other brand, even if they are the same.

☐

Even if another brand has same features as adidas, I would prefer to buy adidas.

☐

If there is another brand as good as adidas, I prefer to buy adidas.

☐

If another brand is not different from adidas in any way, it seems smarter to purchase adidas.

☐

It makes sense to pay more for adidas than for a similar product of another brand.

☐

I would recommend adidas to my friends.

☐

What do you think is the average age of the target consumer of this product?

0 10 20 30 40 50 60 70 80 90 100

age

☐

How much would you be willing to pay for this product in Euros?

0 25 50 75 100 125 150 175 200 225 250

willing to pay in €

☐

3

If you wore this product, how likely would you be to feel...?

	1	2	3	4	5	6	7	
not at all excited (=1)	☐	☐	☐	☐	☐	☐	☐	extremely excited (=7)
not at all cheerful (=1)	☐	☐	☐	☐	☐	☐	☐	extremely cheerful (=7)
not at all sentimental (=1)	☐	☐	☐	☐	☐	☐	☐	extremely sentimental (=7)
not at all confident (=1)	☐	☐	☐	☐	☐	☐	☐	extremely confident (=7)
not at all socially approved (=1)	☐	☐	☐	☐	☐	☐	☐	extremely socially approved (=7)
not at all fulfilled (=1)	☐	☐	☐	☐	☐	☐	☐	extremely fulfilled (=7)

How likely are you to buy this product?

1 2 3 4 5 6 7

(1 = not at all likely, 7 = extremely likely)

☐

Does adidas's brand logo fit this product?

1 2 3 4 5 6 7

(1 = not at all fitting, 7 = extremely fitting)

☐

How important are brand logos to you when buying a product?

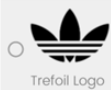
1 2 3 4 5 6 7

(1 = not at all, 7 = extremely)

☐

The next two questions on this page are crucial for ensuring the accuracy and effectiveness of this study. Your thoughtful responses make a big difference.

Which of the following adidas logos was visible on the adidas product that you just saw?



In which category would you place the adidas product you just saw?

☐ football / soccer

☐ lifestyle

You will now be allocated to one of adidas's logos.

Please focus your response specifically **on the logo itself**, not on your overall associations with the adidas brand.

4

How familiar are you with this logo of the brand adidas? (1 = not familiar at all, 7 = extremely familiar)

1 2 3 4 5 6 7



☐

How stylish is this logo? (1 = not stylish at all, 7 = extremely stylish)

1 2 3 4 5 6 7



☐

How unique is this logo? (1 = not unique at all, 7 = extremely unique)

1 2 3 4 5 6 7



☐

Please remember: Focus your response specifically on the logo itself, not on your overall associations with the adidas brand.



How much do you agree with these statements for this logo? (1 = strongly disagree, 7 = strongly agree)

1 2 3 4 5 6 7

I grew up with this logo.

☐

This logo brings back pleasant memories.

☐

This logo is up-to-date.

☐

I would miss this logo if it went away.

☐

I am interested in learning more about this logo.

☐

I think this is the only logo that adidas needs.

☐

To end the survey, please answer these questions about yourself.

What is your nationality?

5

What is your gender?

- ☐ Female
- ☐ Male
- ☐ Non-binary
- ☐ Prefer not to say

How old are you?

- ☐ Under 18
- ☐ 18 - 24
- ☐ 25 - 34
- ☐ 35 - 44
- ☐ 45 - 54
- ☐ 55 - 64
- ☐ 65 - 74
- ☐ 75 - 84
- ☐ 85 or older
- ☐ prefer not to say

What is your current occupation?

- ☐ student without job
- ☐ student with job
- ☐ employee
- ☐ self-employed
- ☐ unemployed
- ☐ retired
- ☐ prefer not to say

What is your individual monthly gross income?

- ☐ less than 1000€
- ☐ 1001 - 2000€
- ☐ 2001 - 3000€
- ☐ 3001 - 4000€
- ☐ 4001 - 5000€
- ☐ above 5000€
- ☐ prefer not to say

6

If you wish to take part in the raffle for **one of three 20€ Amazon gift cards**, please enter your email address below.

The email address will only be used for the raffle, will be treated confidentially, and will be deleted afterwards.

If you do not wish to participate in the raffle, please leave this field blank.



We thank you for your time spent taking this survey.
Your response has been recorded.

Appendix 3: Additional SPSS Results - Logo Stimuli

Procedure One-way ANOVA	
Assumptions	Check whether dependent variable is metric
	Check whether independent variable is not metric
	Check independence of observations
	Check outliers (via "Explore" in SPSS and by using a histogram (in critical cases: calculate z-score and check whether z-score is within threshold of ± 3))
	Check approximately normal distribution of the dependent variable ($\rightarrow$ check via "Explore" in SPSS whether skewness and kurtosis values are within threshold of $\pm 1 \rightarrow$ if not: check histogram)
	Check homogeneity of variances (Levene's test in one-way ANOVA output needs to be $> .05 \rightarrow$ if not: check Welch Test in ANOVA output, needs to be $< .05$)
Analysis	Check significance of ANOVA in ANOVA output (via "Compare Means" in SPSS)
	If ANOVA is significant: Check Post-hoc test
	If Levene's test was significant: Check Games-Howell Post-hoc Test If Levene's test was significant: Check LSD & Gabriel Post-hoc Test

Style			
Question	How stylish is this logo?		
Scale	1 = not stylish at all, 7 = extremely stylish		
Statistical Test	One-way ANOVA		
Approximately Normal Distribution	Checked using a histogram & skewness & kurtosis		
Levene's Test (p-value)	0.110		
Significance ANOVA (p-value)	0.062		
			
Logo	Trefoil	Performance Logo	Badge of Sport
Mean	5.14	5.09	4.78
Standard Deviation	1.484	1.367	1.248

This logo is up-to-date.			
Question	How much do you agree with this statement for this logo?		
Scale	1 = strongly disagree, 7 = strongly agree		
Statistical Test	One-way ANOVA		
Approximately Normal Distribution	Checked using a histogram & skewness & kurtosis		
Levene's Test (p-value)	0.686		
Significance ANOVA (p-value)	0.078		
			
Logo	Trefoil	Performance Logo	Badge of Sport
Mean	4.24	4.69	4.57
Standard Deviation	1.771	1.765	1.613

Appendix 4: Additional SPSS Results - Product Stimuli

Product Quality (Construct / Total Mean)						
Question	This product is...					
Scale	bad (=1) ... good (=7) / unattractive (=1) ... attractive (=7) / of poor quality (=1) ... of good quality (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.080, Lifestyle: 0.360, Football: 0.216					
Significance ANOVA (p-value)	Both Categories: 0.296, Lifestyle: 0.130, Football: 0.953					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	4.87		4.64		4.76	
Standard Deviation (Both Product Categories)	1.302		1.161		1.136	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	4.92	4.83	4.48	4.78	4.74	4.77
Standard Deviation (One Product Category)	1.317	1.295	1.122	1.184	1.158	1.124

Product Quality (1/3)						
Question	This product is...					
Scale	bad (=1) ... good (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.564, Lifestyle: 0.782, Football: 0.411					
Significance ANOVA (p-value)	Both Categories: 0.164, Lifestyle: 0.102, Football: 0.846					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	5.02		4.71		4.89	
Standard Deviation (Both Product Categories)	1.426		1.246		1.337	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	5.08	4.96	4.56	4.83	4.84	4.92
Standard Deviation (One Product Category)	1.452	1.409	1.225	1.260	1.394	1.295

Product Quality (2/3)						
Question	This product is...					
Scale	unattractive (=1) ... attractive (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.031 (Welch-Test 0.568), Lifestyle: 0.020 (Welch-Test 0.444), Football: 0.436					
Significance ANOVA (p-value)	Both Categories: 0.541, Lifestyle: 0.440, Football: 0.847					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	4.40		4.19		4.23	
Standard Deviation (Both Product Categories)	1.829		1.601		1.574	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	4.35	4.44	3.96	4.38	4.16	4.29
Standard Deviation (One Product Category)	1.913	1.757	1.511	1.662	1.606	1.555

Product Quality (3/3)						
Question	This product is...					
Scale	of poor quality (=1) ... of good quality (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.107, Lifestyle: 0.529, Football: 0.395					
Significance ANOVA (p-value)	Both Categories: 0.524, Lifestyle: 0.168, Football: 0.982					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	5.19		5.02		5.16	
Standard Deviation (Both Product Categories)	1.309		1.197		1.232	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	5.31	5.08	4.91	5.12	5.22	5.10
Standard Deviation (One Product Category)	1.272	1.343	1.229	1.170	1.133	1.314

Product Quality (category & logo as independent variables)	
Question	This product is...
Scale	bad (=1) ... good (=7) / unattractive (=1) ... attractive (=7) / of poor quality (=1) ... of good quality (=7)
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.394
Significance ANOVA (p-value) of Logo	Both Categories: 0.262
Significance ANOVA (p-value) of Category	Both Categories: 0.504
Significance ANOVA (p-value) of Interaction	Both Categories: 0.415

Product Target Age						
Question	What do you think is the average age of the target consumer of this product?					
Scale	1-100					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.305, Lifestyle: 0.057, Football: 0.700					
Significance ANOVA (p-value)	Both Categories: 0.129, Lifestyle: 0.475, Football: 0.178					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	23.64		22.63		22.09	
Standard Deviation (Both Product Categories)	6.842		5.834		6.897	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	22.99	24.25	21.72	23.42	21.88	22.26
Standard Deviation (One Product Category)	6.654	7.004	4.832	6.512	7.575	6.323

Product Target Age (category & logo as independent variables)	
Question	What do you think is the average age of the target consumer of this product?
Scale	1-100
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.251
Significance ANOVA (p-value) of Logo	Both Categories: 0.127
Significance ANOVA (p-value) of Category	Both Categories: 0.087
Significance ANOVA (p-value) of Interaction	Both Categories: 0.706

Product Willingness to Pay						
Question	How much would you be willing to pay for this product in Euros?					
Scale	€0 - €250					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.407, Lifestyle: 0.360, Football: 0.006 (Welch-Test 0.368)					
Significance ANOVA (p-value)	Both Categories: 0.794, Lifestyle: 0.841, Football: 0.425					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	39.25		38.14		37.65	
Standard Deviation (Both Product Categories)	20.138		21.722		19.399	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	38.61	39.85	38.75	37.61	40.42	35.35
Standard Deviation (One Product Category)	18.220	21.904	18.246	24.458	21.707	17.052

Product Willingness to Pay (category & logo as independent variables)	
Question	How much would you be willing to pay for this product in Euros?
Scale	€0 - €250
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.013
Significance ANOVA (p-value) of Logo	Both Categories: 0.843
Significance ANOVA (p-value) of Category	Both Categories: 0.414
Significance ANOVA (p-value) of Interaction	Both Categories: 0.420

Likely to Buy						
Question	How likely are you to buy this product?					
Scale	not at all likely (=1) ... extremely likely (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.380, Lifestyle: 0.090, Football: 0.888					
Significance ANOVA (p-value)	Both Categories: 0.622, Lifestyle: 0.062, Football: 0.531					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	2.61		2.44		2.60	
Standard Deviation (Both Product Categories)	1.555		1.532		1.681	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	2.61	2.61	2.18	2.67	2.86	2.39
Standard Deviation (One Product Category)	1.554	1.567	1.441	1.582	1.754	1.599

Likely to Buy (category & logo as independent variables)	
Question	How likely are you to buy this product?
Scale	not at all likely (=1) ... extremely likely (=7)
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.341
Significance ANOVA (p-value) of Logo	Both Categories: 0.520
Significance ANOVA (p-value) of Category	Both Categories: 0.951
Significance ANOVA (p-value) of Interaction	Both Categories: 0.051

Feeling (2/6)						
Question	If you wore this product, how likely would you be to feel...?					
Scale	not at all cheerful (=1) ... extremely cheerful (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.371, Lifestyle: 0.416, Football: 0.698					
Significance ANOVA (p-value)	Both Categories: 0.197, Lifestyle: 0.187, Football: 0.750					
Feeling (2) If you wore this product, how likely would you be to feel...?						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.91		3.64		3.99	
Standard Deviation (Both Product Categories)	1.631		1.665		1.610	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.89	3.93	3.49	3.77	4.02	3.97
Standard Deviation (One Product Category)	1.661	1.614	1.670	1.662	1.538	1.678

Feeling (3/6)						
Question	If you wore this product, how likely would you be to feel...?					
Scale	not at all sentimental (=1) ... extremely sentimental (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.113, Lifestyle: 0.186, Football: 0.370					
Significance ANOVA (p-value)	Both Categories: 0.050, Lifestyle: 0.036, Football: 0.476					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	2.89		2.54		2.97	
Standard Deviation (Both Product Categories)	1.576		1.369		1.473	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	2.93	2.85	2.33	2.73	2.89	3.04
Standard Deviation (One Product Category)	1.515	1.641	1.244	1.452	1.427	1.517

Feeling (4/6)						
Question	If you wore this product, how likely would you be to feel...?					
Scale	not at all confident (=1) ... extremely confident (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.607, Lifestyle: 0.943, Football: 0.356					
Significance ANOVA (p-value)	Both Categories: 0.606, Lifestyle: 0.513, Football: 0.843					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.88		3.73		3.92	
Standard Deviation (Both Product Categories)	1.558		1.600		1.630	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.92	3.84	3.61	3.83	3.86	3.97
Standard Deviation (One Product Category)	1.601	1.525	1.436	1.733	1.531	1.717

Feeling (5/6)						
Question	If you wore this product, how likely would you be to feel...?					
Scale	not at all socially approved (=1) ... extremely socially approved (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.864, Lifestyle: 0.459, Football: 0.366					
Significance ANOVA (p-value)	Both Categories: 0.818, Lifestyle: 0.937, Football: 0.858					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	4.12		4.21		4.23	
Standard Deviation (Both Product Categories)	1.600		1.575		1.596	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	4.15	4.08	4.21	4.21	4.25	4.21
Standard Deviation (One Product Category)	1.636	1.575	1.411	1.714	1.543	1.649

Feeling (6/6)						
Question	If you wore this product, how likely would you be to feel...?					
Scale	not at all fulfilled (=1) ... extremely fulfilled (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.985, Lifestyle: 0.513, Football: 0.683					
Significance ANOVA (p-value)	Both Categories: 0.153, Lifestyle: 0.140, Football: 0.707					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.54		3.24		3.59	
Standard Deviation (Both Product Categories)	1.615		1.521		1.604	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.56	3.52	3.09	3.36	3.59	3.58
Standard Deviation (One Product Category)	1.696	1.545	1.405	1.614	1.530	1.673

Appendix 5: Additional SPSS Results – Factor Analyses

Factor Analysis: Brand Equity Total	
Number of Cases (n)	410
Correlation Matrix Min	0.634
Correlation Matrix Max	0.839
KMO	0.922
Barlett's Test of Sphericity (p-value)	0.000
Approximately Normal Distribution	Checked using a histogram
Number of Extracted Factors	1
Total Variance Explained	77.084%
Communalities	All higher than 0.7 except one (0.657), but given the high number of cases (> 250), Field (2009) considers this ok

Factor Analysis: Brand Equity Lifestyle	
Number of Cases (n)	192
Correlation Matrix Min	0.619
Correlation Matrix Max	0.841
KMO	0.922
Barlett's Test of Sphericity (p-value)	<0.001
Approximately Normal Distribution	Checked using a histogram
Number of Extracted Factors	1
Total Variance Explained	78.487%
Communalities	All higher than 0.7 except one (0.651, "I would recommend adidas to my friends"). When the variable was excluded, the total variance explained only increased slightly (to 82.292%). Considering the importance of this item in the theoretical construct taken from marketing literature, it was decided to keep the variable.

Factor Analysis: Brand Equity Football	
Number of Cases (n)	218
Correlation Matrix Min	0.630
Correlation Matrix Max	0.837
KMO	0.907
Barlett's Test of Sphericity (p-value)	<0.001
Approximately Normal Distribution	Checked using a histogram
Number of Extracted Factors	1
Total Variance Explained	75.824%
Communalities	All higher than 0.7 except one (0.662, "I would recommend adidas to my friends"). When the variable was excluded, the total variance explained only increased slightly (to 78.902%). Considering the importance of this item in the theoretical construct taken from marketing literature, it was decided to keep the variable.

Factor Analysis: Excitement Total (1)	
Number of Cases (n)	410
Correlation Matrix Min	0.454
Correlation Matrix Max	0.826
KMO	0.800
Barlett's Test of Sphericity (p-value)	<0.001
Approximately Normal Distribution	Checked using a histogram
Number of Extracted Factors	1
Total Variance Explained	69.698%
Communalities	All higher than 0.7 except one (0.541, "daring" item). Considering the relatively low communality and a relatively substantial increase in total variance explained without this item, it was decided to remove this item for this factor analysis.

Factor Analysis: Excitement Total (2, without "daring")	
Number of Cases (n)	410
Correlation Matrix Min	0.575
Correlation Matrix Max	0.826
KMO	0.768
Barlett's Test of Sphericity (p-value)	<0.001
Approximately Normal Distribution	Checked using a histogram
Number of Extracted Factors	1
Total Variance Explained	75.768%
Communalities	All above 0.7 except one (0.678, "imaginative"). Given the fact that one variable has already been excluded and the total variance explained increased because of that, it was decided to keep the remaining variables. Removing another variable was considered to risky in the context of the stability of the overall construct from marketing literature.

Factor Analysis: Excitement Lifestyle (1)	
Number of Cases (n)	192
Correlation Matrix Min	0.437
Correlation Matrix Max	0.782
KMO	0.772
Barlett's Test of Sphericity (p-value)	<0.001
Approximately Normal Distribution	Checked using a histogram
Number of Extracted Factors	1
Total Variance Explained	66.465%
Communalities	Four of the five variables had a lower communality than 0.7. Especially the communality of "daring" was low (0.525). Considering the relatively low communality and a relatively substantial increase in total variance explained without this item, it was decided to remove this item for this factor analysis.

Factor Analysis: Excitement Lifestyle (2, without "daring")	
Number of Cases (n)	192
Correlation Matrix Min	0.483
Correlation Matrix Max	0.782
KMO	0.748
Barlett's Test of Sphericity (p-value)	<0.001
Approximately Normal Distribution	Checked using a histogram
Number of Extracted Factors	1
Total Variance Explained	72.278%
Communalities	All above 0.7 except one (0.604, "imaginative"). Given the fact that one variable has already been excluded and the total variance explained increased because of that, it was decided to keep the remaining variables. Removing another variable was considered to risky in the context of the stability of the overall construct from marketing literature.

Factor Analysis: Excitement Football (1)	
Number of Cases (n)	218
Correlation Matrix Min	0.475
Correlation Matrix Max	0.875
KMO	0.816
Barlett's Test of Sphericity (p-value)	<0.001
Approximately Normal Distribution	Checked using a histogram
Number of Extracted Factors	1
Total Variance Explained	72.838%
Communalities	All higher than 0.7 except one (0.559, "daring"). Considering the relatively low communality and a relatively substantial increase in total variance explained without this item, it was decided to remove this item for this factor analysis.

Factor Analysis: Excitement Football (2, without "daring")	
Number of Cases (n)	218
Correlation Matrix Min	0.651
Correlation Matrix Max	0.875
KMO	0.781
Barlett's Test of Sphericity (p-value)	<0.001
Approximately Normal Distribution	Checked using a histogram
Number of Extracted Factors	1
Total Variance Explained	79.124%
Communalities	All communalities above 0.7 (lowest 0.737)

Factor Analysis: Engagement Total	
Number of Cases (n)	410
Correlation Matrix Min	0.586
Correlation Matrix Max	0.810
KMO	0.774
Barlett's Test of Sphericity (p-value)	<0.001
Approximately Normal Distribution	Checked using a histogram
Number of Extracted Factors	1
Total Variance Explained	74.864%
Communalities	All above 0.7 (lowest 0.705)

Factor Analysis: Engagement Lifestyle (1)	
Number of Cases (n)	192
Correlation Matrix Min	0.502
Correlation Matrix Max	0.805
KMO	0.741
Barlett's Test of Sphericity (p-value)	<0.001
Approximately Normal Distribution	Checked using a histogram
Number of Extracted Factors	1
Total Variance Explained	70.185%
Communalities	All higher than 0.7 except two (0.624, "boring"; 0.675 "stimulating"). Considering the relatively low communality and a relatively substantial increase in total variance explained without the item with the lowest communality, it was decided to remove "boring" for this factor analysis.

Factor Analysis: Engagement Lifestyle (2, without "boring")	
Number of Cases (n)	192
Correlation Matrix Min	0.549
Correlation Matrix Max	0.805
KMO	0.675
Barlett's Test of Sphericity (p-value)	<0.001
Approximately Normal Distribution	Checked using a histogram
Number of Extracted Factors	1
Total Variance Explained	76.444%
Communalities	All above 0.7 except one (0.628, "stimulating"). Given the fact that one variable has already been excluded and the total variance explained increased because of that, it was decided to keep the remaining variables. Removing another variable was considered to risky in the context of the stability of the overall construct from marketing literature.

Factor Analysis: Engagement Football	
Number of Cases (n)	218
Correlation Matrix Min	0.654
Correlation Matrix Max	0.816
KMO	0.797
Barlett's Test of Sphericity (p-value)	<0.001
Approximately Normal Distribution	Checked using a histogram
Number of Extracted Factors	1
Total Variance Explained	78.833%
Communalities	All above 0.7 (lowest 0.771)

Appendix 6: Additional SPSS Results – Hypotheses

Procedure Hypothesis Testing H1									
Test A One-way ANOVAs of single Overall Brand Equity items			Test B One-way ANOVAs of construct (Overall Brand Equity)			Test C Two-way ANOVAs of construct (Overall Brand Equity)			
Both categories	Lifestyle	Football	Both categories	Lifestyle	Football	Both categories			
Item 1	Item 1	Item 1	Total sum of construct	Lifestyle sum of construct	Football sum of construct	Total sum of construct			
Item 2	Item 2	Item 2	Total mean of construct	Lifestyle mean of construct	Football mean of construct	Total mean of construct			
Item 3	Item 3	Item 3	Total factor of construct	Lifestyle factor of construct	Football factor of construct	Total factor of construct			
Item 4	Item 4	Item 4							
Item 5	Item 5	Item 5							
Item 6	Item 6	Item 6							

Overall Brand Equity (1/6): It makes sense to buy Adidas instead of any other brand, even if they are the same.						
Question	How much do you agree with these statements?					
Scale	1 = strongly disagree, 7 = strongly agree					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.365, Lifestyle: 0.728, Football: 0.658					
Significance ANOVA (p-value)	Both Categories: 0.273, Lifestyle: 0.059, Football: 0.975					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.43		3.28		3.62	
Standard Deviation (Both Product Categories)	1.635		1.749		1.663	
						
Stimulus	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.30	3.56	2.89	3.62	3.64	3.60
Standard Deviation (One Product Category)	1.616	1.654	1.749	1.689	1.767	1.583

Overall Brand Equity (2/6): Even if another brand has same features as Adidas, I would prefer to buy Adidas.						
Question	How much do you agree with these statements?					
Scale	1 = strongly disagree, 7 = strongly agree					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.115, Lifestyle: 0.157, Football: 0.593					
Significance ANOVA (p-value)	Both Categories: 0.804, Lifestyle: 0.361, Football: 0.878					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.58		3.54		3.68	
Standard Deviation (Both Product Categories)	1.761		1.968		1.861	
						
Stimulus	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.45	3.69	3.23	3.80	3.72	3.65
Standard Deviation (One Product Category)	1.722	1.801	1.991	1.923	1.972	1.775

Overall Brand Equity (3/6): If there is another brand as good as Adidas, I prefer to buy Adidas.						
Question	How much do you agree with these statements?					
Scale	1 = strongly disagree, 7 = strongly agree					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.665, Lifestyle: 0.578, Football: 0.754					
Significance ANOVA (p-value)	Both Categories: 0.473, Lifestyle: 0.536, Football: 0.762					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.39		3.15		3.39	
Standard Deviation (Both Product Categories)	1.743		1.811		1.812	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.28	3.49	3.02	3.27	3.38	3.40
Standard Deviation (One Product Category)	1.700	1.789	1.913	1.724	1.839	1.801

Overall Brand Equity (4/6): If another brand is not different from Adidas in any way, it seems smarter to purchase Adidas.						
Question	How much do you agree with these statements?					
Scale	1 = strongly disagree, 7 = strongly agree					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.893, Lifestyle: 0.860, Football: 0.894					
Significance ANOVA (p-value)	Both Categories: 0.682, Lifestyle: 0.288, Football: 0.858					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.47		3.31		3.50	
Standard Deviation (Both Product Categories)	1.865		1.852		1.819	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.54	3.40	3.04	3.55	3.44	3.55
Standard Deviation (One Product Category)	1.889	1.853	1.870	1.816	1.790	1.853

Overall Brand Equity (5/6): It makes sense to pay more for Adidas than for a similar product of another brand.						
Question	How much do you agree with these statements?					
Scale	1 = strongly disagree, 7 = strongly agree					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.027 (Welch-Test 0.545), Lifestyle: 0.435, Football: 0.046 (Welch-Test 0.810)					
Significance ANOVA (p-value)	Both Categories: 0.517, Lifestyle: 0.234, Football: 0.816					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	2.98		2.80		3.05	
Standard Deviation (Both Product Categories)	1.683		1.898		1.729	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	2.79	3.16	2.60	2.98	3.11	3.00
Standard Deviation (One Product Category)	1.603	1.748	1.781	1.988	1.653	1.799

Overall Brand Equity (6/6): I would recommend Adidas to my friends.						
Question	How much do you agree with these statements?					
Scale	1 = strongly disagree, 7 = strongly agree					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.203, Lifestyle: 0.297, Football: 0.510					
Significance ANOVA (p-value)	Both Categories: 0.422, Lifestyle: 0.191, Football: 0.679					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	4.37		4.09		4.33	
Standard Deviation (Both Product Categories)	1.785		1.971		1.803	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	4.23	4.51	3.82	4.32	4.42	4.25
Standard Deviation (One Product Category)	1.742	1.826	2.019	1.915	1.716	1.879

Overall Brand Equity (Construct / Total Mean)						
Question	How much do you agree with these statements?					
Scale	1 = strongly disagree, 7 = strongly agree					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.264, Lifestyle: 0.407, Football: 0.750					
Significance ANOVA (p-value)	Both Categories: 0.475, Lifestyle: 0.197, Football: 0.969					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.54		3.36		3.59	
Standard Deviation (Both Product Categories)	1.521		1.651		1.567	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.43	3.64	3.10	3.59	3.62	3.57
Standard Deviation (One Product Category)	1.501	1.543	1.700	1.585	1.570	1.574

Overall Brand Equity (Construct / Total Factor)						
Question	How much do you agree with these statements?					
Scale	1 = strongly disagree, 7 = strongly agree					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.262, Lifestyle: 0.419, Football: 0.750					
Significance ANOVA (p-value)	Both Categories: 0.473, Lifestyle: 0.197, Football: 0.974					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	0.02		-0.09		0.06	
Standard Deviation (Both Product Categories)	0.966		1.047		0.995	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	0.02	0.02	-0.18	-0.01	0.14	-0.02
Standard Deviation (One Product Category)	0.945	0.991	1.066	1.016	0.989	1.001

Overall Brand Equity (Construct / Total Mean)	
Question	How much do you agree with these statements?
Scale	1 = strongly disagree, 7 = strongly agree
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.756
Significance ANOVA (p-value) of Logo	Both Categories: 0.416
Significance ANOVA (p-value) of Category	Both Categories: 0.164
Significance ANOVA (p-value) of Interaction	Both Categories: 0.391

Overall Brand Equity (Construct / Total Factor)	
Question	How much do you agree with these statements?
Scale	1 = strongly disagree, 7 = strongly agree
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.765
Significance ANOVA (p-value) of Logo	Both Categories: 0.415
Significance ANOVA (p-value) of Category	Both Categories: 0.161
Significance ANOVA (p-value) of Interaction	Both Categories: 0.391

Procedure Hypothesis Testing H1a						
Test A One-way ANOVAs of durability item			Test B Independent samples t-test (logos grouped by angularity)			Test C Two-way ANOVAs of durability item
Both categories	Lifestyle	Football	Both categories	Lifestyle	Football	Both categories
Durability item	Durability item	Durability item	Durability item	Durability item	Durability item	Durability item, independent variables: category & logo
						Durability item, independent variables: category & angularity

Durability Per Category (angularity as grouping variables)	
Question	How much do you agree with these statements?
Scale	1 = not at all durable, 7 = very durable
Statistical Test	Independent Samples t-Test
Approximately Normal Distribution	Checked using a histogram & kurtosis & skewness values
Means	Lifestyle: Angular: 5.02, Less Angular: 5.24 / Football: Angular: 5.01, Less Angular: 5.04
Levene's Test (p-value)	Lifestyle: 0.156, Football: 0.737
Significance one-sided (p-value)	Lifestyle: 0.112, Football: 0.427
Significance two-sided (p-value)	Lifestyle: 0.225, Football: 0.853

Durability (category & logo as independent variables)	
Question	How much do you agree with these statements?
Scale	1 = not at all durable, 7 = very durable
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.484
Significance ANOVA (p-value) of Logo	Both Categories: 0.462
Significance ANOVA (p-value) of Category	Both Categories: 0.498
Significance ANOVA (p-value) of Interaction	Both Categories: 0.700

Procedure Hypothesis Testing H1b								
Test A One-way ANOVAs of comfort item			Test B Independent samples t-test (logos grouped by circularity)			Test C Two-way ANOVAs of comfort item		
Both categories	Lifestyle	Football	Both categories	Lifestyle	Football	Both categories		
Comfort item	Comfort item	Comfort item	Comfort item	Comfort item	Comfort item	Comfort item, independent variables: category & logo		
						Comfort item, independent variables: category & circularity		

Comfort Per Category (circularity as grouping variables)	
Question	How much do you agree with these statements?
Scale	1 = not at all comfortable, 7 = very comfortable
Statistical Test	Independent Samples t-Test
Approximately Normal Distribution	Checked using a histogram & kurtosis & skewness values
Means	Lifestyle: Circular: 5.70, Less-Circular: 5.50 / Football: Circular: 5.40, Less-Circular: 5.27
Levene's Test (p-value)	Lifestyle: 0.904, Football: 0.197
Significance one-sided (p-value)	Lifestyle: 0.148, Football: 0.231
Significance two-sided (p-value)	Lifestyle: 0.295, Football: 0.463

Comfort (category & logo as independent variables)	
Question	How much do you agree with these statements?
Scale	1 = not at all comfortable, 7 = very comfortable
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.922
Significance ANOVA (p-value) of Logo	Both Categories: 0.056
Significance ANOVA (p-value) of Category	Both Categories: 0.029
Significance ANOVA (p-value) of Interaction	Both Categories: 0.247

Procedure Hypothesis Testing H1c									
Test A One-way ANOVAs of single Excitement items			Test B One-way ANOVAs of construct (Excitement)			Test C Independent samples t-test (logos grouped by asymmetry)			Test D Two-way ANOVAs of construct (excitement)
Both categories	Lifestyle	Football	Both categories	Lifestyle	Football	Both categories	Lifestyle	Football	Both categories
Item 1	Item 1	Item 1	Total sum of construct	Lifestyle sum of construct	Football sum of construct	Item 1	Item 1	Item 1	Total mean of construct, independent variables: category & logo
Item 2	Item 2	Item 2	Total mean of construct	Lifestyle mean of construct	Football mean of construct	Item 2	Item 2	Item 2	
Item 3	Item 3	Item 3	Total factor of construct	Lifestyle factor of construct	Football factor of construct	Item 3	Item 3	Item 3	Total mean of construct, independent variables: category & asymmetry
Item 4	Item 4	Item 4				Item 4	Item 4	Item 4	
Item 5	Item 5	Item 5				Item 5	Item 5	Item 5	
						Total sum of construct	Total sum of construct	Total sum of construct	
						Total mean of construct	Total mean of construct	Total mean of construct	

Product Excitement (1/5)						
Question	This product is...					
Scale	not at all trendy (=1) ... very trendy (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.261, Lifestyle: 0.376, Football: 0.330					
Significance ANOVA (p-value)	Both Categories: 0.668, Lifestyle: 0.653, Football: 0.946					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	4.33		4.17		4.18	
Standard Deviation (Both Product Categories)	1.718		1.721		1.564	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	4.48	4.19	4.25	4.11	4.27	4.10
Standard Deviation (One Product Category)	1.723	1.714	1.596	1.832	1.504	1.619

Product Excitement (2/5)						
Question	This product is...					
Scale	not at all cool (=1) ... very cool (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.349, Lifestyle: 0.175, Football: 0.961					
Significance ANOVA (p-value)	Both Categories: 0.450, Lifestyle: 0.499, Football: 0.809					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	4.29		4.04		4.20	
Standard Deviation (Both Product Categories)	1.727		1.565		1.631	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	4.24	4.35	3.89	4.17	4.09	4.29
Standard Deviation (One Product Category)	1.777	1.689	1.496	1.623	1.611	1.653

Product Excitement (3/5)						
Question	This product is...					
Scale	not at all daring (=1) ... very daring (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.504, Lifestyle: 0.242, Football: 0.708					
Significance ANOVA (p-value)	Both Categories: 0.319, Lifestyle: 0.756, Football: 0.391					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.84		3.58		3.84	
Standard Deviation (Both Product Categories)	1.589		1.625		1.552	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.86	3.81	3.67	3.50	3.86	3.82
Standard Deviation (One Product Category)	1.667	1.522	1.746	1.522	1.468	1.628

Product Excitement (4/5)						
Question	This product is...					
Scale	not at all imaginative (=1) ... very imaginative (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.426, Lifestyle: 0.277, Football: 0.752					
Significance ANOVA (p-value)	Both Categories: 0.872, Lifestyle: 0.933, Football: 0.930					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.97		3.89		3.99	
Standard Deviation (Both Product Categories)	1.544		1.659		1.606	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.97	3.97	3.88	3.91	3.97	4.01
Standard Deviation (One Product Category)	1.473	1.619	1.680	1.652	1.603	1.618

Product Excitement (5/5)						
Question	This product is...					
Scale	not at all exciting (=1) ... very exciting (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.913, Lifestyle: 0.533, Football: 0.414					
Significance ANOVA (p-value)	Both Categories: 0.204, Lifestyle: 0.144, Football: 0.503					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.83		3.60		3.95	
Standard Deviation (Both Product Categories)	1.582		1.540		1.662	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.56	4.08	3.42	3.76	3.95	3.95
Standard Deviation (One Product Category)	1.601	1.531	1.388	1.655	1.627	1.701

Excitement (Construct / Total Factor)						
Question	This product is...					
Scale	1 = not at all (trendy, cool, daring, imaginative, exciting), 7 = very (...)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.812, Lifestyle: 0.688, Football: 0.576					
Significance ANOVA (p-value)	Both Categories: 0.539, Lifestyle: 0.617, Football: 0.805					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	0.04		-0.08		0.03	
Standard Deviation (Both Product Categories)	0.991		0.985		1.025	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	0.04	0.05	-0.11	-0.06	0.05	0.01
Standard Deviation (One Product Category)	1.023	0.971	0.932	1.024	1.039	1.017

Excitement (category & logo as independent variables)	
Question	This product is...
Scale	1 = not at all (trendy, cool, daring, imaginative, exciting), 7 = very (...)
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.973
Significance ANOVA (p-value) of Logo	Both Categories: 0.440
Significance ANOVA (p-value) of Category	Both Categories: 0.748
Significance ANOVA (p-value) of Interaction	Both Categories: 0.980

Procedure Hypothesis Testing H1d									
Test A One-way ANOVAs of single Engagement items			Test B One-way ANOVAs of construct (Engagement)			Test C Independent samples t-test (logos grouped by movement)			Test D Two-way ANOVAs of construct (engagement)
Both categories	Lifestyle	Football	Both categories	Lifestyle	Football	Both categories	Lifestyle	Football	Both categories
Item 1	Item 1	Item 1	Total sum of construct	Lifestyle sum of construct	Football sum of construct	Item 1	Item 1	Item 1	Total mean of construct, independent variables: category & logo
Item 2	Item 2	Item 2	Total mean of construct	Lifestyle mean of construct	Football mean of construct	Item 2	Item 2	Item 2	Total mean of construct, independent variables: category & movement
Item 3	Item 3	Item 3	Total factor of construct	Lifestyle factor of construct	Football factor of construct	Item 3	Item 3	Item 3	
Item 4	Item 4	Item 4				Item 4	Item 4	Item 4	
						Total sum of construct	Total sum of construct	Total sum of construct	
						Total mean of construct	Total mean of construct	Total mean of construct	

Product Engagement (1/4)						
Question	This product is...					
Scale	not at all involving (=1) ... very involving (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.664, Lifestyle: 0.288, Football: 0.483					
Significance ANOVA (p-value)	Both Categories: 0.424, Lifestyle: 0.441, Football: 0.764					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.90		3.71		3.91	
Standard Deviation (Both Product Categories)	1.432		1.365		1.346	
						
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.93	3.87	3.63	3.77	3.86	3.95
Standard Deviation (One Product Category)	1.524	1.349	1.277	1.444	1.180	1.477

Product Engagement (2/4)						
Question	This product is...					
Scale	not at all engaging (=1) ... very engaging (=7)					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.195, Lifestyle: 0.480, Football: 0.509					
Significance ANOVA (p-value)	Both Categories: 0.274, Lifestyle: 0.181, Football: 0.680					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	3.94		3.67		3.93	
Standard Deviation (Both Product Categories)	1.458		1.534		1.486	
						
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	3.96	3.92	3.47	3.85	3.77	4.06
Standard Deviation (One Product Category)	1.478	1.450	1.477	1.571	1.445	1.516

Engagement (Construct / Total Factor)						
Question	This product is...					
Scale	1 = not at all (involving, engaging, stimulating) / extremely boring, 7 = very (...) / not at all boring					
Statistical Test	One-way ANOVA					
Approximately Normal Distribution	Checked using a histogram					
Levene's Test (p-value)	Both Categories: 0.819, Lifestyle: 0.835, Football: 0.778					
Significance ANOVA (p-value)	Both Categories: 0.286, Lifestyle: 0.097, Football: 0.942					
						
Logo	Trefoil		Performance Logo		Badge of Sport	
Mean (Both Product Categories)	0.06		-0.12		0.04	
Standard Deviation (Both Product Categories)	1.024		0.987		0.984	
Stimulus						
Product Category	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer	Lifestyle	Football/Soccer
Mean (One Product Category)	0.14	-0.03	-0.23	0.00	0.05	0.03
Standard Deviation (One Product Category)	1.064	1.011	0.956	1.004	0.942	0.998

Engagement (category & logo as independent variables)	
Question	This product is...
Scale	1 = not at all (involving, engaging, stimulating) / extremely boring, 7 = very (...) / not at all boring
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.787
Significance ANOVA (p-value) of Logo	Both Categories: 0.244
Significance ANOVA (p-value) of Category	Both Categories: 0.379
Significance ANOVA (p-value) of Interaction	Both Categories: 0.195

Procedure Hypothesis Testing H2		
Test A PROCESS Model	Test B Two-way ANOVAs of construct (Overall Brand Equity)	Test C Two-way ANOVAs of logo stimuli items
Both categories	Both categories	Both categories
	Total sum of construct	Familiarity, style, uniqueness, grew up with logo, pleasant memories, up-to-date, miss the logo, learn more about logo, only logo Adidas needs → Further analysis with independent samples t-test if relevant
	Total mean of construct	
	Total factor of construct	

OUTCOME VARIABLE:

PR_M_BE

Model Summary

R	R-sq	MSE	F	df1	df2	p
,1119	,0125	2,4817	1,0245	5,0000	404,0000	,4027

Model

	coeff	se	t	p	LLCI	ULCI
constant	3,2236	,4158	7,7525	,0000	2,4062	4,0410
X1	-,6157	,6202	-,9927	,3214	-1,8349	,6036
X2	,4372	,6002	,7284	,4668	-,7427	1,6171
PR_CAT	,2060	,2608	,7896	,4302	-,3068	,7188
Int_1	,2855	,3862	,7392	,4602	-,4738	1,0448
Int_2	-,2496	,3729	-,6693	,5037	-,9826	,4835

Product terms key:

Int_1	:	X1	x	PR_CAT
Int_2	:	X2	x	PR_CAT

Covariance matrix of regression parameter estimates:

	constant	X1	X2	PR_CAT	Int_1	Int_2
constant	,1729	-,1729	-,1729	-,1030	,1030	,1030
X1	-,1729	,3847	,1729	,1030	-,2277	-,1030
X2	-,1729	,1729	,3602	,1030	-,1030	-,2128
PR_CAT	-,1030	,1030	,1030	,0680	-,0680	-,0680
Int_1	,1030	-,2277	-,1030	-,0680	,1492	,0680
Int_2	,1030	-,1030	-,2128	-,0680	,0680	,1390

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0046	,9410	2,0000	404,0000	,3911

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95,0000

----- END MATRIX -----

Overall Brand Equity (Construct / Total Factor)	
Question	How much do you agree with these statements?
Scale	1 = strongly disagree, 7 = strongly agree
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.765
Significance ANOVA (p-value) of Logo	Both Categories: 0.415
Significance ANOVA (p-value) of Category	Both Categories: 0.161
Significance ANOVA (p-value) of Interaction	Both Categories: 0.391

I grew up with this logo (category & logo as independent variables)	
Question	How much do you agree with this statement for this logo?
Scale	1 = strongly disagree, 7 = strongly agree
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.164
Significance ANOVA (p-value) of Logo	Both Categories: <0.001
Significance ANOVA (p-value) of Category	Both Categories: 0.474
Significance ANOVA (p-value) of Interaction	Both Categories: 0.038

This logo brings back pleasant memories (category & logo as independent variables)	
Question	How much do you agree with this statement for this logo?
Scale	1 = strongly disagree, 7 = strongly agree
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.159
Significance ANOVA (p-value) of Logo	Both Categories: <0.001
Significance ANOVA (p-value) of Category	Both Categories: 0.296
Significance ANOVA (p-value) of Interaction	Both Categories: 0.002

This logo is up-to-date (category & logo as independent variables)	
Question	How much do you agree with this statement for this logo?
Scale	1 = strongly disagree, 7 = strongly agree
Statistical Test	Two-way ANOVA
Approximately Normal Distribution	Checked using a histogram
Levene's Test (p-value)	Both Categories: 0.874
Significance ANOVA (p-value) of Logo	Both Categories: 0.099
Significance ANOVA (p-value) of Category	Both Categories: 0.728
Significance ANOVA (p-value) of Interaction	Both Categories: 0.013

I grew up with this logo.			
Question	How much do you agree with this statement for this logo?		
Scale	1 = strongly disagree, 7 = strongly agree		
Statistical Test	Independent Samples T-Test		
Approximately Normal Distribution	Checked using a histogram		
			
Logo	Trefoil	Performance Logo	Badge of Sport
Levene's Test (p-value)	0.290	0.982	0.954
Significance 1-sided (p-value)	0.244	0.012	0.237
Significance 2-sided (p-value)	0.488	0.024	0.474
Mean if Lifestyle had been shown	3.86	3.51	5.53
Mean if Football had been shown	3.64	4.33	5.32

This logo brings back pleasant memories.			
Question	How much do you agree with this statement for this logo?		
Scale	1 = strongly disagree, 7 = strongly agree		
Statistical Test	Independent Samples T-Test		
Approximately Normal Distribution	Checked using a histogram		
			
Logo	Trefoil	Performance Logo	Badge of Sport
Levene's Test (p-value)	0.203	0.217	0.312
Significance 1-sided (p-value)	0.261	<0.001	0.024
Significance 2-sided (p-value)	0.523	0.002	0.047
Mean if Lifestyle had been shown	3.30	2.67	4.58
Mean if Football had been shown	3.51	3.65	3.96

This logo is up-to-date.			
Question	How much do you agree with this statement for this logo?		
Scale	1 = strongly disagree, 7 = strongly agree		
Statistical Test	Independent Samples T-Test		
Approximately Normal Distribution	Checked using a histogram		
			
Logo	Trefoil	Performance Logo	Badge of Sport
Levene's Test (p-value)	0.628	0.314	0.794
Significance 1-sided (p-value)	0.068	0.008	0.239
Significance 2-sided (p-value)	0.136	0.016	0.585
Mean if Lifestyle had been shown	4.46	4.28	4.66
Mean if Football had been shown	4.03	5.05	4.51