



# Co-creating brands

– The impact of co-creation on brand loyalty: The mediating roles of brand personality and brand trust

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## **Abstract**

Companies are facing significant challenges in the current era of rapidly changing consumer choices, driven by e-commerce and social media as well as shifting consumer behaviors. It is becoming increasingly difficult to address the rapidly changing needs and desires of consumers. The ultimate goal for companies is not only to acquire but also to retain consumers in terms of brand loyalty. Co-creation, defined as the process in which consumers actively participate in the creation and development of new product development, has been shown to have a significant impact on brand personality perception, brand trust, and brand loyalty. Specifically, co-creation can lead to perceptions of sincerity and competence in a brand.

A study was conducted to investigate whether the presumed direct relationship between co-creation and brand loyalty, and the mediating effect of brand personality dimensions of sincerity and competence, and brand trust, holds true. Our results show that customers show higher brand loyalty towards products declared as co-created. This aspect is reinforced by the stronger perception of brand personality traits of sincerity and competence that co-creation evokes. In addition, these two brand personality traits, in conjunction with co-creation, create a stronger sense of brand trust, which reinforces brand loyalty.

These results provide new insights for managers and researchers.

**Title:** Co-creating brands – The impact co-creation on brand trust: The mediating roles of brand personality and brand trust

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**Keywords:** co-creation; innovation; branding; brand trust; brand personality; competence; sincerity; brand loyalty

## Sumário

Empresas atualmente enfrentam desafios significativos na era de mudanças rápidas nas escolhas dos consumidores, impulsionadas pelo e-commerce e redes sociais, bem como por uma mudança no comportamento dos consumidores. É cada vez mais difícil atender às necessidades e desejos dinâmicos dos consumidores. O objetivo final das empresas não se limita apenas a adquirir, mas também reter e fidelizar consumidores. A cocriação, definida como o processo pelo qual os consumidores participam ativamente na criação e desenvolvimento de novos produtos, tem mostrado ter um impacto significativo na percepção da personalidade de uma marca, especialmente na confiança e lealdade em relação à marca. Especificamente, a cocriação pode levar a percepções de sinceridade e competência de uma marca.

Um estudo foi realizado para investigar se a suposta relação direta entre cocriação e lealdade à marca, e o efeito mediador das dimensões de personalidade da marca, em termos de sinceridade, competência e confiança na marca, é verdadeira. Os resultados mostram que os consumidores mostram maior fidelidade à marca em produtos declarados como cocriados. Esse aspecto é reforçado pela percepção mais forte dos traços de sinceridade e competência da personalidade de uma marca evocados pela cocriação. Além disso, esses dois traços de personalidade da marca, juntamente com a cocriação, criam um forte senso de confiança na marca, o que reforça a fidelidade à marca.

Esses resultados fornecem novos insights para gerentes e pesquisadores.

**Título:** Cocriação de marcas - O impacto da cocriação na confiança de marca: o papel mediador da personalidade e da confiança na marca

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**Palavras-chave:** co-criação; inovação; branding; confiança na marca; personalidade da marca; competência; sinceridade; fidelidade à marca

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## **1. Introduction**

Despite significant investment in new product development, 95% of new products fail to reach their target market and nine out of ten newly founded companies go bankrupt. This is especially concerning in today's economic climate, characterized by high inflation, supply chain issues, international conflicts, and a widening gap between wealth and poverty, as well as the ongoing global pandemic. To address these challenges, it is important to increase the productivity of the economy and create more profitable enterprises.

Consumers now have a vast array of options when shopping, from e-commerce platforms to direct shopping via social media apps like Instagram and TikTok. This abundance of choice can be overwhelming (Charm et al., 2022). For example, Amazon (excluding books, media, wine, and third-party sellers) offers approximately 12 million products at any given time. This intense competition makes it increasingly difficult for businesses to attract new customers and retain existing ones. In response, companies are seeking ways to foster brand loyalty among consumers.

Branding is a crucial factor in differentiating a product from its competitors. A strong brand allows products to succeed despite similar qualities, and even charge higher prices, leading to increased profits. Therefore, a key goal for any brand is to achieve brand loyalty, which means that consumers will continue to purchase a brand based on a positive perception (Mellens et al., 1996). Loyal consumers are more willing to pay and consistently purchase a brand, despite competition, leading to higher market shares (Chaudhuri & Holbrook, 2001). The foundation for brand loyalty lies in the perceived associations with the brand. According to Chaudhuri and Holbrook, a key determinant in achieving brand loyalty is brand trust. During the COVID-19 pandemic, 75% of US consumers tried a new shopping method and exhibited switching behavior. Only brands with high consumer trust were able to thrive during this period, showing 50% growth (Charm et al., 2022).

Brand trust can be defined as the willingness of the average consumer to rely on a brand to perform its stated function (Moorman et al., 1992, p. 315; Morgan & Hunt 1994, p. 23). Trust in a brand also implies truthfulness and sincerity about communicated values and goals (Doney

& Cannon, 1997). It is thus defined as "beliefs about reliability, safety, and honesty that people incorporate in their operationalization of trust" (Chaudhuri & Holbrook, 2001, p. 82).

Perceived brand personality is strongly related to brand trust (Aaker 1992). Based on the five-factor model of brand personality, which includes the traits of sincerity, excitement, competence, sophistication, and ruggedness (Aaker, 1997), the factors of sincerity (e.g., honesty and wholesomeness) and competence (e.g., reliability and success) correspond heavily with the characteristics of brand trust. Research shows that brands perceived with personality dimensions such as competence and sincerity display higher brand trust, leading to increased brand loyalty among consumers (Sung & Kim, 2010).

Innovation scholars have noted that co-creation leads to higher consumer trust in the company (Iglesias et al., 2020; Dahl et al., 2015; Schreier et al., 2012) and improved brand personality perceptions (Van Dijk et al., 2014) and brand loyalty (Cambra-Fierro et al., 2018; Mingione et al., 2020; Wasaya et al., 2021). Co-creation aims to increase innovation capacity and value creation by incorporating the experiences and preferences of consumers and end-users in new product development (Prahalad & Ramaswamy, 2004). According to Galvagno and Dalli, co-creation is „the joint, collaborative, concurrent, peer-like process of producing new value, both materially and symbolically”. The authors define co-creation as a process that not only generates innovative, value-creating power, but also influences changed perceptions of a product or brand through customer participation.

Research has shown that the positive perceptions of co-creation can affect brand personality traits such as competence and sincerity, as well as drive purchase intention, loyalty, and perceptions of quality, trust, and innovation (Aaker, 1997; Seimiene & Kamarauskaite, 2014; Van Dijk et al., 2014; Dahl et al., 2015; Schreier et al., 2012; Cambra-Fierro et al., 2018; Mingione et al., 2020; Wasaya et al., 2021). Additionally, feminine individuals tend to be more receptive to the co-creation message and are therefore more strongly impacted by co-created products (Mulyanegara, et al., 2009).

It is important for companies to understand their brands in order to improve positioning and diversification, and ultimately achieve brand loyalty through positively associated brand personality and trust, especially in the context of the emerging and innovative concept of co-creation. However, there is a lack of research on the impact of co-creation on brand personality

attributes and brand trust on brand loyalty. While Van Dijk et al. (2014) explored the influence of sincere brand personality traits on purchase intention, the factors of brand trust and brand loyalty have not been fully researched in relation to co-creation. Additionally, the positive effect of brand personality attributes such as sincerity and competence on brand trust has not been studied in the context of co-creating brands. Therefore, it is still unknown how mediating effects of brand personality perception and brand trust impact brand loyalty in the context of co-creating brands.

There is a clear imbalance of research that favors both companies and participating consumers (Dahl et al., 2015). The associations and perceptual aspects of co-creation at the level of perception are the least well-researched. Consumers who are not actively involved in the co-creation process of a brand's products or services are often referred to as "observing consumers." The perceptions of observing consumers can significantly impact their purchasing decisions (Aaker, 1991). In particular, consumers may be more likely to exhibit brand loyalty if they perceive a brand as superior to its competitors (Kotler & Keller, 2012). These perceptions, which are often based on the experiences and interactions that consumers have with a brand, can play a significant role in determining whether or not an individual will choose to purchase a product or service (Aaker, 1991).

However, more research is needed to understand how co-creation can impact the brand loyalty of observing consumers. For example, it is not yet clear if observing consumers are more likely to be loyal to a brand if they learn that a product was co-created and how this message affects brand personality perceptions, brand trust, and brand loyalty in their decision-making process.

Therefore, in this research, we propose that co-creation fosters brand personality associations of sincerity and competence, which strengthen brand trust and have a positive impact on brand loyalty.

## **1. Thesis Structure and Research Questions**

The structure of the thesis begins with a review of the relevant literature, which leads to the formulation of several hypotheses. To test the validity of these proposed hypotheses, the research approach is then outlined, and the results are analyzed. In conclusion, the obtained

results, along with their implications and limitations, are critically examined. The goal of this study is to address the following research questions:

**RQ1:** Can co-creation increase brand loyalty?

**RQ2:** What are the mechanisms for higher brand loyalty? What is the role of co-creation on brand personality and brand trust?

**RQ3:** On which dimension, does co-creation influence brand personality?

Apart from these main research questions, the following ones will also be answered:

Does a more sincere and competent brand personality in the case of co-creating brands leads to higher brand trust?

Do brand personality perceptions of sincerity and competence and brand trust positively mediate the brand loyalty of co-creating brands?

## **2. Literature Review**

In this chapter, the literature review of this paper is presented. Initially, the foundational knowledge of branding is outlined and established as a baseline for companies to compete, diversify, and innovate. This is followed by a definition of co-creation and the importance of addressing the market. Then, co-creation is examined from the perspectives of firms, collaborating consumers, and observing consumers (the market). Finally, the model of brand personality, brand trust, and brand loyalty is explained and related to the perception of brand co-creation.

### **2.1 Branding**

Branding is a crucial aspect of a firm's strategy for diversification and staying relevant in the market. According to a study by Kaplan and Haenlein (2010), branding can help a firm differentiate itself from its competitors and create a strong, positive image in the minds of consumers. This can be especially important in today's increasingly competitive and rapidly changing market, where firms need to be able to adapt and innovate in order to stay ahead of the curve.

One way in which branding can support a firm's diversification efforts is by helping to create a sense of trust and loyalty among consumers. By building a strong, positive brand reputation, a firm can encourage consumers to continue purchasing its products and services, even as it expands into new markets or introduces new products. This can be especially important when a firm is entering a new market or industry, where it may face significant competition and uncertainty (Kotler & Keller, 2012).

Branding can also support a firm's efforts to stay relevant in the market by enabling it to better understand and respond to the needs and preferences of its customers. According to a study by Chesbrough and Rosenbloom (2002), co-creation - the process of actively involving customers in the design and development of new products and services - can be a powerful way for firms to gain valuable insights and ideas that can help drive innovation and stay ahead of the curve. By engaging with customers and building strong relationships through branding efforts, firms

can more effectively tap into the collective wisdom and creativity of their customers and partners, which can help them stay ahead of the competition.

In general, branding is an important aspect of a firm's strategy for diversification and staying relevant in the market. By building a strong, positive reputation and engaging with customers through co-creation, firms can differentiate themselves from competitors, build trust and loyalty among consumers, and gain valuable insights and ideas that can help drive innovation and stay competitive.

## 2.2 Co-creation and the need to address the Market

Co-creation is a process in which external stakeholders, such as consumers, are invited to contribute ideas and input in the development of new products or services (Iglesias et al., 2020). According to Prahalad and Ramaswamy (2004), one of the leading sources on co-creation, this approach allows firms to achieve value creation and growth through interactive engagement with both the market and consumers. Previously, the interaction between firms and consumers was typically separate and one-sided, with consumers simply being viewed as buyers (Prahalad & Ramaswamy, 2004).

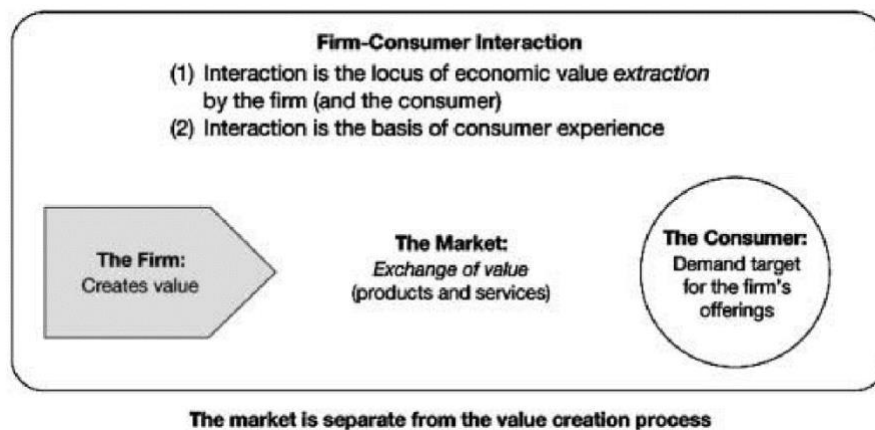


Figure 1: Traditional Firm, Market, Consumer Interaction (Prahalad & Ramaswamy, 2004, p. 7)

However, as depicted in Figure 2, co-creation involves mutual interaction and collaboration between all three parties: the firm, the market, and the consumer. It is crucial to note that co-creation is not a one-way exchange, but rather a process that involves consumers in the value

creation process through facilitated and moderated experiences (Prahalad & Ramaswamy, 2004).

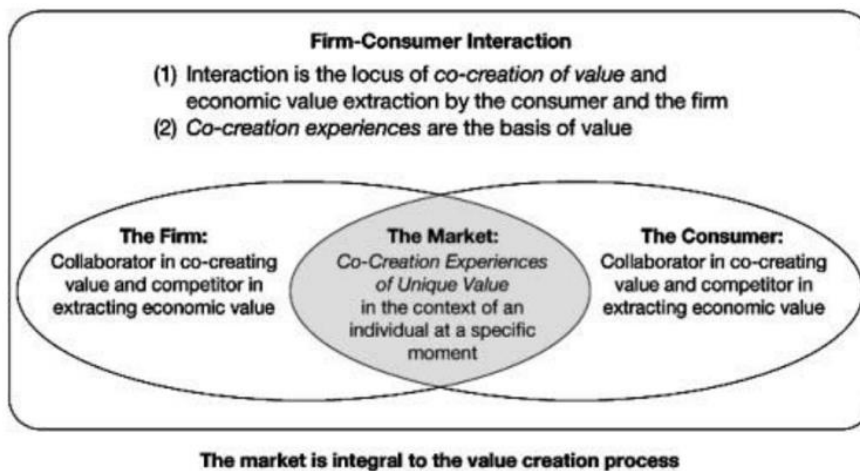


Figure 2: Co-Creative Firm, Consumer Market Interaction (Prahalad & Ramaswamy, 2004 p.11)

### 2.2.1 Co-creation for Firms

In his seminal work "Democratizing Innovation," Erich von Hippel (2005) highlights the importance of consumer participation in driving innovation and the potential benefits that companies can reap from capturing the knowledge and expertise of their users. Von Hippel asserts that open communication with consumers can lead to increased sales, improved profitability, and greater market share (Ramani & Kumar, 2008). Adopting a user-centric approach can give companies a competitive advantage over their competitors, as it enables them to develop products that precisely meet the needs of their consumers (Dahl et al., 2015). Additionally, this commitment to customer-driven innovation can strengthen a company's intellectual property and enhance brand equity by providing the market with the relevant and valuable content it desires (Dahl et al., 2015).

Considering this, co-creation may lead to increased satisfaction among consumers and therefore enhance the brand experience. It may also broaden the market by attracting new customers. Investment in research and development may decrease as external sources (consumers) drive innovation (Laursen & Salter, 2006). Kennedy and Guzman conducted interviews with 42 top managers and found that they were primarily interested in co-creating with consumers to

increase return on investment, validate insights, create resources, and improve service offerings, if it aligns with their mission statement (Kennedy & Guzman, 2006, p. 316).

One example of co-creation in the automotive industry can be found at the BMW Co-Creation Lab (Bartl et al., 2013). This platform allows consumers to submit ideas and collaborate with BMW designers on the creation of new car models or features. These ideas are then evaluated and potentially implemented in future BMW models. By allowing consumers to have a direct impact on the products they purchase, BMW is able to better meet the needs and preferences of its customers.

Another example of co-creation can be found in the toy industry with Lego's Mindstorms product (ESADE, 2018). This product allows consumers to design and build their own robots using a variety of different Lego bricks and computer programming. Consumers are able to submit their designs to the Lego Co-Creation platform, where they can be shared with other creators and potentially be developed into full Mindstorms sets. By involving consumers in the co-creation process, Lego is able to better reflect the preferences and interests of its customer base (Ramaswamy, & Ozcan, 2013).

### **2.2.2 Participating Consumers**

In a second study, Kennedy and Guzman conducted interviews with 450 millennial consumers to understand their motivations for potentially participating in co-creation with a brand. The primary drivers were identified as social, fun, compatibility with the brand, and communication appeal.

Additionally, the level of customer involvement in the co-creation process has been identified as a crucial factor (Dahl et al., 2015). Customers who are more actively engaged in the process, such as by providing input on product design or participating in focus groups, are more likely to be satisfied with the final product or service (Mandolfo et al., 2020). Transparent and effective communication between the company and its customers is also a crucial factor in ensuring customer satisfaction with the final product (Iglesias et al., 2020).

Dahl et al. (2015) have demonstrated that involving customers in new product development can lead to psychological effects for the participating consumers, including a sense of fulfillment

and a feeling of having a personal impact on the company's product portfolio. Consumer participation is crucial for building strong relationships between consumers and firms, leading to user loyalty and trust in the brand (Dahl et al., 2015). Additionally, participation in product innovation can provide an empowering experience and a sense of enjoyment and belonging for consumers (Costa & Vale, 2018).

### **2.2.3 Observing Customers**

Co-creation, or the process of involving consumers in the creation of products or brands, has a range of implications that extend beyond the benefits for firms and the selection criteria and effects for participating consumers. According to Prahalad and Ramaswamy (2004), the market, in the form of observing consumers, plays a significant role in the potential influence of co-creation. Schreier et al. (2012) found that observing consumers tend to have a higher likelihood of purchasing, a higher willingness to pay, and a higher probability of referring a product when it has been co-created by other consumers.

Companies and brands that engage in co-creation are also perceived as more innovative. Four characteristics contribute to these positive perceptions of co-creation: the number of contributing consumers, the diversity of participating consumers, the lack of company constraints, and the fact that co-creating users also use the product or brand (Schreier et al., 2012).

The positive effects of learning that a product was co-created may also stem from consumers identifying with the designers of the product, a phenomenon known as the social identification effect of co-creation (Dahl et al., 2015). However, Schreier et al. (2012) found that the user innovation effect may not be perceived for products with high complexity, as expertise in these products is often attributed to professional firms.

Females tend to have higher brand perceptions and behavioral intentions as a result of their higher sensitivity and consideration of co-creation messages. Fuchs and Schreier (2011) found that co-creation influences consumer perceptions of well-known and exciting brands, and that co-created brands or products are evaluated more positively when presented as "co-created with consumers". It is important to note that the concept of co-creation may require explanations and

clarifications in communication with customers in order to be fully understood (van Dijk et al., 2014).

Furthermore, co-creating brands may also be perceived as more trustworthy due to the intense interaction and communication with customers. Trust in a brand or product is crucial for customer interaction and purchases, and co-creating brands may foster stronger trusting relationships, leading to higher levels of consumer loyalty (Iglesias et al., 2020). Based on these findings, the following hypothesis can be derived:

**H1) Brands that co-create will lead to higher brand loyalty than brands that exclusively use firm professionals for new product development.**

### **2.3 Brand Personality**

Brand personality has been a relevant topic in marketing research for several decades. In opposition to rational values of a brand such as price, quality, or packaging, in which many brands are similar or can be easily mimicked, brand personality on an emotive level offers a strong possibility for distinction and bonding with consumers. According to Seimiene (2012), brand personality is the emotional connection between customer and brand. Aaker (1997) describes brand personality as a collection of human personality traits that are associated with the brand. Increased brand loyalty, the formation of positive attitudes towards brands and the expansion of the value of a brand can be reached by defining a strong brand personality (Seimiene & Kamarauskaite, 2014).

To classify brand personality, scholars often refer to Jenifer Aaker's model, which is very relevant in this field of research. Aaker designed her model based on the big five model of personality developed by McRae et. al, (1992) which is the leading personality classification model for humankind. On 5 dimensions of brand personality, ranging from Sincerity, Excitement, Competence, Sophistication and Ruggedness, brand personality perceptions can be categorized (Aaker, 1997). As shown in figure 4, the underlying specifications for each trait describe the connotations attached to the perceived personality trait. As we only refer to competent and sincere brand personality traits in this study, we explicitly break down these only. According to Aaker, Sincere brands are characterized as down-to-earth, honest

wholesome and cheerful. On the contrary competent brands are seen as reliable, intelligent and successful.

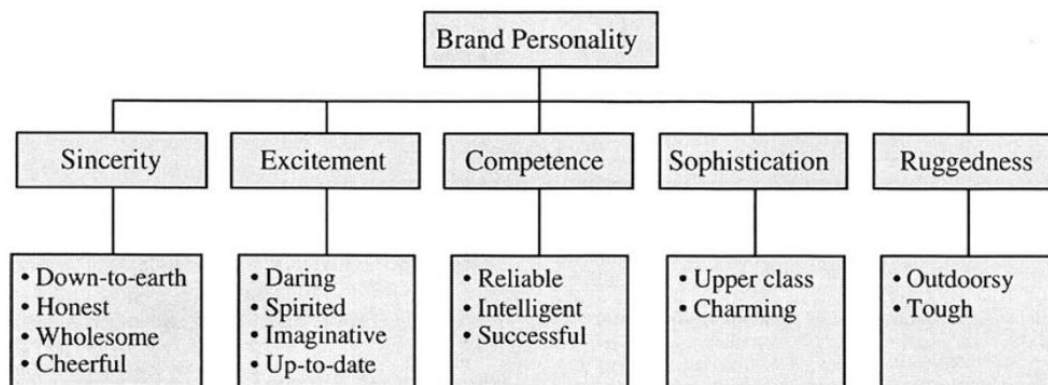


Figure 3: Brand Personality Dimensions (Aaker, 1997, p. 352)

Mahle et al. (2011) investigated the factors influencing consumers' perceptions regarding the different levels of brand personality. The authors found that specific product categories or characteristics influence the perception of brand personality. In addition, they recognized that brands generally carry other associations besides the product-specific ones, classification at the respective level of brand personality: Sincere brands have family-related associations and high morals, competent brands are primarily associated with high quality and expertise, exciting brands relate to special events and moments, sophisticated brands are mainly feminine and rugged brands predominantly masculine (Seimiene & Kamarauskaite, 2014; Mahle et al. 2011).

Also, any direct or indirect encounter with a brand has the potential to change the brand personality perceptions of a consumer (Aaker, 1997). On the one side, brand endorsers, employees, managers, and general feedback of customers can influence brand personality directly (Pringle & Binet, 2005; Seimiene & Kamarauskaite, 2014). On the other hand, brand attributes like, name, logo, tone of communication, colors, packaging, price, advertising style, logistic of the product are the source of causing an indirect effect on brand personality perceptions. (Aaker, 1997; Seimiene & Kamarauskaite, 2014). Considering those findings, we could argue, that a tag defining a brand as co-creating as well fosters brand personality perceptions.

## 2.4 Co-creation and Brand Personality

Co-creation with consumers positively impacts a brand's perceived sincerity and in turn, leads to increased brand loyalty.

Van Dijk et al. (2014) first established the connection between co-creation and brand personality in their study, which found that co-creating with consumers leads to more positive associations and behavioral intentions towards the brand. This is supported by the work of Randall et al. (2011), which found that co-creation can enhance brand associations and behaviors.

Furthermore, co-creation can contribute to a brand's perceived sincerity by allowing for open interaction and collaboration between firms and consumers. This can be seen as a genuine effort by the brand to understand and meet the needs of its customers, rather than imposing its own products or messages on them (Kotler et al., 2018). Additionally, involving consumers in the creation process can demonstrate that the brand values their needs and desires, fostering a sense of mutual respect and understanding, which can lead to increased trust and authenticity in the brand-consumer relationship (Randall et al., 2011).

However, further research is needed to confirm the mediating role of sincere brand personality in the relationship between co-creation and brand loyalty. Despite this, the available evidence suggests that co-creation can lead to increased perceived sincerity, which in turn, can lead to increased brand loyalty (Van Dijk et al., 2014).

Based on this relationship, the following hypothesis is proposed:

**H2a) The effect of co-creation on brand loyalty is mediated by higher perceptions of a sincere brand personality.**

There is a clear connection between co-creation and a sincere brand personality, but there is a gap in the literature regarding the relationship between co-creation and the remaining four brand personality categories, including competence. According to Aaker (1997) and Aaker et al. (2012), competent brands are associated with high quality, reliability, and success, qualities that are valued by customers. Co-creation, which involves consumer input in the creation of higher

value and more compatible products, can improve the perception of a brand and increase its associated value and quality (Van Dijk et al., 2014). Hoyer et al. (2010) found that co-created products are often perceived as more suitable and preferred by customers, leading to outperforming competitors and improved quality perceptions and brand leadership (Aaker, 1997, Aaker et al. 2012).

Co-creation can also increase a brand's perceived competence by enhancing the overall quality and perceived value of the brand's products or services (Van Dijk et al., 2014). By involving consumers in the design and development process, brands can ensure that their products or services meet the needs and preferences of their target audience (Hoyer et al., 2010), leading to increased satisfaction and positive word-of-mouth promotion (Aaker, 1997). Additionally, co-creation can improve a brand's reputation and image by demonstrating the brand's commitment to customer satisfaction and improving the overall user experience (Cova & Dalli, 2009). This can lead to increased perceived competence as consumers may view the brand as more reliable, trustworthy, and responsive to their needs (Aaker, 1997).

Based on these findings, it is proposed that the effect of co-creation on brand loyalty is mediated by higher perceptions of a competent brand personality. Co-creation can enhance a brand's perceived competence in Aaker's 5 factor model by demonstrating the brand's expertise, innovation, and customer-centric approach, leading to increased trust, confidence, and loyalty in the brand.

**H2b) The effect of co-creation on brand loyalty is mediated by higher perceptions of a competent brand personality.**

## **2.5 Brand Personality impact on Brand Trust and Brand Loyalty**

Brand trust is a concept that refers to consumers' willingness to rely on a brand's ability to fulfill its stated function (Chaudhuri & Holbrook, 2001; Morgan & Hunt, 1994; Sung & Kim, 2010). This concept is composed of two main elements: trustworthiness and expertise. Trustworthiness refers to the consumer's confidence that the brand will perform to the highest standards in an honest manner, while expertise refers to the perceived knowledge and ability of the brand, which may be acquired through experience or training (Sung & Kim, 2010).

There is a strong relationship between brand trust and brand loyalty, as demonstrated in several studies (Chaudhuri & Holbrook, 2001, 2002; Sung & Kim, 2010). These studies show that higher levels of trust in a brand's reliability lead to increased brand loyalty. Brand personality, which refers to the perceptions and emotions that consumers associate with a brand, also has a significant influence on brand trust (Sung & Kim, 2010). Brand personality can be characterized by two main categories: sincerity and competence. Sincerity encompasses traits such as honesty, trustworthiness, and wholesomeness, while competence refers to characteristics such as success, reliability, and intelligence (Fournier, 1998). Research suggests that brand personalities characterized by sincerity and competence enhance both brand trust and loyalty (Sung & Kim, 2010).

A brand personality that is perceived as sincere can increase brand trust by creating a sense of authenticity and honesty (Kotler & Armstrong, 2010). Additionally, a sincere brand personality can create a sense of reliability, as consumers believe that the brand will consistently act in accordance with its values (Kotler & Armstrong, 2010). This type of personality can also foster an emotional connection with consumers, leading to increased brand loyalty and trust (Aaker, 1997; Fournier, 1998).

In addition to enhancing trust through sincerity, a brand personality characterized by competence can also increase brand trust. This type of personality is associated with intelligence, efficiency, and reliability (Aaker, 1997), which can enhance the perceived value and credibility of the brand. A competent brand personality can also communicate a sense of responsibility and trustworthiness to consumers, who may look to the brand for guidance and support (Aaker, 1997).

Overall, brand trust is an important element of brand loyalty that can impact a brand's reputation, customer loyalty, and overall success (Sichtmann, 2007). Both sincere and competent brand personalities can enhance brand trust by creating a sense of authenticity, reliability, and emotional connection with consumers, as well as perceived quality and responsibility.

Based on this relationship, the following two hypothesis are proposed:

**H3a) The positive effect of brand sincerity on brand loyalty is mediated by brand trust.**

**H3b) The positive effect of brand competence on brand loyalty is mediated by brand trust**

### 3 Conceptual Framework

After presenting the theoretical foundation for co-creation, the perception of brand personality, brand trust, and brand loyalty, the following chapter presents the conceptual framework and hypotheses that will be tested in this study. The conceptual model is based on an academic review that identified several gaps in the literature that align with the research objective. As such, this model (Figure 5) represents a novel concept.

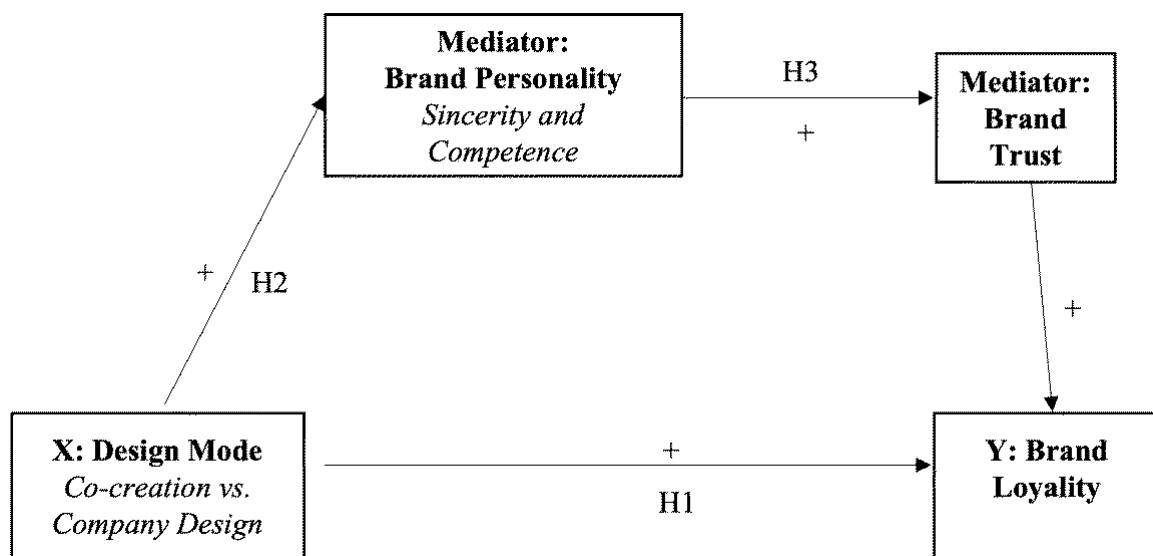


Figure 4: Conceptual Framework

**H1) Brands that co-create, will lead to higher brand loyalty than brands that use exclusively firm professional for new product development.**

**H2a) The effect of co-creation on brand loyalty is mediated by higher perceptions of a sincere brand personality.**

**H2b) The effect of co-creation on brand loyalty is mediated by higher perceptions of a competent brand personality.**

**H3a) The positive effect of brand sincerity on brand loyalty is mediated by brand trust.**

**H3b) The positive effect of brand competence on brand loyalty is mediated by brand trust**

## **4. Methodology and Research Framework**

The purpose of this chapter is to provide a detailed overview of the methodology and variables employed in this research to address the research questions. Specifically, this chapter aims to outline the approach taken and describe the variables utilized in this study.

### **4.1 Research Method**

An online survey was conducted through the Qualtrics platform in order to reach a significant number of questionnaire participants. This method allows for easy access to the survey by a large target group without incurring high costs or barriers. Respondents have the flexibility to complete the survey at their own convenience, without the need to adhere to specific time constraints. Additionally, using an online survey tool like Qualtrics allows for multiple adjustments to be made in order to tailor the research to the specific context, as well as facilitating data entry and analysis (Evans & Mathur, 2005). Moreover, random allocation to the two research stimuli can also be implemented, reducing the potential for biases (Tingling et al., 2003).

### **4.2 Sampling**

In the field of non-probability sampling methods, i.e., methods in which the probability of a perfect representation of a population is not considered, a distinction is made between convenience and target sampling methods. The latter include quota or judgement sampling, while convenience sampling offers the advantage of cost and time efficiency (Kothari, 2004, p.15). Since no specific consumer groups were targeted in this study, convenience sampling was chosen. This target group was reached through the university's network (e.g., Católica Lisbon School of Business and Economics, Nova School of Business and Economics, University of Mainz) and through social media (e.g. Instagram, WhatsApp).

### **4.3 Research Instruments**

The research was conducted using a research tool, an online Qualtrics questionnaire. The study was accessed through an anonymous link shared via E-mail, WhatsApp or Instagram. Participants answered the questionnaire anonymously to ensure as honest an answer as possible, especially in terms of describing their own personality and perception aspects.

### **4.4 Main Study**

The survey was sent to a pool of 5 participants before its launch in order to test the survey flow and the logic of the questions. These people were excluded from participation in the main survey. The survey was then launched through Qualtrics.

The study followed a between subject design 2X1 (Design mode: Co-creation vs professional) x (product type: yogurt) reached 137 participants, of which 121 completed the study. This completion rate can be regarded as very high, as participants who complete the survey via their mobile phones can often be quickly distracted. To ensure an equal distribution of 60 participants from the two different randomized research treatments, one participant was deleted. The distribution of the survey was standardized in English.

### **4.5 Design and Procedure**

In September 2022, a study was conducted to examine the impact of co-creation on brand loyalty in relation to yogurt consumption. The sample consisted of 137 participants who were first asked whether they were familiar with the concept of co-creation. An explanation of the term was provided to all participants. Afterwards, the participants were queried about their yogurt consumption habits and involvement with the product. The study utilized a mixed design with a 2X1 (Design Mode 2: co-creation vs. non-co-creation) x1 (Yogurt Brand) between-subjects design.

First, the participants were welcomed to the study and thanked for their participation and informed about the general conditions and confidentiality, etc. Next, they were asked if they were familiar with the concept of co-creation. All participants were then given a definition,

regardless of the definition. Afterwards, the consumers were asked about their consumption behavior in relation to yogurt. Next, the participants were presented with two different yogurt brand stimuli - one describing a brand that collaborates with consumers and the other describing a development process solely facilitated by experts within the company - randomly. Following the presentation of the stimuli, the participants were asked two manipulation check questions to ensure the effectiveness of the experimental conditions. Following the manipulation check, the participants were asked about their perceptions of the brand personality of the Herios brand.

Following the manipulation check, the participants were asked about their perceptions of the brand personality of the Herios brand. A short attention check was then included, followed by a survey of the variables brand trust and brand loyalty. At the end of the survey, demographic variables were collected.

#### **4.6 Stimuli Development**

The stimuli used in this study were designed based on the methodology of Schreier et al. (2012), who employed a low-involvement product (breakfast cereal) to investigate the factors influencing co-creation. In this study, a fictional yogurt brand called "Herios" was used, and participants were asked to consider the brand and its message about the product development process.

The first stimuli (co-creation) consisted of a text that stated: "We are Herios. We rely on customer feedback. We value and encourage interaction with customers, and none of our products have been manufactured without receiving any form of customer feedback. Through co-creation, we ensure that we create the most fitting product and find the best communication and positioning as a brand. We value our consumers and the collaboration we encounter. Our customers make us better every day". This stimuli also featured an image of the brand that included the phrase "Co-created with consumers" (see Appendix 2 and 3 for further information).

The second stimuli (no co-creation) included the following text: "We are Herios. As a brand, we are trying to attract the most skilled and educated employees to achieve the best outcome for our customers. Our products are designed by highly trained designers who love what they

do. Through the affection and skillset of each employee, we can ensure that we can be at our best and improve to be better every day."This stimuli also featured an image of the brand that did not include the phrase "Co-created with consumers" (see Appendix 2 and 3 for further information).

**4.7 Measures**

The manipulation check in this study was conducted by posing a question to participants after they were exposed to the stimuli. Specifically, participants were asked to clarify whether the parties involved in the scenario were the brand, the brand's consumers, or both. For scenario one, the parties were the consumers and the company, while for scenario two, it was only the company. This approach follows the model proposed by Van Dijk et al. (2014).

To measure the perception of the brand's personality, three adjectives were chosen for each of the dimensions of Sincerity (honest, down-to-earth, wholesome), Excitement (imaginative, up-to-date, spirited), and Competence (reliable, intelligent, successful) based on the scales developed by Aaker (1997).

Brand trust and the dependent variable of brand loyalty were assessed using the scales of Chaudhuri and Holbrook (2001) on a 1-7 scale (ranging from strongly disagree to agree). For brand trust, four items were selected, while three items were chosen for brand loyalty.

The complete questionnaire and all other scales used in this study can be found in the seen below

**Measurement Scales:**

Variable	Measure	Source
<i>Attention Check</i>	<p style="text-align: center;"><b>To ensure the quality of the data, and that you are reading the questions carefully, please select the option red.</b></p> <p style="text-align: center;"><i>(1) Blue; (2) Yellow; (3) Red; (4) Green</i></p>	<i>Own Construct</i>

<p><b>Consumption</b></p>	<p><b>Do you consume yoghurt?</b>  <i>(1) Yes; (2) No, never</i></p> <p><b>How often do you consume yogurt?</b></p> <p><i>1) Everyday; (2) Almost Every day; (3) Weekly; (4) Monthly; (5) Never</i></p>	<p><i>Own Construct</i></p>
<p><b>Design Approach Comprehension Manipulation Check</b></p>	<p><b>Given the product information you have read, by whom do you think the product was developed?</b></p> <p><i>(1) Only the company; (2) The company and consumers; (3) Only consumers</i></p>	<p><i>Adapted from Van Dijk et al., 2014</i></p>
<p><b>Brand Personality Perceptions</b></p>	<p><b>How much do you agree or disagree with the following adjectives? Herios is...</b></p> <ul style="list-style-type: none"> <li>▪ down to earth</li> <li>▪ up to date</li> <li>▪ reliable</li> <li>▪ successful</li> <li>▪ imaginative</li> <li>▪ honest</li> <li>▪ wholesome</li> <li>▪ spirited</li> <li>▪ intelligent</li> <li>▪ masculine</li> <li>▪ feminine</li> </ul> <p><i>1) Strongly Disagree; (7) Strongly Agree</i></p>	<p><i>Adapted from Aaker, 1997</i></p>
<p><b>Brand Trust</b></p>	<p><b>How much do you agree or disagree with the following statements about Herios?</b></p> <ul style="list-style-type: none"> <li>▪ I trust this brand to have my best interest at heart</li> <li>▪ The presented brand is making effort to address its customer needs</li> <li>▪ This brand is safe</li> <li>▪ Overall, I consider the presented brand to be trustworthy</li> <li>▪ I trust this brand</li> </ul> <p><i>1) Strongly Disagree; (7) Strongly Agree</i></p>	<p><i>Adapted from Chaudhuri and Holbrook (2001).</i></p>

<p><b><i>Brand Loyalty</i></b></p>	<p><b>How much do you agree with the following statements about Herios?</b></p> <ul style="list-style-type: none"> <li>▪ I am committed to the brand</li> <li>▪ I would be willing to pay a higher price for the brand than for other brands</li> <li>▪ I would recommend it to my friends and family</li> </ul> <p><i>(1) Strongly Disagree; (7) Strongly Agree</i></p>	<p><i>Adapted from Chaudhuri and Holbrook (2001).</i></p>
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Table 1: Measurement Scales

## **5. Analysis and Results**

In this chapter, the collected data will be analyzed using descriptive statistics, examining the development of stimuli and conducting reliability and correlation analysis on the measurement items.

### **5.1 Sample Characterization**

The initial descriptive statistical analysis aims to outline the characteristics of the sample and confirm the equality between experimental conditions in terms of demographic variables. The analysis reveals the homogeneity of the sample, which ensures the reliability of the results. The total sample consisted of 121 completed responses, with no specific demographic requirements. Of the 121 responses, 62 were aware of the concept of co-creation, and 96% were consumers of yogurt. The gender distribution is slightly skewed towards females (50.4% versus 44.6% males). The age distribution shows that the largest group is between 25-34 years old (43%), followed by 18-24 (25.6%) and 35-44 (9.9%). The smallest share is among participants aged 65+ (1.7%).

The country distribution shows that most participants come from Germany (45.5%), Portugal (10.7%), Austria (9.9%), and France (5.7%). The remaining participants are composed of small proportions from 15 other countries. The education of most participants shows that 64% have either a bachelor's or graduate degree, while 17% have attended university but have not obtained a degree. Most participants are employees (50.4%), students (29.8%), and self-employed (13.8%). The salary distribution shows that 31.4% of participants earn between 50,000 and 99,999 €, while 21.5% earn less than 25,000 € and 20.7% earn 25,000 € - 49,999 €. Please check Appendix 1 for more information.

### **5.2 Scale Reliability**

It is crucial to ensure the reliability and consistency of the scales used in this research, even as many of the items were taken from previous studies. To evaluate the accuracy of these scales, the Cronbach's  $\alpha$  (alpha) statistic is commonly used for Likert scales. This measure assesses the internal consistency of a group of interrelated items, with a value ranging from 0.1 to 1. A higher value signifies a high degree of internal consistency and the reliability of the sum or

average of the survey items. The Cronbach's  $\alpha$  also indicates whether all items are measuring the same latent variable and should therefore be combined into one scale.

While Bonett and Wright (2015) recommend disregarding the assumption of equal variances or covariances, there is no universally accepted minimum value for Cronbach's  $\alpha$  in research. A range of 0.6 to 0.9 is generally considered acceptable, but a value above 0.9 may indicate redundancy among scale items (Streiner, 2003). Eisinga et al. suggest that for multi-item scales with two or fewer items, the Spearman-Brown coefficient is a more appropriate measure. In this study, all corrected inter item-total correlation values for all scales were acceptable. Additionally, it was determined whether deleting an item from any scale would improve its reliability.

<b>Variables</b>	<b>Items</b>	<b>Corrected Item-Total Correlation</b>	<b>Cronbach's Alpha</b>
<b><i>Brand Trust</i></b>	▪ I trust this brand	0.749	0.864
	▪ I trust this brand to have my best interest at heart	0.733	
	▪ This brand is safe	0.768	
	▪ The presented brand is making effort to address its customer needs	0.603	
<b><i>Brand Loyalty</i></b>	▪ I am committed to the brand	0.824	0.909
	▪ I would be willing to pay a higher price for the brand than for other brands	0.817	
	▪ I would recommend it to my friends and family	0.813	
<b><i>Brand Personality Excitement</i></b>	▪ Up to date	0.542	0.750
	▪ Imaginative	0.677	
	▪ Spirited	0.619	
<b><i>Brand Personality Competence</i></b>	▪ Reliable	0.640	0.775
	▪ Intelligent	0.613	
	▪ Successful	0.599	
<b><i>Brand Personality Sincerity</i></b>	▪ Down-to-earth	0.602	0.783
	▪ Honest	0.686	
		0.607	

▪ Wholesome		
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Table 2: Reliability Analysis Study

After the reliability analysis, all items of the respective constructs were averaged to obtain the correspondent variable.

### 5.3 Results Manipulation Check

After the two different Stimuli (Co-Creation and No-Co Creation) the correspondents where asked, as a manipulation check whether they understood, by whom the corresponding scenario was developed. By conducting a t-test for independent samples, it was confirmed that the differences between the scenarios were understood by the participants, as the mean values of the two scenarios were significantly different ( $p < 0.001$ ). Accordingly, respondents attributed the scenario not Co-created, interpreted that the yogurt was developed by the firm, while the rest of the sample recognised the role of consumers in the co-creation setting ( $M_{non\ cc} = 1.136$ ;  $M_{cc} = 1.968$ ;  $p < .001$ ).

### 5.4 Main Results

In the following part of the study, the three hypotheses are analysed, and the main results of the study are presented.

#### Test of Hypothesis 1:

**H1) Brands that co-create will lead to higher brand loyalty than brands that exclusively use firm professionals for new product development.**

The hypothesis proposed that co-creating brands leads to increased brand loyalty. To investigate this relationship, we conducted an independent t-test comparing the design mode (co-creation versus firm design) with brand loyalty as the dependent variable. The results showed that subjects who experienced the co-creation scenario for the Herios brand ( $M = 4.58$ ;  $SD = 1.38$ ) had significantly higher brand loyalty compared to those exposed to the

company-designed scenario ( $M = 4.01$ ;  $SD = 1.352$ ),  $t(119) = 2.494$ ;  $p = 0.014$ ;  $d = 0.44$ . This  $d$  value can be classified as small to medium according to Cohen's (1992) effect size standards. Based on the significant findings ( $p = 0.014$ ), we can't reject the first hypothesis.

Design Mode	N	Mean	SD
Brand Designed	59	4.01	1.44
Co-Created	62	4.58	1.37

Table 3: Results Hypothesis 1 – T-Test

### Test of Hypothesis 2:

**H2a) The effect of co-creation on brand loyalty is mediated by higher perceptions of a sincere brand personality.**

In testing variant a) of our second hypothesis, which posits that the effect of design mode (X: independent variable) on brand loyalty (Y: dependent variable) is mediated by sincere brand personality perception (M: mediating variable), we conducted a mediation analysis using the method described by Hayes (2013; Model 4).

Our analysis revealed a significant positive relationship between design mode and brand personality sincerity rating (indirect effect( $\beta$ )=1.38,  $p < .001$ ), indicating that the use of the Co-Creation method leads to higher ratings of sincerity for the brand. Additionally, the model showed a significant impact of sincere brand personality on brand loyalty ( $\beta = .44$ ;  $p < .001$ ), indicating that higher scores of brand sincerity are associated with higher levels of brand loyalty.

To confirm these findings, we conducted a bootstrapping analysis based on 5000 samples, which revealed a significant and positive conditional indirect effect of design mode (Co-Creation or brand-design) on brand loyalty through brand personality (Sincerity) ( $B = .61$ ,  $SE = .16$ ,  $95\% CI = [.34, .96]$ ). This result supports the partial mediation effect of sincere brand personality between design mode (Co-Creation) and brand loyalty, as all 95% confidence intervals did not include zero (Hayes, 2013). Therefore, H2a) is not rejected.

Outcome	Indirect Effect Path	Indirect Effect	Lower CI	Upper CI
1	Design Mode -> BP Sincerity	1.38	0.88	1.88
2	BP Sincerity -> Brand Loyalty	0.44	0.29	0.6
3	Design Mode -> BP Sincerity ->Brand Loyalty	0.61	0.34	0.96
Outcome	Direct Effect Path	Indirect Effect	Lower CI	Upper CI
4	Design Mode -> Brand Loyalty	1.44	0.95	1.92

Table 4: Results Hypothesis H2a) Mediation Analysis - Brand Sincerity

**H2b) The effect of co-creation on brand loyalty is mediated by higher perceptions of a competent brand personality.**

To test variant b), in which we propose that the effect of design mode (X: independent variable) on brand loyalty (Y: dependent variable) is mediated by competent brand personality perception, we also conducted a mediation analysis (Hayes, 2017; Model 4). The data from this analysis showed a significant positive relationship between design mode and the competence rating of the brand personality ( $\beta= 1.47, p <.001$ ). This means that the competence rating of the brand increases when the co-creation method is used.

Additionally, the model revealed a significant impact of competent brand personality on brand loyalty ( $\beta= .71; p <.001$ ), indicating that a higher brand competence rating leads to higher brand loyalty. To further validate these results, we conducted a bootstrapping analysis using 5000 samples, which confirmed a significant and positive conditional indirect effect of design mode (co-creation or brand-design) through brand personality (competence) on brand loyalty ( $B = 1.06$  SE = .17, 95% CI = [.74, .93]).

This suggests that there is a partial mediation effect of competent brand personality between design mode (co-creation) and brand loyalty (all 95% confidence intervals did not include zero; Hayes, 2013). Therefore, H2b) is not rejected.

Outcome	Indirect Effect Path	Indirect Effect	Lower CI	Upper CI
1	Design Mode -> BP Competence	1.47	1.04	1.90
2	BP Competence -> Brand Loyalty	.71	.59	.84
3	Design Mode -> BP Competence ->Brand Loyalty	1.06	.73	1.41
Outcome	Direct Effect Path	Indirect Effect	Lower CI	Upper CI
4	Design Mode -> Brand Loyalty	.99	.64	1.34

Table 5: Results Hypothesis H2b) Mediation Analysis - Brand Competence

### ***Test of Hypothesis 3:***

To calculate H3, the mediation model was extended to include trust as a second sequential mediator. For this purpose, a subsequent bootstrapping analysis was carried out using the PROCESS Model 6 tool (Hayes, 2017). Hypothesis 3 is split into variant a) and b). Variant a) examines the mediators sincere brand personality and trust, while variant b) examines competent brand personality and trust as a mediator.

### **H3a) The positive effect of brand sincerity on brand loyalty in mediated by brand trust.**

Using The first mediation analysis was calculated to test whether co-creation increases brand loyalty and whether the direct path is mediated by brand personality sincerity and brand trust. Firstly, the results revealed that there is a significant effect between the selected design mode and variable brand personality sincerity ( $B=1.38$ ;  $p < .001$ ). Secondly, even trust is directly impacted by design mode ( $\beta=0.004$ ;  $p=0.634$ ) it influenced by a brands sincerity ( $\beta=0.47$ ;  $p<.001$ ). Finally, Brand loyalty as fully dependent of both brand personality sincere ( $\beta=0.23$ ;  $p < .001$ ), and trust ( $\beta=0.37$ ;  $p < .001$ ), resulting on a no longer significant direct effect of the design mode ( $p=0.123$ ), which hints to full mediation.

Finally, using the bootstrapping analysis, we can conclude that even trust is not a significant mediating variable on its own (CI [ -0.0321; 0.212]), trust used as a sequential mediator for sincere brand personality, we obtain a significant result (CI [ 0.161; 0.21]). Based on these results, H3a) is not rejected as trust represents a second sequential mediator.

	Variable	Beta	P-Value	Significance
<b>Direct effect on Trust</b>	Design Mode	0.004	0.643	<i>Non -Significant</i>
	Brand Sincerity	0.47	<.0001	<i>Significant</i>
<b>Direct Effect on Brand Loyalty</b>	Trust	0.37	< 0.001	<i>Significant</i>
		<b>BootLLCI</b>	<b>BootULCI</b>	
<b>Indirect Effect of X on Y</b>	Trust	-0.0321	0.212	<i>Non- Significant Mediating Effect</i>
	Brand Sincerity and Trust (sequential)	0.161	0.21	<i>Significant Sequential Mediating Effect</i>

Table 6: Results Hypothesis H3a) Sequential Mediation Analysis – Brand Sincerity and Trust

### H3b) The positive effect of brand competence on brand loyalty in mediated by brand trust

Using PROCESS Model 6 tool (Hayes, 2017) the second mediation analysis was calculated to test whether co-creation increases brand loyalty and whether the direct path is mediated by the competent brand personality and brand trust. First, the results showed that there is a significant effect between the chosen design mode and the variable of competent brand personality (B=1.47; p < .001). Secondly, even trust is not directly influenced by design mode (p= 0.205) it is significantly impacted by brand personality competence (B=0.43; p<.001). Finally, brand loyalty is fully dependent on brand personality competence (B=0.39; p <.001) and trust (B=0.45; p <.001), resulting in a non-significant impact by design mode (p=0.25), indicating full meditation.

Ultimately, using the bootstrap calculation, we can conclude that trust is not significant mediation variable by itself (BootLLCI= 0.0184; BootULCI= 0.2498), when it's introduces as sequential mediator for competent brand, it leads to a significant mediating effect (BootLLCI= 0.0032; BootULCI= 0.3521). Based on these results, H3b) is not rejected as trust is a full mediator.

	<b>Variable</b>	<b>Beta</b>	<b>P-Value</b>	<b>Significance</b>
<b>Direct effect on Trust</b>	Design Mode	0.051	0.205	<i>Non-Significant</i>
	Brand Competence	0.539	0.000	<i>Significant</i>
<b>Direct Effect on Brand Loyalty</b>				
	Trust	0.320	0.001	<i>Significant</i>
		<b>BootLLCI</b>	<b>BootULCI</b>	
<b>Indirect Effect of X on Y</b>	Trust	-0.0184	0.2498	<i>Non-Significant</i>
	Brand Sincerity and Trust (sequential)	0.0032	0.3521	<i>Significant Sequential Mediating Effect</i>

Table 7: Results Hypothesis H3b) Sequential Mediation Analysis – Brand Competence and Trust

### Further Analysis:

In order to determine the role of gender in co-creation perception, as suggested by Mulyanegara, et al. (2009) and Van Dijk et al. (2014), we conducted further analysis. The results of this analysis led us to postulate that feminine gender moderates the impact of co-creation on brand loyalty in a positive manner.

To verify this relationship, we employed the PROCESS Model 1 (Hayes, 2017) as a moderation tool through SPSS to assess the moderating influence of gender on co-creation and brand loyalty. The overall model was found to be significant, with an F-Value (3,117) = 29,7,  $p = <.0001$ , explaining 43,23% of the variance.

<b>R</b>	<b>R-sq</b>	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>P</b>
.6575	.4323	29.7003	3.0000	117.0000	<.0001

Further moderation analysis showed that feminine gender moderates the effect between co-creation and brand loyalty use significantly,  $\Delta R^2 = 12.42\%$ ,  $F(1, 117) = 13,5$ ,  $p = .0085$ , 95% CI [-0.0368, -0.0098].

	<b>R2-chng</b>	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>P</b>
<b>X*W</b>	.1242	.1358	1.0000	117.0000	.0085
			BootLLCI	BootULCI	
<b>Int_1</b>			-.0368	-.0098	

Table 8: Further Moderation Analysis - Gender

Based on these results, we can confirm the findings of Van Dijk et al. (2014) and Mulyanegara, et al. (2009) that the co-creation message has a higher impact on women than men.

## 6. Conclusion and Implications

The aim of this research is to examine the ways in which co-creation can positively affect brand loyalty by exploring the role of perceived brand personality. Specifically, we aim to determine whether increased perceived brand personality traits of sincerity and competence, achieved through co-creation, lead to higher brand loyalty.

In addition, we seek to understand whether these perceived brand personality traits can increase brand trust, which in turn leads to increased brand loyalty. We also conduct a complementary analysis to consider the influence of gender on brand loyalty for co-creating brands. Previous research has demonstrated the relationship between brand personality, brand trust, and brand loyalty (Sung & Kim, 2010; Chaduhauri & Holbrook, 2001).

However, there has been limited research on the mediating effect of brand personality traits of competence and sincerity, as well as brand trust, on brand loyalty in the context of co-creating brands. This lack of understanding limits our ability to effectively leverage brand personality, trust, and loyalty in brand-building efforts. Therefore, we investigate the relationship between these variables and their impact on brand co-creation efforts in order to better understand how to use brand personality, trust, and loyalty to build strong, co-created brands that engage and retain customers.

Our study found that consumers prefer brands that are co-created over those solely designed by professionals, leading to higher brand loyalty. These results are consistent with previous research indicating that co-created products can increase loyalty (Prahalad & Ramaswamy, 2004; Van Dijk et al., 2014; Mulyanegara et al., 2009; Lin, 2010; Dikcius et al., 2013).

Additionally, we found that co-creation reinforces perceived brand personality traits of competence and sincerity, supporting the findings of Van Dijk et al. (2014). We also discovered that brand trust is a strong predictor of brand loyalty, with co-created brands that are perceived as competent and sincere also being more trustworthy, resulting in higher brand loyalty. These findings support the hypothesis that an increase in brand trust due to co-creation is directly

linked to brand loyalty, as well as the idea that a competent and sincere brand personality can be seen as an indicator of higher brand trust.

Finally, our analysis showed that females perceive co-creation more strongly and react with increased loyalty compared to men, a finding consistent with previous research (Van Dijk et al., 2014; Mulyanegara et al., 2009; Lin, 2010; Dikcius et al., 2013). These results have significant theoretical implications, which we discuss in the following section.

## **6.1 Theoretical Implications**

The present study investigates the impact of co-creating brands on the perception of observing consumers, with a focus on brand personality and perceived brand trust. Previous research has demonstrated that communicated co-creation can have a positive effect on the perception of brands or products (Dahl et al., 2015; Schreier et al., 2012; Cambra-Fierro et al., 2018; Mingione et al., 2020; Wasaya et al., 2021). Our study adds to this literature by showing that co-creation can have a sequential effect that goes beyond the direct effects studied previously (Dahl et al., 2015; Schreier et al., 2012). We also found that the interaction between brand personality and co-creation leads to higher trust, which in turn explains the strong effect of co-creation on brand loyalty.

There is a limited body of research on the components of brand personality associations, making the findings of this study particularly valuable. The evidence suggests that co-creating brands are perceived as more sincere and competent (Van Dijk et al., 2014; Randall et al., 2011). These findings, in combination with our study, provide important insights into the impact of co-creation on observing consumers. Our study also confirms the assumptions of Chaudhuri and Holbrook (2001, 2022) and Sung and Kim (2010) regarding the relationship between brand trust and brand loyalty.

However, the effect of co-creation on brand personality perception has not been thoroughly investigated in previous research. Our study offers exciting insights in this area, demonstrating a connection between brand trust and competent and sincere personality. Additionally, our study confirms the previously assumed factor that women may feel the intensity of co-creation more strongly (Mulyanegara et al., 2009; Van Dijk et al., 2014).

Further investigation is needed to illuminate the reasons for this effect.

There are also managerial implications that will be discussed in the next section.

## **6.2 Managerial Implications**

This research offers valuable insights for marketers, advertisers, and companies that involve customers and consumers in product development. It suggests that the communication or lack thereof about co-creation can significantly impact the perception of a brand's personality, trustworthiness, and ultimately, loyalty.

By predicting the perceived strength of brand loyalty based on brand personality perceptions, brands have the opportunity to create a market offer that is tailored to their target audience and optimally appealing and accessible. Our study found that simply including a note on the label stating "Co-Created with the help of consumers" and explaining the company's concept and philosophy can have a strong impact on perception.

However, organizations should keep in mind that consumer interpretation of co-creation communication can vary, and that factors such as industry, product complexity, and individual differences also play a role. We will address these limitations and potential future research directions in the following section.

## **6.3 Limitations and Future Research**

Although this research provides a core understanding of co-creation as a positive driver of brand loyalty in relation to brand personality and brand trust there are some limitations associated with the nature and extent of the investigation.

Firstly, in terms of product category and product complexity, only one product, a yoghurt brand, is presented. This product was chosen because it is familiar to all participants and has a simple comprehensibility. However, it also represents one of the weaknesses of the study. A comparison of a hedonistic vs. utilitarian product or an uncomplex with a complex product would have allowed for further diversification.

Secondly, the sample size of 120 was neither small nor particularly large. Since the participants were split into two different groups, there were only 60 participants per scenario (co-creation vs. firm design). A larger sample would be recommended here in order to obtain clearer and more valid results.

Thirdly, by using an unknown brand that was fictitious to the participants, the study aimed to separate the effects of co-creation on brand perception. The results could vary when using brands that are already established in the market with different levels of awareness, positioning, brand propositions and consumer preferences. The difficulty of resolving these already associative effects was highlighted by Aaker, 2004. Thus, a future study could examine the comparison of brands that are real in nature and already have brand personality associations and test the effects of co-creation.

Fourth, only the two brand personality variables of sincerity and competence were examined. Future studies could test all of Aaker's brand 5 personality traits and see to what extent brand loyalty, brand trust and co-creation have an effect.

Additionally, other factors like price, quality, and generational differences should be considered when studying brand loyalty. Price can be a strong factor that influences the decision-making process of consumers, as it can be a deciding factor between two similar brands. Quality is also important, as higher quality products tend to be preferred over lower quality products.

Finally, generational differences should be considered, as different generations may have different perceptions of a brand and may respond differently to co-creation

## Bibliography

Aaker, D. A. (2012). *Building strong brands*. Simon and Schuster.

Aaker, D. A. (1991). *Managing brand equity*. New York: The Free Press.

Aaker, J. L. (1997). Dimensions of brand personality. *Journal of marketing research*, 34(3), 347-356.

Baregheh, A., Rowley, J., & Sambrook, S. (2009). Towards a multidisciplinary definition of innovation. *Management decision*.

Bartl, M., Jawecki, G., & Wiegandt, P. (2010, June). Co-creation in new product development: conceptual framework and application in the automotive industry. In *Conference Proceedings R&D Management Conference—Information, Imagination and Intelligence, Manchester* (Vol. 9, pp. 1-9).

Bartl, M., Jawecki, G., Bilgram, V., & Wiegandt, P. (2013). The BMW Group co-creation lab: from co-creation projects to programmes. *Discontinuous innovation: Learning to manage the unexpected*, 179-203.

Bessant, J., Lamming, R., Noke, H., & Phillips, W. (2005). Managing innovation beyond the steady state. *Technovation*, 25(12), 1366-1376.

Biel, A. L. (1993). Converting image into equity. *Brand equity and advertising: Advertising's role in building strong brands*, 26(10), 67-81

Bonett, D. G., & Wright, T. A. (2015). Cronbach's alpha reliability: Interval estimation, hypothesis testing, and sample size planning. *Journal of organizational behavior*, 36(1), 3-15.

Cambra-Fierro, J., Melero-Polo, I., & Sese, F. J. (2018). Customer value co-creation over the relationship life cycle. *Journal of Service Theory and Practice*, 28(3), 336–355. <https://doi.org/10.1108/JSTP-01-2017-0009>

Caprara, G. V., Barbaranelli, C., & Guido, G. (2001). Brand personality: How to make the metaphor fit?. *Journal of economic psychology*, 22(3), 377-395.

Chang, W., & Taylor, S. A. (2016). The effectiveness of customer participation in new product development: A meta-analysis. *Journal of Marketing*, 80(1), 47-64.

Charm, T., Coggins, B., Robinson, K., & Wilkie, J. (2022, April 27). *The great consumer shift: Ten charts that show how US shopping behavior is changing*. McKinsey & Company. <https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/the-great-consumer-shift-ten-charts-that-show-how-us-shopping-behavior-is-changing>

Chaudhuri, A., & Holbrook, M. B. (2001). The chain of effects from brand trust and brand affect to brand performance: the role of brand loyalty. *Journal of marketing*, 65(2), 81-93

Chaudhuri, A., & Holbrook, M. B. (2002). Product-class effects on brand commitment and brand outcomes: The role of brand trust and brand affect. *Journal of Brand Management*, 10(1), 33-58.

Chaturvedi, P., Kulshreshtha, K., Tripathi, V., Scholar, R., & Professor, A. (2020). The Big Five personality traits as predictors of organic food purchase intention: Evidence from an emerging market. *Pjeee*, 17(7), 10202–10218.

Chesbrough, H., & Rosenbloom, R. S. (2002). The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies. *Industrial and Corporate Change*, 11(3), 529-555.

Costa, C., & do Vale, R. C. (2018). To tell or not to tell? The impact of communicating consumer participation in new product development. *Journal of Product & Brand Management*.

Costa, P. T., & McCrae, R. R. (1992). Normal personality assessment in clinical practice: The NEO Personality Inventory. *Psychological assessment*, 4(1), 5.

Cova, B., Dalli, D., & Zwick, D. (2011). Critical perspectives on consumers' role as 'producers': Broadening the debate on value co-creation in marketing processes. *Marketing Theory, 11*(3), 231-241.

Darren W. Dahl, C. F. (2015). Why and When Consumers Prefer Products of User-Driven Firms: A Social Identification Account. *Management Science, 1978–1988*.

Doney, P. M., & Cannon, J. P. (1997). An examination of the nature of trust in buyer–seller relationships. *Journal of marketing, 61*(2), 35-51.

Dikcius, V., Seimiene, E., & Zaliene, E. (2013). Congruence between brand and consumer personalities. *Economics and Management, 18*(3), 526-536.

Esade Business & Law School [ESADE]. (2018, September 24). *Why Your Company Should Embrace Co-Creation*. Forbes. <https://www.forbes.com/sites/esade/2018/09/24/why-your-company-should-embrace-co-creation/>

Evans, J. R., & Mathur, A. (2005). The value of online surveys. *Internet research*.

Fournier, S. (1998). Consumers and their brands: Developing relationship theory in consumer research. *Journal of consumer research, 24*(4), 343-373.

Fennis, B. M., Pruyn, A. T. H., & Maasland, M. (2005). Revisiting the malleable self: brand effects on consumer self-perceptions of personality traits. *ACR North American Advances*.

Fuchs, C., & Schreier, M. (2011). Customer empowerment in new product development. *Journal of product innovation management, 28*(1), 17-32.

Galvagno, M., & Dalli, D. (2014). Theory of value co-creation: a systematic literature review. *Managing service quality*.

- Ghorbani, M., Karampela, M., & Tonner, A. (2022). Consumers' brand personality perceptions in a digital world: A systematic literature review and research agenda. *International Journal of Consumer Studies*.
- Goldberg, L. R. (2014). What the hell took so long? Donald W. Fiske and the Big-Five factor structure. In *Personality research, methods, and theory* (pp. 29-43). Psychology Press.
- Gosling, S. D., Rentfrow, P. J., & Swann Jr, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in personality*, 37(6), 504-528.
- Hatch, M. J., & Schultz, M. (2010). Toward a theory of brand co-creation with implications for brand governance. *Journal of Brand Management*, 17(8), 590–604.
- Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford publications.
- Hidehiko Nishikawa, M. S. (2016). The Value of Marketing Crowdsourced New Products as Such: Evidence from Two Randomized Field Experiments. *Journal of Marketing Research*.
- Hofstede, G. (1984). *Culture's consequences: International differences in work-related values* (Vol. 5). sage.
- Hoeffler, S. (2003). Measuring preferences for really new products. *Journal of marketing research*, 40(4), 406-420.
- Hogan, R. T. (1991). *Personality and personality measurement*.
- Hoyer, W. D., MacInnis, D. J., & Pieters, R. (2010). *Handbook of consumer psychology*. Psychology Press.
- Hu, G., Li, P., & Tang, C. (2020). Research on the influence mechanism of personality traits on value Co-creation. In *2020 Conference on Social Science and Natural Science* (pp. 779-784).

Iglesias, O., Markovic, S., Bagherzadeh, M., & Singh, J. J. (2020). Co-creation: A key link between corporate social responsibility, customer trust, and customer loyalty. *Journal of Business Ethics*, 163(1), 151-166.

Ind, N., Iglesias, O., & Markovic, S. (2017). The co-creation continuum: From tactical market research tool to strategic collaborative innovation method. *Journal of Brand Management*, 24(4), 310–321.

Ind, N., Iglesias, O., & Schultz, M. (2013). Building brands together: Emergence and outcomes of co-creation. *California Management Review*.

Jo Bitner, M., Faranda, W. T., Hubbert, A. R., & Zeithaml, V. A. (1997). Custom contributions and roles in service delivery. *International Journal of Service Industry Management*, 8(3), 193–205. <https://doi.org/10.1108/09564239710185398>

Joel West, M. B. (2013). Leveraging External Sources of Innovation: A Review of Research on Open Innovation. *Journal of Product Innovation Management*, 814–831.

Johnson, D. (2001). What is innovation and entrepreneurship? Lessons for larger organisations. *Industrial and commercial training*.

Laursen, K., & Salter, A. (2006). Open for innovation: the role of openness in explaining innovation performance among UK manufacturing firms. *Strategic management journal*, 27(2), 131-150.

Lin, L. Y. (2010). The relationship of consumer personality trait, brand personality and brand loyalty: an empirical study of toys and video games buyers. *Journal of product & brand management*, 19(1), 4-17.

Liu, Z. L., Anderson, T. D., & Cruz, J. M. (2012). Consumer environmental awareness and competition in two-stage supply chains. *European Journal of Operational Research*, 218(3), 602-613.

Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, 53(1), 59-68.

Kahn, K. B. (2018). Understanding innovation. *Business Horizons*, 61(3), 453-460.

Kazadi, K., Lievens, A., & Mahr, D. (2016). Stakeholder co-creation during the innovation process: Identifying capabilities for knowledge creation among multiple stakeholders. *Journal of Business Research*,

Kennedy, E., & Guzmán, F. (2016). Co-creation of brand identities: consumer and industry influence and motivations. *Journal of Consumer Marketing*, 33(5), 313–323.

<https://doi.org/10.1108/JCM-07-2015-1500>

Kotler, P., & Armstrong, G. (2010). *Principles of marketing* (14th ed.). Upper Saddle River, NJ: Prentice Hall.

Kotler, P., & Keller, K. L. (2012). *Marketing management* (14th ed.). Upper Saddle River, NJ: Prentice Hall.

Kotler, P., Keller, K. L., Ang, S. H., Tan, C. T., & Leong, S. M. (2018). *Marketing management: an Asian perspective*. Harlow: Pearson.

Maehle, N., Otnes, C., & Supphellen, M. (2011). Consumers' perceptions of the dimensions of brand personality. *Journal of Consumer behaviour*, 10(5), 290-303.

Mandolfo, M., Chen, S., & Noci, G. (2020). Co-creation in new product development: Which drivers of consumer participation? *International Journal of Engineering Business Management*, 12, 1–14. <https://doi.org/10.1177/1847979020913764>

Mellens, M., Dekimpe, M., & Steenkamp, J. B. E. M. (1996). A review of brand-loyalty measures in marketing. *Tijdschrift voor economie en management*, (4), 507-533.

Mingione, M., Cristofaro, M., & Mondì, D. (2020). «If I give you my emotion, what do I get?» Conceptualizing and measuring the co-created emotional value of the brand. *Journal of Business Research*, 109, 310–320. <https://doi.org/10.1016/j.jbusres.2019.11.071>

Moorman, C., Zaltman, G., & Deshpande, R. (1992). Relationships between providers and users of market research: The dynamics of trust within and between organizations. *Journal of marketing research*, 29(3), 314-328.

Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of marketing*, 58(3), 20-38.

Mohr, L. A., & Webb, D. J. (2005). The effects of corporate social responsibility and price on consumer responses. *Journal of consumer affairs*, 39(1), 121-147.

Mulyanegara, R. C., Tsarenko, Y., & Anderson, A. (2009). The Big Five and brand personality: Investigating the impact of consumer personality on preferences towards particular brand personality. *Journal of brand management*, 16(4), 234-247.

Nambisan, S. (2002). Designing virtual customer environments for new product development: Toward a theory. *Academy of Management review*, 27(3), 392-413.

Neale, L., Robbie, R., & Martin, B. (2016). Gender identity and brand incongruence: When in doubt, pursue masculinity. *Journal of Strategic Marketing*, 24(5), 347-359.

Noftle, E. E., & Robins, R. W. (2007). Personality Predictors of Academic Outcomes: Big Five Correlates of GPA and SAT Scores. *Journal of Personality and Social Psychology*, 93(1), 116–130. <https://doi.org/10.1037/0022-3514.93.1.116>

Ogunbodede, O., Papagiannidis, S., & Alamanos, E. (2021). Value co-creation and co-destruction behaviour: Relationship with basic human values and personality traits. *International Journal of Consumer Studies*.

Oyserman, D. (2006). High power, low power, and equality: Culture beyond individualism and collectivism. *Journal of Consumer Psychology*, 16(4), 352-356.

Parniangtong, S. (2017). *Competitive advantage of customer centricity*. Springer Singapore.

Prahalad, C. K., & Ramaswamy, V. (2000). Co-opting customer competence. *Harvard Business Review*, 78(1), 79–90.

Prahalad, C. K., and Venkat Ramaswamy. 2004. “Co-Creation Experiences: The next Practice in Value Creation.” *Journal of Interactive Marketing* 18 (3): 5–14.

<https://doi.org/10.1002/dir.20015>.

Pringle, H., & Binet, L. (2005). How marketers can use celebrities to sell more effectively. *Journal of Consumer Behaviour: An International Research Review*, 4(3), 201-214.

Ramani, G., & Kumar, V. (2008). Interaction orientation and firm performance. *Journal of marketing*, 72(1), 27-45.

Ramaswamy, V., & Ozcan, K. (2013). Strategy and co-creation thinking. *Strategy & Leadership*.

Randall, W. S., Gravier, M. J., & Prybutok, V. R. (2011). Connection, trust, and commitment: dimensions of co-creation?. *Journal of strategic marketing*, 19(01), 3-24.

Schreier, Martin, Christoph Fuchs, and Darren W. Dahl. 2012. “The Innovation Effect of User Design: Exploring Consumers’ Innovation Perceptions of Firms Selling Products Designed by Users.” *Journal of Marketing* 76 (5): 18–32. <https://doi.org/10.1509/jm.10.0462>.

Seimiene, E. (2012). Emotional connection of consumer personality traits with brand personality traits: Theoretical considerations. *Economics and management*, 17(4), 1472-1478.

Seimiene, E., & Kamarauskaite, E. (2014). Effect of brand elements on brand personality perception. *Procedia-Social and Behavioral Sciences*, 156, 429-434.

Sichtmann, C. (2007). An analysis of antecedents and consequences of trust in a corporate brand. *European Journal of Marketing*.

Sirgy, M. J. (2018). Self-congruity theory in consumer behavior: A little history. *Journal of Global Scholars of Marketing Science*, 28(2), 197-207.

Song, X., Jung, J., & Zhang, Y. (2021). Consumers' Preference for User-Designed Versus Designer-Designed Products: The Moderating Role of Power Distance Belief. *Journal of Marketing Research*, 58(1), 163–181. <https://doi.org/10.1177/0022243720972702>

Streiner, D. L. (2003). Construct validity of the relationship profile test: a self-report measure of dependency-detachment construct validity of the relationship profile test: a self-report measure of dependency–detachment. *J Pers Assess*, 80(1), 99-103.

Sung, Y., & Kim, J. (2010). Effects of brand personality on brand trust and brand affect. *Psychology & Marketing*, 27(7), 639-661.

Tingling, P., Parent, M., & Wade, M. (2003). Extending the capabilities of Internet- based research: lessons from the field Peter Tingling. *Internet Research*, 13(3), 223–235.

van Dijk, J., Antonides, G., & Schillewaert, N. (2014). Effects of co-creation claim on consumer brand perceptions and behavioural intentions. *International Journal of Consumer Studies*, 38(1), 110–118. <https://doi.org/10.1111/ijcs.12071>

Verleye, K. (2015). The co-creation experience from the customer perspective: its measurement and determinants. *Journal of Service Management*.

Von Hippel, E. (2005). Democratizing innovation: The evolving phenomenon of user innovation. *Journal für Betriebswirtschaft*, 55(1), 63-78.

Voyer, B. G., Kastanakis, M. N., & Rhode, A. K. (2017). Co-creating stakeholder and brand identities: A cross-cultural consumer perspective. *Journal of Business Research*, 70, 399–410. <https://doi.org/10.1016/j.jbusres.2016.07.010>

Wasaya, A., Saleem, M. A., Ahmad, J., Nazam, M., Khan, M. M. A., & Ishfaq, M. (2021). Impact of green trust and green perceived quality on green purchase intentions: A moderation study. *Environment, Development and Sustainability*, 23(9), 13418–13435.

<https://doi.org/10.1007/s10668-020-01219-6>

West, J., & Bogers, M. (2014). Leveraging external sources of innovation: a review of research on open innovation. *Journal of product innovation management*, 31(4), 814-831.

Whelan, S., & Davies, G. (2006). Profiling consumers of own brands and national brands using human personality. *Journal of Retailing and Consumer Services*, 13(6), 393-402.

Zacher, H., & Rudolph, C. W. (2021). Big Five traits as predictors of perceived stressfulness of the COVID-19 pandemic. *Personality and Individual Differences*, 175(January), 110694.

<https://doi.org/10.1016/j.paid.2021.110694>

Zahra, S. A., & Covin, J. G. (1994). The financial implications of fit between competitive strategy and innovation types and sources. *The Journal of High Technology Management Research*, 5(2), 183-211.

Zaichkowsky, J. L. (1985). Measuring the involvement construct. *Journal of consumer research*, 12(3), 341-352.

## Appendix

### Appendix 1: Study Sample Characterization

Criteria	Option	Frequency	%	Criteria	Option	Frequency	%
<b>Gender</b>	Female	62	50.4%	<b>Education Level</b>	Some Secondary Education	3	2.4%
	Male	55	44.7%		Completed Secondary	9	7.3%
	Other	5	4.1%		Vocational or Similar	13	10.6%
	I prefer not to say	1	0.8%		Some University but no degree	17	13.8%
<b>Age</b>	Under 18	0	0.0%		University Bachelors degree	50	40.7%
	18-24 years old	32	26.0%		Graduate or professional degree)	28	22.8%
	25-34 years old	52	42.3%		<b>Monthly Income</b>	25,000 - 49,999 Euros per year	25
	35-44 years old	19	15.5%	50,000 - 99,999 Euros per year		38	30.9%
	45-54 years old	12	9.8%	100,000 - 199,999 Euros per year		15	12.2%
	55-64 years old	6	4.9%	More than 200,000 Euros per year		5	4.1%
	65+ years old	2	1.6%	Prefer not to say		12	9.8%
<b>Nationality</b>	Germany	57	46.3%	<b>Occupation</b>	Student	37	30.1%
	Portugal	13	10.6%		Employee	62	50.4%
	Austria	12	9.8%		Self-employed	16	13%
	United States of America	8	6.5%		Unemployed	3	2.4%
	France	7	5.7%		Unable to work	3	2.4%
	Belgium	5	4.1%		Other	1	0.8%

	Bulgaria	3	2.4%		I prefer not to say	1	0.8%
	Finland	3	2.4%	<b>Familiarity Co-Creation</b>	Yes	81	61.4%
	Sweden	3	2.4%		No	51	38.6%
	Brazil	2	1.6%	<b>Consume yoghurt</b>	Yes	126	96.2%
	Denmark	2	1.6%		No, Never	5	3.8%
	Others (1 each)	8	6.5%	<b>Consumption yoghurt</b>	Almost Everyday	36	27.7%
					Weekly	46	35.4%
					Monthly	24	18.5%
					Never	5	3.9%

## Appendix 2: Study Scenarios

Scenario Co-Created Product	Scenario Firm Designed Product
<p>Now please imagine the following:</p> <p>You are confronted with a yogurt brand and their current advertisement.</p> <p>The brand is called Herios and defines their product development approach as the following:</p> <p>We are Herios. We <b>rely on customer feedback</b>. We value and encourage <b>interaction with customers</b>, and none of our products have been manufactured <b>without receiving any form of customer feedback</b>.</p> <p>Through co-creation, we ensure that we create the <b>most fitting product</b> and find the best communication and positioning as a brand. <b>We value our consumers and the collaboration we encounter</b>. Our customers make us better every day</p>	<p>Now please imagine the following:</p> <p>You are confronted with a yogurt brand and their current advertisement.</p> <p>The brand is called Herios and defines their product development approach as the following:</p> <p>We are Herios. As a brand, we are trying to <b>attract the most skilled and educated employees</b> to achieve the best outcome for our customers. <b>Our products are designed by highly trained designers who love what they do</b>.</p> <p>Through the <b>affection and skillset</b> of each employee, <b>we can ensure that we can be at our best and improve to be better every day</b></p>

### Appendix 3: Study Stimuli



### Appendix 4 Study Variable Description and Sources

Variable	Measure	Source
<i>Attention Check</i>	<p>To ensure the quality of the data, and that you are reading the questions carefully, please select the option red.</p> <p>(1) Blue; (2) Yellow; (3) Red; (4) Green</p>	<i>Own Construct</i>
<i>Consumption</i>	<p><b>Do you consume yogurt?</b> (1) Yes; (2) No, Never</p> <p><b>How often do you consume yogurt?</b> 1) Everyday; (2) Almost Every day; (3) Weekly; (4) Monthly; (5) Never</p>	<i>Own Construct</i>
<i>Design Approach Comprehension Manipulation Check</i>	<p><b>Given the product information you have read, by whom do you think the product was developed?</b> (1) Only the company; (2) The company and consumers; (3) Only consumers</p>	<i>Adapted from Van Dijk et al., 2014</i>

<p><b>Product Involvement</b></p>	<ul style="list-style-type: none"> <li>▪ I would be interested in reading information about how the yogurt is made.</li> <li>▪ I would be interested in reading the Consumer Reports article about yogurt.</li> <li>▪ I have compared product characteristics among brands yogurts.</li> <li>▪ I think there are a great deal of differences among yogurt brands.</li> <li>▪ I have a most preferred yogurt.</li> </ul>	<p><i>Adapted from Zaichkowsky, 1985</i></p>
<p><b>Consumer self-perceptions</b></p>	<p><b>How much do you agree or disagree with the following statements?</b></p> <ul style="list-style-type: none"> <li>▪ I am a loyal consumer</li> <li>▪ I like shopping online</li> <li>▪ I like shopping in stores</li> <li>▪ I frequently share my opinion with firms (through f.e. surveys)</li> <li>▪ I am a well-informed consumer</li> </ul> <p><i>1) Strongly Disagree; (7) Strongly Agree</i></p>	<p><i>Own Construct</i></p>
<p><b>Brand Personality Perceptions</b></p>	<p><b>How much do you agree or disagree with the following adjectives? Herios is...</b></p> <ul style="list-style-type: none"> <li>▪ down to earth</li> <li>▪ up to date</li> <li>▪ reliable</li> <li>▪ successful</li> <li>▪ imaginative</li> <li>▪ honest</li> <li>▪ wholesome</li> <li>▪ spirited</li> <li>▪ intelligent</li> <li>▪ masculine</li> <li>▪ feminine</li> </ul> <p><i>1) Strongly Disagree; (7) Strongly Agree</i></p>	<p><i>Adapted from Aaker, 1997</i></p>
<p><b>Brand Trust</b></p>	<p><b>How much do you agree or disagree with the following statements about Herios?</b></p>	<p><i>Adapted from Chaudhuri and</i></p>

	<ul style="list-style-type: none"> <li>▪ I trust this brand to have my best interest at heart</li> <li>▪ The presented brand is making effort to address its customer needs</li> </ul> <p style="text-align: center;"><i>1) Strongly Disagree; (7) Strongly Agree</i></p>	<ul style="list-style-type: none"> <li>▪ This brand is safe</li> <li>▪ Overall, I consider the presented brand to be trustworthy</li> <li>▪ I trust this brand</li> </ul> <p style="text-align: right;"><i>Holbrook (2001).</i></p>
<b>Purchase Intentions</b>	<p style="text-align: center;"><b>How likely are you to purchase from this Herios?</b></p> <p style="text-align: center;"><i>1) Extremely Unlikely; (7) Extremely Likely</i></p>	<p style="text-align: right;"><i>Adapted from Mohr et al., 2005, and Hoeffler, 2003</i></p>
<b>Brand Loyalty</b>	<p style="text-align: center;"><b>How much do you agree with the following statements about Herios?</b></p> <ul style="list-style-type: none"> <li>▪ I am committed to the brand</li> <li>▪ I would be willing to pay a higher price for the brand than for other brands</li> <li>▪ I would recommend it to my friends and family</li> </ul> <p style="text-align: center;"><i>(1) Strongly Disagree; (7) Strongly Agree</i></p>	<p style="text-align: right;"><i>Adapted from Chaudhuri and Holbrook (2001).</i></p>
<b>Human Personality</b>	<p style="text-align: center;"><b>Please rate according to your own personality trait perceptions.</b></p> <ul style="list-style-type: none"> <li>▪ Extraverted, enthusiastic</li> <li>▪ Critical, quarrelsome.</li> <li>▪ Dependable, self-disciplined.</li> <li>▪ Anxious, easily upset.</li> <li>▪ Open to new experiences, complex.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reserved, quiet.</li> <li>▪ Sympathic, warm</li> <li>▪ Disorganizes carless</li> <li>▪ Calm, emotoionally stable</li> <li>▪ Conventional, uncreative</li> </ul> <p style="text-align: right;"><i>Adapted from Gosling, 2003</i></p>

	<i>1) Strongly Disagree; (7) Strongly Agree</i>	
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