LUISS

Master's degree in Marketing Analytics and Metrics

"From product customization to purchase: analyzing the impact of Brand Strength (emerging vs. established) and Customization Levels on Consumer Buying Behavior."

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Graduation Session: Autumn Session a.y. 2023/2024

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Abstract

This thesis investigates the relationship between **product customizatio**n and **consumer buying behavior**, with a particular focus on how **brand strength** (emerging vs. established) moderates the impact of **customization levels** (high vs. low) on **willingness to buy** (WTB). While customization can effectively engage consumers, it also introduces cognitive challenges such as decision fatigue and regret, which may deter purchases. The goal of this research is to provide strategic insights for brands, enabling them to optimize their customization strategies according to their market position and the preferences of their target consumers.

A **survey-based methodology** was employed, testing two main hypotheses: first, that lower levels of customization generally lead to higher WTB, and second, that brand strength moderates this relationship, with established brands being better suited to offering more complex customization. The sample was further segmented into four consumer clusters - **NON**, **NEW**, **ACTIVE**, and **LAPSING** - based on control variables such as past purchase behavior, attitudes toward customization, and future purchase intentions. The same analysis was applied to each cluster to understand how their behavior diverges from the general sample results. The findings show that for the **overall sample**, *higher levels of customization are most effective for established brands*, benefiting from strong consumer trust, whereas *emerging brands perform better with simpler options*. However, differences emerge between the overall sample and the individual clusters, highlighting that analyzing only the overall sample is insufficient to fully understand consumer needs. A more detailed analysis allows companies to refine their customization strategies, potentially reaching a larger and more effectively targeted audience, leading to increased profitability.

Additionally, the research demonstrates that **cognitive overload, indecision** and **purchase regret** reveal a *misalignment between consumers' expectations and what they actually need* for a satisfactory outcome. This emphasizes the gap between what consumers think they want and the level of customization that best suits their decision-making capacity. The study underscores that there is no one-size-fits-all model for customization; instead, companies must align their customization offerings with their brand strength, taking into account the differences among consumer clusters to provide a level of customization that meets customer expectations while addressing the typical gap between intention and action.

Introduction

In today's consumer-driven market, the demand for individuality and personalization has fundamentally reshaped how brands engage with their customers. Consumers no longer seek generic, one-size-fits-all products but are instead drawn to offerings that reflect their individual preferences and identities. Brands such as Nike, Pandora, and Converse have capitalized on this trend by integrating customization options that allow customers to co-create their products. This shift toward customization has created new opportunities for brands to deepen customer engagement and loyalty. However, while customization can enhance consumer satisfaction, it also introduces significant complexity. As the range of customization options increases, so does the risk of decision fatigue and cognitive overload, often leading to indecision and even regret after purchase. These drawbacks pose a key challenge for marketers: ***how can brands offer the benefits of customization without overwhelming their consumers?***

The central problem this thesis addresses is how the level of customization offered by a brand influences consumers' **willingness to buy (WTB - Dependent Variable)** and how this effect is moderated by the brand's strength - whether it is well-established or emerging. While extensive research has explored the appeal of customization, there is limited understanding of how consumers navigate the cognitive demands of customizing products and how **brand strength** (Moderator) may mitigate or exacerbate these challenges. This gap in the literature raises an important question: ***How do different levels of product customization (high vs. low) affect consumer purchase intentions, and how does brand strength (emerging vs. established) moderate this relationship?***

Recent industry reports underscore the importance of addressing this issue. According to McKinsey (2021), 76% of consumers are more likely to purchase from brands that offer personalized products, and companies excelling in customization generate 40% more revenue than their competitors. Despite these benefits, the process of customization often comes with unintended consequences. As consumers are presented with more options, they experience **choice overload**, which can reduce satisfaction and lead to **purchase abandonment**. Moreover, while consumers may initially be enthusiastic about customizing a product, the complexity of the process can result in **anticipated regret** and diminished purchase intent.

This thesis seeks to address these issues by analyzing the interaction between **customization levels** and **brand strength**. Specifically, it aims to understand whether the trust and familiarity associated with established brands can reduce the cognitive burden of customization, thereby encouraging consumers to complete their purchases. In contrast, emerging brands, which lack the same level of consumer trust, may find it more challenging to implement complex customization processes effectively. This research proposes that established brands are better positioned to offer **high levels of customization** without negatively affecting WTB, while emerging brands might benefit from **simpler, lower levels of customization** to avoid overwhelming their customers.

To explore these dynamics, this thesis tests several hypotheses. First, it hypothesizes that **lower levels of customization**, which offer fewer and simpler choices, will lead to higher WTB compared to more complex customization processes (**H1**). Second, it posits that **brand strength** will moderate the relationship between customization levels and WTB, with established brands able to support higher levels of customization without diminishing consumer intent to purchase (**H2**).

To test these hypotheses, this research adopts a survey-based methodology, segmenting consumers into four distinct clusters: **NON** (those who do not engage in customization), **NEW** (first-time or potential customizers), **ACTIVE** (those who frequently customize), and **LAPSING** (those who previously engaged in customization but no longer do). These clusters were created using control variables such as **past purchase behavior**, **attitude toward customization**, and **future purchase intentions**. By analyzing both the overall sample and the behavior of each cluster, the study provides insights into how brands can tailor their customization strategies based on consumer profiles. Importantly, this research not only considers consumers' **inclination to customize** but also accounts for the **indecision** and **regret** that may arise during the customization process—factors that are addressed in the conclusions when discussing the optimal level of customization based on individual predispositions.

The findings of this study offer both theoretical and practical contributions. From an academic perspective, it enriches the literature on **customization** and **brand strength**, highlighting how these factors interact to influence consumer behavior. On a practical level, it provides actionable insights for marketers seeking to optimize their customization offerings. For **established brands**, the results suggest that more complex customization processes can

be successfully implemented, as these brands enjoy a high degree of consumer trust and loyalty. However, **emerging brands** may need to adopt simpler customization models to reduce cognitive overload and increase purchase likelihood.

In summary, this thesis addresses a critical issue in today's personalized marketplace: how to balance the appeal of customization with the cognitive effort it demands. By exploring the role of brand strength in moderating the relationship between customization levels (high vs low) and WTB, this research provides a nuanced understanding of how brands can better design their customization strategies to align with consumer expectations and behavior.

Chapter 1: Understanding the phenomena

1.1. The social desire for product personalization, practical relevances.

The trend towards individualism is a powerful force shaping contemporary society's purchasing behavior. Inclination to individualism reflects the individual's desire to assert themselves in the social context (Accenture Life Trends 2024) and is notably seen in the increasing demand for product customization. Persophenomenonn serves as a powerful means of identity expression, enabling individuals to project their uniqueness onto the objects they acquire (Belk, Russell W. 1988; Richins, Marsha L. 1994).
Recent research, such as that conducted by McKinsey in 2024, supports personalized product trends. These products resonate more deeply with consumers, creating a profound and long-lasting emotional and psychological attachment (Ball et al. 1992). This attachment, as highlighted by Escalas & Bettman (2005), is not just a fleeting feeling but a deep connection that can foster purchase intention. Personalized goods satisfy fundamental psychological needs, such as the active construction of self-concept and the consolidation and expression of personal identity, enabling individuals to distinguish themselves and assert their uniqueness (Ball et al. 1992; Belk, Russell W. 1988; Kleine et al. 1995).

The value consumers place on personalization is evident in their willingness to pay a premium for customized products. According to Deloitte (2023), one in five consumers interested in personalized products or services is willing to pay 20% more Deloitte. (2023). A McKinsey study found that 76% of consumers are more likely to purchase from brands that personalize their offerings (The value of getting personalization right or wrong is multiplying, McKinsey & Company 2021). This high level of interest underscores the importance of personalization in attracting and retaining customers. Indeed, 48% of consumers are willing to wait longer to receive personalized products (Teasdale, 2022). These behaviors are driven by a clear desire to stand out and assert individuality in a market saturated with mass-produced goods. Additionally, McKinsey's research reveals that companies excelling in personalization generate 40% more revenue than the industry average, highlighting the economic importance of personalization (McKinsey, 2024). Thus, personalization increases consumers' emotional connection to products, improves business performance, and provides better customer outcomes. A 2024 report conducted by Shewale,

R. (2024) indicates that personalization can potentially increase a company's ROI[1] by 2000%, and 76% of consumers are more likely to purchase from brands that offer personalized experiences. Consequently, many companies seek to offer customizable products to meet the growing consumer demand for personalized experiences (Pallant et al. 2020). Each company addresses this demand differently, depending on its target market and the nature of its products. Personalization is radically transforming the consumer experience in the beauty and skincare sector. Function of Beauty, for example, creates custom hair care products based on detailed questionnaires that gather information on hair type, goals, and personal preferences. This approach not only meets practical needs but also strengthens the sentimental bond with the brand, encouraging customers to repeat the purchase in the future. In the apparel sector, companies like Nike, Vans, Puma, Converse offer customers the ability to design their footwear online, choosing personalized colours and materials, thus increasing consumer satisfaction and uniqueness. In jewellery, brands like Pandora and Tiffany & Co. allow customers to choose specific charms, engravings, and settings, enhancing the consumers' affectionate value to products. These examples illustrate how personalization addresses specific needs, boosts purchase intentions, and increases the likelihood of retaining consumers. Therefore, it becomes evident that each personalization is influenced by various variables, which will be explored in detail, specifically for the product under investigation, in the following sections.

In recent years, it has been demonstrated that consumer preferences have significantly shifted, with a growing demand for personalized products (Salesforce, 2023). This trend is particularly evident among the so-called "Profitable Growers," who consider the ability to personalize consumer experiences as crucial for differentiating their market offerings. In fact, 65% of consumers expect companies to tailor their experiences to reflect their evolving needs and preferences (Salesforce, 2023). This change in expectations requires companies to interact with customers on various levels, from online interactions to in-person encounters (McKinsey, 2023).

[1] Return on investment (ROI) is a metric used to understand the profitability of an investment. [6]

1.2. Personalization vs. Customization: key differences

In academic research and marketing, “personalization” and “customization” are often synonyms. However, there are fundamental differences between these two concepts. Salesforce provides a clear definition: personalization involves a company modifying an experience without any effort from the customer, while customization allows the customer to intentionally modify the experience. Specifically, personalization involves creating or modifying a product using customer data to meet individual needs (What Is Personalization? A Marketing Guide, Salesforce).

An emblematic example is Spotify, which uses user listening data to create personalized playlists and music suggestions, offering a tailored experience without direct user intervention. For some product categories, it is possible to personalize without customizing; another example is Netflix, which uses user viewing data to offer personalized movie and TV show suggestions, creating a unique interface for each user based on their interests and viewing habits. These examples highlight an obvious point: while digital products can be easily personalized, material products face more challenges if not impossibilities.

Furthermore, personalization often refers to a 360-degree consumer experience, encompassing various aspects of the purchase experience, from personalized marketing campaigns to targeted sponsorships, advertising methods, and even the personalization of product or service features Vesanen, J. (2007). Personalization can, therefore, include elements that make the experience unique and may not necessarily refer to the product's personalization. For instance, Amazon shows products based on previous user searches, while The New York Times offers personalized news recommendations (Ojedokun, n.d.).

In the consumer's mind, product personalization is often mistakenly interpreted as customization. This means consumers believe they are personalizing their product by adding, for instance, their initials or choosing colour and fabric combinations that reflect their uniqueness. In everyday language, the concept of product personalization is not only misinterpreted but also limited in its meaning, failing to capture the various aspects with which the purchase experience can be personalized.

In product personalization, while data can guide marketers, it is impossible to precisely determine detailed preferences, especially when the final product is not digital. Data can suggest that a customer wants a particular colour or model of sneakers. However, in most

cases, companies cannot offer a personalized product that fully meets customer expectations based solely on passively collected data (Weinberg, P. 2024). This is where customization comes into play: the customer manually modifies the object to meet their specific needs or preferences (Benedict Clark, 2021; Angelina Lawton, 2021). Although they may seem similar in a superficial analysis or to the average consumer, it is crucial to reiterate that there is a significant difference: personalization is an implicit process where the company modifies the object without an explicit request from the customer. On the other hand, customization is explicit, requiring the customer to indicate the desired changes directly.
An example of customization is Nike By You, which allows customers to customize their shoes online, choosing colours and materials and adding text, thus offering a truly unique product. For this reason, customization offers a higher level of individualized experience than personalization but requires active customer participation.

For this research, the focus is solely on the choices made by customers and their effects. Consequently, the terms "product personalization" and "product customization" will be used interchangeably, as they are commonly understood by consumers as synonymous in everyday language. Hereafter, personalization or customization refers to the consumer's deliberate choice to select and shape a product according to their preferences, thereby fulfilling their need to express their identity through the product.

1.3. The importance of focusing on online product customization

In this thesis research, particular attention will be paid to the online customization of products. This focus is justified by the growing trend of consumers buying products online, a trend supported by numerous recent studies and research. More and more consumers prefer to shop online, attracted by the convenience, the wide range of products available, and the ability to easily compare prices and features. A Netcomm report indicates that two-thirds of the Italian population engaged in online shopping in 2023, demonstrating how online shopping is becoming a standard and consolidated practice (Gargantini, S., 2022). Particularly relevant is consumers' preference for online product customization over offline. A 2023 Bain & Company report found that consumers appreciate online customization because it saves time and effort compared to in-store customization. The ability to see real-time changes made to the product and access a broader range of options makes the online experience much more attractive (Bain, 2018). Established companies are the pioneers in

leading the charge for large-scale personalization. From the companies' perspective, implementing this level of online customization is crucial to effectively reach the desired target audience. By doing so, customization can be standardized and confined to specific elements, which can vary in quantity. This approach starkly contrasts with that of artisans, who create bespoke products for their clients and thus maintain a much narrower customer base. Artisans can afford to offer customizations that transcend the typical cost-satisfaction trade-off, as they provide highly personalized and unique solutions. This distinction highlights the inherent limitations and opportunities within different customization strategies, which will be further explained in the following paragraphs.

These data confirm not only that the propensity of consumers towards online purchases is a growing trend but also that online customization is a more efficient and customer-centric approach for a larger consumer base compared to traditional offline methods (Angelina Lawton. 2021). For these reasons, this research aims to better understand the phenomenon by investigating the efficient online customization process.

1. 4. Insights from consumer and company perspectives

The research objective is to analyze to what extent the desire to personalize a product represents an incentive for purchase intentions. This aspect is particularly relevant as customizing a product to meet specific customer needs is more complex than it may seem. Customization entails costs, and if the personalization process is not adequately designed in terms of time, effort, and the breadth of choice offered, and if the range of customizations is perceived as excessive, it can lead consumers to prefer a standardized product or even forgo the purchase altogether (Choi, J., & Lee, D., 2015).

From the consumer's perspective, product personalization requires active participation, implying the availability of time to adapt the product to their preferences. This process requires significant cognitive effort, as the consumer must make decisions for each customizable detail of the product. As the number of choices needed to complete the purchase increases, a decision paralysis, known as "overchoice" may hinder the purchase process (Manolică et al. 2021).

Therefore, the number of customizable options could represent a darkside to customization for part of the consumers, and it requires time. In standard purchasing conditions, i.e., without product personalization, the average time to complete an online purchase is 30 minutes. However, it can extend to several days, assuming that before proceeding with the purchase, the consumer has had enough time to gather the necessary information for an informed decision (Salsify, n.d.; Mourali et al. 2005). When a consumer decides to personalize a product, the overall purchase time increases significantly. Although the consumer may have gathered preliminary information, personalization requires selecting various options through the website to get a complete view of the final product before purchase. According to a Wang, X., & Yang, Z (2010), customers overestimate the time spent on short-duration tasks and underestimate the time spent on long-duration tasks during online personalization. The difficulty of the personalization task and the customer's motivation to process information significantly influence their perception of time.

Therefore, it is hypothesized that, on average, assuming consumers are not affected by the negative effect, each personalization choice may add from a few seconds to a few minutes to the overall purchase time, making it evident how this can significantly increase the total time required to finalize the purchase even when the best conditions are present. Applying this reasoning to the example of Nike By You, the average purchase time could vary significantly from the timing of a standard product. Nike allows the customization of some shoe models, each personalization requiring 10 to 19 steps depending on the chosen model; for each step, regardless of the model, 0 (no possibility to select a choice) to 4 types of fabrics and 3 to 13 colour options per fabric type can be chosen.

Consequently, the more customizable a product is, the more time a consumer spends in front of the screen making a certain number of choices, requiring increasing cognitive effort as the number of choices increases. Each small modification can significantly change the product, creating many different versions. When the choices are excessive, the time and cognitive effort required can overwhelm the consumer, potentially leading to "decision paralysis", resulting in a missed purchase (Manolică et al., 2021).

The research aims to understand the efficient level of personalization in online purchases, considering three key variables: time, effort, and the amount of choice.

Based on these variables, two levels of personalization, high and low, will be defined to evaluate the trade-off between the desire to personalize a product and the determination needed to complete the purchase process. By "level of personalization," high personalization refers to allowing a large number of modifications and the number of steps necessary for the consumer to personalize the product according to their needs. This may impact their intentions and require more time and effort. On the other hand, low personalization permits the consumer to personalize fewer product characteristics, requiring less time and effort and allows even consumers that are most susceptible to the negative effects of customization to customize.

Using Nike's customizable shoes as an example, we question whether a significant number of consumers are genuinely willing to invest the time and effort required for such a detailed personalization process to obtain a customized product. Alternatively, it could be a strong reputation and established customer loyalty to the brand that primarily motivate dedicated customers to engage in the extensive customization process, aiming to own a product specifically from Nike. This suggests that consumers are willing to invest the time and effort required for high personalization, not solely for the customization itself, but because they value the association with the Nike brand and what it represents.
It is natural to question whether offering an extensive range of customizable options truly boosts product sales enough to offset the significant costs associated with customization. These costs include the development of a sophisticated website, the design and manufacturing of various customizable components, and the logistics of sourcing these items. Alternatively, this strategy is less about immediate sales and cultivating the brand's image. By providing extensive customization options, the brand positions itself as highly attentive and responsive to customer desires, enhancing its perceived value and strengthening customer loyalty.

Understanding whether intense personalization effectively drives sales, rather than merely enhancing the brand image, is crucial for smaller or lesser-known companies. These entities may invest heavily in high levels of personalization without fully grasping the associated risks, simply by emulating trends set by more established and leading brands in the industry. For these smaller players, the stakes are higher, as they might need a more robust customer base and brand recognition that larger companies enjoy. Therefore, discerning the true impact of personalization on sales versus brand perception is essential to ensure that their

investments yield tangible returns rather than simply following a trend that may not suit their unique market position and resources.

An utterly spontaneous consideration is whether a consumer desires a personalized product regardless of the brand. In the case of shoes, consumers would prefer to visit a professional cobbler rather than relying on a commercial brand. This suggests that attempting to scale this personalization model to a more significant extent for emerging and smaller enterprises could be particularly challenging. These companies might struggle to compete with both the bespoke service offered by professionals and the established brand reputation. Thus, it is crucial for them to carefully evaluate the feasibility and potential benefits of adopting such a personalization strategy. Therefore, a more limited personalization approach could still meet customer needs while aligning with smaller businesses' capabilities and resources. By offering a balanced level of customization, these companies could satisfy consumer demands without overextending themselves, thereby finding a sustainable middle ground.

From the business perspective, it is therefore crucial to evaluate several factors influencing the cost of product personalization. These factors include product complexity, the level of personalization required, the production method adopted, and the technologies employed. Products with greater complexity or intricate designs may require significant investment in design and customized production phases. Furthermore, the degree of personalization required directly impacts costs: small-scale production for individual customers tends to be more expensive than mass production of standardized products (Pallant, 2020).
What has just been explained could be why fewer companies follow Nike's approach in allowing such robust product personalization and why more companies offer minimal customization, such as Adidas, which only allows adding a maximum of 11 letters of text on both feet.

Another consideration is that luxury brands offer mostly minimal personalization. For instance, Gucci allows customization by adding only initials to the product, Prada, with the Made to Measure program, allows customization of finishes and details, and Dolce & Gabbana allows the addition of brand-essential elements for an additional fee.
Many brands exercise caution in allowing consumers to personalize their products because they are concerned that excessive personalization could undermine the brand's essence expressed in the product, compromising the brand's intrinsic value.

Since the product represents an expression of the brand, personalization must be carried out carefully to avoid affecting the brand's perception and value. Consumer loyalty also relies on the brand's recognizability and consistency, aspects that must be safeguarded in the customization process (Qualtrics, 2022; Thellefsen et al. 2013).
While personalization seems to respond to the push towards individualism and the consumers' need to feel represented in the product by adding a unique detail or a combination of elements that make the product unique, the Accenture Life 2024 report seems to confirm the need for buyers to be guided by the brand in purchase decisions. In the highly competitive contemporary market, brand strength is crucial in consumers' purchase decisions (Hameed et al., 2022).

The brand plays a fundamental role in helping consumers identify and distinguish products (Fianto et al. 2014). With the increased product variety and companies' more excellent knowledge compared to consumers, this informational asymmetry can cause confusion or uncertainty during the purchase process. In such situations, brands act as symbols or signals of product positioning (Wang, X., & Yang, Z. 2010).
Brands represent a set of shared values and ideals that resonate deeply with consumers, creating an emotional and cultural connection (Keller, K. L., 1993). Familiarity with a brand generates trust and security, essential elements in purchase decisions (Laroche et al. 1996). When consumers have had positive experiences with a brand, they tend to associate its products with quality and reliability, reducing perceived risk during the purchase. Trust is indeed a fundamental component in purchase decisions, as consumers seek to minimize uncertainty by choosing brands with an established reputation (Fianto et al., 2014; Nasar et al. 2012).
Research confirms that consumers prefer to buy from known brands, highlighting the importance of brand recognition and reputation in decision-making (Jung et al. 2016; Agmeka et al. 2019).

1. 5. Thesis research goals and potential contributions

This research aims to understand the added value that personalization can bring to a brand and how much consumer choice is influenced, not so much by personalization itself, but by the values promoted by the brand with which consumers identify. By distinguishing between

emerging[2] and established brands, this approach will facilitate entrepreneurs' understanding of the effectiveness of personalization in different market contexts. Furthermore, it will help identify which types of personalization are most effective in satisfying the needs of their specific consumer targets.

This thesis will make multiple significant contributions to marketing and brand management. Firstly, it will focus on analyzing two levels of customization, developed by considering three key variables: the amount of choice presented to the consumer during the product personalization process, effort, and time. The main objective is to determine which level of customization, high or low, is more effective in incentivizing purchase intentions. Based on the results, it will be possible to guide companies in the product-use sector, providing them with practical insights on optimizing their personalization strategies. These conclusions can then be generalized to other sectors, offering broader applicability. This aspect of the study will clarify how various personalization techniques can be optimized based on the brand's market recognition and the characteristics of its consumer base.

Secondly, the research will examine how personalization strategies influence consumer decisions when interacting with well-known (established) brands versus lesser-known (emerging) brands. A crucial aspect will be understanding how brand strength can moderate this relationship and determining to what extent brand reputation influences the effectiveness of personalization in promoting engagement and customer loyalty.

Finally, to summarize, this thesis will offer substantial contributions to both the theory and practice of marketing. On one hand, it will enrich the academic understanding of the relationship between brand strength and the desire for personalization. On the other hand, it will provide valuable strategic guidance for entrepreneurs and brand managers, helping them improve the effectiveness of their personalization strategies. With this dual focus on theoretical insights and practical applications, the results of this study will be of great value to scholars and professionals aiming to enhance their brand's market position through effective personalization techniques.

[2] The term "Emerging brands" refers to those brands that are not yet widely recognized and do not have a fixed image in the minds of most consumers.

Chapter 2 - Literature review

This paragraph aims to clarify the theoretical foundations that guide the experiment toward addressing the proposed research question. The preceding section delineated the distinction between customization and personalization, two concepts frequently conflated in scientific literature. This chapter will introduce the variables analyzed in the following chapter.

Initially, a summary of the historical stages of customization will be presented, followed by an examination of the motivations driving consumers toward customization. The independent variable, level of customization (high vs. low), and the dependent variable, willingness to buy, within the model will be defined. Additionally, relevant concepts to be employed as control variables will be introduced, and the potential moderating effect of “brand strength” on the primary relationship between the independent (IV) and dependent (DV) variables will be outlined.

Finally, the rationale for segmenting our target sample into four clusters based on consumer predisposition to personalization will be explained: non-customizers, new customizers, active customizers, and lapsing customizers. Several control variables will be used to analyze the consumer sample, with the aim of explaining the potential relationships between purchase intention and preference for a specific style of personalization.

The respondents will be grouped based on their "attitude towards customization," which will be explained in subsequent paragraphs. The analyses previously mentioned aim to understand the relationship between the variables to establish a general rule on: how the intention to purchase a customized product changes depending on the level of customization, and how brand strength can moderate this relationship. Through clustering, the goal is to refine the general rule. By the end of the research, it is hoped to provide recommendations for different types of customization, depending on whether the brand is perceived as established and well-known or emerging and less known, considering the heterogeneous target segment.

2.1 Historical overview of customization

Schifferstein, Mugge, and Hekkert (2004) provide a comprehensive overview of the evolution of mass customization, illustrating how this approach has developed over time.

Davis (1987) introduced the notion of mass customization (MC) defined for the purposes of this paper as "... the ability to quickly design, produce, and deliver products that meet specific customer needs at close to mass-production prices." (Tu et al. 2001). According to Blom (2000), product customization is a process that alters or modifies a product's appearance or functionality to increase its personal relevance to an individual. Product customization, as defined by Blom (2000), is the process of altering or modifying a product's appearance or functionality to enhance its personal relevance to an individual. Although today this practice seems to be an unstoppable phenomenon, before the advent of mass production, it was the standard practice.

Before the Industrial Revolution, all products were handmade by artisans, making each product unique and easily customizable to meet individual needs (Heskett 1980; Weightman & McDonagh 2003). With the advent of the Industrial Revolution, products began to be mass-produced, standardized, and identical, targeting a broad customer base. This shift resulted in the loss of the personal touch in products, which now reflected the needs of the masses. As early as 1972, Jencks and Silver opposed the standardization promoted by manufacturers, arguing that it limited and imposed consumer choices. They believed products should be tailored to reflect each individual's uniqueness. This stands in stark contrast to Ford's mindset of mass production, which relies on economies of scale and rigid standardization technique. As Henry Ford famously quipped: "Any customer can have a car painted any color that he wants so long as it is black". Toffler (1980) foresaw a change in consumer roles, suggesting that consumers would eventually become "prosumers," individuals who are both producers and consumers of a product.

It is not surprising indeed that the dream of a global village where products and marketing strategies are standardized to achieve economies of scale appears to be an unrealistic plan (Mueller-Heumann 1992). Hildebrand et al. (2014) show us that market fragmentation is a phenomenon that can be traced back before the turn of the century. Markets are increasingly fragmented, and individuals seem more inclined toward change (Hart 1995). There are different terms that have been used by expert to describe this phenomenon, such as "market fragmentation" (Shani and Chalasani 1992), "mass customized marketing"

(Mueller-Heumann 1992), "micro marketing" (Kara and Kaynak 1997), and "markets of one" (Pine et al. 1995; Andel 1998). This trend is linked to the advent of postmodern culture (Firat and Schultz 1997). Companies, aware of the market's growing fragmentation, have intensified their efforts to understand their increasingly diverse target audience through customization .

As discussed in the first chapter, customization is a response to consumers' need to feel represented and to express their personality by making the product unique (Kaiser et al., 2017). For this reason, an increasing number of companies are striving to adapt their products to meet consumer needs.

However, product personalization extends beyond mass customization by emphasizing the consumer's personal relevance rather than focusing on production cost (Blom 2000; Blom and Monk 2003). Mass customization is becoming an increasingly pursued goal for companies, aiming to explore dynamics that can facilitate consumers in purchasing customized products. Traditionally, consumers would start from scratch to select desired options for each component of the product and then assemble the whole. This customization model was widely used until the study conducted by Hildebrand et al. (2014).

The Choice-based Solution Space (CvSS) model proposed by Hildebrand et al. (2014) introduces an innovative approach, allowing consumers to begin customization from an initial set of models (starting solutions). Each model represents a combination of customizable options from which the customer can start to further personalize the product according to their needs. This approach facilitates consumers' decision-making process by offering an initial selection that closely matches the desired product and can be further adapted to their personal preferences.

By doing so, consumers are supported in their decision right from the start, reducing the negative effects of customization (see 2.3.), and increasing the likelihood of completing the purchase of the customized product.

2.2 The consumer drive to customization

Research on product personalization has established that consumers' need for personalization is strongly linked to their desire for uniqueness, self-expression.

The desire for uniqueness can be described as the urge to set oneself apart from others through the acquisition, use, and arrangement of consumer goods, aiming to develop and enhance one's self-image and social image (Tian et al., 2001).

Extensive research has explored the impact of product ownership and usage on consumer identity (Belk, 1988; Kleine, Kleine, & Allen, 1995; McCracken, 1986; Oyserman, 2009; Reed et al., 2012). It's well-established that products carry culturally defined meanings, aiding consumers in expressing their identities (Belk, 1988; Kleine, Kleine, & Kernan, 1993; Levy, 1959; Malhotra, 1988). Possessions and consumption habits often mirror personal identities (Belk, 1988; Solomon, 1983). Individuals may purchase and use products to reinforce a threatened identity (Gao, Wheeler, & Shiv, 2009; Rucker & Galinsky, 2008) or to develop an aspirational one (Escalas & Bettman, 2003; Venkatesh et al., 2010). This reflects the broader understanding that consumer choices are deeply intertwined with identity construction and reinforcement.

Personalizing products through self-expressive customization involves tailoring a product to reflect one's identity and preferences (Kaiser et al., 2017). This process can include actions such as engraving a name on an item, adorning a product to match personal taste, choosing design elements that align with one's style, or modifying an item to symbolize affiliation with a group (Franke & Schreier, 2008; Franke, Schreier, & Kaiser, 2010; Schouten & McAlexander, 1995). Customization helps extend an individual's self-concept into the product itself.

Self-expressive customization alters the usual flow of meaning, shifting it from the product defining the individual to the individual defining the product (Kaiser et al., 2017). This process involves infusing personal identity into the product, thus making it an extension of oneself (Franke & Schreier, 2008; Kiesler & Kiesler, 2005; Moreau & Herd, 2010). This personalization fosters a deeper attachment to the product (Kleine, Kleine, & Allen, 1995), enhances its representation of the user's identity (Kiesler & Kiesler, 2005), and increases its utility for achieving personal goals (Behm-Morawitz, 2013).

In summary, whether it is out of a need for uniqueness or for self-expression, previous research has found that this is why consumers have an emotional attachment to customizable products, which is why they are considered valuable. (Wallendorf & Arnould, 1988; Schultz et al., 1989; Ball & Tasaki, 1992; Kleine et al., 1995; Mugge et al., 2006; Csikszentmihalyi & Rochberg-Halton, 1981; Dittmar, 1991; Richins, 1994; Kamptner, 1995; Dyl & Wapner, 1996).

2.3 The effort of customization

Customizing a product demands significant time and effort from the customer, who must meticulously analyze and discern which potential combinations of options best fulfill their requirements. Consequently, customization can be viewed as a balance between the aspiration toward personalization and the obstacles of time and cognitive effort. As anticipated in the previous chapter, each step in the customization process requires the consumer to invest effort in decision-making, a task that becomes progressively intricate as the number of available options expands (Bettman *et al*. Citation 1990). Although research on customization is still evolving, it is known that the human information processing capacity is limited, so consumers may become overwhelmed by the number of possibilities at their disposal (Huffman and Kahn (1998); Wind and Rangaswamy (2001), Zipkin (2001), Dellaert and Stremersch 2005) to customize a product.

A substantial body of evidence highlights the significant negative impacts that excessive complexity in choice can have on customers (Lv et al., 2023b). This phenomenon, known as "choice overload" (Schultz et al., 2016), can lead to reduced satisfaction, increased regret, and procrastination in making purchase decisions (Chernev et al., (2014); Mogilner et al., (2008); Reutskaja & Hogarth, (2009); Sagi & Friedland, (2007)). An overwhelming array of options not only causes decision-making issues such as fatigue and difficulty (Schultz et al., 2016b) (Iyengar & Lepper, 2000), but also generates stress and anxiety, which can result in post-purchase regret (Scheibehenne et al., 2010).

Choice overload, as a subjective phenomenon, manifests through changes in consumers' internal states such as decision confidence, satisfaction, and remorse (Chernev et al., 2014). Elevated levels of choice overload typically result in decreased satisfaction and confidence, coupled with increased remorse (Chernev et al., 2014). Consequently, individuals

experiencing choice overload are less likely to be satisfied with their decisions (Botti & Iyengar, 2004), exhibit lower confidence in having selected the optimal option (Haynes, 2009), and are more susceptible to post-decision regrets (Inbar, Botti, & Hanko, 2011). Within this framework, higher levels of choice overload correlate with a greater propensity to defer decisions, alter initial choices, prefer smaller assortments, and favor options that are easily justifiable (Iyengar & Lepper, 2000; Chernev, 2003; Chernev, 2006; Sela et al., 2009). Therefore, individuals confronted with significant choice overload, regardless of their intrinsic desire to fulfill personal identity and distinguish themselves, are unlikely to finalize the purchase of highly customized products requiring multiple decisions.

Despite the potential drawbacks, the interest and value that consumers may attribute to a customized product remain significant. As early as 1965, Cardozo discovered that the effort—comprising mental, physical, and financial exertion—invested by consumers in the shopping process can enhance their evaluation of the product, leading them to view it more favorably (Squire et al., 2004). Several behavioral economic theories elucidate the impact of effort, Pallant et al. (2020) highlights the effort heuristic (Kruger et al., 2004), the IKEA effect (Norton et al., 2012), and the "I designed it myself" effect (Franke et al., 2010).

The IKEA effect is particularly pertinent in the realm of personalization and co-production of value. This effect highlights the increased value that consumers tend to assign to products they have assembled themselves compared to those purchased pre-assembled (Norton et al., 2012). Furthermore, consumers often value their own poorly constructed creations more highly than expertly made ones (Norton et al., 2012). The IKEA effect is applicable to various creation scenarios, such as food preparation (Troye and Supphellen, 2012a, Troye and Supphellen, 2012b) and online product customization (Franke et al., 2010).

2.4 The direct correlation between “level of customization” and “willingness to buy”

Therefore, for a consumer to fully benefit from the positive effects of customization, such as the desire for self-expression, uniqueness, and the willingness to invest effort, these must counteract potential negative effects, including uncertainty and susceptibility to choice overload. These effects manifest differently based on individual characteristics. Consequently, there can be instances where an individual, though inclined to customize, is

constrained by a strong susceptibility to choice overload, ultimately abandoning the purchase due to decision-making difficulties.

This research proposes two customization models: one high and one low, based on the number of choices an individual must make to customize their product. Low customization will involve fewer customizable aspects of the product, thereby reducing the number of choices an individual must make. This reduction decreases the risk of uncertainty and the occurrence of choice overload, thus enabling the consumer to proceed with the product customization. A low level of personalization will also require less time and cognitive effort to complete the purchase.

Conversely, there might be a segment of the population that is not easily affected by uncertainty and choice overload. These individuals are willing to invest considerable time in customizing the product to their preferences and are interested in exploring all possible customization options to achieve their desired product.

Introduction of the direct correlation of the research question

This research aims to analyze how low and high levels of product customization impact purchase intentions, i.e., willingness to buy. The ***main hypothesis*** as follows:

H_0 : *With low product customization (less customizable option to select) compared to high product customization (more customizable option to select), there is a higher level of willingness to buy.*

H_1 : With high product customization (more customizable option to select) compare to low product customization (less customizable option to select), there is higher level of willingness to buy.

2.5 Research scope and introduction of the moderation

As detailed in the previous chapter, paragraph 1.3, this research will focus on online customization rather than in-store customization. The rationale behind this decision is rooted in the necessity for technology to facilitate mass customization, which can be more effectively achieved through digital platforms such as websites or mobile applications. These digital channels enable businesses to reach a significantly broader customer base, thereby enhancing accessibility and convenience for consumers interested in personalized products.

The product selected for analysis in this research is sneakers. Sneakers serve as an ideal case study for several reasons. While previous research (Powell & Yang, 2023) focuses on dress shoes, the insights can be analogously applied to sneakers. Firstly, the existing research on dress shoes indicates that approximately 80% of consumers have responded positively to the usefulness and appeal of customization. This high percentage suggests a significant market demand and consumer interest in personalization options that can be extrapolated to sneakers. Additionally, more than 50% of consumers expressed a willingness to pay a premium for customized dress shoes, highlighting a general trend in the perceived value and importance that consumers place on having footwear that reflects their individual preferences and styles. We can reasonably infer that similar attitudes would apply to sneakers, given their popularity and the cultural emphasis on personalized fashion in this category.

Furthermore, the footwear sector was one of the first to adopt mass customization tools in the early 2000s. Adidas was one of the pioneering companies to enable product customization through the Miadidas program (Developers & Developers, 2023). However, in Italy, this initiative ceased in 2019. The reasons behind this decision are unclear, but some reviews suggest that a portion of consumers was not sufficiently motivated by the type of customization offered. Currently, as described in the first chapter, Adidas offers minimal customization that does not significantly alter the main model of the product, allowing customers to add only their initials.

Nike was also a pioneer in the field of customization and continues to offer customers complete product personalization, which can involve numerous steps (see example explanation in the previous chapter for more details). Other companies such as Puma, Vans, and Converse also offer similar high levels of customization styles. It is important to note that

the first company to attempt to create an empire based on shoe customization was Shoes of Prey, went bankrupt in 2019. The CEO, Michael Fox, stated that the reasons for the failure were varied. Firstly, according to Fox, consumers do not really know what they want; there is a gap between what consumers want to do and what they actually do. Additionally, Fox observed that, learning from experience, everyone loves the idea of being a designer, but not everyone is able to do it from scratch. For some, it takes a few minutes, and for others, months, so their customization model clearly exhibited a real paralysis of choice.

The model used by Shoes of Prey was based on attribute-by-attribute customization. Over time, thanks to the research by Powell & Yang (2023), the model shifted to customization through starting solutions (CvSS), which has certainly facilitated the customization process. This model is now used by most companies offering customizable shoes, from the most well-known to the less renowned.

This failure, however, has highlighted the importance of the brand offering the customization; indeed, Fox asserts that the primary reason for the failure is that:
"Mass-market customers don’t want to create; they want to be inspired and shown what to wear. They want to see the latest trends, what celebrities and Instagram influencers are wearing, and they want to wear exactly that — both the style and the brand" (Carey, 2019).
This statement is particularly interesting as it suggests that mass customization works only with established brands that exert a certain influence on consumers. Therefore, it is essential to investigate how much customizable products are created by the consumers' need to see themselves represented in the product and how much depends on the brand's influence on consumers.

Numerous studies have demonstrated the importance and influence of the brand in consumers' purchasing decisions (Tali & Nautiyal, 2022). Research highlights how brands allow consumers to express needs similar to those satisfied through customization. Previous studies have emphasized the role of brands as a means of self-expression to convey and validate one's identity (Aaker, 1997; Berger and Heath, 2007; Escalas and Bettman, 2005). This need to reaffirm self-image has been further explored by Dunning (2005) and Rogers (1947), who show that consumers appreciate brands to the extent that they reflect their principles and beliefs (Kleine, Kleine, and Kernan, 1993; Levy, 1959; Solomon, 1983).

Brands can represent various values for consumers (Chernev et al., 2011). They can be associated with specific reference groups (Escalas and Bettman, 2005) or serve as indicators of prestige and social status (Braun and Wicklund, 1989). Additionally, it has been shown that brands reveal otherwise hidden aspects of consumers' self-image, as consumers often choose brands they consider appropriate for their image (Dolich, 1969; Tucker and Painter, 1961). Beyond serving as external signals, brands help establish and confirm the concept of self and consumers' identity without necessarily aiming for social recognition (Belk, 1988; Fournier, 1998). In these cases, individuals' motivation to express their inner states is driven by the desire to signal their identity not to others, but to themselves (Bodner and Prelec, 2003; Loewenstein, 1999). Research also shows that consumers tend to prefer brands that reflect their ideal self-concept in conspicuous consumption contexts, while they prefer brands that reflect their actual self-concept in less conspicuous consumption contexts (Ross, 1971). This demonstrates how brands satisfy not only the need for personal expression but also for consistency with individual identity, reinforcing the brand's importance in the decision-making process related to customization and purchase intention.

These studies indicate that both brands and product customization respond to consumers' needs for self-expression and social affirmation. Therefore, it is interesting to explore how much the desire for personalization is influenced by brand strength or if this desire is so strong that it transcends the brand itself.

The brand exerts significant influence on purchasing decisions when consumers are aware of its existence and the values it represents, allowing them to identify with or distance themselves from these values. It can therefore be hypothesized that a well-established and recognized brand in the market already meets the needs for self-expression and social affirmation that consumers seek through customization. However, we observe that strong brands like Nike and Puma demonstrate the opposite by offering extensive customization options. It is important to consider that, within the sector, well-known brands are divided into two main categories: those offering minimal customization, such as adding initials (e.g., Adidas), and those allowing complex customization, such as Nike. If established brands, which should already partially satisfy the needs driving the desire for customization, exhibit this diversity, then less well-known or emerging brands should carefully consider their approach to customization.

Thus, it becomes essential to understand whether extensive product customization could be effective for a less well-known brand, especially considering that, in such a context, it represents the only means of expressing the needs for uniqueness, self-expression, and social affirmation.

These are the reasons why brand strength is included in the equation. In this analysis, "brand strength" refers to the brand's ability to meet the needs that consumers seek to satisfy through customization. Consequently, the hypotheses with the moderator will be:

H2: The positive relationship between product customization options and purchase intention is moderated by brand strength, such that the relationship is stronger for well-established brands compared to less-known brands.

2.6 Research question and hypothesis recap

Below is a schematic representation of the variables that will be analyzed in this thesis research. This is followed by an image of the model illustrating the relationships between the variables, along with the formulation of the research question and hypotheses.

Independent Variable (IV): Level of product customization (high vs. low)

- Low product customization = less choices, less time, less effort
- High product customization = more choices, more time, more effort

Moderating Variable (MV): Brand strength (well-known/established vs. lesser-known/emerging)

Dependent Variables (DVs): Willingness to buy

Control Variables: Past purchase of customizable products; Attitude towards customization; Future purchase intentions; involvement in the product category; shopping attitude; predisposition to the negative effects of customization; demographic factors.

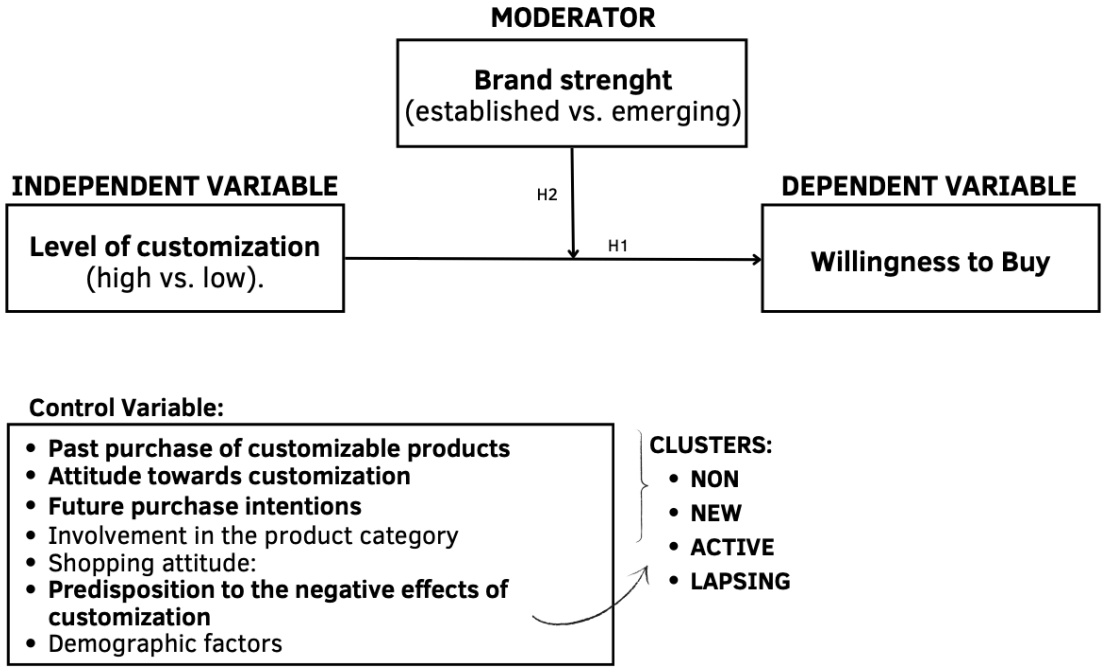


Table 1. Conceptual representation of the research model and related variables.

Research question:

How does the level of product customization (high vs. low) influence consumer purchase intentions, and how is this effect moderated by brand strength (established vs. emerging brands)?

Hypothesis:

Effect of product customization on willingness to buy:

H_1 : *With low product customization (less customizable option to select) compared to high product customization (more customizable option to select), there is a higher level of willingness to buy.*

H_0 *: With high product customization (more customizable option to select) compared to low product customization (less customizable option to select), there is a higher level of willingness to buy.*

Model with moderation:

H2 : The positive relationship between product customization options and purchase intention is moderated by brand strength, such that the relationship is stronger for well-established brands compared to less-known brands.

2.7 Customer Segmentation

This paragraph outlines the control variables used in the study and how these will serve as a basis for clustering the population, thereby providing more precise recommendations on which type of customization to offer. Detailed descriptions will be avoided as these concepts have already been addressed previously.

To determine individuals' interest in customization and offer them different versions of customization based on their predisposition, various control variables were considered in this experiment:

- **Past purchase of customizable products (Q1):** Whether the product has already been purchased, the purchasing channel (online, in-store, or both), the frequency of purchase, and whether the product was bought specifically for its customizability.
- **Attitude towards customization (Q2)**: This includes various factors such as the desire for uniqueness (Tian et al., 2001), the desire for self-expression (Aaker, 1997), and three positive effects of customization: heuristic effort (Kruger et al., 2004), the IKEA effect (Norton et al., 2011), and the "I made it myself" effect (Franke et al., 2010).
- **Future purchase intentions (Q3)**
- **Involvement in the product category** (Pallant et al., 2020)
- **Inclination toward customization:** This includes enjoyment of shopping, attitude towards online shopping, time pressure, and risk minimization. (Babin et al. 1994; Dawson, Bloch, and Ridgway 1990; Srinivasan and Ratchford 1991; Simpson et al., 2008)
- **Predisposition to the negative effects of customization**: Indecision and choice overload (Simpson et al., 2008).
- **Demographic factors**: Gender, age, and country of origin, which could provide interesting contributions to the research.

These control variables provide essential insights. Firstly, past purchase intentions, attitude towards customization, and future purchase intentions offer an understanding of the general predisposition of consumers towards customization. This research, inspired by the experiment conducted by Simpson et al. (2008), aims to explore the concept of examining the target audience in clusters based on levels of personalization. Based on these three criteria,

consumers can be divided into four segments: against customization, new to customization, active, and lapsing.

1. **Against customization (NON):** Individuals who have never purchased a customizable product, do not show interest in customization, and have no intention of doing so in the future.
2. **New to customization:** Individuals who have never purchased a customizable product but are somewhat interested in customization and would like to try so in the future.
3. **Active:** Individuals who have already purchased a customizable product, are predisposed to customization, and will continue to buy customized products in the future.
4. **Lapsing:** Individuals who have purchased a customizable product in the past, are somewhat predisposed to customization, but do not intend to purchase customizable products in the future.

As outlined in previous paragraphs, this thesis aims to demonstrate that the balance between positive drivers leading to customization, i.e. factors that predict a positive inclination toward customization, and the negative effects, i.e. predisposition to cognitive decision complexity and purchase regret, that may emerge depends on each individual. For instance, an individual may desire extensive customization but abandon the process when faced with overly complex options.

Therefore, in the equation for clustering respondents, the predisposition to choice overload and indecision is also included. This approach enables companies to offer targeted customization options, high vs. low, based on consumers' predisposition to customization and its negative effects. By analyzing the four cluster segments, more targeted recommendations can be provided regarding the type of customization based on the type of company and customer segment.

Chapter 3 - Methods and Results

This chapter presents the methodology and data collection procedures that underpin the findings of the research model, offering critical insights for both businesses and consumers. The study involved administering a meticulously designed survey aimed at investigating the impact of product customization levels (high vs. low - Independent Variable) on consumer purchase intentions (Dependent Variable). Additionally, it examines how brand strength (established vs. emerging - Moderator) moderates this relationship. The initial phase of the analysis provides a comprehensive overview of the sample as a whole, followed by a more detailed exploration of how these dynamics may shift in relation to individual consumer characteristics.

To deepen this understanding, the sample is segmented into specific clusters (NON, NEW, ACTIVE, LAPSING), categorized based on past purchasing behaviors (Q1), customization preferences (Q2), and future purchase intentions (Q3). Respondents are assigned to high or low customization levels **(variable Type of Customization, Appendix, Tab)** depending on their self-reported attitudes toward personalized products. The study also wants to explore how decision complexity, indecision, and purchase regret (variable Complexity, Appendix , Tab) influence these assignments, with customization levels adjusted accordingly to account for any disruptions to consumers' positive inclinations toward customized purchases **(variable Type of Customization NEW, Appendix , Tab)** .

The core objective of this analysis is to assess how different market segments respond to varying degrees of customization, and how brand strength shapes these responses **(Appendix, Table Overall model).** By segmenting the sample and evaluating the behavioral patterns within each group, this study seeks to deliver a more nuanced understanding of customization as a strategic marketing tool. The findings underscore the critical importance of aligning customization strategies with the distinct preferences and needs of various target segments.

Moreover, this analysis seeks to reconcile the gap between consumers' expressed desire for customization and their actual purchasing behavior. By tailoring customization strategies for each cluster, the aim is to increase the likelihood of aligning consumer preferences with product offerings, thereby facilitating purchase decisions. The study also evaluates how brand strength moderates the relationship between customization and purchase intention across

consumer segments **(Appendix, clusters),** providing valuable insights for marketers seeking to harmonize brand positioning with customization strategies.

3.1 Survey structure and Sample Analysis

A total of 106 participants conducted a survey via Qualtrics (40 males, 51 females, 2 identifying as non-binary/third gender, and 13 preferring not to disclose their gender). The average age of the participants was 41 years (SD = 15), with the largest age groups being 18–30 years (39 respondents) and 51–60 years (29 respondents). The sample was composed of individuals randomly selected from the student populations of LUISS Guido Carli University and Tilburg University, as well as from their extended networks, including family members and friends. This approach ensured a diverse and representative participant pool, drawn from both academic and non-academic contexts. The participants represented a diverse range of nationalities, with 58 from Italy, 21 from The Netherlands, 8 from Belgium, 7 from Spain, 6 from Austria, 5 from Syria, and 1 from Macedonia (see Appendix 1 further details).

After being introduced to the nature of the survey and consenting to the privacy conditions, participants proceeded to answer three sets of questions designed to capture their predisposition towards product customization before being exposed to any stimuli. To ensure respondents were familiar with the concept of personalization and customization - especially given the ambiguities present in the literature - clarifications were provided through the questionnaire (see Appendix 2, Table 1 for further details).

Participants were initially asked whether they had ever purchased a customizable product (Q1) . Those who responded negatively were directed to complete a series of questions using a 5-point Likert scale (ranging from "Strongly disagree" to "Strongly agree"), which measured their desire for uniqueness, their inclination toward self-expression, and their perceptions of the potential benefits of co-designing a product with customers (Q2). For participants who responded affirmatively, additional questions were posed regarding their previous purchasing behavior. These questions addressed the location of their most recent purchase (whether online, in-store, or both), the frequency with which they purchased customized products, and the extent to which the possibility to customize the product was the reason for their decision to purchase (see Appendix 1).

Participants were also asked to indicate their interest in purchasing a customizable product online in the future using a 5-point Likert scale (ranging from 'Strongly disagree' to 'Strongly agree') (Q3). The responses from these three sets of questions were subsequently used to categorize respondents into four distinct clusters: non, new, active, and lapsing. These clusters will be analyzed in subsequent sections (see Appendix 2, Table 2 for further details).

In the following section of the survey, a block was dedicated to the randomization of stimuli. Participants were randomly assigned to one of the experimental conditions (for further details, see Table 1, Appendix 3):

- *Stimulus HH*: High level of customization with a well-known/established brand (see Appendix 3, Figure 1),
- *Stimulus HL*: High level of customization with a less-known/emerging brand (see Appendix 3, Figure 2),
- *Stimulus LH*: Low level of customization with a well-known/established brand (see Appendix 3, Figure 3),
- *Stimulus LL*: Low level of customization with a less-known/emerging brand (see Appendix 3, Figure 4).

The stimuli were designed by selecting brands that currently offer product customization. Due to the practical limitations of replicating a fully interactive product customization website, participants were instead presented with an image illustrating a simplified, guided three-step customization process. The first section of the image displayed a standard shoe model currently available from Nike.

While the rationale for selecting this object as the survey's reference stimulus has been outlined earlier, this section provides a detailed explanation of the shoe image (with or without branding), which included red indicators highlighting each customizable component. In the first step, participants could choose from different fabric types, with four options available in the high-customization condition and one option in the low-customization condition. In the second step, participants selected a color for the chosen fabric, with 34 color options in the high-customization condition and 13 in the low-customization condition. Lastly, participants were asked to imagine customizing the final product by altering the color of the logo (Nike for well-established brands; Hockerty for emerging brands) and/or adding their initials to the back of the shoe.

The stimuli were designed to replicate two distinct styles of online customization: a simple, limited-choice format representing low customization, and a more complex, extensive-choice format representing high customization. Additionally, brand references were incorporated into the stimuli to evaluate whether brand strength moderates the relationship between customization levels and consumers' purchase intentions.

Following the stimuli presentation, participants were asked a series of specific questions on a 5-point bipolar scale to assess their comprehension of the stimuli manipulation (see Appendix 4, Table 2). The first three questions aimed to verify their understanding of the two levels of customization (high vs. low). It is important to clarify that the first letter in the stimuli codes (HH, HL, LH, LL) denotes the level of customization (High customization vs. Low customization), while the second letter indicates brand strength (High = well-known/established vs. Low = less-known/emerging).

As presented in Table 3 of Appendix 4, the results demonstrate that when the level of customization was high (HH and HL stimuli), the mean scores exceeded the neutral midpoint of 3 on the scale, $M_{HH} = 4.64$, $SD_{HH} = 0.95$, and $M_{HL} = 3.78$, $SD_{HL} = 1.18$. Conversely, when the level of customization was low (LH and LL stimuli), the mean scores fell below the neutral point, with $M_{LH} = 2.36$, $SD_{LH} = 1.46$, and $M_{LL} = 1.65$, $SD_{LL} = 1.02$. These results indicate that participants correctly understood when the stimuli presented low or high levels of customization. Higher mean scores for the HH and HL stimuli reflect participants' recognition of high customization, while lower mean scores for the LH and LL stimuli confirm their correct identification of low customization. This comprehension is critical, as it suggests the stimuli manipulation was effective, allowing for valid analysis of how customization levels influence consumer perceptions and behaviors. Furthermore, the differentiation between the HH and HL stimuli may imply that brand strength modulates the perceived value of customization, even when the customization level remains the same.

The fourth question aimed to assess whether respondents paid attention to the brand logo presented within the stimuli. As shown in Table 4 of Appendix 4, the results reflect the intended manipulation when the brand was well-known and established, for the HH and LH stimuli, with $M_{HH} = 4.46$, $SD_{HH} = 0.99$, and $M_{LH} = 3.68$, $SD_{LH} = 0.87$. A similar pattern was observed for the HL and LL stimuli, with $M_{HL} = 2.00$, $SD_{HL} = 0.87$, and $M_{LL} = 2.00$, $SD_{LL} = 1.50$, consistent with the intended manipulation. These results indicate that participants correctly understood the presence and significance of the brand logo in the stimuli. When the

brand was well-known, participants demonstrated higher attention and recognition, as reflected in the elevated scores for the HH and LH stimuli. Conversely, lower scores for the HL and LL stimuli suggest that participants correctly identified when the brand was less known or emerging. This effective comprehension of brand manipulation ensures the validity of the experimental design, reinforcing that participants' responses can be reliably linked to the varying levels of brand strength presented in the stimuli.

Overall, the respondents demonstrated a clear understanding of the stimuli, successfully differentiating between the varying levels of customization and brand strength as intended in the experimental design.

After being randomly assigned to one of the four stimuli, participants were presented with a series of questions aimed at assessing their willingness to purchase a customized product, as well as the potential influence of brand strength on this relationship (see Appendix 4, Table 5). The questions measuring willingness to buy were adapted from established scales by Baek et al. (2010) and Topçu and Kaplan (2015). However, evaluating brand strength and its potential moderating effect on the relationship between customization and purchase intent - required a more nuanced approach.

Two brands were selected to examine the moderating effect of brand strength on consumer purchase intention: Nike, a well-established market leader, and Hockerty, a deliberately lesser-known and emerging brand. To ensure that respondents had noticed the brand and to assess the strength of their relationship with it, a series of questions were included to measure overall brand equity. This assessment covered key dimensions such as brand awareness, brand associations, perceived quality, and brand loyalty, which were evaluated for both the emerging and established brands (see Appendix 4, Table 6).

Brand Strength is a two-factor variable designed to distinguish between the established brand, Nike, and the emerging brand, Hockerty, allowing for the examination of how brand strength moderates consumer attitudes toward customization and purchase intention. After exposure to the stimuli, participants responded to control measures using a 5-point Likert scale (ranging from 'Strongly disagree' to 'Strongly agree'). These measures assessed their interest in the product (Appendix 4, Table 7) and included two distinct sets of questions. The first set aimed to understand favorable attitudes toward customization, focusing on preferences for self-expression and uniqueness (Appendix 4, Table 8). The second set captured potential

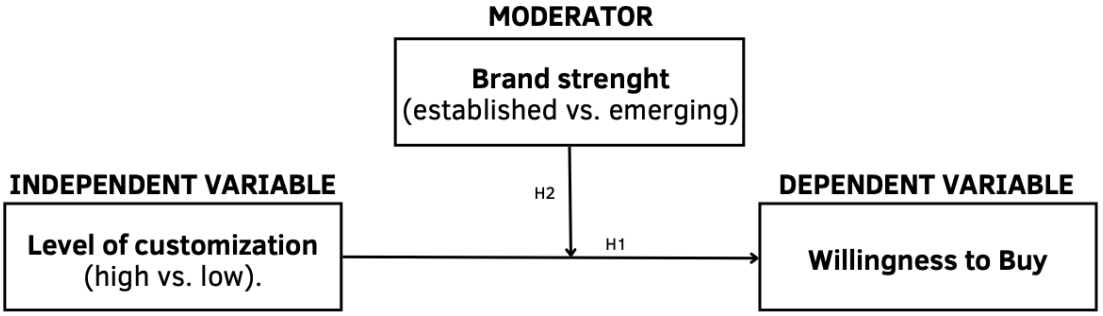
negative effects of customization, such as decision fatigue, cognitive overload, or anticipated regret, which could diminish the likelihood of completing a purchase (Appendix 4, Table 9).

These questions were crucial for identifying both the positive and negative influences on consumers' decisions regarding customizable products. Lastly, demographic data, including age, gender, and country of residence, were collected to control for potential variations in consumer behavior and preferences across different demographic groups."

The data was subsequently cleaned and processed using RStudio. This involved renaming columns for consistency, addressing missing or incomplete data, and grouping variables where necessary to ensure accurate analysis. Categorical variables, such as gender and age, were recorded into numerical formats to facilitate statistical analysis. Additionally, all relevant variables were aggregated and grouped to ensure clarity and consistency throughout the dataset. All variables were measured using coherent and validated scales, with negatively worded questions appropriately recorded. Despite the use of scales adapted from established literature, reliability and validity tests are provided to ensure the robustness of the measures (Appendix 4, Table 10). The dataset is now structured and ready for testing the hypotheses outlined in the analytical model.

3.2 Testing the hypotheses and presentation of results for the overall sample

With a solid understanding of the survey structure and the roles each variable plays in the analysis, we now turn our attention to the core relationship of interest in this study: the effect of **Customization Levels** on **Willingness to Buy (WTB)**. Furthermore, we will explore how this relationship is influenced by key moderating factors, particularly **Brand Strength**.



3.2.1 Overview of the main relationship between Level of Customization and WTB (Study 1)

The primary hypothesis under investigation posits that the level of customization influences consumers' willingness to buy (WTB). To explore this, WTB was analyzed across the four stimuli, each representing a unique combination of customization levels and brand strength. As presented in Appendix 5, Table 1, the average WTB varied among the stimuli: high customization with a well-established brand (HH) yielded a WTB of 3.44, while high customization with a lesser-known brand (HL) resulted in a lower WTB of 2.96. Low customization with a well-known brand (LH) generated the highest WTB at 3.7, and low customization with a lesser-known brand (LL) produced a WTB of 3.25.

These results reveal a clear pattern: the LH stimulus (low customization paired with a well-known brand) generated the highest WTB, suggesting that consumers may prefer simpler customization processes when engaging with a familiar brand. In contrast, the HL stimulus (high customization with a lesser-known brand) resulted in the lowest WTB, indicating that higher levels of customization may be less attractive when the brand lacks strong recognition.

To statistically validate these findings, a *Linear Regression Model* was used for each stimulus group, with the results detailed in Appendix 5, Table 2. This Table presents the estimates, standard errors, t-values, and p-values for each customization condition, providing insights into the significance of the differences observed. The analysis revealed the following:

- **High customization and a well-known/established brand (HH)**: An estimated WTB of 3.44, with a standard error of 0.14, and a highly significant p-value (8.15e-44). This confirms that high customization with a well-known brand has a significant positive impact on consumer purchase intention.
- **High customization with a lesser-known/emerging brand (HL):** An estimated WTB of 2.96, with a slightly larger standard error (0.15) but still statistically significant (p-value = 1.27e-37). This supports the conclusion that consumers are less willing to buy when the brand is less known, even with extensive customization options.
- **Low customization with a well-known/established brand (LH):** The highest WTB estimate of 3.7, with a standard error of 0.15, demonstrating that low customization combined with a well-known brand is highly appealing (p-value = 1.96e-44).

- **Low customization with a lesser-known/emerging brand (LL):** An estimated WTB of 3.25, with strong statistical significance (p-value = 2.05e-40), indicating that low customization with a lesser-known brand remains moderately attractive to consumers.

From the table, it becomes clear that, regardless of whether the brand is established or emerging, lower levels of customization are generally preferred over higher levels (**LH (3.7) > HH (3.44); LL (3.25) > HL (2.96)**). Additionally, when the level of customization is high, brand strength positively influences WTB (**HH (3.44) > HL (2.96)**), and the same pattern holds for low customization (**LH (3.7) > LL (3.25)**).

The p-values for all stimulus conditions are highly significant (all below 0.001), confirming that the differences in WTB across the various customization and brand strength combinations are not due to chance. The high t-values further reinforce the statistical significance of these relationships.

Based on these findings, we can derive meaningful insights regarding the hypotheses.

H_1: With low product customization (less customizable option to select) compared to high product customization (more customizable option to select), there is a higher level of willingness to buy.

H_0: With high product customization (more customizable option to select) compared to low product customization (less customizable option to select), there is a higher level of willingness to buy.

The results provide *strong support for* ***H_1***, which suggests that ***lower levels of product customization*** are associated with a ***higher willingness to buy*** compared to high customization. This is evidenced by the *higher WTB observed for the LH and LL stimuli, compared to HH and HL*, indicating that consumers generally prefer simpler and less complex customization options. Conversely, the data does not support $\mathbf{H_0}$, which proposed that higher product customization would lead to increased WTB.

3.2.2 The Moderating Role of Brand Strength (Study 2)

Beyond the primary effects of customization, the moderation analysis offers valuable insights into the role of **average brand strength** in influencing the relationship between customization levels and **willingness to buy (WTB)**. The hypothesis suggested that stronger brand recognition would enhance WTB, regardless of the level of customization offered.

The results of the moderation analysis, as shown in Appendix 5, Table 3, confirm that *brand strength exerts a positive and statistically significant effect on WTB*. Specifically, the coefficient for brand strength is **0.32** (p-value = 3.01e-05), *indicating that for every one-unit increase in brand strength, WTB rises by an average of 0.32*. This finding supports the hypothesis that well-established brands, such as Nike, significantly boost consumers' willingness to purchase, even when the range of customization options is limited.

Moderation hypothesis:

H2 : The positive relationship between product customization options and purchase intention is moderated by brand strength, such that the relationship is stronger for well-established brands compared to less-known brands.

Moreover, the intercept value of **2.33** represents the baseline WTB when brand strength is at its lowest. The consistently high t-values and low standard errors further underscore the robustness of these results, highlighting that *brand strength significantly amplifies WTB across all customization levels*. This underscores the critical role of brand recognition as a moderating factor in enhancing purchase intentions in the context of product customization.

These findings support **H2**, which posits that the positive relationship between product customization options and purchase intention is **moderated by brand strength**, such that this relationship is stronger for well-established brands compared to lesser-known brands. The data clearly demonstrates that brand strength enhances the impact of customization on WTB, confirming the moderating effect as hypothesized.

3.2.3 A statistical Method that proves the overall model (Overall Study)

Before arriving at the final model, several statistical techniques were explored to assess the relationship between *customization levels, brand strength,* and *willingness to buy (WTB).* Initially, standard methodologies such as linear regression, ANOVA, and multilinear regression were employed. These methods were selected due to their suitability for handling the dependent and independent variables in the model, as well as their adherence to fundamental assumptions, including normality, linearity, homoscedasticity, and the absence of multicollinearity. These assumptions were validated through a series of diagnostic checks, as depicted in Appendix 5, Table 4.

The diagnostic checks conducted to validate the assumptions of the model revealed no significant violations. The *Residuals vs Fitted* plot showed a balanced distribution of residuals around the fitted values, indicating that the linearity assumption was upheld. Similarly, the *Q-Q Plot* displayed a near-linear pattern of standardized residuals, suggesting that the residuals followed an approximately normal distribution. The *Scale-Location Plot* demonstrated a random spread of standardized residuals, confirming that the assumption of homoscedasticity, or constant variance, was satisfied. Lastly, the *Residuals vs Leverage* plot indicated no data points with significant leverage or Cook's distance, ensuring that no single observation exerted undue influence on the model.

Despite meeting these assumptions, the linear regression, ANOVA, and multilinear regression models were unable to fully capture the complexity of the interaction between customization levels, brand strength, and WTB with a high level of significance. The results from these models were inconclusive and did not provide sufficient insight into the moderating role of brand strength in shaping the relationship between customization and WTB.

The Decision to Implement the Johnson-Neyman Approach

In light of the limitations observed in the initial models, the *Johnson-Neyman (J-N) Interval* method was selected as a more appropriate statistical technique. This method is designed to identify specific values of the **moderator (Average Brand Strength)** at which the relationship between the **predictor (Customization Level)** and the **outcome variable (WTB)** becomes statistically significant. The **J-N approach** is particularly effective when examining how a continuous moderator, such as **brand strength**, influences the relationship between an independent variable (Customization Level) and a dependent variable (WTB).

Unlike traditional methods that assume a uniform moderating effect, the **J-N Interval** identifies the precise ranges where the moderator exerts a significant influence. In this case, the analysis revealed that **Average Brand Strength** significantly moderates the relationship between **Customization Level** and **WTB** when **Average Brand Strength (centered)** falls within the interval **[0.76, 2.86]**. This confirms that the moderating effect of **brand strength** is statistically significant within this range.

Simple Slopes Analysis for visualization

To further elucidate this interaction, a **simple slopes analysis** was conducted (Appendix 5, Table 6). This technique calculates the slope of the **predictor variable (Customization Level)** at different values of the **moderator (Average Brand Strength)**, providing a more detailed view of how the relationship between customization and WTB varies with different levels of brand strength. Specifically, we examined the relationship at two distinct values of **Average Brand Strength**:

- **At lower levels of Brand Strength** (Customization Level = 1), the slope was estimated to be **0.28**, indicating a *positive and statistically significant relationship between Customization Level and WTB (p = 0.01)*. This finding suggests that even at *lower levels of brand strength, the level of customization exerts a significant, though modest, effect on WTB.*
- **At higher levels of Brand Strength** (Customization Level = 2), the slope increased to **0.34**, indicating a *stronger positive relationship between Customization Level and WTB (p = 0.00).* This shows that at higher levels of brand strength, the impact of customization on WTB is more pronounced, meaning that *consumers are more inclined to purchase when they perceive the brand to be strong and the level of customization options are extensive.*

The simple slopes analysis demonstrated that the *influence of customization on WTB intensifies with higher levels of brand strength.* The graphical representation of these results (Appendix 6, *Table 6*) visually supports this interaction, showing the differing slopes for each level of brand strength and reinforcing the conclusion that brand strength enhances the impact of customization on consumer purchase intention.

Conclusion of Johnson-Neyman Approach

The use of the Johnson-Neyman (J-N) Interval and Simple Slopes Analysis proved to be essential in uncovering the interaction between brand strength and customization levels on WTB. The results highlighted that brand strength acts as a significant moderator, with its effect becoming increasingly pronounced as the level of customization rises. This finding aligns with the hypothesis that *well-established brands are better positioned to leverage customization options to increase WTB compared to lesser-known brands*.

By utilizing the J-N Interval and simple slopes analysis, it was possible to pinpoint the conditions under which customization exerts the greatest influence on WTB. This provided a clearer and more actionable understanding of how brand strength enhances the effectiveness of customization strategies, offering valuable insights for businesses seeking to tailor their offerings to maximize consumer engagement.

3.3 Testing the hypotheses and presentation of results for each cluster

This section extends the analysis to examine the relationship between customization levels, brand strength, and willingness to buy (WTB) within distinct participant clusters. The purpose is to investigate whether the dynamics observed in the overall sample remain consistent across different clusters, each defined by varying predispositions toward customization and purchasing behavior.

The analysis will be conducted separately for each cluster to assess whether the relationships between the variables - particularly the interaction between customization and brand strength - vary based on the unique characteristics of each group. Segmenting participants into clusters enables an evaluation of how specific predispositions, such as a higher or lower inclination toward customization, may influence the strength or direction of these relationships.

For each cluster, descriptive statistics will be presented to provide an overview of the participants' characteristics. This will be followed by a detailed analysis of the key relationships within each group. This approach allows for the identification of significant variations across clusters and offers insights into how different consumer segments respond to customization and brand strength in the context of purchasing decisions.

3.3.1. Cluster creation

Previously, an overview of the key variables used in the survey was provided. This section now offers a more detailed explanation of how these variables were applied to create the clusters for analysis.

Q1, *Past Purchase*, categorized respondents based on their previous experience with customizable products. Those who had never purchased a customizable product were assigned a value of 1 for the variable *purchase intention*, while those with prior experience were assigned a value of 2. This allowed for an initial segmentation between consumers who are new to customization and those with firsthand experience.

To evaluate consumers' predisposition toward customization, a series of questions (Q2) was used and then aggregated into a single (summary) variable for the purpose of analysis. These questions measured key attributes such as *desire for uniqueness*, *inclination toward self-expression*, and perceptions of the benefits of co-designing a product with customers. As discussed in the literature review, these factors are strong predictors of consumer interest in customization, regardless of the degree of customization available. The resulting variable, *inclination toward customization*, reflects the extent to which consumers are positively inclined toward customization and recognize its advantages.

Q3 assessed respondents' interest in purchasing customizable products online in the future. Based on these variables, participants were grouped into distinct clusters:

1. **Cluster NON**

The "NON" cluster consists of consumers who have never purchased a customized product (Past_Purchase = 1) and demonstrate low levels of both customization interest and future purchase intentions. These consumers fall into the following categories:

- Inclination_toward_customization is less than 3 and Future_intentions is less than 3.
- Inclination_toward_customization is less than 3 and Future_intentions is greater than or equal to 3.
- Inclination_toward_customization is greater than or equal to 3 and Future_intentions is less than 3.

Consumers in the "NON" cluster represent those with minimal engagement, both in terms of interest in customization and likelihood of future purchases. They are the least likely to exhibit significant future purchasing behavior.

2. **Cluster NEW**

The "NEW" cluster captures consumers who, despite not having made a past purchase (Past_Purchase = 1), express high levels of interest in customization and future purchase intentions. These consumers meet the following criteria:

- Inclination_toward_customization is greater than or equal to 3, and Future_intentions is greater than or equal to 3.

This cluster reflects a group of potential new customers who are highly inclined toward customization and are more likely to make purchases in the future. They represent a key segment for potential growth.

3. **Cluster ACTIVE**

The "ACTIVE" cluster comprises consumers who have made a past purchase (Past_Purchase = 2) and exhibit strong engagement in both customization and future purchasing behavior. These consumers can be categorized as follows:

- Inclination_toward_customization is less than 3, and Future_intentions is greater than or equal to 3.
- Inclination_toward_customization is greater than or equal to 3, and Future_intentions is greater than or equal to 3.

Consumers in the "ACTIVE" cluster are characterized by their high level of engagement with the brand, showing a willingness to customize products and strong intentions to make future purchases. This segment is highly valuable for maintaining brand loyalty and driving future sales.

4. **Cluster LAPSING**

The "LAPSING" cluster includes consumers who have made a past purchase (Past_Purchase = 2) but show signs of disengagement, either through a lack of interest in customization or lower future purchase intentions. These consumers are classified as follows:

- Inclination_toward_customization is less than 3 and Future_intentions is less than 3.
- Inclination_toward_customization is greater than or equal to 3 and Future_intentions is less than 3.

Consumers in the "LAPSING" cluster are at risk of becoming inactive, as they either no longer find customization appealing or have diminished future purchase intentions. Identifying and re-engaging these consumers can be crucial for retaining their business.

This segmentation framework offers valuable insights into consumer behavior, enabling the development of targeted marketing strategies based on each group's level of engagement, interest in customization, and likelihood of future purchases. By understanding these distinct segments, brands can more effectively tailor their approaches to enhance both customer retention and acquisition efforts.

For a visual representation of this segmentation process, refer to Table 1 in Appendix 6.

3.3.2. Cluster descriptive statistics

In this section, the sample distribution across the clusters is examined in more detail before replicating the relationships studied within the overall sample for the specific clusters. These distributions reveal meaningful differences between the clusters based on age, country, and gender, offering insights into the characteristics of each group.

Age Distribution by Cluster

The age distribution across the clusters (Table 1, Appendix 6.1) shows notable differences.

- **Active Cluster**: The majority of respondents in this cluster are aged between 18 and 30, with 25 participants, making this the dominant age group within the active cluster. Additionally, a significant number of respondents fall within the 31–40 age group (11 participants), while the 51–60 age group comprises 14 participants. This indicates that the active cluster primarily consists of younger individuals, with a secondary presence of older, middle-aged respondents.
- **New Cluster**: In contrast, the new cluster skews older, with the largest group of respondents aged 51–60 (10 participants). The 41–50 age group follows closely

behind with 5 participants. Younger respondents in this cluster are notably fewer, with only 4 individuals aged 18–30 and 3 aged 31–40. This suggests that the new cluster is largely composed of middle-aged respondents who may be new to customization.

- **Lapsing and Non Clusters**: The lapsing and non clusters have smaller sample sizes but show an interesting trend. The lapsing cluster has only a few respondents, with 3 individuals aged 18–30 and 2 individuals aged 41–50. In the non cluster, respondents are more evenly spread across age groups, though younger participants (18–30) dominate with 7 respondents. This suggests that while the non-customizers span a wide range of ages, younger individuals form a significant proportion.

Gender Distribution by Cluster

Gender distribution across the clusters (Table 2, Appendix 6.1) further reveals key distinctions:

- **Active Cluster**: The active cluster shows a near-equal split between males (28 participants) and females (21 participants), with a small portion of non-binary respondents (6 participants). This balance suggests that both genders are actively engaged in customization, with no significant gender-based skew.
- **New Cluster**: In the new cluster, females are the majority, with 16 participants compared to 3 males. Interestingly, 5 participants in this cluster preferred not to disclose their gender, reflecting a more diverse range of gender identities compared to the active cluster. This could suggest that females, particularly middle-aged respondents (as shown in the age distribution), are more inclined to explore customization for the first time.
- **Lapsing and Non Clusters**: The lapsing cluster has a smaller sample, but males slightly outnumber females (5 males vs. 2 females). The non cluster, however, shows a majority of female participants (14), with a small number of males (4). These results highlight the varying levels of engagement with customization based on gender, with females more represented in the new and non-customizer clusters, while males dominate in the lapsing group.

Country Distribution by Cluster

The country distribution across clusters (Table 3, Appendix 6.1) also highlights notable patterns.

- **Active Cluster**: Respondents from Italy dominate the active cluster, with 27 participants, followed by the Netherlands with 15 participants. Other countries, such as Belgium, Spain, and Austria, have lower representation, each with 3–5 participants. This suggests that the active cluster is highly concentrated in Italy and the Netherlands, potentially reflecting greater familiarity or engagement with customization in these countries.
- **New Cluster**: The new cluster is also dominated by Italian respondents, with 15 participants, while the Netherlands follows with 5 participants. A small number of respondents come from other countries, including Syria, Austria, and Spain. This distribution indicates a similar pattern to the active cluster, though with a slightly more diverse representation of countries.
- **Lapsing and Non Clusters**: In the lapsing cluster, the few respondents are primarily from Italy (5 participants). The non cluster shows a similar trend, with Italian respondents making up the majority (11 participants), followed by the Netherlands and Belgium. Overall, Italy consistently has the largest representation across clusters, suggesting a stronger focus on customization or brand recognition in this region.

In conclusion, the descriptive statistics reveal several key patterns across the clusters:

- The **active cluster** is primarily composed of younger respondents, with balanced gender representation and strong engagement from Italy and the Netherlands. This suggests that younger consumers, particularly those in these two countries, are more likely to engage actively with product customization, possibly due to higher digital literacy and exposure to innovative online shopping experiences. Brands targeting this group may benefit from leveraging technology-driven customization features and offering more interactive experiences to maintain engagement.
- The **new cluster** tends to skew older and female, with a more diverse set of respondents from different countries. This indicates that middle-aged women may be more inclined to explore customization for the first time, likely due to changing lifestyle needs or a desire for products that cater to their personal tastes. The broader

geographic spread in this cluster also highlights the potential for international expansion of customization offerings. Marketing strategies targeting this group should emphasize ease of use and clear value propositions, as they may not be as familiar with customization as their younger counterparts.

- The **lapsing and non clusters** show smaller sample sizes, but younger individuals and females tend to dominate the non-customizer group, while males are slightly more prevalent in the lapsing group. This suggests that while younger consumers may be open to customization, there is a segment that remains disengaged or has not yet been converted into active customizers. The presence of males in the lapsing group could imply that, for some consumers, initial interest in customization diminishes over time, possibly due to a lack of continued relevance or evolving preferences. To address this, brands should consider re-engagement strategies for lapsing customers, such as personalized offers or simplified customization processes to reignite interest.

These demographic insights are valuable for understanding how different age groups, countries, and genders engage with customization and how targeted strategies can be developed for each cluster. By tailoring marketing efforts to the specific needs and behaviors of each group, brands can optimize their approach, enhancing both customer acquisition and retention. For instance, younger, tech-savvy consumers may respond well to more advanced customization features and digital innovation, while older, newer customers might prefer simplicity and guidance during the customization process.

Although these findings offer valuable insights, the relationships observed within the specific clusters warrant further exploration in future research to deepen our understanding of consumer behavior. Nonetheless, the results from the overall sample reflect the heterogeneity of consumer needs, indicating that a one-size-fits-all approach to customization may not be effective. Customization strategies should instead be tailored to the diverse preferences and motivations that vary across demographic groups.

At this stage, it becomes particularly interesting to examine whether the characteristics observed in each cluster also align with the distinct needs emerging from the data when the analyses conducted on the overall model are applied to each individual cluster. This approach will allow for a more granular investigation into how customization preferences and behaviors differ across consumer segments, further informing strategies that cater to the specific demands of each group.

3.3.3. Cluster NON

Main relationship between Level of Customization and WTB (Study 1 for cluster NON)

In the analysis of the "NON" cluster, where participants have little to no prior experience with customizable products, the relationship between customization level and Willingness to Buy (WTB) differs substantially compared to the overall sample. The same four stimuli (HH, HL, LH, LL), representing varying combinations of customization levels and brand strength, were analyzed, but the results highlight a significantly lower WTB across all conditions.

In contrast to the general sample, where low customization and a well-known brand (LH) generated the highest WTB (3.7), the *"NON" cluster consistently reported a WTB below 3 for all stimuli conditions*, indicating that customization options, regardless of the brand strength, failed to sufficiently motivate purchase intentions among this group (Table 1, Appendix 6.2).

For the "NON" cluster, no stimuli produced a WTB above 3, meaning none of the combinations of customization level and brand strength succeeded in generating purchase intention. This suggests a marked difference from the overall sample, where simpler customization paired with well-known brands (LH) performed significantly better in driving WTB. In terms of statistical significance, all stimuli within the "NON" cluster show highly significant p-values ($p < 0.001$), indicating that the results are reliable and reflect a consistent lack of purchase intent across the board. Despite this significance, the relatively low WTB estimates across all conditions highlight that customization strategies, as they currently stand, may not be sufficient to engage this cluster.

The consistently low WTB values suggest that consumers in the "NON" cluster are not easily swayed by customization options. This may be due to unfamiliarity with the concept or a lack of perceived value in customization. Future strategies targeting this group should focus on consumer education and increasing awareness of the benefits of customization. Simplifying the customization process or offering lower-risk entry points might also help to generate initial interest and move these consumers toward a higher willingness to buy.

The Moderating Role of Brand Strength (Study 2 for cluster NON)

In the "NON" cluster, brand strength plays a minimal role in moderating the relationship between customization levels and WTB. *The hypothesis that stronger brand recognition would enhance WTB is not supported within this specific segment.* Unlike the overall sample, where *well-known brands (such as Nike) significantly increased WTB even with limited customization options*, the "NON" cluster shows no statistically significant effect of brand strength on WTB. (Table 2, Appendix 6.2)

The estimate for *Average Brand Strength* is 0.2197, but the p-value ($p = 0.1107$) suggests that brand strength is not a statistically significant moderator in this cluster. This means that, regardless of whether a brand is well-known or emerging, it does not significantly influence WTB in the "NON" cluster.

For the "NON" cluster, relying on brand strength to drive WTB is ineffective. These consumers may not place as much importance on brand recognition or may be less familiar with the brands being presented. As such, marketing efforts should focus on creating relevance for these consumers, perhaps by communicating the tangible benefits of customization rather than depending on brand prestige alone to drive purchasing behavior.

Overall Study (cluster NON)

The "NON" cluster consists of consumers who have never engaged in customization and, as previous analyses suggest, are unlikely to show interest in customization in the future. These consumers exhibit a clear resistance to customization, whether due to lack of exposure or inherent disinterest.

Applying the Johnson-Neyman (J-N) Interval and Simple Slopes Analysis to this group reveals distinct interactions between brand strength, customization levels, and willingness to buy (WTB). While the overall sample analysis indicated more complex relationships, the trends within the "NON" cluster highlight marked differences.

In the Table 3 (Appendix 6.2), high customization (red line) shows a slight decrease in WTB as brand strength increases, indicating a negative relationship. On the other hand, low customization (blue line) reveals a positive trend, with WTB increasing as brand strength

grows. This suggests that while the "NON" cluster resists high customization, they respond more favorably to simpler customization options, especially as the brand becomes stronger.

Even with this positive trend, WTB rarely exceeds the critical threshold of 3, signaling weak purchase intent overall. Only when customization is minimal and the brand is perceived as well-established does WTB approach or slightly surpass this point, reflecting minimal purchase interest. This confirms the "NON" cluster's overall lack of inclination toward customization, preferring simplicity in product offerings.

Nevertheless, a small subset of consumers within this group, closer to the purchase threshold, may be swayed by minimal customization. Marketing strategies targeting this niche with straightforward, low-complexity customization options could potentially activate their latent interest. These findings underscore the importance of tailoring strategies to the specific behaviors and preferences of this cluster, with an emphasis on leveraging brand strength to drive engagement where possible.

3.3.4. Cluster NEW

Main relationship between Level of Customization and WTB (Study 1 for cluster NEW)

In the analysis of the "NEW" cluster, which includes consumers who have some familiarity but limited experience with customizable products, the relationship between the level of customization and Willingness to Buy (WTB) shows both similarities and differences compared to the overall sample.

According to Table 1 (Appendix 6.3), the WTB across all four stimuli (HH, HL, LH, LL) presents results similar to the overall sample, with lower WTB compared to more experienced consumer segments but still significantly higher than the "NON" cluster. As presented Table 1, the average WTB for each stimulus was:

- High customization with a well-established brand (HH): WTB estimate of 3.55, with a standard error of 0.2488, a t-value of 14.27, and a highly significant p-value of 1.21e-14.
- High customization with a lesser-known brand (HL): WTB estimate of 3.10, with a standard error of 0.2488, a t-value of 12.46, and a significant p-value of 3.63e-13.

- Low customization with a well-established brand (LH): WTB estimate of 4.00, with a standard error of 0.2873, a t-value of 13.92, and a significant p-value of 2.27e-14.
- Low customization with a lesser-known brand (LL): WTB estimate of 3.16, with a standard error of 0.2122, a t-value of 14.91, and a p-value of 3.94e-15.

These results highlight a key finding: similar to the overall sample, the *"NEW" cluster exhibits the highest WTB for low customization with a well-known brand (LH), which yielded the maximum WTB estimate of 4.00.* This suggests that while consumers in this cluster are open to customization, simpler options paired with established brands tend to be more effective in driving WTB.

While the relationship between customization and WTB is statistically significant for all stimuli (with all p-values well below 0.001), the HH and HL stimuli yielded lower WTB compared to LH, reinforcing the idea that consumers in the "NEW" cluster favor less complex customization options when purchasing from a well-known brand. The results indicate that while customization is appealing to this group, it works best when kept straightforward, particularly with familiar brands.

The Moderating Role of Brand Strength (Study 2 for cluster NEW)

In the moderation analysis for the "NEW" cluster, the impact of brand strength on the relationship between customization and WTB is statistically significant, but less pronounced than in the overall sample.

As shown in Table 2 (Appendix 6.3), the estimate for Average Brand Strength is 0.4446, with a standard error of 0.1066, a t-value of 4.17, and a p-value of 2.29e-04. This result indicates that *brand strength significantly moderates the relationship between customization and WTB* in this cluster, albeit with a somewhat weaker effect compared to more experienced consumer segments.

Additionally, the intercept value of 2.094 suggests that when brand strength is at its minimum, WTB is relatively low. However, as brand strength increases, WTB rises by 0.4446 units for every one-unit increase in brand strength. *This indicates that for the "NEW" cluster, stronger brands have a meaningful impact on driving purchase intentions, at any customization level.*

Despite the positive moderating role of brand strength, the effect is not as strong as in the general sample, where well-known brands more effectively increased WTB. Consumers in this cluster may still be developing brand loyalty or understanding of the benefits associated with established brands in the context of customization.

Overall Study (cluster NEW)

The "NEW" cluster represents consumers who have never purchased a customized product but show strong interest and openness to trying customization in the future. This willingness creates unique dynamics between brand strength, customization levels, and willingness to buy (WTB) within this segment. In the Table 3 (Appendix 6.3), high customization (represented by the red line) and low customization (represented by the blue line) reveal differing trends as brand strength increases. Both customization levels show positive relationships between brand strength and WTB, but there are important differences.

Low customization (blue line) demonstrates a strong increase in WTB as brand strength rises. Consumers in this cluster clearly prefer simpler customization, with their willingness to purchase increasing significantly as the brand becomes stronger. The steep upward trend of the blue line suggests that for the "NEW" cluster, the combination of low customization and strong brand perception is a key driver of purchase intent.

High customization (red line), while still positively correlated with brand strength, shows a slower rate of growth in WTB. Even though WTB increases with stronger brands, the rise is more moderate compared to low customization. This indicates that high customization is less appealing to the "NEW" cluster, even though they are generally open to trying customized products. The red line never reaches the blue line, suggesting that consumers in this cluster prefer low customization, regardless of brand strength.

Furthermore, WTB surpasses the threshold of 3 (indicating purchase interest) much more consistently in the case of low customization. High customization only approaches this threshold as brand strength grows, but it still remains less effective overall in stimulating strong purchase intentions compared to low customization.

In summary, consumers in the "NEW" cluster exhibit a clear preference for low customization, with this preference strengthening as brand strength increases. High customization, though somewhat appealing, lags behind in driving WTB. These insights suggest that marketing strategies targeting this segment should focus on offering simpler customization options, especially when aiming to leverage strong brand perception to boost purchase interest. However, it is important to note that high customization still generates significant willingness to buy (WTB) within a small sample of the "NEW*"* cluster. This sample of respondents, while smaller, respond positively to more complex customization when coupled with strong brand strength. This indicates that while simpler customization may appeal to the majority, offering more extensive customization can still attract a niche of highly engaged consumers within the "NEW" cluster, particularly when strong brand identity is in play.

3.3.5. Cluster ACTIVE

Main relationship between Level of Customization and WTB (Study 1 for cluster ACTIVE)

The analysis of the "ACTIVE" cluster, consisting of consumers who are regularly engaged with customizable products, presents a strong relationship between customization levels and Willingness to Buy (WTB). This group shows a more decisive pattern in its purchase behavior, with higher WTB estimates across all stimuli compared to the "NON" and "NEW" clusters. From Table 1 (Appendix 6.4), we can observe the following results for the four stimuli representing different combinations of customization levels and brand strength:

- High customization with a well-established brand (HH): WTB estimate of 3.59, with a standard error of 0.1905, a t-value of 18.82, and a highly significant p-value of 1.14e-22.
- High customization with a lesser-known brand (HL): WTB estimate of 3.09, with a standard error of 0.2376, a t-value of 13.00, and a significant p-value of 1.14e-16.
- Low customization with a well-established brand (LH): WTB estimate of 3.77, with a standard error of 0.1841, a t-value of 20.50, and a significant p-value of 3.85e-24.
- Low customization with a lesser-known brand (LL): WTB estimate of 3.66, with a standard error of 0.2254, a t-value of 16.24, and a significant p-value of 3.39e-20.

Similar to the overall sample, the LH stimulus (low customization with a well-established brand) produces the highest WTB at 3.77, reflecting that even in the "ACTIVE" cluster, *lower customization combined with strong brand recognition is a highly effective driver of purchase intent*. However, this cluster shows a notable *willingness to engage with both high and low levels of customization, as demonstrated by the relatively high WTB across all stimuli.*

The key insight from this analysis is that the "ACTIVE" consumers are more responsive to both well-established brands and lesser-known brands compared to other clusters. For example, the LL condition (low customization with a lesser-known brand) yields a significantly higher WTB estimate of 3.66, indicating that even emerging brands can capture attention if the customization process is simplified.

Statistically, all p-values are highly significant ($p < 0.001$), suggesting that the differences in WTB across stimuli conditions are meaningful and reflect the preferences of the "ACTIVE" cluster. The results imply that companies targeting this group should emphasize both brand recognition and a balanced approach to customization, as both high and low levels of customization can effectively stimulate purchase intent.

The Moderating Role of Brand Strength (Study 2 for cluster ACTIVE)

In contrast to the "NON" and "NEW" clusters, brand strength plays a more noticeable role as a moderator for the "ACTIVE" cluster, though the impact is somewhat less pronounced compared to the overall sample.

As shown in Table 2 (Appendix 6.4), the estimate for Average Brand Strength is 0.2331, with a standard error of 0.1157, a t-value of 2.01, and a p-value of 4.99e-02, indicating that brand strength still significantly moderates the relationship between customization levels and WTB in this cluster, albeit to a lesser degree than in the general sample.

The intercept value of 2.80 suggests that WTB starts at a higher baseline even when brand strength is minimal. As brand strength increases, the WTB rises by 0.2331 units for every one-unit increase in brand strength. This highlights that while the "ACTIVE" consumers are more receptive to customization in general, stronger brand names still provide a boost to purchase intentions, although the effect is smaller compared to the overall population.

Overall Study (cluster ACTIVE)

The "ACTIVE" cluster represents consumers who have already purchased customized products and intend to continue doing so in the future, demonstrating a clear predisposition toward customization. The analysis of this group reveals distinct patterns in the relationship between brand strength, customization levels, and willingness to buy (WTB).

In Table 3 (Appendix 6.4), the red line represents high customization, which shows a significant upward trend as brand strength increases. This suggests that for the "ACTIVE" cluster, the appeal of high customization grows notably with stronger brand recognition, indicating that established brands can effectively enhance WTB when offering more complex customization options. The consistent positive slope reflects a strong alignment between high customization and brand strength in driving consumer purchase intentions.

Conversely, the blue line representing low customization shows a flatter slope, indicating a more modest increase in WTB as brand strength rises. Notably, WTB for low customization begins relatively high across all levels of brand strength, implying that these consumers already find simple customization appealing, independent of brand recognition. This suggests that low customization holds intrinsic value for the "ACTIVE" cluster, even when the brand is less established.

A key insight from this analysis is that WTB remains consistently above the threshold of 3 for both high and low customization, signaling strong purchase intent across the board. However, as brand strength increases, high customization begins to surpass low customization in effectiveness, indicating that more complex customization becomes increasingly attractive to this segment when offered by well-known brands.

Overall, the "ACTIVE" cluster exhibits a strong willingness to engage with both high and low customization, with high customization becoming particularly influential as brand strength rises. Marketing strategies targeting this group should focus on promoting advanced customization options, especially in conjunction with strong brand positioning, to maximize engagement and future purchase behavior.

3.3.6. Cluster LAPSING

Main relationship between Level of Customization and WTB (Study 1 for cluster LAPSING)

The "LAPSING" cluster consists of consumers who previously engaged with customizable products but have since reduced or discontinued their purchasing behavior. However, due to the limited sample size in this cluster (with only three available data points), it was not possible to perform any meaningful statistical analysis on the relationship between customization levels and Willingness to Buy (WTB).

As a result, no valid conclusions can be drawn for this group based on the data available. Future studies or larger sample sizes would be needed to assess whether customization strategies can effectively re-engage this cluster and drive higher WTB.

The Moderating Role of Brand Strength (Study 2 for cluster LAPSING)

Similarly, due to the lack of sufficient data, it was not feasible to analyze the moderating effect of brand strength on the relationship between customization and WTB in the "LAPSING" cluster. Any conclusions drawn from this minimal dataset would be unreliable, and additional data collection is necessary to explore whether brand strength could play a role in re-engaging these consumers.

Overall Study (cluster LAPSING)

The "LAPSING" cluster consists of consumers who have previously engaged in purchasing customized products but have decided not to do so in the future. As anticipated, the small sample size for this group limits the depth of insights that can be drawn.

The graph illustrates that willingness to buy (WTB) remains largely flat across varying levels of brand strength, with no notable variation between stronger and weaker brands. WTB for low customization (blue line) remains consistently around 3.2, indicating a slightly positive attitude toward simpler customization options. This level, slightly above the neutral threshold of 3, suggests that there could still be a marginal opportunity to re-engage this segment by offering streamlined, less complex customization options.

Notably, high customization is absent from the graph, which strongly indicates that this segment is not inclined toward more complicated customization processes. This may suggest that the decision to stop purchasing customized products is linked to the complexity or perceived difficulty of the customization process itself.

The combination of a lack of interest in high customization and a slightly positive response to low customization suggests that simplifying the customization process could appeal to this segment. However, given the small sample size, these conclusions should be interpreted with caution. Further research with a larger dataset would be necessary to confirm whether simplifying the customization experience could effectively re-engage consumers in this group.

Chapter 4 - Conclusions

The findings of this research illustrate that the relationship between customization levels, brand strength, and willingness to buy (WTB) is highly nuanced and varies across different consumer clusters.

The overall analysis reveals that customization positively influences WTB, with this effect becoming more pronounced when brand strength is higher. However, the preferences and behaviors of specific clusters - NON, NEW, ACTIVE, and LAPSING to product customization - demonstrate that customization strategies must be carefully tailored to meet the distinct needs and inclinations of each group.

Overall Sample

For the overall sample, the study confirms that lower levels of customization are generally preferred, particularly when paired with well-known/established brands. The LH stimulus (low customization with a well-established brand) yielded the highest WTB, emphasizing that simpler customization processes combined with strong brand recognition are most effective in driving purchase intentions. Conversely, high customization with lesser-known brands (HL) resulted in the lowest WTB, suggesting that offering complex customization options may overwhelm consumers, particularly when brand recognition is weak.

Moreover, the moderation analysis demonstrates that brand strength significantly amplifies the effect of customization on WTB. As brand strength increases, the willingness to engage with customization grows stronger, particularly for consumers exposed to high customization options. This finding highlights the critical role of brand perception in enhancing the appeal of customization.

Cluster-Level Insights

The analysis of individual clusters reveals critical differences in how customization and brand strength interact to influence WTB, reinforcing the importance of segmenting consumers and developing tailored marketing strategies.

- **NON Cluster:** Consumers in this group exhibit minimal interest in customization, regardless of brand strength. Their consistently low WTB across all customization levels indicates a clear resistance to the concept of product customization. Even the

influence of well-established brands fails to significantly drive purchase intentions in this cluster. Therefore, brands should not rely on customization to engage this group and should instead focus on more standardized offerings and brand awareness initiatives.

- **NEW Cluster:** This cluster shows a stronger inclination toward customization, with a clear preference for low customization options, especially when paired with well-known brands. While high customization generates some interest, it is significantly less effective in driving WTB. The moderation analysis reveals that brand strength positively influences WTB for both customization levels, though the effect is stronger for low customization. These consumers represent an opportunity for brands to introduce simple, intuitive customization features that align with their initial openness to personalized products. However, a niche segment within this group may still respond positively to more complex customization when brand strength is strong.

- **ACTIVE Cluster:** Consumers in the ACTIVE cluster demonstrate a high level of engagement with both low and high customization options. Brand strength plays an important role, particularly in enhancing the appeal of high customization. For this group, customization is a key driver of purchase decisions, and the presence of a strong brand further amplifies their willingness to buy. Marketing strategies for this segment should emphasize advanced, flexible customization features that cater to their desire for personalized experiences while leveraging brand loyalty to maintain high engagement.

- **LAPSING Cluster:** The LAPSING cluster, although small, provides some insights into why consumers may disengage from customization. WTB remains slightly above neutral for low customization, suggesting that simpler, less complex customization processes may still hold appeal. The absence of high customization in the results strongly indicates that the complexity of the process may have contributed to their decision to stop purchasing customized products. Future strategies targeting this segment should focus on simplifying the customization process, making it more accessible and easier to complete, in an effort to re-engage these consumers.

4.1. Managerial and Consumer Implications

The results of this research provide essential insights for businesses, helping them assess whether their current or planned product customization strategies are both effective and efficient. By gaining a deeper understanding of their target market, businesses can evaluate whether their customization offerings are successfully engaging their audience or whether certain segments are being underserved. This knowledge allows companies to identify potential market gaps and adjust their strategies accordingly to capture and serve these segments more effectively.

Managerial Implications

One of the key takeaways from this research is the importance of assessing consumers' tolerance for the complexity of online customization processes. Since consumers typically undertake customization independently, without real-time guidance, they often face information overload or difficulty navigating multiple choices. This can lead to decision fatigue, cognitive overload, or even purchase regret, resulting in abandoned purchases. Businesses, therefore, must ensure that their customization processes are intuitive, user-friendly, and designed to match the decision-making capabilities of their consumers. It is also critical to thoroughly study consumers' tolerance for complex decision-making processes, indecision, and purchase regret, which this research has shown to significantly impact willingness to buy (WTB).

This research represents a significant step forward in developing a model that helps businesses predict whether consumers' desires for customization align with their actual behavior. The survey section (Table 8, Appendix 4) introducing the summary variable *inclination toward customization* provided valuable insights into how favorably consumers perceive customization and its benefits. For instance, when a consumer displays a strong inclination toward customization (with a score above 3), it is hypothesized that they would prefer a higher degree of personalization, allowing them to meet their specific needs. Conversely, when consumers exhibit neutral or low enthusiasm for customization (with a score below 3), it is assumed that a lower level of customization would adequately satisfy their preferences (Table 1, Appendix 7). This criterion was used to assign each respondent a customization level that corresponded to their interest in personalization.

However, this assumption overlooks a critical factor that has historically led to the failure of some businesses offering customizable products: the consumer's reaction to the customization process itself. Take the case of *Shoes of Prey*, where the company failed to bridge the gap between consumers' expressed desires and their ability to navigate complex customization processes. As the CEO noted, although consumers expressed a desire for customized products, they were not necessarily skilled designers. Many consumers struggled to complete the customization process as they had imagined, resulting in incomplete or abandoned purchases.

To address this issue, this research included a second set of questions designed to capture how the negative effects of customization, such as decision fatigue, cognitive overload, indecision and anticipated regret (Appendix 4, Table 9) affect the different clusters (Appendix 7, Table 3). These negative effects diminished the likelihood of consumers completing a purchase, resulting in many participants who were initially matched with high customization shifting to lower levels of customization when complexity and regret affected their behavior (as shown in Table 4, Appendix 7). This highlights the importance of businesses offering customization options that not only match consumer preferences but also align with their capacity to manage the process without feeling overwhelmed.

The Table 5 (Appendix 7) reveals important shifts in customization preferences across different consumer clusters after considering the impact of cognitive complexity and purchase regret. Initially, respondents were matched with either low or high customization based on their inclination toward customization, but many adjusted their preferences when faced with the complexity of the process.

Key Shifts Across Clusters:

- **NON Cluster**: Initially, the majority of NON consumers were matched with low customization (16 low, 9 high). After considering complexity, most (25 respondents) opted for no customization, further solidifying their lack of interest in personalized products when faced with the difficulties of decision-making.
- **NEW Cluster**: Initially, there was an even split between those preferring low and high customization (16 low, 16 high). However, complexity and regret shifted preferences: while 4 moved toward low customization, 14 shifted to high and 14 chose a mix of both. This demonstrates that although complexity is a factor, many

NEW consumers are still open to personalized products, particularly with strong brand presence.

- **ACTIVE Cluster**: Initially, the split occurred between low and high customization preferences is almost double (17 low, 29 high). After considering complexity and regret, 18 respondents stuck with low customization, while 18 remained with high, and 10 moved to a mix of both. This indicates that although complexity impacts some in this group, many are still willing to engage with more advanced customization options.
- **LAPSING Cluster**: Initially disengaged, with most showing little interest in either low or high customization (1 low, 2 high). After factoring in complexity and regret, all respondents opted for low customization (3), highlighting that simplifying the process is essential for re-engaging these consumers.

The table 5 (Appendix 7) highlights the significant role of cognitive complexity and purchase regret in shaping customization preferences. While ACTIVE and NEW consumers remain relatively open to advanced customization, the LAPSING and NON clusters clearly gravitate toward simpler or no customization options when complexity is a factor. These insights emphasize the importance of tailoring customization options to match consumer tolerance for decision-making challenges, particularly for businesses aiming to retain or re-engage different consumer segments.

From a managerial perspective, it is crucial for businesses to align customization strategies with their brand strength. Strong brands are in a position to offer more advanced customization options that reflect the brand's values and resonate with consumer expectations. However, for brands with weaker market positioning, offering simplified and accessible customization options that reduce complexity is likely to yield more positive outcomes. Importantly, businesses must ensure that customization options are consistent with their brand identity while remaining aligned with the expectations of their target market.

Strategic Implications for Different Brand Types

The findings also underscore the importance of conducting a detailed analysis of consumer behavior before implementing a customization strategy. Customization should not be approached with a one-size-fits-all mentality. Instead, businesses need to align their

customization strategies based on their brand strength and the specific preferences of each consumer segment:

- **For weaker brands**, it is advisable to focus on offering simple, intuitive customization options that minimize complexity. While customization can enhance WTB even for weaker brands, its impact will be more modest without the support of strong brand equity. Thus, building brand strength should be the primary goal before expanding into more complex customization offerings.
- **For stronger brands**, the research demonstrates that extensive customization can significantly increase WTB, particularly among highly engaged segments such as the *ACTIVE* cluster. These brands should invest in advanced customization platforms that allow for greater personalization while ensuring that the process remains smooth and seamless for the consumer.
- **For brands aiming to re-engage lapsed consumers**, simplifying the customization process is key. Reducing the complexity of customization options and enhancing usability may help to win back consumers in the *LAPSING* cluster, who may have disengaged due to frustration with overly complex customization processes in the past.

By aligning customization offerings with brand strength and consumer preferences, companies can more effectively meet market demands, optimize consumer engagement, and strengthen brand loyalty. Furthermore, this targeted approach ensures that resources are allocated efficiently, enabling firms to maximize the return on investment from their customization initiatives.

Consumer Implications

From the consumer perspective, the findings indicate that businesses applying the results of this research could better meet consumer expectations by offering customization experiences tailored to the preferences and abilities of their target audience. Providing intuitive and accessible customization options will help ensure that consumers do not feel overwhelmed by the process. When customization is carefully designed to meet consumer expectations, it increases satisfaction, fosters a stronger connection to the brand, and enhances long-term loyalty.

Moreover, by offering customization experiences that match the consumer's ability to manage complexity, companies can help alleviate decision fatigue and reduce the likelihood of purchase regret. This consumer-centric approach not only increases the likelihood of successful purchases but also fosters greater satisfaction and loyalty, as customers experience a seamless customization process that reflects their preferences and capabilities.

4.2. Limitations

While this research provides valuable insights into the relationship between customization, brand strength, and consumer behavior, it is not without its limitations. One of the primary limitations is the relatively small sample size, which, although sufficient for initial exploratory analysis, limits the generalizability of the findings. A larger and more diverse sample would allow for more robust conclusions and ensure that the observed patterns are representative of broader consumer segments. As a result, the findings should be interpreted with caution, particularly when extrapolating to larger or different demographic groups.

Another limitation stems from the experimental design itself. The stimuli used in the study were static, relying on hypothetical scenarios rather than real-world interactions. While these stimuli were carefully constructed to reflect realistic customization processes, they cannot fully capture the complexity and user experience that consumers would encounter in a live, interactive environment. Thus, the results may not entirely reflect how consumers behave when faced with actual customization tasks, where cognitive load, decision fatigue, and user interface challenges play a larger role. Future studies should aim to incorporate more dynamic and immersive testing environments to better simulate real-life customization experiences.

Additionally, the scope of the study was limited by the focus on two types of brands—established and emerging. While this dichotomy provides important insights into how brand strength influences willingness to buy (WTB) in the context of customization, it overlooks potential variations within these categories. For instance, not all established or emerging brands operate under the same consumer perceptions, and the specific characteristics of each brand (e.g., product category, brand equity, consumer trust) could have additional, unmeasured effects on the outcomes. Further research is needed to disentangle these brand-specific factors to provide a more granular understanding of how different brands can tailor customization strategies effectively.

Moreover, this study proves that enterprises need to adopt a new approach when considering customization strategies - one that takes into account both the target audience and the brand itself. Businesses must determine whether the focus of their strategy should be on offering limited customization options that appeal to consumers seeking a personalized product without strong brand attachment. For established brands, the strategy may involve steering consumers toward higher levels of customization, paired with a premium price, to meet the specific needs of a discerning segment. Alternatively, as suggested by the findings, a focus on low-level customization options could appeal to a broader category of consumers. This approach may allow businesses to capture a wider market by offering customization that is accessible, manageable, and appealing to a diverse audience. Balancing simplicity with personalization can engage a range of consumer clusters, particularly those with lower tolerance for complexity but who still desire some degree of product customization.

Lastly, the study did not account for other moderating variables that could impact consumer responses to customization, such as price sensitivity, cultural differences, or prior experiences with customization. These factors could significantly influence consumer attitudes toward both customization and brand strength, representing a potential gap in the analysis. Future research should explore these dimensions to provide a more comprehensive understanding of the drivers behind consumer behavior in customized product offerings.

By recognizing these limitations, future studies can build on this research and address the gaps, ultimately providing a more thorough and applicable understanding of customization strategies in marketing.

4.3. Future Research

To further advance the findings of this research, several key areas should be explored in future studies. First, replicating the experiment with a larger and more diverse sample is essential for enhancing the generalizability of the results. A larger dataset would provide greater statistical power, allowing for more nuanced insights into the preferences of different consumer clusters (NON, NEW, ACTIVE, and LAPSING). This would offer a more accurate representation of how various segments of the market respond to differing customization strategies across brands.

Second, future research should aim to improve the experimental design by presenting more dynamic and interactive stimuli. Instead of relying on static images or hypothetical scenarios, researchers could develop a fully functional prototype of a website that simulates real customization processes. This would allow respondents to engage directly with the customization options, providing a more immersive and realistic experience. Evaluating participant responses after they have navigated a live prototype would yield deeper insights into their decision-making processes, as it would better capture the cognitive complexity and challenges they face when customizing products in real-world contexts.

Moreover, it would be valuable to gain a deeper understanding of the specific target audiences of established and emerging brands. One potential approach is to collect data directly from brand websites, utilizing Artificial Intelligence (AI)-driven tools to gather and clean consumer interaction data. AI could be used to analyze how different consumer segments engage with various levels of customization, enabling researchers to track patterns of behavior and preference in real time. This data-centric method would allow for more precise predictions regarding the impact of customization strategies on specific consumer groups.

Incorporating Artificial Intelligence into future research methodologies would not only improve the accuracy of predictions but also yield rich insights into the dynamics between consumers and brands. AI-driven analysis could provide companies with a clearer understanding of how different customization strategies might succeed or fail, depending on the brand's identity and its target audience. By using AI to anticipate consumer preferences and tailor customization offerings accordingly, brands can develop more effective and personalized marketing strategies that resonate with specific consumer clusters. Ultimately, this would help brands optimize their customization offerings, ensuring they align with both their identity and the preferences of their consumers, while also enhancing customer satisfaction and loyalty.

By exploring these avenues, future research will deepen the understanding of customization and its relationship to brand strength, while providing actionable insights for businesses seeking to refine their strategies in an increasingly competitive market.

Appendix

Appendix 1

Table 1 - Age mean and standard deviation.

	Mean_Age	SD_Age
1	41.28302	15.15932

Table 1.1 - Age distribution.

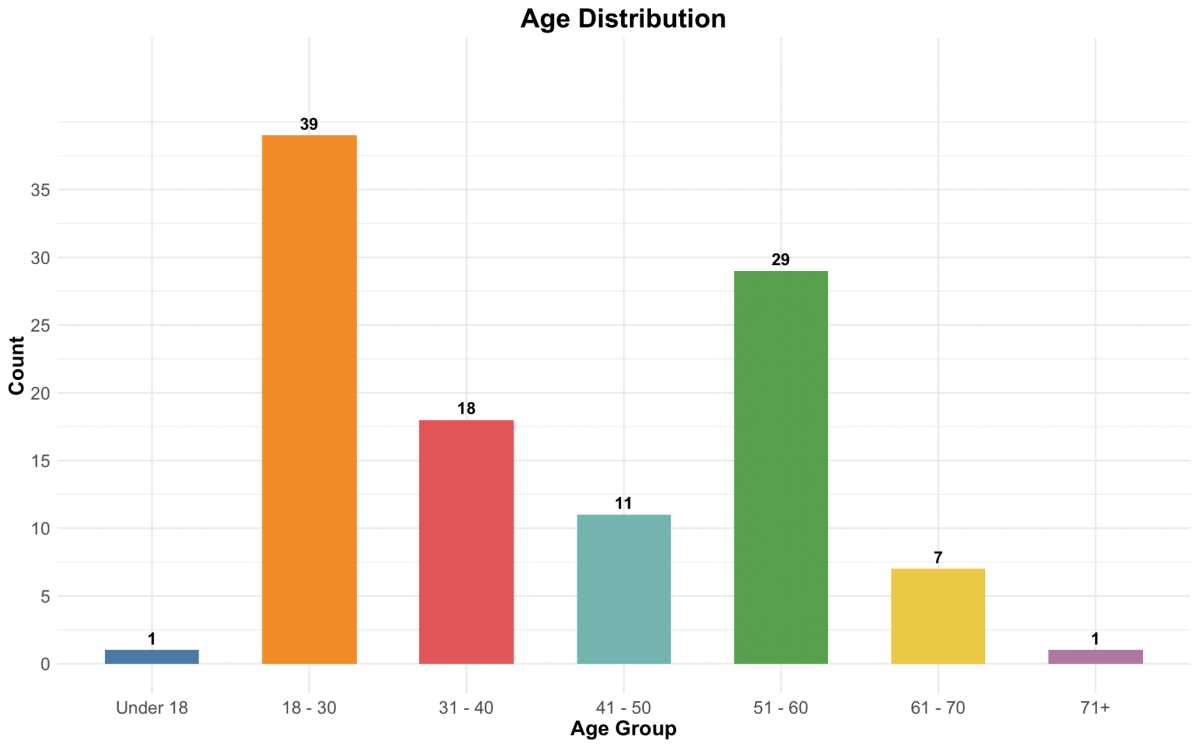


Table 2 - Gender count

	Gender	Count	Gender_Label	Percentage
1	1	32	Male	30.188679
2	2	54	Female	50.943396
3	3	2	Non-binary / third gender	1.886792
4	4	18	Prefer not to say	16.981132

Table 2.1 - Gender distribution

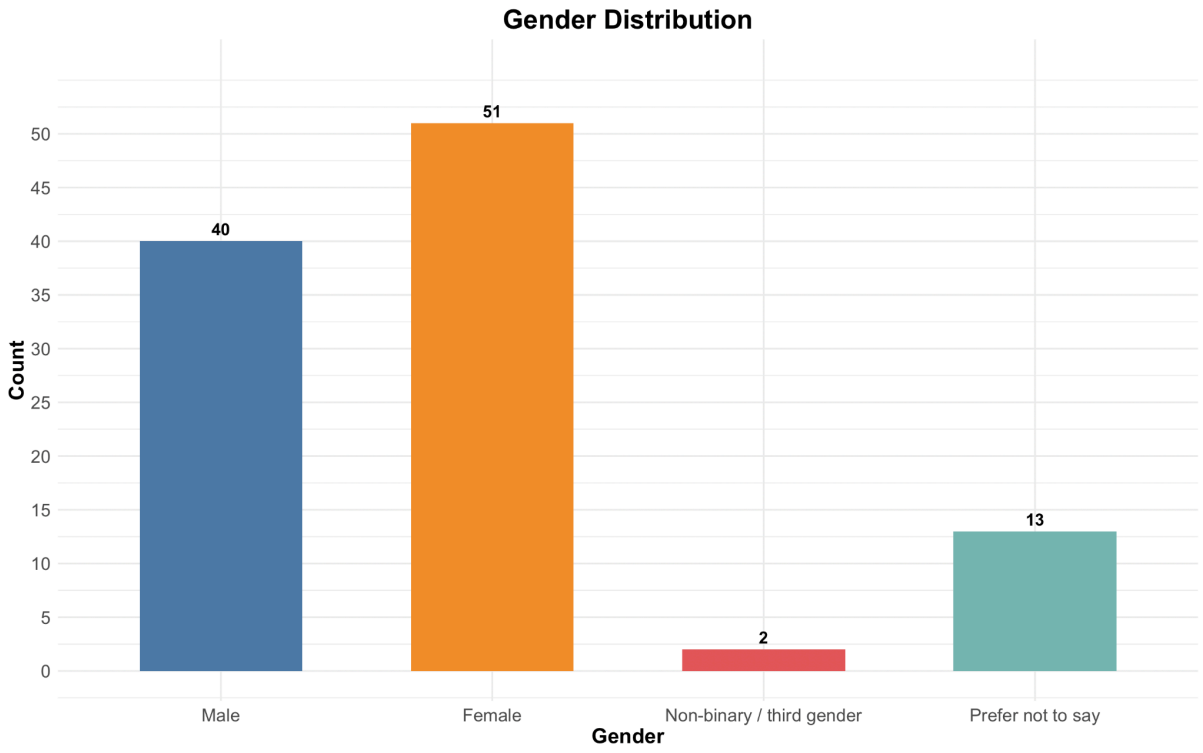


Table 3 - Country count

	Country	Count	Percentage
1	Austria	1	0.9433962
2	Belgium	1	0.9433962
3	Italy	81	76.4150943
4	Macedonia	1	0.9433962
5	Spain	5	4.7169811
6	Syria	1	0.9433962
7	The Netherlands	16	15.0943396

Table 3.1 - Country distribution

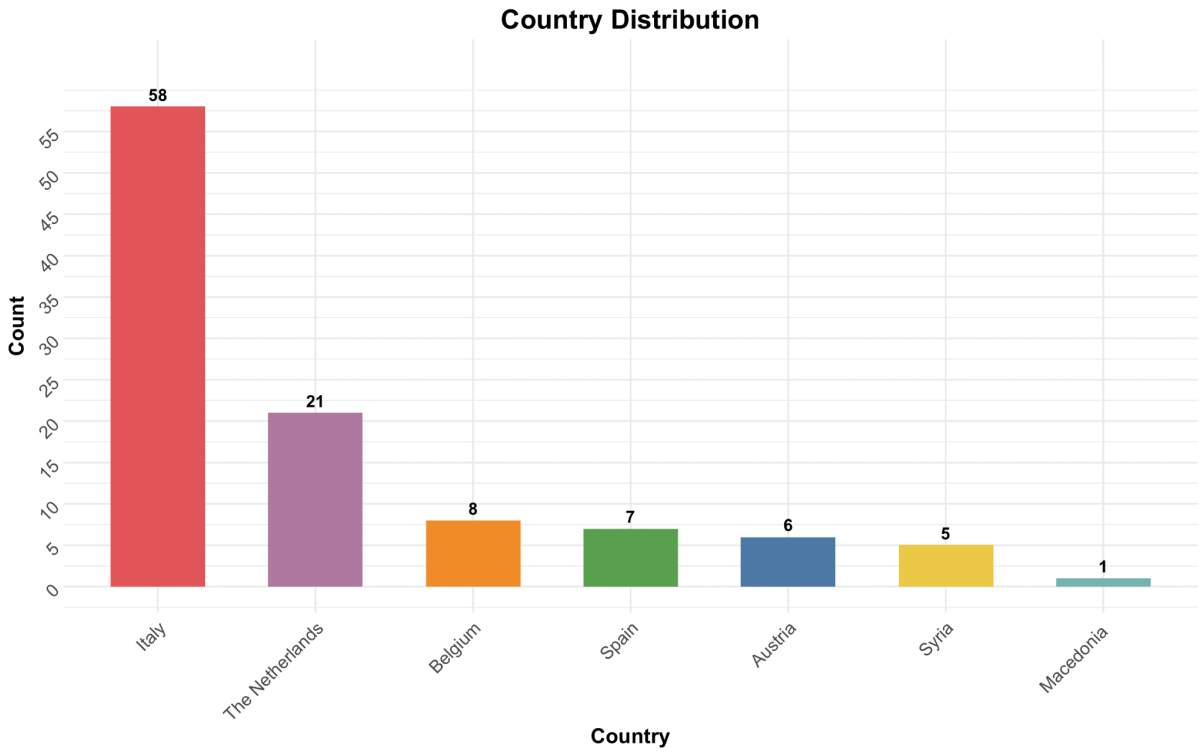


Table 4 - When customized product have been bought in the past - statistics

Table 4.1 - Location Last Purchase

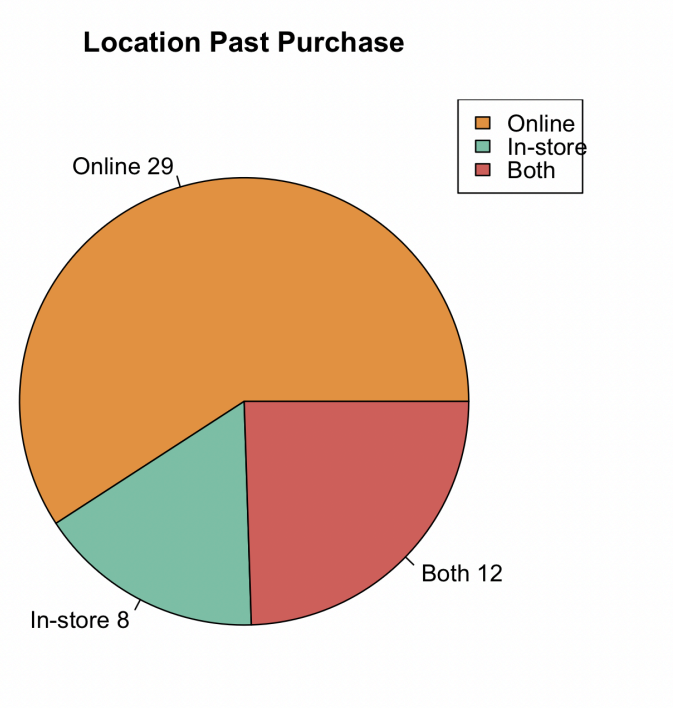


Table 4.2 - Last Purchase of a customizable product

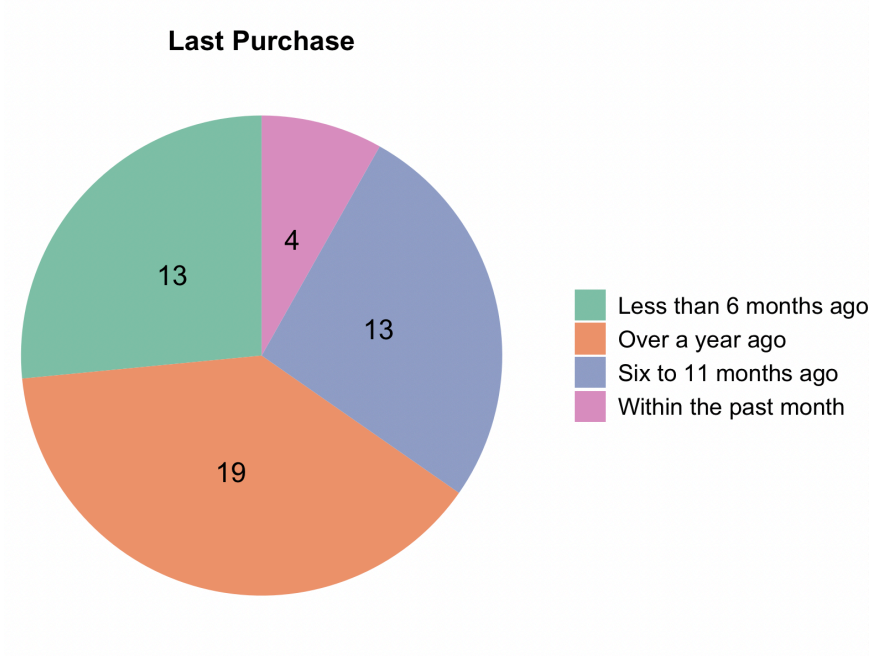


Table 4.2 - Frequency purchase of customized products

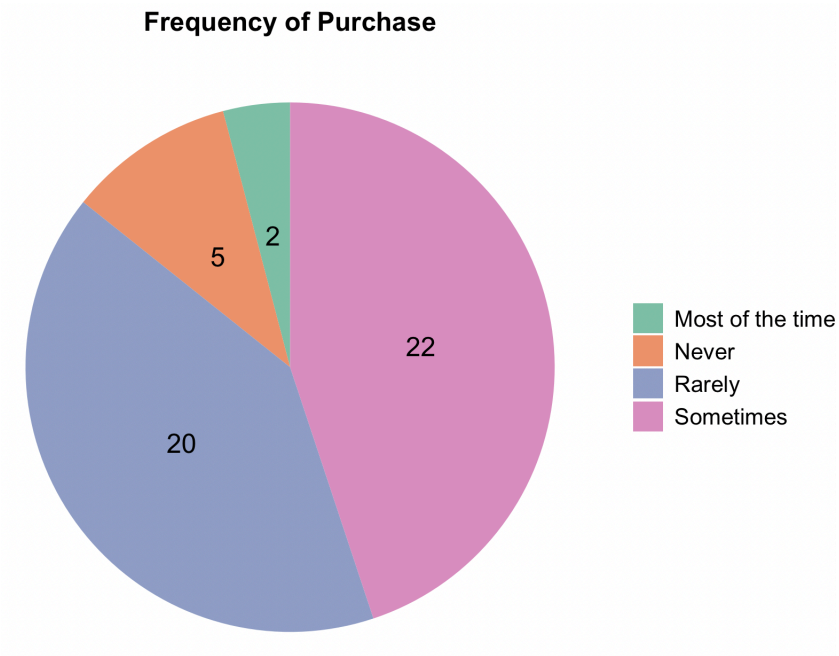
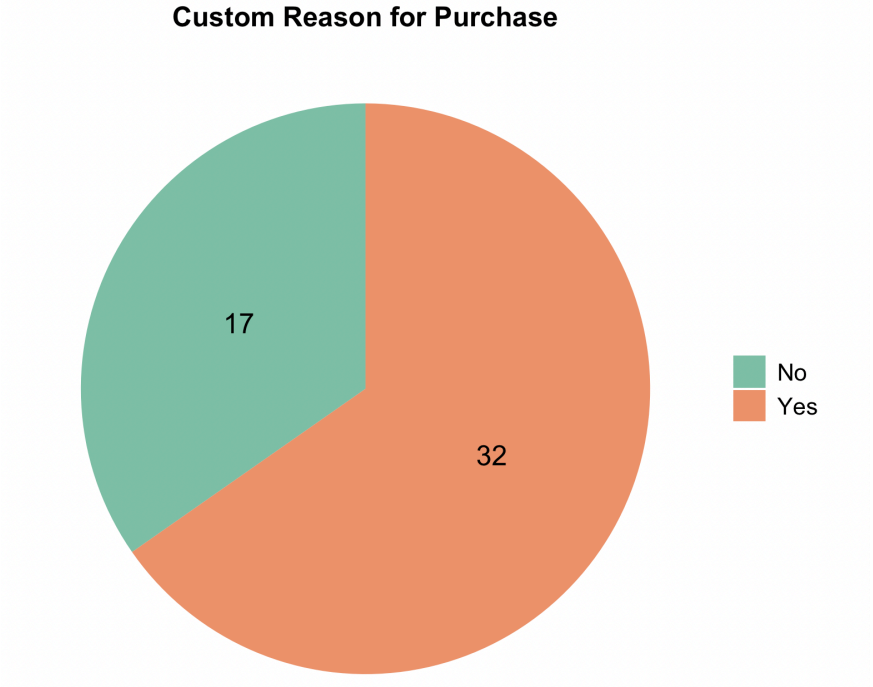


Table 4.3 - If the customization is the reason for the purchase



Appendix 2

Table 1 - Customization and personalization definition in the survey.

Let's clarify the concepts first:

Personalization occurs when *"a company automatically adjusts an experience or product to fit a customer's needs without their input"*. Example: A streaming service recommending shows based on viewing history.

Customization allows *"customers to modify a product or experience to their preferences"*. Example: A customer designing a T-shirt by choosing the color, size, and design online.

Key difference: Personalization is automatic and requires no customer involvement, while customization requires active customer participation.

Table 2 - Questions to create the clusters.

VARIABLE	QUESTION/STATEMENT	SCALE	REFERENCES (adapted by)
Past Purchase	Have you ever bought a customised product?	Yes/No	self-made
Desire of Uniqueness	I often look for one-of-a-kind products or brands so that I create a style that is all my own.	5 Likert scale (Strongly Disagree to Strongly Agree)	Tian et al. (2001)
	Often when buying products, an important goal is to find something that communicates my uniqueness.		
	I actively seek to develop my personal uniqueness by buying special products or brands.		
Self expression	Having an eye for products that are interesting and unusual assists me in establishing a distinctive image.	5 Likert scale	Tian et al. (2001); Kaiser et al. (2017)
	The products and brands that I like best are the ones that express my individuality.		
	I often combine possessions in such a way that I create a personal image for myself that can't be duplicated.		
Heuristic effort	When I think a product requires a lot of effort to make, I consider it to be of higher quality.	5 Likert scale	Kruger et al. (2004)
IKEA effect	I attribute greater value to products that I have helped build.	5 Likert scale	Norton et al. (2011)
"I made it myself"	I feel more satisfied when I use a product I designed myself.	5 Likert scale	Franke et al., 2010
Future intentions	Are you interest to buy a customised product online in the future?	5 Likert scale	self-made

Appendix 3 - Stimuli

Figure 1 - Stimulus HH- High Customization and High Brand Strength

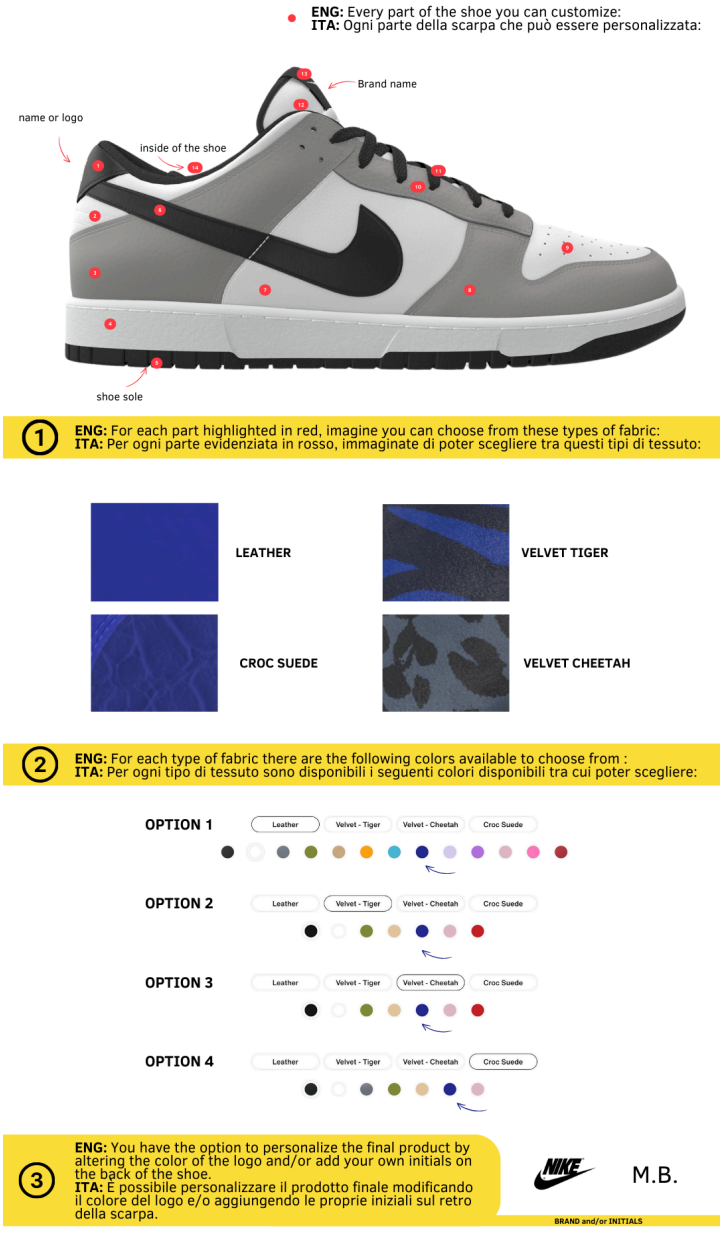


Figure 2 - Stimulus HL - High Customization and Low Brand Strength

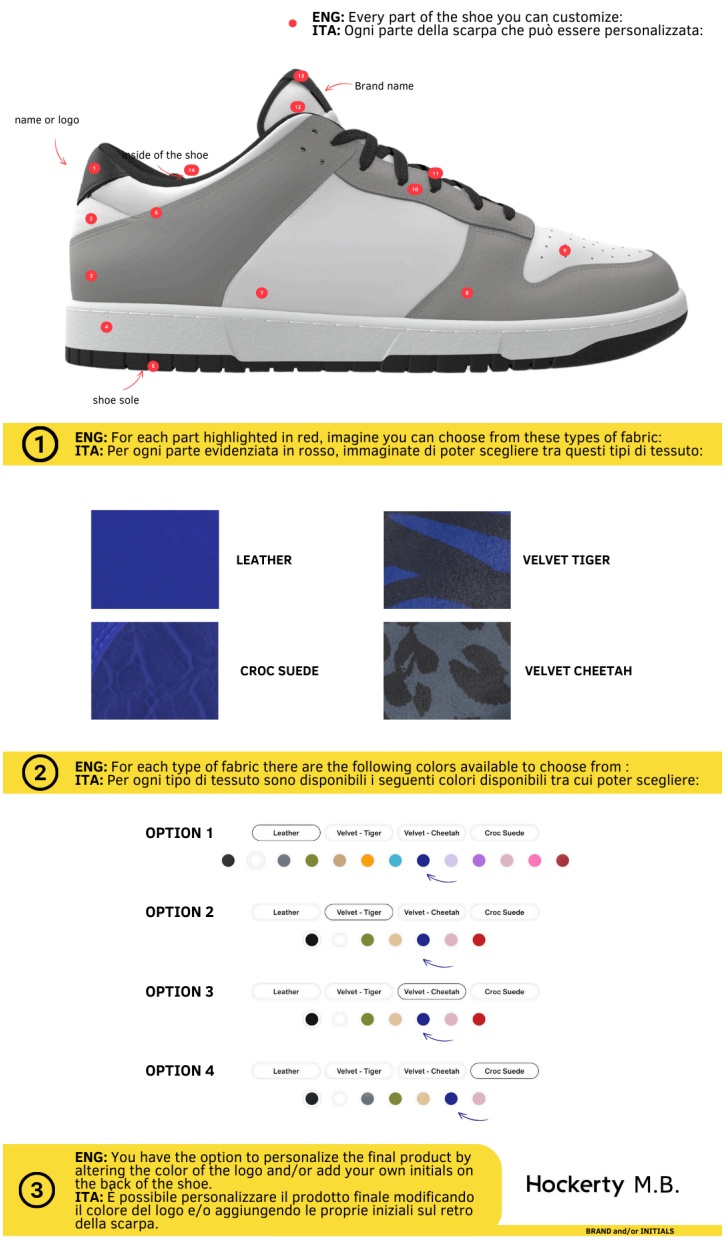


Figure 3 - Stimulus LH - Low Customization and High Brand Strength

Figure 4 - Stimulus LL - Low Customization and Low Brand Strength

Appendix 4

Table 1 - Number of stimuli per category

	stimuli	count
1	HH	28
2	HL	27
3	LH	25
4	LL	26

Table 2 - Bipolar scale (self-made) to check correct understanding of manipulation. .

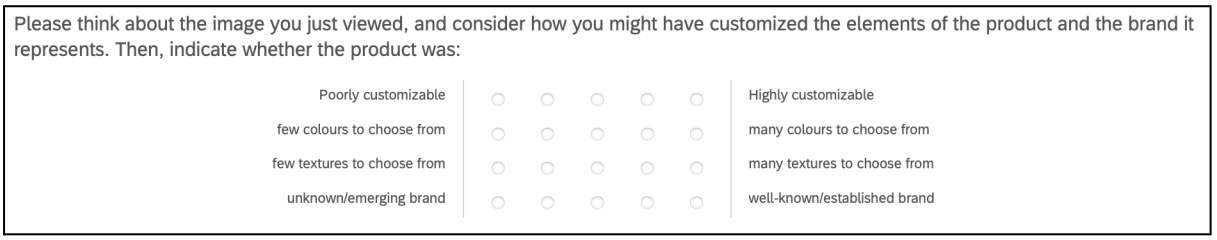


Table 3 - Level of customization per stimulus understood.

	stimuli	M_customization	SD_customization
1	HH	4.642857	0.9511897
2	HL	3.789474	1.1822271
3	LH	2.360000	1.4685594
4	LL	1.652174	1.0272955

Table 4 - Level of Brand Strength per stimulus understood.

	stimuli	M_customization	SD_customization
1	HH	4.642857	0.9511897
2	HL	3.789474	1.1822271
3	LH	2.360000	1.4685594
4	LL	1.652174	1.0272955

Table 5 - Questions and scale WTB - DV

VARIABLE	QUESTION/STATEMENT	SCALE	REFERENCES (adapted by)
WTB	I would seriously consider purchasing a product that can be customized as it was presented.	5 Likert scale (Strongly Disagree to Strongly Agree)	Baek et al. (2010)
WTB	I would be very likely to purchase a customizable product like the one I just saw.	5 Likert scale	Baek et al. (2010)
WTB	I would never consider buying the customizable product I just saw.	5 Likert scale	Baek et al. (2010)
WTB	Whenever possible, I avoid buying customised products preferring standardised ones.	5 Likert scale	Topçu and Kaplan (2015)
WTB	I don't like the idea of owning customised products.	5 Likert scale	Topçu and Kaplan (2015)

Table 6 - Questions and scale WTB - Moderator

VARIABLE	QUESTION/STATEMENT	SCALE	REFERENCES (adapted by)
Brand Strenght - Awareness	I am aware of the brand product I have just seen.	5 Likert scale (Strongly Disagree to Strongly Agree)	Tong and Hawley (2009) & Yoo et al. (2000)
Brand Strenght - Association	I can recognize the brand among other competitors.	5 Likert scale	Tong and Hawley (2009) & Yoo et al. (2000)
Brand Strenght - Association	I have difficulty in imagining the brand in my mind.	5 Likert scale	Tong and Hawley (2009) & Yoo et al. (2000)
Brand Strenght - Perceived quality	I trust the quality of the brand.	5 Likert scale	Tong and Hawley (2009) & Yoo et al. (2000)
Brand Strenght - Loyality	I consider myself to be loyal to the brand.	5 Likert scale	Tong and Hawley (2009) & Yoo et al. (2000)
Brand Strenght - Loyality	It makes sense to buy this brand instead of any other brand, even if they are the same.	5 Likert scale	Tong and Hawley (2009) & Yoo et al. (2000)
Brand Strenght - overall	In general, the brand is more than a product to me.	5 Likert scale	Tong and Hawley (2009) & Yoo et al. (2000)

Table 7 - Questions to measure product involvement

VARIABLE	QUESTION/STATEMENT	SCALE	REFERENCES (adapted by)
Product interest	This type of product is very important to me.	5 Likert scale (Strongly Disagree to Strongly Agree)	Pallant et al. (2020)
Product interest	For me, this type of product does not matter.	5 Likert scale	Pallant et al. (2020)
Product interest	I have a strong interest in this type of product.	5 Likert scale	Pallant et al. (2020)

Table 8 - Questions to measure the inclination toward customization

VARIABLE	QUESTION/STATEMENT	SCALE	SOURCE
Shopping enjoyment	I like shopping.	5 Likert scale (Strongly Disagree to Strongly Agree)	Babin et al. (1994) & Dawson, Bloch, and Ridgway (1990)
Shopping enjoyment	I take my time when I do shopping.	5 Likert scale	Babin et al. (1994) & Dawson, Bloch, and Ridgway (1990)
Attitude towards online shopping	I like shopping online.	5 Likert scale	Babin et al. (1994) & Dawson, Bloch, and Ridgway (1990)
Attitude towards online shopping	I prefer shopping online rather than in-store.	5 Likert scale	Babin et al. (1994) & Dawson, Bloch, and Ridgway (1990)
Shopping enjoyment	My attitude toward online shopping is positive.	5 Likert scale	Babin et al. (1994) & Dawson, Bloch, and Ridgway (1990)
Time pressure	I am always busy.	5 Likert scale	Srinivasan and Ratchford (1991)
Time pressure	I usually find myself pressed for time.	5 Likert scale	Srinivasan and Ratchford (1991)
Attitude towards online shopping	I prefer shopping online rather than in-store when I am short in time.	5 Likert scale	Babin et al. (1994) & Dawson, Bloch, and Ridgway (1990) & Srinivasan and Ratchford (1991)
Attitude towards online shopping	online or in the store with little time to spare, I prefer to buy products that are standardized and familiar to me.	5 Likert scale	Babin et al. (1994) & Dawson, Bloch, and Ridgway (1990) & Srinivasan and Ratchford (1991)
Minimizing Risk	I am very cautious in trying new/different products.	5 Likert scale	Simpson et al. (2008)
Minimizing Risk	I would rather stick with a brand I usually buy than try something I am not very sure of.	5 Likert scale	Simpson et al. (2008)
Minimizing Risk	I enjoy taking chances in buying unfamiliar brands just to get some variety in my purchases.	5 Likert scale	Simpson et al. (2008)

Table 9 - Questions to measure the predisposition to cognitive decision complexity and purchase regret

VARIABLE	QUESTION/STATEMENT	SCALE	SOURCE
Choice overload	When presented with many options, I feel overwhelmed and frustrated.	5 Likert scale (Strongly Disagree to Strongly Agree)	Simpson et al. (2008).
Choice overload	Having a limited number of options makes me feel more in control.	5 Likert scale	Simpson et al. (2008).
Choice overload	Too many choices often lead me to delay making a decision.	5 Likert scale	Simpson et al. (2008).
Indecision	The complexity of options makes it difficult for me to decide.	5 Likert scale	Simpson et al. (2008).
Indecision	I often have doubts about the purchase decisions I make.	5 Likert scale	Simpson et al. (2008).
Indecision	I often wonder if I've made the right purchase selection.	5 Likert scale	Simpson et al. (2008).

Table 10 - Reliability and validity test for all the scales used

	Variable_Set	Cronbach_Alpha	Variance_Explained	KMO_Value	Reliability	Validity
1	WTB_Average	0.76	0.45	0.62	Good	Low Variance
2	Average_Brand_Strength	0.70	0.47	0.75	Good	Low Variance
3	Check_HH_1_3	0.85	0.65	0.73	Good	Low Variance
4	Check_HL_1_3	0.76	0.53	0.70	Good	Low Variance
5	Check_LH_1_3	0.81	0.66	0.70	Good	Low Variance
6	Check_LL_1_3	0.72	0.58	0.50	Good	Low Variance
7	Average_Desire_Uniqueness	0.87	0.69	0.74	Good	Low Variance
8	Average_Self_Expression	0.77	0.54	0.68	Good	Low Variance
9	Involvement	0.86	0.69	0.67	Good	Low Variance
10	Inclination_toward_customization	0.70	0.19	0.66	Good	Low Variance
11	Cognitive_decision_complexity_purchase_regret	0.92	0.65	0.84	Good	Low Variance

Appendix 5 - Main interaction

Table 1 - Average Willingness to Buy per each Stimulus

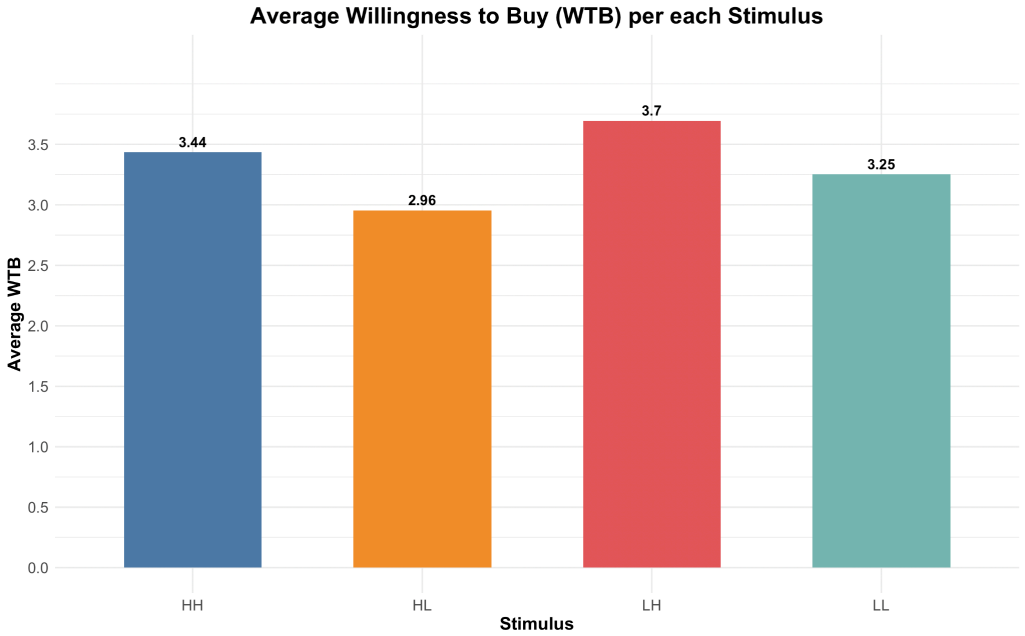


Table 2 - Main effect - stat

	Estimate	Std. Error	t value	p value
Stimuli_HH	3.435714	0.1429055	24.04186	8.154916e-44
Stimuli_HL	2.955556	0.1455278	20.30921	1.267744e-37
Stimuli_LH	3.696000	0.1512369	24.43847	1.962488e-44
Stimuli_LL	3.253846	0.1483000	21.94097	2.048877e-40

Table 3 - Moderation effect - stat

	Estimate	Std. Error	t value	p value
(Intercept)	2.3286845	0.23950212	9.723023	2.799368e-16
Avarage_Brand_Strenght	0.3192765	0.07315443	4.364418	3.014735e-05

Table 4 - Model with the overall representation of the relationships.

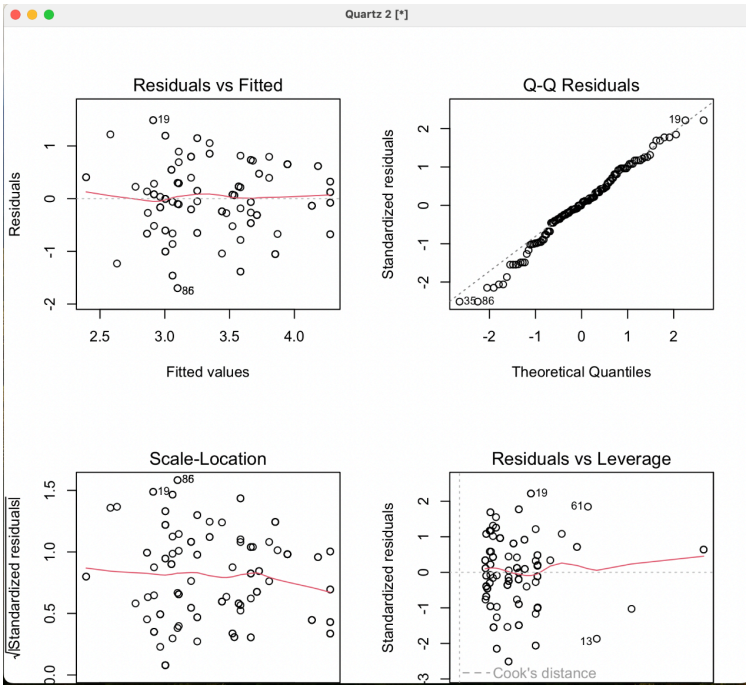


Table 5 - Overall model - JOHNSON-NEYMAN INTERVAL and SIMPLE SLOPES ANALYSIS

When Customization_Level is INSIDE the interval [0.76, 2.86], the slope of Avarage_Brand_Strenght_centered is $p < .05$.
Note: The range of observed values of Customization_Level is [1.00, 2.00]

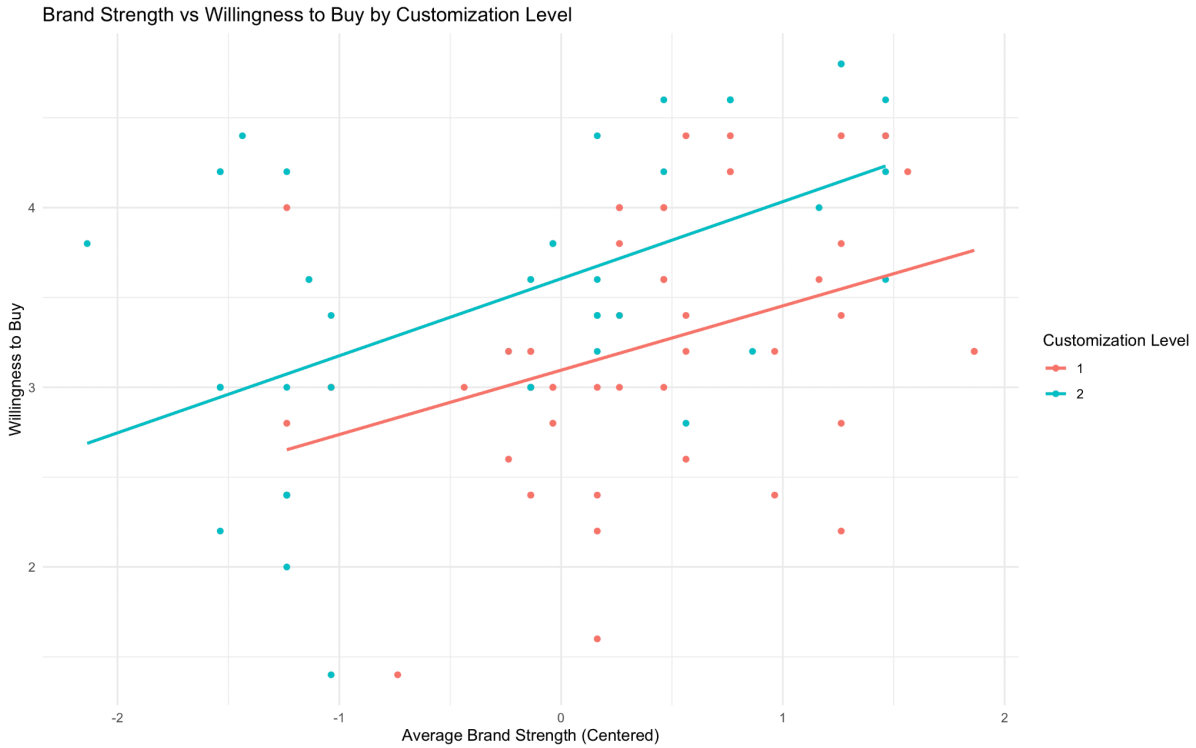
SIMPLE SLOPES ANALYSIS
Slope of Avarage_Brand_Strenght_centered when Customization_Level = 1.00 (1):

Est.	S.E.	t val.	
0.28	0.11	2.62	0.01

Slope of Avarage_Brand_Strenght_centered when Customization_Level = 2.00 (2):

Est.	S.E.	t val.	p
0.34	0.09	3.67	0.00

Table 6 - Overall model - Simple Slopes Analysis for visualization



Appendix 6

Table 1 - Visual Representation of Variables for Consumer Segmentation and Cluster Classification

Past Purchase Behavior	Inclination Toward Customization	Future Purchase Intentions	Segment Classification
No (Past_Purchase = 1)	Low (< 3)	Low (< 3)	NON
No (Past_Purchase = 1)	Low (< 3)	High (>= 3)	NON
No (Past_Purchase = 1)	High (>= 3)	Low (< 3)	NON
No (Past_Purchase = 1)	High (>= 3)	High (>= 3)	NEW
Yes (Past_Purchase = 2)	Low (< 3)	Low (< 3)	LAPSING
Yes (Past_Purchase = 2)	Low (< 3)	High (>= 3)	ACTIVE
Yes (Past_Purchase = 2)	High (>= 3)	Low (< 3)	LAPSING
Yes (Past_Purchase = 2)	High (>= 3)	High (>= 3)	ACTIVE

Appendix 6.1 - Cluster descriptive statistics

Table 1 - Age distribution by cluster

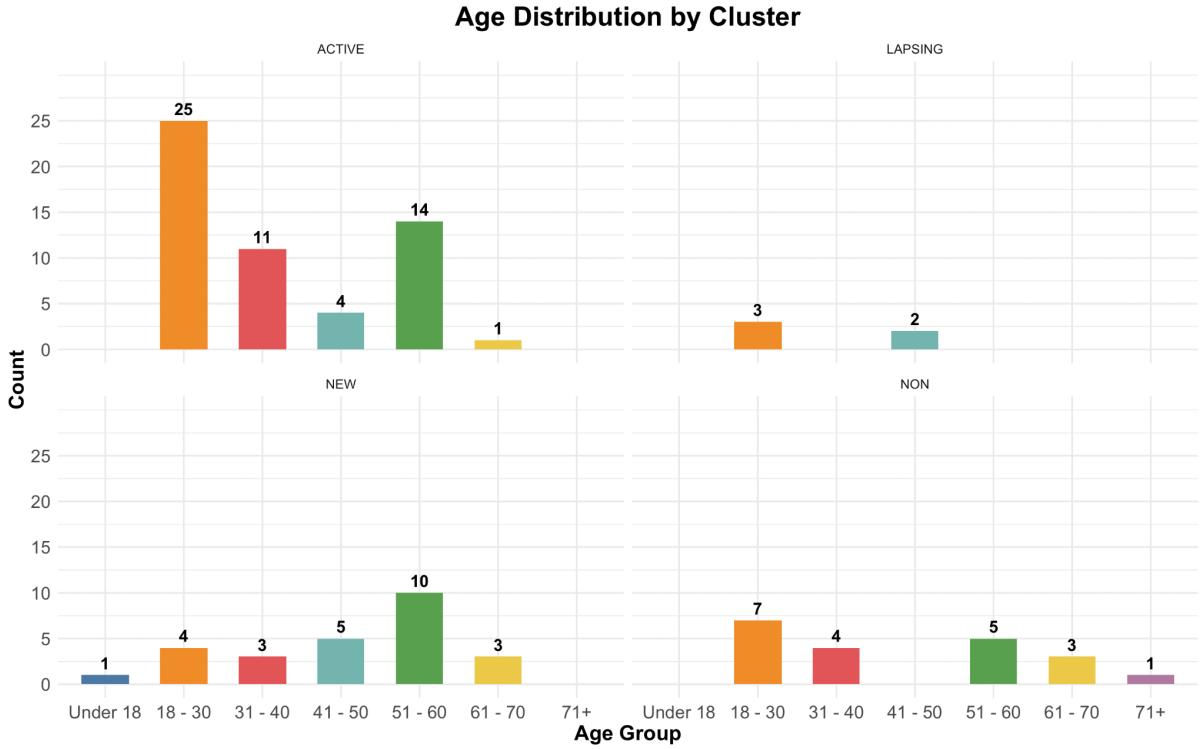


Table 2 - Gender distribution by cluster

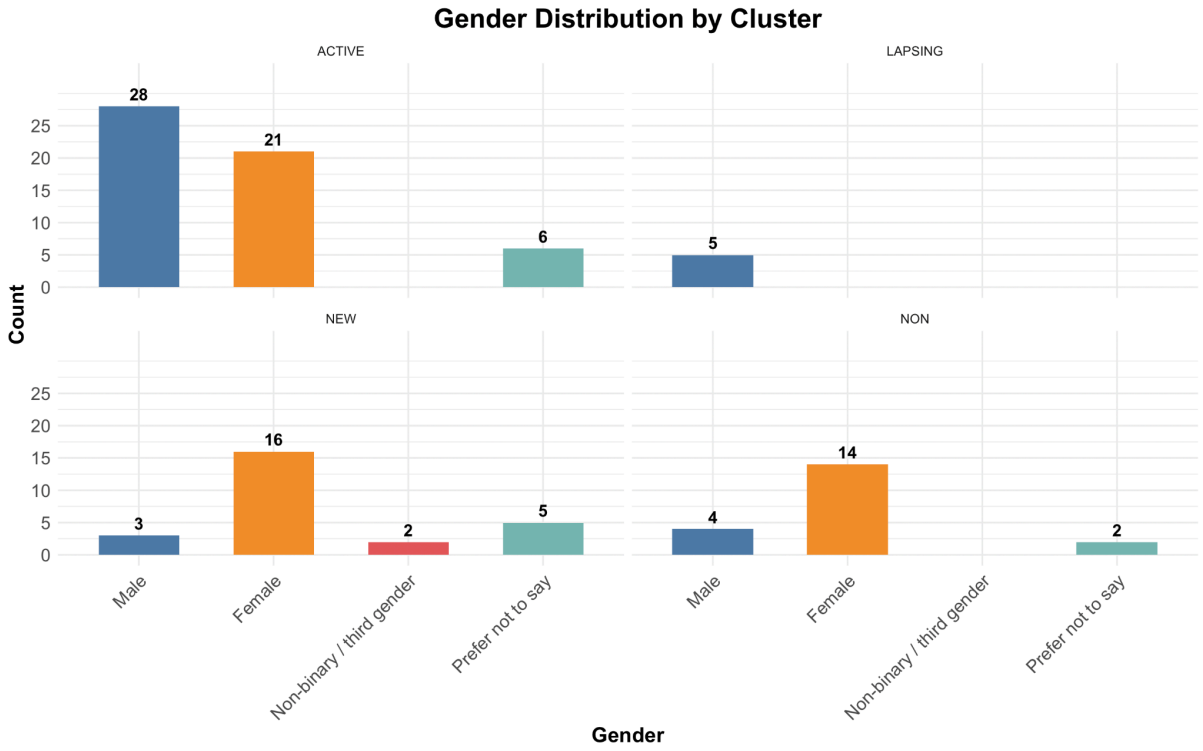
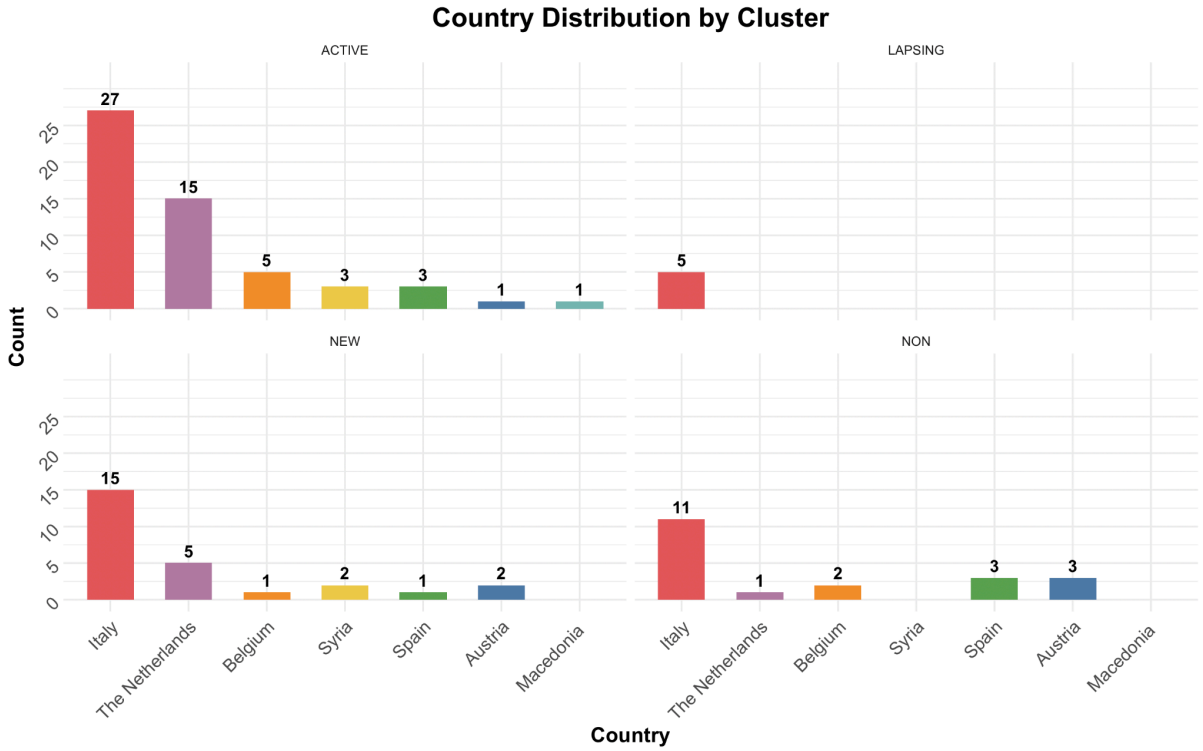


Table 3 - Country distribution by cluster



Appendix 6.2 - Cluster NON

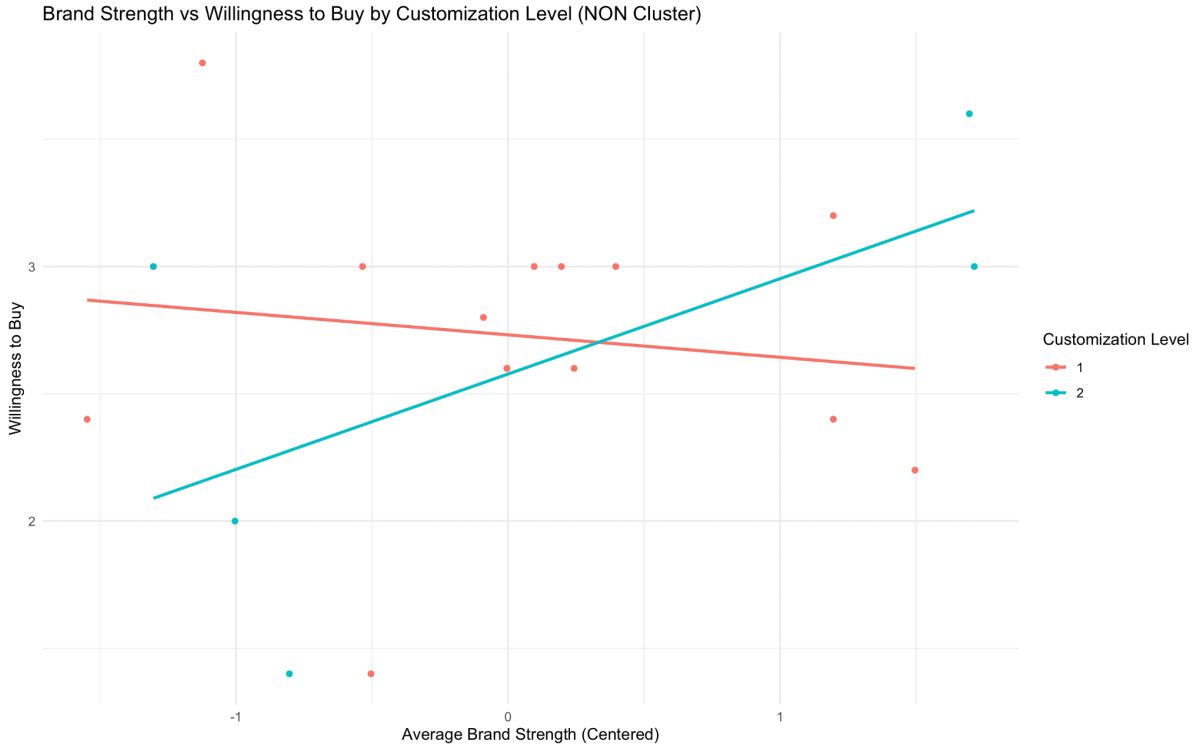
Table 1 - Main relationship (cluster NON)

	Estimate	Std. Error	t value	p value
Stimuli_HH	2.733333	0.2640886	10.350061	5.245824e-09
Stimuli_HL	2.755556	0.2156275	12.779243	1.820926e-10
Stimuli_LH	2.666667	0.3734777	7.140096	1.189705e-06
Stimuli_LL	2.750000	0.3234412	8.502319	1.018621e-07

Table 2 - Moderator (cluster NON)

	Estimate	Std. Error	t value	p value
(Intercept)	2.0612284	0.4226972	4.876371	9.137263e-05
Avarage_Brand_Strenght	0.2197186	0.1316379	1.669114	1.106744e-01

Table 3 - Overall Model (cluster NON)



Appendix 6.3 - Cluster NEW

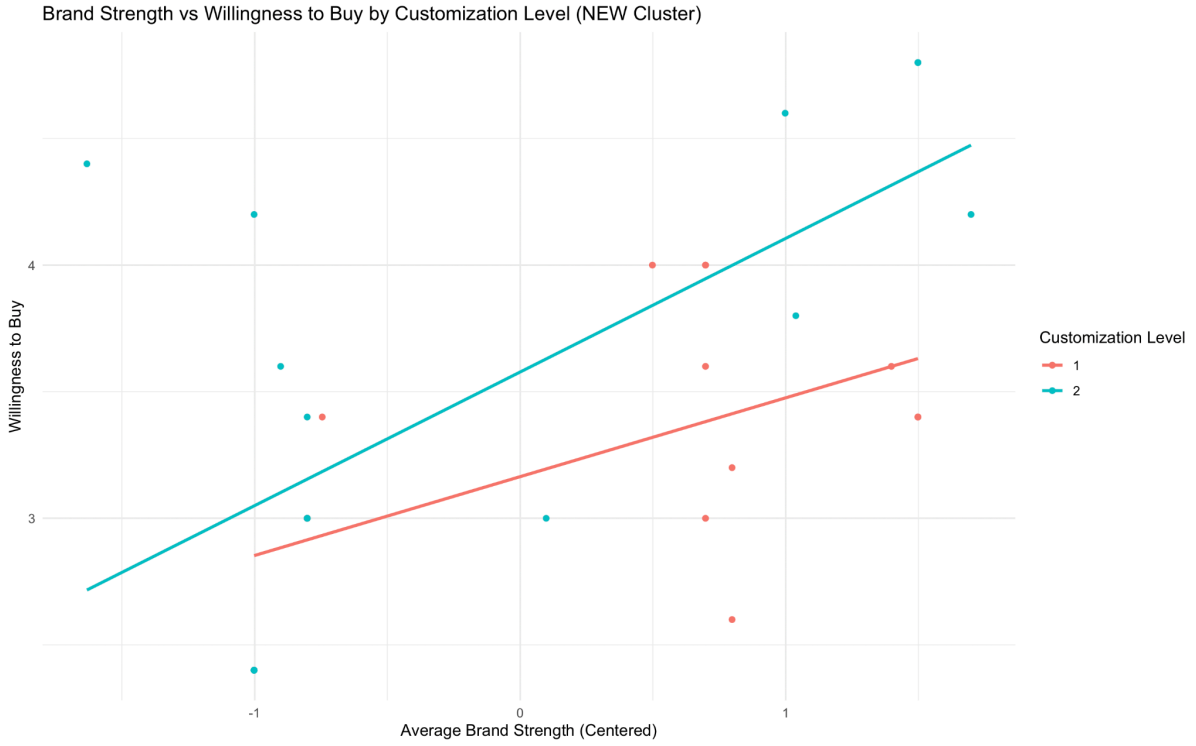
Table 1 - Main relationship (cluster NEW)

	Estimate	Std. Error	t value	p value
Stimuli_HH	3.550000	0.2488374	14.26634	1.215663e-14
Stimuli_HL	3.100000	0.2488374	12.45793	3.628128e-13
Stimuli_LH	4.000000	0.2873327	13.92114	2.265977e-14
Stimuli_LL	3.163636	0.2122093	14.90810	3.935666e-15

Table 2 - Moderator (cluster NEW)

	Estimate	Std. Error	t value	p value
(Intercept)	2.0940456	0.3295504	6.354249	4.496419e-07
Avarage_Brand_Strenght	0.4440631	0.1065606	4.167236	2.290164e-04

Table 3 - Overall Model (cluster NEW)



Appendix 6.4 - Cluster ACTIVE

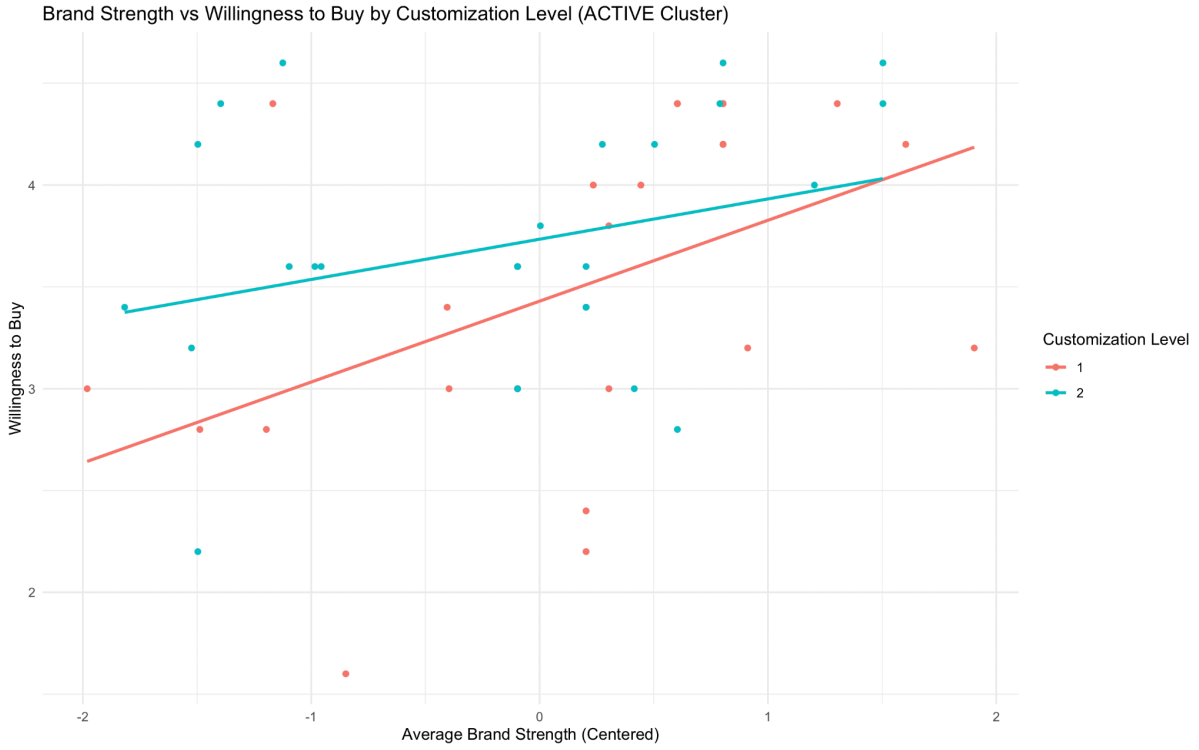
Table 1 - Main relationship (cluster ACTIVE)

	Estimate	Std. Error	t value	p value
Stimuli_HH	3.585714	0.1905195	18.82072	1.135708e-22
Stimuli_HL	3.088889	0.2376195	12.99931	1.142850e-16
Stimuli_LH	3.773333	0.1840593	20.50064	3.848233e-24
Stimuli_LL	3.660000	0.2254257	16.23595	3.386688e-20

Table 2 - Moderator (cluster ACTIVE)

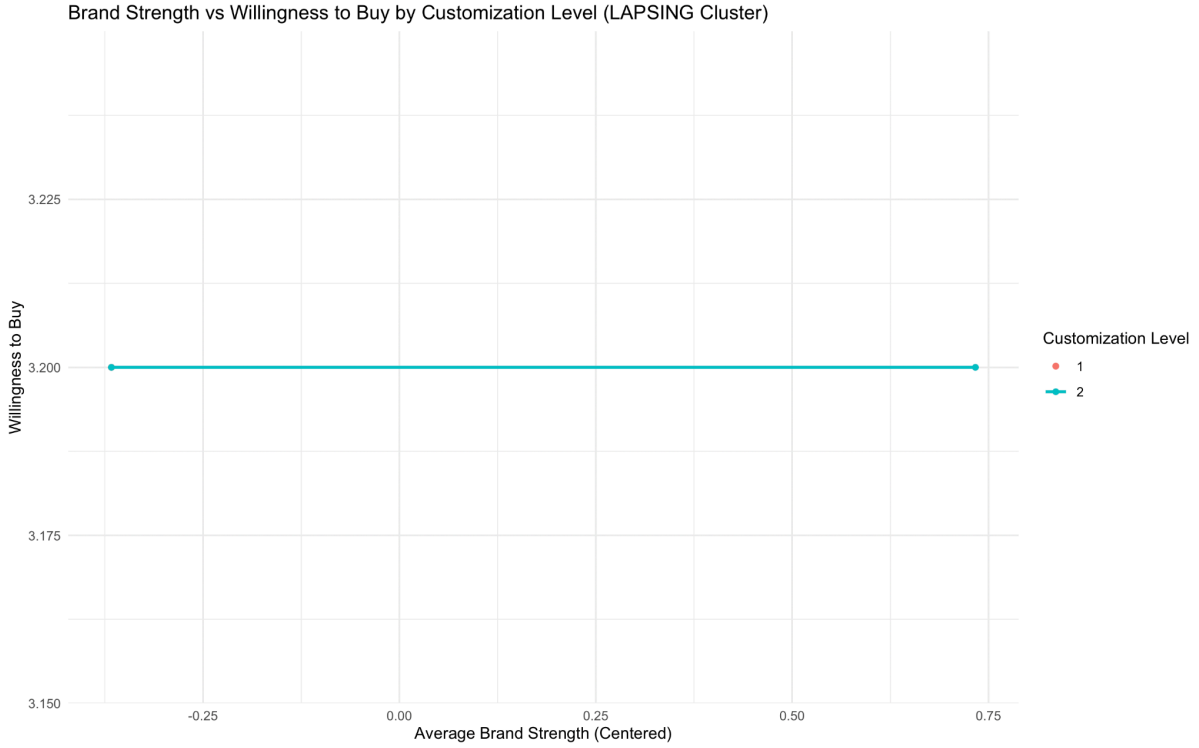
	Estimate	Std. Error	t value	p value
(Intercept)	2.7969686	0.3955981	7.070227	7.150382e-09
Avarage_Brand_Strenght	0.2330947	0.1157273	2.014171	4.986092e-02

Table 3 - Overall Model (cluster ACTIVE)



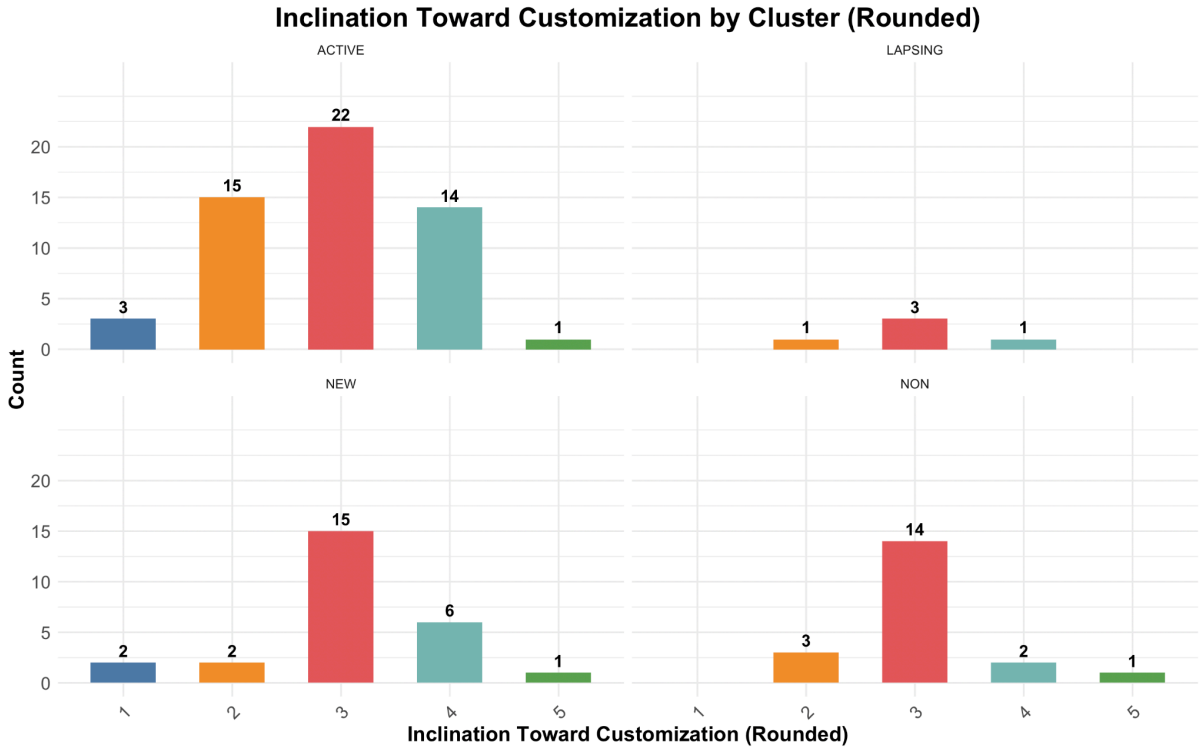
Appendix 6.5 - Cluster LAPSING

Table 1 - Overall Model (cluster ACTIVE)

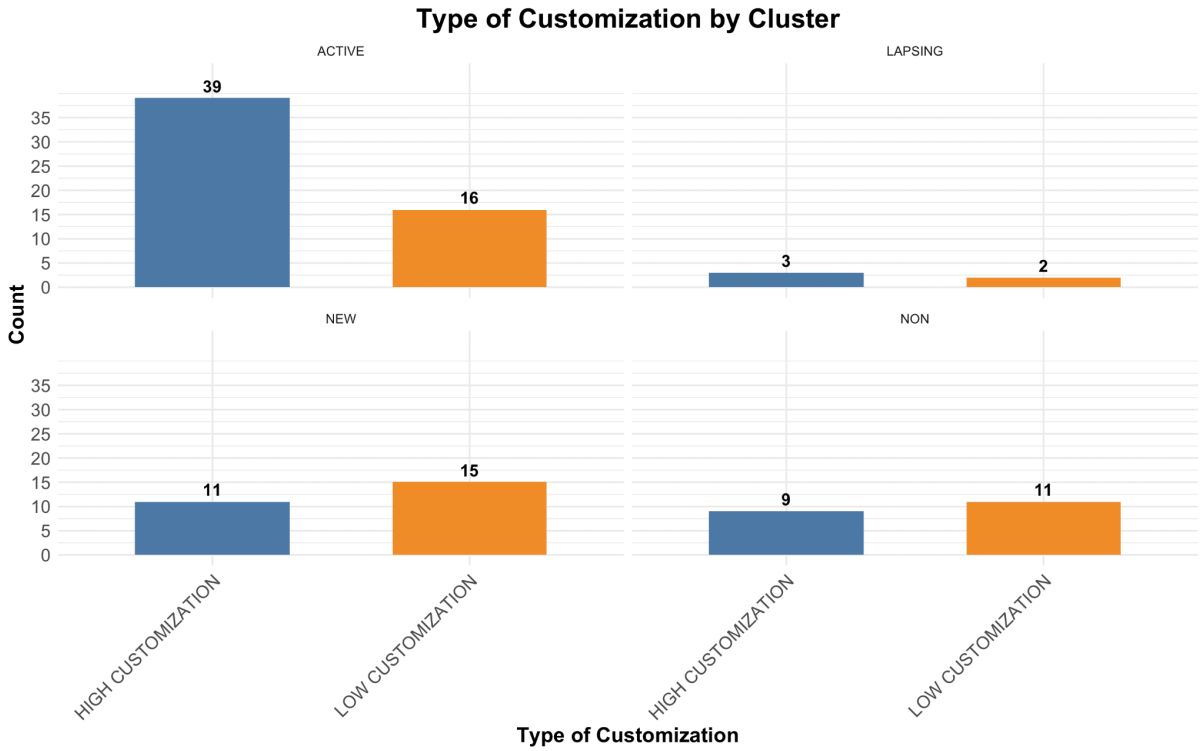


Appendix 7

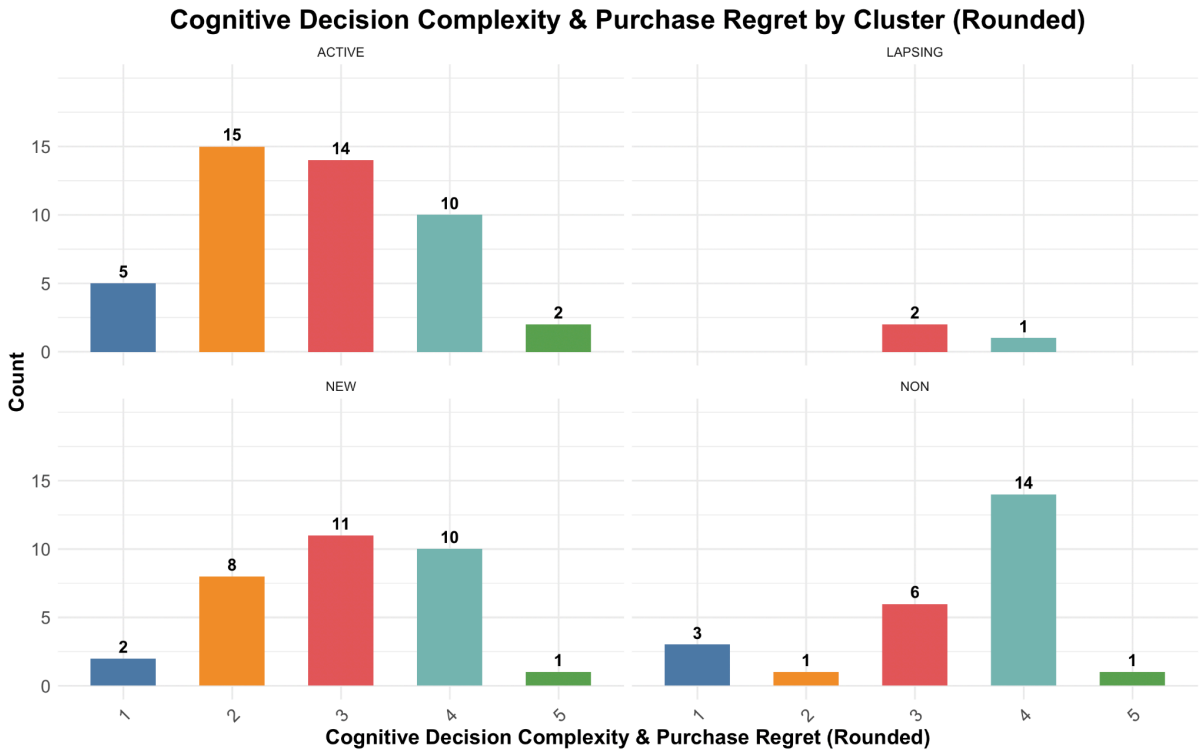
Tab 1 - Inclination toward customization by cluster



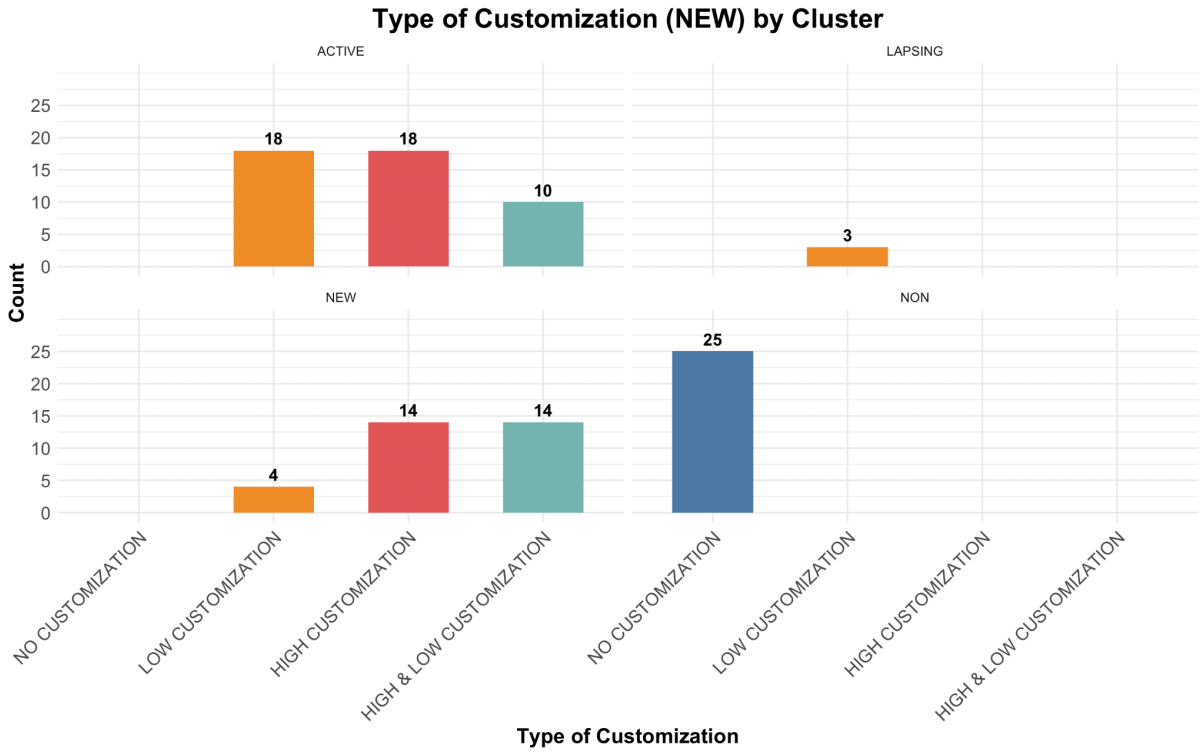
Tab 2 - Type of customization waned by cluster before taking in consideration complexity and regret.



Tab 3 - How complexity, indecision and purchase regret affect the clusters



Tab 4 - Type of customization waned by cluster after taking in consideration complexity and regret.



Tab 5 - Type of customization match based on the inclination toward customization and after taking in consideration complexity and regret by cluster .

	Inclination Toward Customization		Type of Customization Matched		Impact of Complexity & Regret		Type of Customization (NEW)			
Cluster	Low Inclination	High Inclination	Low Customization	High Customization	Low Complexity & Regret	High Complexity & Regret	Low Customization (NEW)	No Customization (NEW)	High & Low Customization (NEW)	High Customization (NEW)
ACTIVE	18	28	17	29	29	17	18	0	10	18
LAPSING	3	0	1	2	2	1	3	0	0	0
NEW	4	28	16	16	16	16	4	0	14	14
NON	20	5	16	9	9	16	0	25	0	0

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Chapter 3

All data presented in this research were self-elaborated using R Studio for analysis and visualization. Should further information or access to the dataset be required, please contact the author directly.

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