



# **Building a Competent Brand Personality**

## **Trough Product Co-Creation:**

*The Raw Potential of the Vegan Food Market*

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## ABSTRACT

Alongside the exponential growth of vegan food products' demand, came a substantial adjustment of companies' portfolios to include these conscious alternatives. Nonetheless, consumers claim to be unsatisfied with the provided offerings, creating the urgent need for investment in innovative product development processes. The following dissertation aimed to explore co-creation's potential as an enhancer of brand perceptions, and consequent product attractiveness. Two experimental studies tested whether the involvement of consumers in the new product development process influenced consumers' purchase intentions, brand personality perceptions, and the importance of the communicating source. The findings indicate that co-created vegan products are preferred over similar non-co-created alternatives, by individuals that already purchase vegan products, regardless of their dietary choices or experienced product involvement. Additionally, companies engaging in co-creation were perceived to detain a more competent brand personality, which promotes trust and sequentially mediates purchase intentions. Lastly, the findings revealed that the perceived competence of the communicating agent directly impacts brand competence, and indirectly influences trust and purchase behaviors. Nonetheless, co-creators' performance in this task was not sturdy enough to be considered a significantly beneficial strategy. Hereby, the uncovered findings not only provide firms the evidence that co-creation is a valuable approach for new product development on a continuously growing market, but also expand existing knowledge on the topic of co-creation, brand personality perceptions, and vegan innovation.

**Title:** Building a Competent Brand Personality Trough Product Co-Creation: *The Raw Potential of the Vegan Food Market*

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**Keywords:** Co-Creation, Brand Personality Perceptions, Competence, Trust, Vegan Innovation, Purchase Intentions, Customer Perceptions, Involvement, Communicator.

## SUMÁRIO

Juntamente com o crescimento exponencial da procura de produtos alimentares vegan, ocorreu uma adaptação substancial dos portfólios das empresas para incluir estas alternativas conscientes. No entanto, os consumidores declaram estar insatisfeitos com a oferta, gerando uma necessidade urgente de investimento em processos de desenvolvimento de produto inovadores. A dissertação seguinte investigou o potencial da cocriação na elevação de percepções de marca, e a consequente atratividade de produtos vegan. Dois estudos experimentais testaram se o envolvimento dos consumidores no processo de desenvolvimento de novos produtos influenciaria as intenções de compra, as percepções de personalidade de marca, e a importância da fonte de comunicação. Os resultados indicam que produtos vegans cocriados são preferidos a alternativas semelhantes não cocriadas, por indivíduos que já compram produtos vegan, independentemente da dieta adotada ou do nível de envolvimento com o produto. Adicionalmente, empresas que utilizam cocriação foram interpretadas como detendo uma personalidade de marca mais competente, o que promove confiança, e sequencialmente media as intenções de compra. Por último, os resultados revelam que a competência do agente de comunicação impacta diretamente a competência da marca, e influencia indiretamente confiança e comportamentos de compra. No entanto, a avaliação da performance dos cocriadores nesta tarefa não foi forte o suficiente para ser considerada uma estratégia significativamente benéfica. Consequentemente, os resultados obtidos não só providenciam provas de que cocriação é uma abordagem valiosa no desenvolvimento de novos produtos num mercado continuamente crescente, como expandem o conhecimento existente no tópico de cocriação, percepções de personalidade de marca e inovação vegan.

**Título:** Construindo uma Personalidade de Marca Competente Através de Cocriação de Produtos: *O Potencial Inexplorado do Mercado Alimentar Vegan*

**Autor:** Mariana Labisa

**Palavras-Chave:** Cocriação, Percepções de Personalidade da Marca, Competência, Confiança Inovação Vegan, Intenções de Compra, Percepções dos Consumidores, Envolvimento, Comunicador.

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## 1. INTRODUCTION

What if the necessary tools for the preservation of future generations, the protection of animal welfare, and the enhancement of your health could all be neatly stored in a kitchen pantry? These are the thoughts leading millions of consumers to adopt sustainable diets, exponentially increasing the demand for plant-based food products (Dedehayir et al. 2019). Distinct from various alimentary trends that have quickly come and gone, the vegan movement appears to be here to stay, with the vegan global food market presenting a value of 16 billion dollars in 2021 (Statista, 2021), and being estimated to grow 875% until 2029 (Barclays, 2019).

Numerous brands have identified the potential of the vegan market and have adjusted their portfolios attempting to respond to its growing demand (Miguel et al., 2021). Nonetheless, the launch of vegan ranges is not a success guarantee, as consumers claim to be disappointed with the currently offered options and point to gaps in the market that are not being addressed by brands (Portuguese Vegetarian Association, 2021). The unserved market suggests an opportunity for companies to launch innovative products, with the Portuguese Vegetarian Association (2021) highlighting the need for new product development approaches that promote a higher congruence between consumer needs and companies' offerings.

Amongst the various product development techniques available to companies, one strategy that has captured the attention of both researchers and firms, while remaining unexploited by the vegan market, is co-creation. Co-creation combines the need, often tacit knowledge of consumers, with the company's internal expertise, in the development of innovative products with stronger market performance (Chang et al. 2016; Fang et al. 2008; Prahalad et al., 2004). Innovation scholars arguing for the potential of a co-creation strategy have focused on explaining its superior outcomes, through the identification of higher perceptions of a firm's innovation capabilities (Costa et al., 2018, Schreier et al., 2012), customer orientation (Fuchs et al., 2011), and product suitability (Filieri, 2013, Fang et al., 2008). Others have focused on co-creation's brand effect (Hussain et al., 2020, Fuchs et al., 2013), with Van Dijk and colleagues (2014) referring to the role of enhanced brand personality perceptions as a significant mediator of purchase intentions for firms using and communicating co-creation.

As the vegan market is highly characterized by self-identification and value declaration (Greenebaum, 2012), the personality traits promoted by brands are more carefully analyzed by consumers, becoming a key criterion on their decision-making process (Punyatoya, 2011). Therefore, the study of co-creation's impact on the promotion of specific brand personality

traits gains a great deal of relevance in this unique market. While the discoveries of Van Dijk and colleagues (2014) provide valuable evidence of the impact of co-creation in the promotion of a specific brand personality, it only investigates sincerity, one of five brand personality categories (Aaker, 1997). Hence, a knowledge gap remains on how co-creation influences other personality categories, and to what extent they would be advantageous for brands competing in the vegan market setting.

The existing product unsuitability and consequent brand disappointment currently characterizing the vegan food market grants the identification of innovation techniques capable of promoting a competent brand personality great promise. Competent brands are associated with perceptions of dependability, expertise, and leadership (Aaker, 1997, Maehle et al. 2011, Aaker et al. 2012), which detain a crucial role in antecedent trust (Xue et al., 2020). As co-creation has been identified as a promoter of proficiency, reliability, security, and trustworthiness (Hoyer et al., 2010, Randall et al., 2011, Dijk et al., 2014), it becomes possible to question whether this strategy could effectively promote a competent brand personality, and what benefits such perceptions could provide to brands in the vegan market.

Nonetheless, to effectively evaluate consumers' perceptions of a co-creation approach, firms need to acknowledge the differences between the customer segments composing the market, and how these disparities may influence the strategy outcome. In the case of the vegan food market, while vegan demand was initially led almost exclusively by consumers highly committed to a cause and ideology (Wescombe, 2019), nowadays it is composed of various segments of individuals following different diets, with unique consumption motivations, and consequently dissimilar levels of product involvement (Miguel et al., 2021, Portuguese Vegetarian Association, 2021). Since studies have established product involvement as a significant variable in product innovation adoption, and brand personality evaluations (Dedehayir et al. 2019, Arts et al., 2011, Punyatoya, 2011), it becomes crucial to assess its possible moderative role in the valuation of the brands engaging in co-creation, and consequent product attractiveness, which remains a gap in the literature for the vegan market.

Moreover, to evaluate the different segments' perceptions towards vegan co-creation, it is also necessary to guarantee the comprehension of the adopted strategy. Literature has established that the strength of the message is based on the communicator's trustworthiness and expertise (Roy et al., 2009), which leads co-creation researchers to investigate the most credible and competent communicating sources. While studies have identified external sources, such as co-

creators, as especially effective and trustworthy communicating agents (Jacobsen et al., 2020, Carfora et al., 2019), little is known of how the different segments of the vegan market would evaluate co-creators' communication competence and how these evaluations would translate into brand inferences. Therefore, the assessment of co-creation communicator competence also becomes an essential, yet unexplored, topic in the study of vegan co-creation potential.

The following research aims to fill the presented and relevant literature gaps, through the analysis of co-creation outcomes in the vegan market. It focuses on the perceptions of passive customers, intending to understand if brands engaging in co-creation offer products perceived as superior to other market alternatives and if these perceptions are a result of higher brand competence and trust evaluations. Additionally, it accounts for the possible moderative role of both the targets' dissimilar levels of product involvement and the evaluated competence of the selected communicating source. By doing so, it extends existing knowledge on various areas of research, including co-creation outcomes, brand personality perceptions, and vegan innovation, while providing managerial guidelines of an innovative approach to an increasingly attractive market.

## 1.1. Thesis Structure and Research Questions

The thesis structure begins with an overview of existing literature, leading to the development of several hypotheses. Following, to verify the veracity of the proposed hypothesis, the description, and analysis of two conducted sequential studies will be provided. Finally, the obtained results will be discussed, as well as their applications and limitations. The presented study aims to answer the following research questions:

- **RQ1:** Can co-creation influence purchase behaviors of new products in the vegan food market?
- **RQ2:** Does co-creation influence competence brand personality perceptions in the vegan food market?
- **RQ3:** Do enhanced brand competence perceptions result in higher trust in the vegan food market?
- **RQ4:** Does the experienced level of product involvement moderate the outcomes of co-creation of vegan products?
- **RQ5:** Does the chosen communicator have a moderating role in vegan co-created products performance?

## 2. LITERATURE REVIEW

### 2.1. Veganism and the Vegan Market

The UK Vegan Society describes a vegan as “someone who tries to live without exploiting animals for the benefit of animals, people, and the planet” (Vegan Society, 2021). One’s identification as a vegan can be portrait as a key factor of its identity, its moral values, and its lifestyle (Greenebaum, 2012). The common share of this belief characterizes veganism as a social movement, and even a philosophy (Wescombe, 2019).

Whether being motivated by health, animal well-being, or sustainability concerns, veganism is a trend that is rapidly growing across countries and continents (Wescombe, 2019). The movement’s goals are even addressed in the United Nations 2030 Agenda for Sustainable Development, through topics of environmental sustainability, ecosystems preservation, responsible consumption, and production (Sustainable Development Goals, 2019).

As the vegan movement grows, gaining more attraction and grid, a global demand for vegan products aligned with the moral values of these conscious consumers emerges, including food products suitable for a sustainable diet (Dedehayir et al. 2019, Aleksandrowicz et al. 2016). Thus, studies estimate a global market value growth superior to 1000% until 2029 for the vegan food and drinks segment (Barclays, 2019), leading firms to invest in the expansion of their vegan ranges (Miguel et al. 2021). Aldi and Tesco present two retailing examples, with a plant-based assortment increase in 2021 of 175% and 103%, respectively (Eating Better, 2021).

#### *The Portuguese Vegan Market*

Portugal is no exception to the veganism trend, having verified that the number of vegan individuals doubled between 2007 and 2017, reaching 60 thousand consumers (AC Nielsen, 2017). Nevertheless, the demand for vegan food products is not restricted to vegan consumers, and according to the same Nielsen study, there has been a clear trend for the reduction of either meat or fish consumption on the general Portuguese’s food regimes. A more recent study, corroborated these conclusions, stating that the number of people that follow a vegan diet, or that are looking to reduce meat and fish consumption reached, in two years, 9% of the population (Lantern, 2019). As a result, companies no longer consider vegan product costumers a small market niche, but instead, an expressive societal movement constituted from both vegan and non-vegan individuals (Portuguese Vegetarian Association, 2021).

### *Need for Innovation in the Vegan Market*

Resulting from an undeniable growth in demand lead by both vegan and non-vegan consumers, the vegan food market became extremely attractive not only to new business ventures (Dedehayir et al. 2019) but also to well-established brands such as Marks & Spencer and PepsiCo, which aimed to capitalize on the rising vegan trend (Portuguese Vegetarian Association, 2021). As a result, the concentration of the vegan food market has been gradually rising (Miguel et al. 2021).

Although there has been an increase in the width and depth of available vegan ranges (Miguel et al. 2021, Portuguese Vegetarian Association, 2021), the development of plant-based products is not a guarantee of success. The necessary investment in market research and product development to assure the quality and safety of vegan products is rather significant (Saari et al., 2021), and many brands are failing to meet their target's expectations.

Customers claim to be unsatisfied with the provided options, due to artificial product taste, unhealthy ingredients, high prices, and unsustainable packaging (Portuguese Vegetarian Association, 2021). Thus, they wish to see better-suited alternatives on their supermarket shelves, creating an urgent necessity for the study of new product development approaches that provide a higher congruency between the market needs and the brand's offerings (Portuguese Vegetarian Association, 2021, Dedehayir et al., 2017). It is up to companies to invest in innovative techniques that will not only improve the attractiveness of their vegan products but also regenerate the customers' faith in vegan brands.

Some companies have acknowledged the existing market tension and have attempted to innovate through the involvement of customers in the new product development process. The German retailer Lidl provides an interesting example as it involved customers in both the ideation and testing phase of a new vegan range, which resulted in improved performance of the firm's new offerings, and enriched brand perceptions of customer orientation, and sustainability concerns (Vegconomist, 2019).

While the usage of customer involvement in the development of improved new products has already captured the attention of researchers and firms (Alam, 2002), there is still a literature gap providing either qualitative or quantitative evidence of how this technique may behave in this speedily growing market, with a clear need for new product development approaches.

## 2.2. Customer Involvement Through Co-Creation

### *The Evolution of Customer Involvement in New Product Development*

Since the late 70's companies have identified the marketing potential of customer involvement, starting as a source of productivity gains, consequent of the reduction of production costs (Bendapudi et al., 2003). Nowadays, as consumers' needs are continuously evolving, the necessity of adaptation occurs at a much faster rate, and the quantity and quality of knowledge required to successfully innovate are much higher (Filiberti, 2013, Chesbrough, 2003). Subsequently, the accredited potential of external input has exceeded efficiency concerns (Filiberti, 2013), providing customers an active role in the new product development process, in key dimensions such as product design, manufacturing, and distribution (Rayna et al., 2021).

This shift in perspective resulted from the realization that, although companies detain a more profound technical knowledge of how to successfully develop products (Katila et al., 2002), customers possess a valuable deeper understanding of what originates their needs, and which attributes better respond to them (O'Hern et al., 2017). As such, companies identified a valuable opportunity, through the combination of both company and user knowledge, to create new products, conquerors of better market performance (Fang et al. 2008, Chang et al. 2016). This cooperative technique of open innovation is commonly denominated Co-Creation (Prahalad et al., 2004).

### *Co-Creation Definition and Benefits*

Co-creation has been defined as the creation of value resulting from a cooperative generation process, between the company, and the consumers (Prahalad et al., 2004). The definition highlights the existing collaborative alliance between the technical knowledge of the firm employees, and the needs personal knowledge of the customers, during the innovation process.

Through co-creation, companies can better understand their target, resulting in the production of superiorly innovative products, that are better suited to satisfy the customer needs (Fang et al., 2008, Hoyer et al., 2010). Besides beneficiating from improved products, consumers also experience feelings of empowerment, truthfulness, and common risk (Randall et al., 2011), either having occupied an active or passive role in the development of the products (Dahl et al. 2015).

The increased customer satisfaction directly beneficiates the companies engaging in this approach, as they will be perceived as more customer-oriented (Fuchs et al., 2011) and with superiorly valued products in comparison to other market alternatives (Van Dijk, 2014, Hoyer et al., 2010). As such, they experienced increased purchase behaviors (Hoyer et al., 2010) and reduced failure risks (Ogawa et al. 2006), which provides the adoption of co-creation a unique prospect for competitive advantage (Prahalad et al., 2004).

### 2.3. Potential of Co-Creation in the Vegan Food Market

#### *Co-Creation Perceptions, Attitudes, and Consequent Behaviors*

The enhancement of customer perceptions becomes uniquely valuable to firms when it promotes profitable purchasing behaviors. To establish the relationship between perceptions, intentions, and consequent behaviors, two theories often are used: The Theory of Reasoned Action (TRA), and The Theory of Planned Behavior (TPB) (Fishbein et al., 1977, Ajzen et al., 1991). Both theories support that someone's intention to act a certain way is dependent on the attitude towards this action, the seeming pressure to act that specific way, and the belief that there is availability for that behavior (Montano et al, 2015). Thus, attitudes become a vital dimension when evaluating behavioral intentions, as according to both TRA and TPB, the more favorable these attitudes are, the stronger the motivation to act (Teng et al. 2015).

The presented research will build upon these theories, aiming to understand how the usage of co-creation in the vegan market affects customer perceptions, anteceding the attitudes responsible for promoting behavioral intentions.

Research shows that co-creation has already been successfully used as a perception enhancer tool in the food market. A study conducted by Filieri (2003), revealed this open innovation technique as a cost-efficient approach, which allows for the development of new food products, services, packaging, promotions, and corporate social initiatives, all of which are perceived as better suited in the satisfaction of customer's needs. These conclusions were further demonstrated by Van Dijk and colleagues (2014), whose study, within the food market, concluded that products identified as co-created were perceived as more enticing, innovative, creative, and better suited to the customer needs. In both studies, customers' strengthened inferences promoted positive attitudes leading to increased purchase intentions (Van Dijk et al., 2014, Filieri, 2003).

Therefore, while co-creation in the vegan market is an untapped topic by literature, it is hypothesized that this innovation tool will also allow the improvement of customers' perceptions, promoting positive attitudes responsible for higher purchase behaviors.

**H1:** New products that are co-created, in the vegan food market, will lead to higher purchase intentions than products that are exclusively developed by internal firm's professionals.

## 2.4. Influence of Co-Creation on Brand Personality Perceptions

### *Relevance of Brand Personality in the Vegan Market*

In increasingly concentrated markets, such as the vegan food market, competing brands often display similar functional features, which provides greater importance to emotional aspects, such as brand personality, in the battle for differentiation (Kuenzel et al., 2010).

Brand Personality can be defined as the set of unique human features linked with a brand (Aaker, 1997). To evaluate them, a framework of brand personality dimensions, and the corresponding scales generalizable across product categories, was developed by Jennifer Aaker. It identified five unique personality dimensions, based on 42 human traits: Excitement, Competence, Sophistication, Sincerity, and Ruggedness (Aaker, 1997).

As different brands detain dissimilar personalities, customers often choose brands with specific personality characteristics to bring out the desired aspects of their personality (Aaker, 1999). Research has established that when consumers perceive a high match between their ideal self and the brand's promoted personality, they are more likely to establish a positive attitude towards the brand (Kuenzel et al., 2010). Therefore, brand personality has been found an especially relevant variable in the study of brand evaluations (Keller, 2008), being considered one of the most crucial, and consistent, predictive tools of attitudes (Anisimova, 2007).

When brand managers started to acknowledge the importance of concepts such as brand personality, they began to search for innovative ways to promote specific personality traits highly valued by their target, aiming to gain a unique competitive edge over competitors (Phau et al., 2000). While the impact of valued personality traits varies across markets depending on their specificities, as vegan food products mirror consumers' values (Greenebaum, 2012), the personality traits of the existing brands become a key criterion in product selection (Punyatoya, 2011). Therefore, when analyzing the impact of innovative strategies in the vegan market, it is extremely relevant to understand how they will translate into brand perceived traits.

### ***Co-Creation Impact on Brand Personality Perceptions***

The impact of co-creation on the promotion of specific brand personality traits was first uncovered by Van Dijk and colleagues' research (2014). Their study provided evidence on the explanatory power of brand personality, in the relation between co-creation perceptions and behavioral intentions (Van Dijk et al., 2014). The findings derived from the impact of co-creation on authenticity and sincerity perceptions, resulting from the open line of communication between companies and consumers, promoted by this designed model (Van Dijk et al., 2014, Randall et al., 2011). As both concepts are highly connected to sincere brand personality traits (Aaker, 1997), the authors consider this personality category as the most suitable mediator. Nonetheless, a literature gap remains on how co-creation influences other personality categories and what benefits they would bring to brands competing in the vegan food market.

### ***Co-Creation Connection to Competence Personality Traits***

Having into consideration the existing product inappropriateness and brand disappointment identified as currently present in the vegan market, the brand personality category that appears to show the greatest potential is a competent brand personality. A brand that is described as having a competent personality incorporates traits such as responsibility, dependability, and security (Aaker, 1997, Aaker et al. 2012). Thus, competent brands are associated with perceptions of quality and expertise, while often occupying leading positions in the market (Maehle et al. 2011). The formation of this perception is based on the customer's product experience and only occurs if the performance expectations are met, or surpassed (Maehle et al. 2011).

Through co-creation it is possible to modify the way the brand is experienced, resulting in greater value extraction (Van Dijk et al., 2014). Co-created products are often perceived as better suited and preferred over other competitive alternatives (Hoyer et al., 2010), which promotes leadership, quality, and proficiency perceptions, highly connected to a competent brand personality (Aaker, 1997, Aaker et al. 2012). Furthermore, a co-creation strategy allows for the formation of dynamic dialogue, between customers and the companies promoting a feeling of truthfulness, empowerment, and a common risk (Randall et al., 2011), also extended to the observing customers that feel vicariously involved (Dahl et al. 2015). Higher reliability, and security, perceptions are therefore formed, which are highly connected to a competent

brand personality (Aaker, 1997, Aaker et al. 2012), and reinforce the link between the two variables. Thus, the following connection between the identified variables is hypothesized:

**H2:** Brands engaging in co-creation, in the development of new vegan food products, are perceived to detain a more competent personality, than brands that rely exclusively on internal professionals.

### ***Competent Brand Personality as a Source of Trust and Purchase Intentions***

Trust can be characterized as “a state of perceived vulnerability or risk that is derived from individual uncertainty regarding the motives, intentions, and potential actions of others on whom they depend” (Kramer, 1999). In the food industry, including the vegan market, this dimension has an especially important role as individuals consume food without total and transparent evidence of quality, safety, and sustainability (Zhang et al., 2016). Thus, these acuties depend highly on the trust created, not only by product information, but also the brand itself, and any other agents involved in the development process (Carfora et al., 2019, Jacobsen et al. 2020).

As competence perceptions originate from the brands’ ability to provide solutions with the expected level of quality, competent brands encourage a feeling of trustworthiness and dependability (Sichtmann, 2007). Consequently, research has established brands perceived as detaining a more competent personality as promoters of higher trust (Sung et al., 2010). These findings are aligned with studies indicating that competence detains a strong explanatory power in antecedent trust, which will encourage purchase intentions (Xue et al., 2020, Perepelkin et al., 2011). As such the following hypothesis are proposed:

**H3:** Higher perceptions of brand competence promoted by co-creation, will enhance trust, which will promote purchase intentions of vegan co-created products.

## **2.5. The Role of Product Involvement in the Vegan Food Market**

### ***Product Involvement as a Segmentation Tool***

The concept of involvement has played a major role in the study of consumer behavior (Beatty, 1988). Research has defined involvement as “a consumer's level of involvement with an object, situation, or action determined by the degree to which he perceives that concept to be personally relevant” (Celsi et al., 1988). In the case of a product, involvement is measured based on how

important the product is perceived to be in the eyes of the consumer (Zaichkowsky, 1985). When evaluating a particular product class, the effort dedicated by consumers to the decision-making process will differ according to the level of product involvement (Chakravarti et al., 2003). Highly involved consumers will invest more time and energy in the search for product information, the development of heterogeneous considerations, the evaluation of alternatives, and the final purchase decision, in comparison to low involved customers (Punyatoya, 2011, Chakravarti et al., 2003). Therefore, product involvement has been identified as a powerful moderating variable of consumer behavior and is often used as a customer segmentation criterion (Bloch, 1981).

Involvement is highly influenced by the existing connection between the product in question and the consumer beliefs, interests, and needs (Miguel et al. 2021). As a result, in a high involvement setting, consumers will be more motivated to carefully process the brand information, including the product's congruence between the brand image and their self-concept (Xue, 2008). Given that the engagement in a vegan lifestyle can be described as a key identity factor that mirrors consumers' values (Greenebaum, 2012), the effort dedicated to the decision-making process will be higher for the vegan segment, to guarantee compliance with their beliefs (Miguel et al. 2021). As such, is possible to argue for a positive relationship between the degree of devotion to the vegan lifestyle, and the level of product involvement, being higher for consumers fully dedicated to a vegan routine, in comparison to the remaining non-vegan segments.

### ***Product Involvement Impact on Brand Personality Evaluations and Innovation Adoption***

Research has demonstrated that brand personality influences behavioral intentions, such as purchase intentions, at both high and low product involvement scenarios (Punyatoya, 2011). Nonetheless, the effect of brand personality is stronger in a high involvement setting, as the products often reflect the consumers' self-image, and the congruency with brand personality is used as a decisive criterion in the decision-making process (Punyatoya, 2011, Oh et al., 2002). Consequently, it is expected that the effect of brand personality on the purchase intentions of a new vegan product will be stronger for the vegan segment in comparison to the non-vegan, as vegans display stronger product involvement.

Moreover, involvement has also been shown to have high explanatory power for new product adoption (Arts et al., 2011). In high involvement settings, consumers present a greater understanding of the product category, resulting in a smaller effort to evaluate the innovative

offers, and consequently form behavioral intentions (Gatignon et al. 1985). As such, in the vegan market, studies have established that innovation adoption is a sequential process, being led by the vegan segment and followed by the non-vegans (Dedehayir et al. 2019). Having into consideration the established positive impact of product involvement on both brand personality perceptions outcomes, and innovation adoption, the following hypothesis is proposed:

**H4:** The higher level of product involvement, experienced by the vegan segment, positively moderate a) product purchase intentions and b) brand competence perceptions, of brand adopting co-creation.

## 2.6. Communicating Vegan Co-Creation

### *How to Communicate Co-Creation*

A co-creation strategy can only influence consumers' brand and product perceptions if they comprehend that the product was indeed co-created (Van Dijk et al., 2014). Thus, research has demonstrated that the benefits of co-creation are potentialized by the comprehension of the adopted innovation strategy (Costa et al., 2018, Schreier et al., 2012).

Nonetheless, it is also imperative to assure the credibility of this message (Van Dijk et al., 2014), providing special relevance to the selection of the communicating agent (Jacobsen et al., 2020, Peres et al., 2010). As literature establishes that in uncertain situations consumers evaluate the existing trust in the communicator (Eden et al., 2008), the more trustworthy or expert the communication source is considered to be, the stronger the impact its message will have on consumers (Roy, 2009).

### *Resourcing to Consumers to Communicate Co-Creation*

Research has found that some external agents are more effective at communicating new products than companies' spokespersons. Peer consumers (Bickart et al., 2001), and unpaid endorsers (Taylor et al. 1994) appear to be the most competent sources, as they promote higher credibility, trustworthiness, and overall better product evaluations (Howes et al., 2013). This asymmetry of effectiveness is also verified in the co-creation context, where companies are often seen as having ulterior motives, such as financial incentives, making their communication skills are less convincing (Dou et al., 2012). Consequently, researchers have focused on alternative external agents capable of effectively communicating co-created products.

Co-creators have been found to be a possible profitable alternative in the food market, as they are better at establishing a relationship of trust with the target consumers (Carfora et al., 2019, Jacobsen et al., 2020). Since in the vegan food market trust is a crucial success determinant (Zhang et al., 2016), the usage of co-creators in the communication role is hypothesized to be especially beneficial in potentializing perceived trustworthiness.

Additionally, the importance of communicating agent selection is also reflected in the study of brand personality perceptions, as these brand inferences are especially influenced by the characteristics of the individuals associated with the brand, an effect denominated user imagery (McCracken, 1989, Aaker, 1997). Therefore, the traits of the brand will be directly influenced by the endorsers and spokespersons used (Balaji et al., 2011). Since studies demonstrate that, in the food market, co-creators are perceived to be competent and honest communicators (Jacobsen et al., 2020), according to the user imagery effect (McCracken, 1989, Aaker, 1997), we expect that these traits will be directly transferred to the brand itself. Hence, we hypothesized that the usage of co-creators as communicators will, not only increase the perceived trust of new co-created products but also have a positive effect on the perceptions of a competent brand personality.

**H5:** The communication of co-created vegan products will positively moderate competent brand personality perceptions and trust, if conducted by the co-creators.

### 3. CONCEPTUAL FRAMEWORK

A conceptual map is presented below (figure 1), based on the hypothesis drawn from the literature. The scheme represents both a moderation mediation model and a sequential mediation model, uncovering the proposed connections between the different variables.

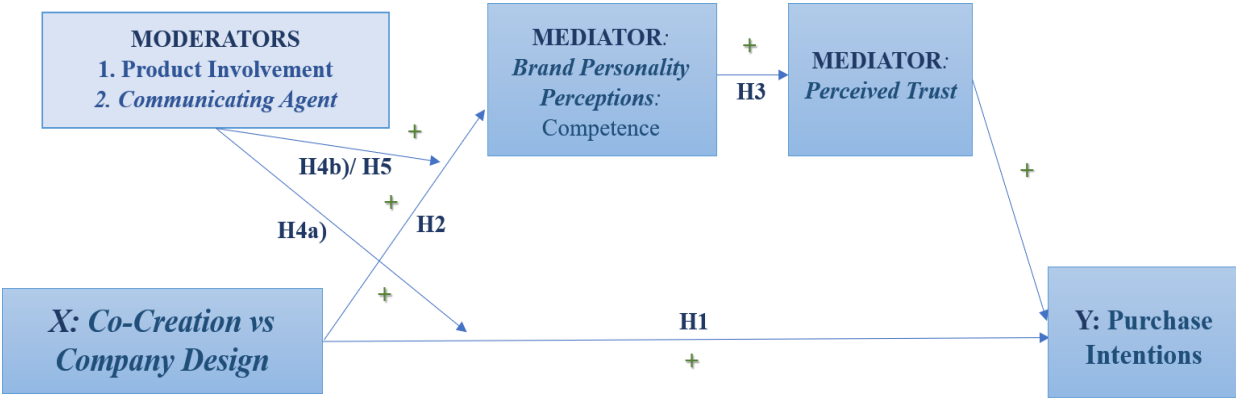


FIGURE 1 - CONCEPTUAL MAP

**Overview of the studies:**  
 Study 1: Test of H1, H2, H3 and H4.  
 Study 2: Test of H5.

## 4. METHODOLOGY AND RESEARCH FRAMEWORK

### 4.1. Research Methods and Instruments

To test the proposed hypothesis, two sequential studies were developed. Study 1 aimed to manipulate the product design approach, measuring the response in purchase intentions, and testing both brand personality and trust perceptions, as possible mediators of this relationship (H1, H2, and H3). Additionally, it analyzed the possible moderating effect of product involvement (H4).

Following the result analysis of Study 1, and the establishment of causal relations between the design mode, purchase intentions, and brand perceptions, a second study was designed to explore the connections further. Thus, Study 2 focused on the analysis of the impact of a second moderating variable, the co-creation communicating agent (H5).

For both studies, a causal research design was adopted, with the development of different experiments. The experiments were conducted through the usage of online surveys, as its many benefits outweighed its limitations. Online surveys are considered a low-cost technique, that allows the rapid and direct gathering of information, while simultaneously maximizing the convenience for the respondents (Evans et al., 2005). This efficient tool also permits data to be directly loaded to the analysis software, saving time and resources consequent of the data entry process (Ilieva et al, 2002). In addition, through the usage of surveys, it is possible, to not only use diversified question formats but also to control the sample eligible to answer the different defined sections of the survey (Ilieva et al, 2002, Evans et al., 2005). Therefore, it was considered the most beneficial tool for both the researchers and the respondents.

### 4.2. Pre-Survey

#### *Method and Sample Description*

A pre-survey was conducted to identify the most suitable product to be used as stimuli in the main studies. The products presented as alternatives in the pre-survey were: vegan cheese alternatives, ready-to-go vegan meals, and vegan bakery goods. These options were selected based on a study developed by the Portuguese Vegetarian Association (2021) which identified them as products utmost lacking in the vegan market and with the greatest dissatisfaction.

The pre-survey aimed to identify which of the three categories had the highest innovation potential, the strongest purchase intentions, and the sturdiest co-creation credibility.

The pre-survey was conducted in English using the Qualtrics software, to a sample of 55 participants. The participants were 65,5% of females, with ages distributed across all age groups. The most significant age group was 18 to 25, representing 30.9% of the sample.

### ***Procedure and Results***

The sample was first presented with the three product categories and asked to evaluate them according to their general innovation potential, using a 5-point Likert scale [1-very low; 5-very high]. Next, to guarantee valid responses to the questions regarding co-creation potential, the sample read a section dedicated to the clarification of the concept, with a practical example of how the technique applies in the market.

After the apprehension of the co-creation concept, the inquiries were asked to imagine a scenario in which a fictional company used this innovative technique in the creation of three new different products: a vegan pasta ready-to-go meal, a vegan alternative to feta cheese with jalapenos, and a vegan chocolate croissant. Visual stimuli of the three products were provided to guarantee congruence with the main studies (*appendix 1*). The images were presented simultaneously avoiding possible anchor effects during the product evaluations. After the presentation of the products, a 5-point Likert scale was once again used to test both the credibility of the product as a co-created item [1-Very Low; 5-Very High] and the respective purchase intentions [1-Extremely Unlikely; 5-Extremely Likely].

The results of a One-Way ANOVA demonstrated that, in terms of general innovation, the category of ready-to-go vegan meals presented a significantly higher innovation potential than the vegan cheese alternatives (MReady-To-Go Meals=3.82; MCheese Alternatives=3.05; P-value=0.000), however not significantly superior to bakery goods (MBakery Goods=3.56; P-Value=0.137). Regarding co-creation credibility, the vegan ready-to-go meal revealed significantly higher means than the presented bakery good (MReady-To-Go Meals=3.93; MBakery Goods=3.38; P-Value=0.006), and the vegan cheese alternative (MCheese Alternatives=3.24; P-value=0.000). Finally, the purchase intentions valuations bear a similar result, with the ready-to-go meal presently significantly higher evaluations than the bakery option (MReady-To-Go Meals=3.80; MBakery Goods=3.20; P-Value=0.006), and the cheese alternative (MCheese Alternatives=3.11; P-value=0.000).

As vegan ready-to-go meals were the product that presented the highest scores in all the studied parameters, this was the product category selected for the main studies.

### 4.3. Study 1

#### *Method and Sample Description*

Study 1 was developed to analyze the impact of the product design approach (company design versus co-creation) on purchase intentions (H1). Additionally, it accounted for the effect of brand personality perceptions (H2) and trust (H3) as mediators, and product involvement (H4) as a moderator.

To collect the data for hypothesis testing, an English online survey was developed on the Qualtrics software. Before the survey was available to the general public, a sample of 10 participants was selected for a pilot study. The designated individuals provided feedback regarding the survey length, language, and overall question comprehension. Adjustments were made according to the provided input, and the improved version was shared through the author's network, the online tool Amazon MTurk, and various online communities of vegans and vegetarians' consumers.

The sampling method selected was the probability sort, as all individuals, regardless of their dietary choices, were considered eligible to conclude the study. Nonetheless, a filter question was designed aiming to isolate the portion of the sample that already consumes vegan products, allowing the comparison of the study results for both the target market and the remaining population.

160 participants took part in the survey, after the deletion of incomplete responses. The sample was constituted by 70% of females, and the most represented age groups were from 18-25 and 26-35, representing a cumulative value of 75.7%. Nonetheless, according to the Portuguese Vegetarian Association (2017), these demographic characteristics represent the customer segment with the highest potential in the vegan food market.

The respondents were mainly current consumers of vegan products (78.8%), with 31.3% following a vegan diet, 19.4% following variations of the vegetarian diet, and 30.6% being non-vegan and non-vegetarian that include vegan alternatives in their food routine. In terms of consumption characterization, 44.4% of the sample consumes vegan food products either daily or regularly, and 47.5% consumes them occasionally. A more detailed characterization of the sample can be found in the appendix (*appendix 2*).

### ***Stimuli Development***

As Study 1 aimed to analyze a causal relationship between two product design methods, and purchase intentions, a 2X1 between subject's design was selected (design mode: 2 (co-creation vs company design) x 1 (vegan product)). Consequently, one of two scenarios was evenly and randomly attributed to each inquiry: Scenario Prof presented a product entirely designed by company professionals, and Scenario CC introduced the same product, however, designed through co-creation (*appendix 3*). Scenario Prof counted with 82 valid responses (51.25%) and Scenario CC with 78.

In both scenarios, the presented product was a vegan pasta ready-to-go meal, equal to the one utilized in the pre-survey. Alongside a written description of the new product (*appendix 4*), a visual stimulus was developed for both scenarios, with a minor difference that in the image of the Scenario CC, the product was signaled as co-created with consumers (*appendix 5*).

Prior to the presentation of the respective scenario, an introduction was designed informing that the purpose of the study was to obtain feedback on the potential of a new vegan product concept. This approach aimed to prevent focal bias on the co-creation aspect and to avoid cueing participants on the real purpose of the study. Moreover, the introduction also indicated that for confidentiality reasons the name of the company responsible for this product would not be provided, in its place the fictional *TasteTastic* was used. This strategy allowed the evaluation of the effect of co-creation on brand perceptions, without the conditioning of existing discernments of known brands in the market.

### ***Variable Description and Reliability***

To evaluate the variables of the proposed model, different items were drawn from various literature sources and adapted to the research parameters. Nevertheless, a reliability test was conducted for the adapted items, to guarantee their internal consistency (Bonett et al., 2015). A Cronbach's Alpha analysis was used for the variables with more than three items, and a Spearman-Brown coefficient for the ones presenting two or less (Eisinga et al., 2013).

The analysis revealed that for the variable competent brand personality, one of the nine evaluated items presented an extremely low contribution to the variable internal consistency (Corrected Item Total Correlation = 0.444). As all the other studied items revealed a Corrected Item Correlation Coefficient superior to 0.6, the mentioned item was removed from the variable analysis, resulting in the improvement of its Cronbach's Alpha. After the stated alterations, as

demonstrated in the table below (*table 1*), all variable measurements present a Cronbach's Alpha value superior to 0.7, which gives validity to its selection (Christmann et al., 2006).

<i>Variable</i>	<i>Items</i>	<i>Cronbach's Alpha</i>
<i>Competent Brand Personality</i>	Reliable; Hard-Working; Secure; Successful; Leader; Confident; Intelligent; Technical.	0.898
<i>Trust</i>	- I trust the presented brand to comply with vegan standards. - I trust the presented brand to have my best interests at heart. - The presented brand is making every effort to address its customer needs. - Overall, I consider the presented brand to be trustworthy.	0.873
<i>Product Involvement</i>	- Vegan products are very important to me. - I am concerned about guaranteeing that the products I purchase are vegan. - I would be interested in reading information about vegan food products, including how they are made. - I have compared vegan food product characteristics among brands. - I think there are plenty of differences among brands that provide vegan food products. - I have a favorite brand for vegan food products.	0.906
		<i>Spearman-Brown</i>
<i>Purchase Intentions</i>	- I would purchase the presented product. - I would recommend the presented product to family and friends.	0.747

**TABLE 1 - RELIABILITY ANALYSIS STUDY I**

### *Procedure*

The data collection began with the division of the sample between the target of vegan food brands (vegan and non-vegan consumers of vegan products), and the remaining population (non-vegan non-consumers of vegan products), through the question “Do you consume vegan food products?” [1-Yes; 2-No]. Next, the level of product involvement was evaluated, when respondents were asked to indicate their level of agreement with six reliable items, using a 7-point Likert scale [1-Strongly Disagree; 7-Strongly Agree] (*appendix 6*).

The respondents were then randomly and evenly assigned either to the control group, through the analysis of Scenario Prof, or to the treatment group, with the analysis of Scenario CC. Both groups were introduced to an equal setting where they encountered an identical new product, from the same fictional brand. However, in Scenario Prof the respondents were told that this product was a result of efforts from an “internal *TasteTastic* team of employees, experts in product development”, whereas in Scenario CC this team worked “in collaboration with consumers just like you” (*appendix 3*). To guarantee the comprehension of the scenario's discrepancies, a manipulation test was conducted, where the respondents had to identify by

whom they perceived the product to have been developed [1-Only the Company; 2-The Company and Consumers; 3- Only Consumers].

After the scenario comprehension, the sample evaluated the perceived competence of the brand personality and trust. To measure brand personality perceptions, the respondents assessed the descriptiveness of the determinant nine traits of a competent brand personality [1-Not at all Descriptive; 7-Fully Descriptive], allowing for the creation of a competence score through an average of the individual adjectives. On the other hand, to evaluate perceived trust, the sample evaluated their level of agreement with four reliable items [1- Strongly Disagree; 7-Strongly Agree].

Only after the brand personality and trust evaluations, was the sample presented with a more detailed characterization of the product, alongside visual product stimuli (*appendix 5*). The visual stimuli were purposely presented after brand evaluations to avoid any contamination of the answers, allowing for the isolation of the co-creation tool effect on brand perceptions. The dependent variable of the study was then measured through the usage of two items assessing the likelihood of purchase intentions, once again using a 7-point Likert scale [1-Extremely Unlikely; 7-Extremely Likely].

Before the completion of the survey, demographic and consumption characterizing information was collected, allowing for the control of several relevant variables. The variables considered for the characterization of the consumption included dietary habits, frequency of consumption, and ranking of the most valued attributes during the purchase process. The demography analysis included: gender, age, nationality, education, and income (*appendix 2*).

## ***Results***

*Manipulation Check:* The manipulation analysis revealed positive results. Through the realization of an Independent Sample T-Test, it was possible to verify that the differences between the scenarios were understood by the sample, as the means of both scenarios are significantly different (P-value=0.000). Therefore, the respondents to whom it was attributed Scenario Prof interpreted the product to be developed by the company, whereas the remaining sample recognized the consumers' role in the co-creation setting (MScenario Prof=1.50; MScenario CC =1.79).

*Test of Hypothesis 1:* To establish a relationship between the firms' design approach (independent variable) and consumers' purchase intentions (dependent variable), an Independent Sample T-Test was selected. The test included the responses of individuals that currently consume vegan products regardless of the dietary choice adopted (N=126). The results revealed a significant mean difference between the two scenarios (P-value=0.014), with Scenario CC promoting higher purchase intentions scores (M Purchase Intentions Scenario Prof= 4.735; M Purchase Intentions Scenario CC= 5.233). Consequently, H1 is not rejected for current consumers of vegan products, as the data confirms a significant increase in the likelihood of purchase when products are co-created.

An additional analysis was conducted on the portion of the sample characterized by individuals that do not currently consume vegan products (N=44), to evaluate the impact of the product design mode on this segment. The Independent Sample T-Test analysis revealed that there is no significant mean difference between the two presented scenarios (P-value=0.892), leading to the conclusion that this market segment does not detain a higher purchase intention for co-created products (M Purchase Intentions Scenario Prof= 3.937; M Purchase Intentions Scenario CC= 4.000).

*Test of Hypothesis 2:* To test the mediating effect of a competent brand personality, a bootstrapping analysis was conducted, through the PROCESS Model 4 tool (Preacher et al., 2004). The test allowed for the evaluation of each component of the proposed mediation model, through multiple regressions.

Firstly, the data revealed a significant positive relationship between the independent variable design method, and competent brand personality evaluations (B=0.428;  $t(124)=2.138$ ; P-value=0.035). As such it is possible to conclude that when a co-creation approach is used, instead of a company-designed method, there is an increase in the brand's competence score. Next, the model also demonstrated a significant influence of a competent brand personality on the dependent variable purchase intentions (B=0.552;  $t(124)=7.293$ ; P-value=0.000), allowing the conclusion that when there is a higher brand competence evaluation, this will be translated in higher purchase intentions. After verifying both relationships, the indirect effect was analyzed with a bootstrapping output, which confirmed a mediating role of a competent brand personality, due to the positive values of both the lower and upper limit of the confidence interval [0.0235; 0.4812]. Additionally, the data demonstrates that, when accounting for the brand competence perceptions, the direct effect of the variable scenario on purchase intentions

is no longer significant (P-value=0.128), which indicates full mediation. Hence, it is not possible to reject hypothesis 2, which proposes that a competent brand personality mediates vegan co-creation outcomes.

	Variable	Beta	P-Value	Significance
<b>Direct Effect on Competence Score</b>	Scenario	0.427	0.035	<i>Significant</i>
	Competence Score	0.552	0.000	<i>Significant</i>
<b>Direct Effect on Purchase Intentions</b>	Scenario	0.263	0.128	<i>Non-Significant</i>
		<b>BootLLCI</b>	<b>BootULCI</b>	
<b>Indirect Effect of X on Y</b>	Competence Score	0.0235	0.4812	<i>Significant Mediating Effect</i>

**TABLE 2 - MEDIATION ANALYSIS STUDY 1: BRAND COMPETENCE SCORE**

*Test of Hypothesis 3:* Drawn from literature, H3 aimed to extend the mediation model further, through the incorporation of trust as a second sequential mediator. As such, a subsequent bootstrapping analysis was performed, using the PROCESS Model 6 tool (Preacher et al., 2008).

The analysis allowed, once again, for the evaluation of each component of the proposed mediation model, through multiple regressions. The data first demonstrated that there is a significant direct effect between the selected scenario and variable brand personality competence (B=0.4267; t(124)=2.197; P-value=0.034). Secondly, it showed that although trust is not directly influenced by the scenario (P-Value=0.786), it is influenced by the brand personality competence (B=0.5392; t (124)=6.519; P-value=0.000). Finally, it established purchase intentions as fully dependent of both brand personality competence (B=0.3793; t (124)=4.593; P-value=0.000), and trust (B=0.3204; t (124)=4.128; P-value=0.000), resulting on a no longer significant direct effect of the scenario (P-value=0.129), which once again indicates full mediation.

Consequently, through the bootstrapping output, it is possible to conclude that, although trust is not a significant mediating variable by itself (BootLLCI= -0.0969; BootULCI= 0.1550) when introduced as a sequential mediator of brand personality competence, it reveals a significant mediating effect (BootLLCI=-0.0051; BootULCI= 0.1859). As a result, we do not reject H3, as trust was found to be a second significant mediator of our model.

	<b>Variable</b>	<b>Beta</b>	<b>P-Value</b>	<b>Significance</b>
<b>Direct Effect on Trust</b>	Scenario	0.051	0.786	<i>Non-Significant</i>
	Brand Competence	0.539	0.000	<i>Significant</i>
<b>Direct Effect on Purchase Intentions</b>	Trust	0.320	0.001	<i>Significant</i>
		<b>BootLLCI</b>	<b>BootULCI</b>	
<b>Indirect Effect of X on Y</b>	Trust	-0.0969	0.1550	<i>Non-Significant Mediating Effect</i>
	Brand Competence and Trust <i>(sequential)</i>	0.0051	0.1859	<i>Significant Sequential Mediating Effect</i>

**TABLE 3- SEQUENTIAL MEDIATION ANALYSIS STUDY 1: BRAND COMPETENCE SCORE AND TRUST**

*Test of Hypothesis 4:* Our H4 hypothesized the moderating role of product involvement on co-created product's purchase intentions (H4a) and brand personality evaluations (H4b). As H4 assumed that the level of product involvement is directly associated with the existing commitment to the vegan lifestyle, it was primarily necessary to verify this condition.

The differences in product involvement were measured for three market segments: vegan consumers, consumers that follow variations of a vegetarian diet, and other consumers that follow a regular diet but also consume vegan alternatives. Through a One-Way ANOVA, it was possible to confirm a significant mean difference between the three segments (P-value=0.000), with vegan consumers presenting the highest product involvement (MVegan Involvement=6.022), followed by the consumers following variations of the vegetarian diet (MVegetarian Involvement=5.180), and finally the remaining consumers of vegan products (MOthers Involvement=3.838). Therefore, the condition is verified.

Next, a moderation mediation model was tested using the PROCESS Model 8 tool (Preacher et al., 2007), aiming to identify a moderating influence not only on the direct effect of the scenario on purchase intentions (H4a), but also on the indirect effect represented by the mediator competent brand personality (H4b).

The analysis shows that there is no significant moderating effect between the level of involvement and the mediator competent brand personality (P-value= 0.2926). Additionally, an identical outcome is verified for the interaction between the level of involvement and purchase intentions (P-value=0.9795). Consequently, across different levels of involvement, there is no moderation of the direct effect between scenario and purchase intentions, nor on the indirect

effect of the mediator competent brand personality. This conclusion is supported through the analysis of bootstrapping output, where it is possible to observe the value zero between the upper and lower limit of the confidence interval [-0.0542, 0.2623]. The analysis was repeated controlling for the collected sample characterizing demographic variables, nonetheless, the result remained unaffected, resulting in the rejection of both H4a and H4b.

	<i>Variable</i>	<i>Beta</i>	<i>P-Value</i>	<i>BootLLCI</i>	<i>BootULCI</i>	<i>Significance</i>
<b>Moderation</b>						<i>No Significant</i>
<b>Mediation</b>	Product	0.0036	0.9795	-0.0542	0.2623	<i>Moderating</i>
<b>Model</b>	Involvement					<i>Mediation</i> <i>Effect</i>

**TABLE 4 - MODERATION ANALYSIS STUDY 1: PRODUCT INVOLVEMENT**

### *Additional Findings*

To take full advantage of the gathered data, and to better understand the sample's perceptions, additional analysis was conducted.

First, it was analyzed the most valued attributes in vegan products by both vegan and non-vegan consumers, and also non-current consumers. Through a Descriptive Mean Analysis and a One-Way ANOVA Analysis, it was possible to conclude that for all the inquired individuals the most important attribute when purchasing vegan products is taste. This attribute is followed by healthiness by vegan consumers, and price for the remaining two segments. The attribute that showed the most significant mean difference between the segments was information regarding the production process, which was considered an important attribute by current consumers of vegan products (vegan and non-vegan), but it was considered the least important by non-consumers of vegan products (P-value=0.047, MVegans=4.36 MNon-Vegans=4.39; MNon-Consumers=5.15)

Secondly, while for the purpose of the study competence brand perceptions were evaluated through a competence score, a deeper analysis was conducted aiming to evaluate which of the traits were most dissimilarly evaluated across the proposed scenarios. Through an Independent Sample T-Test, it was possible to see that the traits of a competent brand personality that were the most affected by the usage of co-creation are: brand intelligence, confidence, and reliability.

<i>Competence Trait</i>	<i>Scenario</i>	<i>Mean</i>	<i>P-Value</i>
<i>Intelligence</i>	Scenario Prof	4.561	0.012
	Scenario CC	5.141	
<i>Confidence</i>	Scenario Prof	4.487	0.023
	Scenario CC	4.987	
<i>Reliability</i>	Scenario Prof	4.219	0.002
	Scenario CC	4.782	

**TABLE 5 - ADDITIONAL FINDINGS STUDY 1: HIGHLIGHTED COMPETENCE TRAITS**

### ***Conclusion***

Consistent with H1 our findings indicate that consumers of vegan products, both vegan and non-vegan, detain higher purchase intentions for vegan products that are co-created, in comparison to the ones fully developed by the firms. Our analysis also revealed that a competent brand personality is a significant mediation variable for the relationship between the adopted product design approach and purchase intentions, which supports H2. As proposed by H3, the extension of the established mediation model was tested revealing trust to be a significant sequential mediator following brand competence and antecedent purchase intentions.

Against what was predicted in H4, product involvement did not show a significant moderating role in either the direct relationship between design mode and purchase intention or in the indirect path established through mediation.

*Consequently, H1, H2, and H3 are not rejected, while H4 is rejected.*

## **4.4. Study 2**

### ***Method and Sample Description***

After the establishment of both a direct (H1) and indirect effect (H2 and H3) between the independent variable design mode and the dependent variable purchase intentions, a second study was developed aiming to explore how other variables could impact the identified mediation model. Therefore, Study 2 was designed to analyze the possible moderating role of the co-creation communicating agent (H5) on the mediator's brand competence perceptions and trust. It focused solely on the co-creation setting, through the analysis of two possible co-creation communicators.

Similar to Study 1, an online survey was conducted in Study 2 using Qualtrics software. The survey was shared through the author's network, various online communities of vegans and vegetarians, and the tool Amazon M Turk.

The study counted with a sample of 162 participants, after the deletion of incomplete responses and the incorrect responses to the attention check filter question. The sample was balanced in terms of gender, having 53,1% males. The most represented age groups were, once again, from 18-25 and 26-35, representing a cumulative value of 66.5%.

While the majority of the sample represented current consumers of vegan products (85.2%), it included individuals adopting different dietary habits, with 50% following a vegan diet, 19.1% following variations of the vegetarian diet, and 31.8% being non-vegan and non-vegetarian that include vegan alternatives in their food routine. In terms of consumption characterization, 48.2% of the sample consumes vegan food products either daily or regularly, and 45.1% consumes them occasionally. A more detailed characterization of the sample can be found in the appendix (*appendix 7*).

### ***Stimuli Development***

To analyze the impact of the co-creation communicating agent, a 2X1 between subject's design was selected (design mode: 2 (company communicating co-creation vs co-creators communicating co-creation) x 1 (vegan product)), and similar to Study 1, participants were randomly assigned to one of two scenarios. Unlike Study 1, the content of the scenarios was only regarding the co-creation setting, where Scenario Prof presented a co-created vegan product communicated by the company itself, and Scenario CC presented the same co-created vegan product communicated by the co-creators themselves (*appendix 8*). The Scenario Prof had 82 valid responses (50.6%) and the Scenario CC had 80 participants.

### ***Variable Description***

As Study 2 aimed to explore further the connections established in Study 1, the same variables and items were used to evaluate the different scenarios (*appendix 8*). Nonetheless, as the focus of the study was the impact of the communicating agent of co-creation, the variable communication competence, was added to the study.

The results of the reliability analysis allowed for the identification of two items with a low contribution to the respective variable internal consistency (Corrected Item Total Correlation <

0.550), one measuring product involvement and the other trust. As all other items presented values above 0.6 both items were removed from the variable analysis. As demonstrated in the following table (*Table 5*), all variables presented a Cronbach's Alpha value superior to 0.7, which gives validity to its selection (Christmann et al., 2006).

<i>Variable</i>	<i>Items</i>	<i>Cronbach's Alpha</i>
<i>Competent Brand Personality</i>	Reliable; Hard-Working; Secure; Successful; Leader; Confident; Intelligent; Technical.	0.908
<i>Trust</i>	- I trust the presented brand to comply with vegan standards. - The presented brand is making every effort to address its customers' needs -Overall, I consider the presented brand to be trustworthy	0.778
<i>Involvement</i>	- Vegan products are very important to me. - I am concerned about guaranteeing that the products I purchase are vegan. - I have compared vegan food product characteristics among brands. - I think there are plenty of differences among brands that provide vegan food products. - I have a favorite brand for vegan food products.	0.884
<i>Communication Competence</i>	-I think that the people who communicated this new product have the skills to do it successfully. - I think that the people who communicated this new product have enough experience to communicate it. - I think that the people who are communicating this new product know the needs of consumers well enough, to communicate it effectively.	0.789
		<b><i>Spearman-Brown</i></b>
<i>Purchase Intentions</i>	- I would purchase the presented product. - I would recommend the presented product to family and friends.	0.799

**TABLE 6 - RELIABILITY ANALYSIS STUDY 2**

### ***Procedure***

The survey began, once again, with a filter question aiming to divide the sample into two groups: current consumers of vegan products and non-consumers of vegan products. Afterward, the respondents were evenly attributed one of two scenarios. Scenario Prof described a situation where the sample encounter a communication made by the company, whereas scenario CC communicated the same product through the co-creators themselves (*appendix 8*).

A manipulation test was also included in Study 2, aiming to analyze whether the respondents perceived the differences in the communicating agent used. The test was conducted through the question "By whom do you think the product is being communicated?", with a 7-point bipolar scale [1-The Brand TasteTastic; 7-The TasteTastic Consumers]. Additionally, an attention

check question was carefully included during the survey to measure the level of attention of the respondents.

After the comprehension of the respective scenarios, the respondents evaluated the same variables used in Study 1, through the same items and scales. However, due to the level of importance attributed to the communicating component in this study, Communication Competence was introduced as a new variable and was measured through three statement items drawn from literature, which the respondents evaluated using a 7-point Likert scale [1-Strongly Disagree; 7-Strongly Agree].

## ***Results***

*Manipulation Test:* An Independent Sample T-Test was used to evaluate the significance of the Manipulation Check. Since higher evaluation means represented the comprehension that the scenario was being communicated by the co-creators, scenario CC presented a significantly higher mean than scenario Prof, with a p-value was below 0.05 ( $M_{\text{Scenario Prof}}=4.34$ ;  $M_{\text{Scenario CC}}= 4.97$ ;  $P\text{-value} =0.044$ ). Therefore, it is possible to conclude that, overall, the sample understood the differences between the two attributed scenarios.

*Test of Hypothesis 5:* The fifth proposed hypothesis focused on the significant impact of the chosen communicating agent of co-creation. To reach conclusions regarding its veracity, different variable relationships were tested. Firstly, we examined the relationship between communication competence and brand competence, with a Linear Regression analysis. The analysis revealed that there is a correlation between the two variables, with communication competence evaluations positively influencing the brand competence perceptions ( $R^2= 0.405$ ;  $P\text{-value}=0.000$ ;  $B=0.692$ ). Secondly, to extend this model further, we analyzed the impact of brand competence on trust, also revealing a positive connection between the two variables ( $R^2= 0.283$ ;  $P\text{-value}=0.000$ ;  $B=0.451$ ). Finally, the link between trust and purchase intentions was tested, showing as in Study 1 a positive correlation ( $R^2= 0.297$ ;  $P\text{-value}=0.000$ ;  $B=0.680$ ). Therefore, a sequential connection between the four variables is present, with a direct effect of communication competence on brand competence, which indirectly impacts trust and purchases intentions.

Although there is a positive link between communication competence and brand competence, it is important to mention that it presents a correlation coefficient below 0.8 (Pearson Correlation Coefficient Communication Competence/Brand Competence= 0.636), which indicates that while the variables are correlated, the relationship is moderate (Pearson

Correlation Coefficient equal to  $|0.8|$  represents a strong relationship, equal to  $|0.6|$  a moderate relationship, and equal to 0 indicates no relationship (Frost, 2019)).

After the establishment of a connection between communication competence and the remaining variables, it was tested whether the two scenarios presented significantly different means of communication competence. The results of an Independent Sample T-Test demonstrated that the scenario presenting co-creators as communicators demonstrates a significantly higher communication competence mean, than the one communicated by the firm (P-Value=0.016; MScenario Prof=5.351; MScenario CC=5.721). Therefore, it is possible to conclude that, for current consumers of vegan products, co-creators are evaluated as more competent communicators of co-created products, in comparison companies.

As the two scenarios presented different evaluations of communication competence, the communicating agent was then tested as a possible moderator of the established linear model, through a PROCESS Model 1 analysis (Preacher et al., 2007). Nonetheless, the output revealed that its moderating role is non-significant, due to a P-value superior to 0.05 (P-value=0.689). Therefore, it is possible to conclude that, while communication competence directly influences brand competence, and indirectly impacts trust and purchase intentions, the two selected communicating agents do not diverge enough in communication competence, to significantly moderate brand perceptions and purchase behaviors. This is further corroborated by the outputs of various linear regressions testing the direct impact of the two scenarios on the evaluated variables (P-Value Brand Competence=0.586; P-Value Trust=0.133; P-Value Purchase Intentions= 0.274), resulting in the rejection of H5.

	<b>Variable</b>	<b>Beta</b>	<b>P-Value</b>	<b>Significance</b>
<b>Moderation Model</b>	Communicating Agent	0.059	0.689	<i>Non-Significant</i>

**TABLE 7 - MODERATION ANALYSIS STUDY 2: COMMUNICATING AGENT**

### ***Additional Findings***

An additional analysis was conducted to test whether the dissimilar levels of product involvement, experienced by the different segments of the vegan market, moderated the evaluations on the communicating competence of the presented external agents. Through a PROCESS Model 1 analysis (Preacher et al., 2007), it was possible to verify that the moderating effect was non-significant due to a p-value superior to 0.05 (P-value=0.349). Therefore, it is possible to conclude that, while the consumers of this market display different levels of

involvement with the vegan lifestyle and with vegan products, it does not influence the way they perceive the competence of the two selected communicating agents.

	Variable	Beta	P-Value	Significance
<b>Moderation Effect on Communicating Competence</b>	Product Involvement	0.193	0.349	<i>Non-Significant</i>

**TABLE 8 - ADDITIONAL FINDINGS STUDY 2: PRODUCT INVOLVEMENT MODERATION EFFECT**

### **Conclusion**

Study 2 built upon the results of Study 1, with the analysis of the impact of the communicating competence of different communicating agents. The analysis revealed that communication competence influences brand competence, which antecedes trust and purchases intentions. Nonetheless, against H5 it also indicates that the evaluated communication competence of co-creators is not sufficiently superior to the communication competence of the company to be significantly reflected on the brand.

*Therefore, H5 is rejected.*

## **5. FINDINGS AND DISCUSSION**

The presented research analyses the application of different product design approaches in the development of new vegan food products, distinguishing between co-creation and company design, and focusing on perceptions of the consumers external to the development process. While the potential of co-creation in increasing product suitability (Fang et al., 2008, Hoyer et al., 2010, Filieri, 2013) and promoting valuable brand traits (Van Dijk et al., 2014) has been previously outlined by literature, little is known regarding the application of this strategy in the rapidly growing vegan market, and how the different customer segments will perceive and react to brand engaging in co-creative innovation efforts.

The findings of the two conducted studies provide strong indications that co-creation is an effective tactic in the development of new vegan food alternatives. First, the results indicate that for current consumers of vegan products, co-created food alternatives are preferred to similar professional-designed options. Furthermore, this preference leads to superior purchase intentions. The results from Study 1, are aligned with previous research, classifying co-created products as more uniquely enticing and with higher perceived suitability (Hoyer et al., 2010, Filieri, 2013, Van Dijk et al., 2014).

Secondly, while the studies analysis focused on consumers that currently consume vegan products, the sample also included individuals that presently do not consume plant-based alternatives. Literature states that the main reasons leading consumers not to try vegan products are misconceptions of lack of taste, texture, and nutritional value (Dedehayir et al., 2017). As co-creation has been established as an enhancer of food products' perceived attractiveness (Filieri, 2013, Van Dijk et al., 2014), it was tested whether the communication of this open innovation strategy was sufficient to capture the attention of these individuals and overcome the existing vegan skepticism. Nonetheless, the results show that this subsample was not significantly enticed by the involvement of other consumers in the development of new vegan products. Such consumers report the same low level of interest in purchasing co-created products, as with products developed by companies' professionals, demonstrating strong indifference towards information regarding the production process of vegan products.

Thirdly, the data revealed interesting brand effects for firms employing co-creation in the vegan market. The involvement of consumers in the development process led current consumers to perceive brands as more competent in terms of brand personality. Among the various traits established by Aaker (1997) characterizing a competent brand personality, the ones most enhanced by this approach, in the eyes of the consumers, were intelligence, reliability, and confidence. Aligned with existing literature, increased perceived brand competence was also found to be a source of trustworthiness and dependability (Sung et al., 2010, Sichtmann, 2007, Xue et al., 2020), which strongly justifies why, in a market where trust plays such an imperative role (Zhang et al., 2016), these products are preferred to other market alternatives. Therefore, it is possible to conclude that the involvement of customers in the development of new vegan products is beneficial for both product performance, and the brand itself.

Fourthly, as current consumers of the vegan market comprise both vegan and non-vegan individuals, the study evaluated if the differences of product involvement between the segments significantly moderated the previously mentioned findings. The analysis discovered that, although individuals engaging in a vegan lifestyle present higher product involvement than both vegetarians and other consumers that include vegan alternatives in their diets, these differences in product involvement do not play a moderating role either on purchase intentions or in brand perceptions. Thus, against our predictions, more involved vegan consumers are equally enticed by co-created vegan products as other individuals following various dietary lifestyles. These conclusions may be connected to the proposed scenarios, which utilized a fictional brand.

Although highly involved consumers have been identified as being vastly invested in the decision-making process (Bloch, 1981), leading to a more attentive evaluation of brand personality traits (Punyatoya, 2011), and a stronger predisposition to adopt innovation (Arts et al., 2011), they have also been established to detain high brand loyalty (Bloch, 1981). Therefore, having encountered a hypothetical situation dissimilar to their usual decision-making setting, and being forced to evaluate an unfamiliar brand, might have attenuated the effects of high involvement on co-created products' purchase intentions and brand competence evaluations.

Fifthly, our results from the second study, which focused on co-creation communication, indicate that brand competence is directly correlated to the communication competence of the selected communicating source. Therefore, the more competent a communicator is perceived to be, the strongest will be the impact of co-creation on brand competence, and the consequent effect on trust and purchase intentions. The perceived effect of co-creation communication on brands is in line with the existing advertising literature stating that appealing and credible communicators transmit more effectively the brand message to consumers and promote stronger brand trustworthiness (Chih-Chung et al., 2012). Additionally, the revealed trait transference also corroborates literature regarding the effect of user imagery (McCracken, 1989), and provides evidence of the critical influential role of endorsers (Balaji et al., 2011).

Finally, the study supports Jacobsen and colleagues' (2020) research regarding the value of co-creator as communicators, through the identification of a superiorly evaluated communicating competence. This conclusion results from their ability, as consumers, to create more meaningful interactions with their peers (Bickart et al., 2001). However, the found communication competence differences between co-creators and firms were not enough to reflect significantly dissimilar evaluations of brand competence or trust. Hence, it is hypothesized that communicating co-creation, is by itself sufficient to increase perceived competence and trustworthiness, reducing the impact of those same benefits when resourcing to co-creators. This goes in line with existing research stating that the communication of a co-creation strategy by a company has the power to enhance perceptions of corporate abilities by itself (Costa et al., 2018).

Overall, the findings uncover the potential of engaging in co-creation initiatives, indicating that this strategy is efficient not only in promoting immediate purchase behaviors but also in enhancing the way a brand is perceived and the value it brings to current consumers of the vegan market setting on the long term.

## 6. THEORETICAL AND MANAGERIAL IMPLICATIONS

### 6.1. Theoretical Implications

The involvement of consumers in the development of new products is an innovative technique that has been progressively capturing the attention of academics and firms (Alam, 2002). While existing literature has successfully examined co-creation outcomes across different product categories and complexities (Costa et al., 2018, Fuch et al, 2013, Filieri, 2013), the potential of this innovation strategy in the vegan food market remains unexplored. Having into consideration the exponential growth of vegan products demand (Dedehayir et al. 2019), the increasing concentration of the market (Miguel et al., 2021), and the disappointment of consumers towards the offered product and the brands that supply them (Portuguese Vegetarian Association, 2021), the presented research aimed to extend the understanding of co-creation to this new context, as a possible solution to the existent market tension.

One of the major previously established benefits of co-creation is consumers' ability and willingness to aid companies to improve their innovation efforts. The collaboration between firms and consumers has been proven to increase the suitability of existing products (Filieri, 2013, Fang et al., 2008), and to allow the development of new concepts capable of filling existing market gaps (Hoyer et al., 2010), both leading to enlarged demand (Schreier et al., 2012). In this research, we extend this line of research further, through the verification that these valuable outcomes can also be applied to the vegan food market. Our findings reveal that products identified as co-created experience increased attractiveness, due to higher purchase intentions across various customer segments.

Besides contributing to existing literature regarding co-creation's impact on product evaluations, our study focused deeply on the brand effect. Previous research identified a direct link between the usage of co-creation and the improvement of brand traits such as authenticity and sincerity (Van Djik et al., 2014). Therefore, co-creation has been identified as a possible promoter of a sincere brand personality (Van Djik et al., 2014). The presented research aimed to explore the connection between co-creation and brand personality further, being a pioneer in the identification of the possible impact on other personality categories. Our findings revealed that enhanced competent brand personality perceptions are also a significant positive outcome of co-creation, due to the heightening of traits such as dependability, intelligence, and confidence. Additionally, it revealed that a competent brand personality promotes higher trust

in co-created vegan products, which supports existing literature establishing brand competence as an antecedent of trust (Sichtmann, 2007, Xue et al., 2020).

Finally, the presented findings, also contribute to knowledge regarding co-creation communication. While previous studies have identified the selection of the co-creation communicating agent as a crucial step for its success (Jacobsen et al., 2020, Peres et al., 2010), this study focuses on the effect it has on brand perceptions. Our results indicate that the competence of the communicating agent, directly influences brand competence perceptions, corroborating the user effect revealed in brand personality literature (McCracken, 1989, Aaker, 1997). Therefore, it demonstrates that for brands to fully leverage their competence inferences, the exceeding communication competence of the communication source must be assured.

## 6.2. Managerial Implications

The conducted research provides companies with evidence that the incorporation of co-creation in the development of new vegan food products can be a valuable strategy. Primarily, it demonstrates that the involvement of customers in the development process increases product attractiveness and preferability, across the several segments that constitute this growing market. Therefore, it demonstrates that through the empowerment of the vegan market consumers firms can potentialize their innovation efforts and obtain a higher return on investment.

A second implication is regarding the effect of co-creation on brand. Our findings indicate that brands communicating co-creation in the development of new products are perceived by customers as more intelligent, dependable, and confident, even if they are unknown brands. Thus, companies engaging in this open innovation strategy can improve their perceived competence, and promote trust in their target, independently of how established or recognized there are in the market.

Nonetheless, for brands to take advantage of such enhanced perceptions, it is necessary to assure that customers comprehend the adopted design approach. It is the responsibility of brand managers to develop a clear and consistent communicating strategy across all points of contact with the target. This strategy must have into consideration aspects such as the product packaging, the point of sale, product advertising, and the contents shared in the brand's digital space such as its social media and website.

Besides guaranteeing consumers' understanding that co-creation took place, our findings indicate that brand managers must also carefully select the agents responsible for

communicating this co-creation. The communicating competence of the selected communicator was found to directly influence brand competence perceptions, and indirectly trust and purchase intentions. Hence, it becomes crucial for brand managers to select the most competently influential voices, to fully leverage their perceived competence to the brand itself. Though our study revealed that the communicating competence of co-creators is not sufficient to significantly influence brand perceptions, firms can focus on conducting market research to understand how consumers perceive different communicators and which is the most beneficial opportunity.

In conclusion, our research provides firms guidelines on how to correctly approach the vegan market. It demonstrates that in an increasingly concentrated market, with strong customer dissatisfaction, a co-creation strategy offers, not only immediately heightened product attractiveness but also significantly enhances brand perceptions, which in the long term is one of the few strategies that effectively promote differentiation (Kapferer, 2008). It is now up to firms to finally acknowledge the true potential of combining their employee's expertise with consumers' unique knowledge, in the development of exceptional vegan food products able to meet and surpass customers' expectations.

## **7. LIMITATIONS AND FUTURE RESEARCH**

Although the presented research has contributed to the creation and extension of knowledge, it also presented inherent limitations. As the study aimed to understand the overall acceptance of vegan co-creation products by different market customer segments, efforts were made to guarantee the inclusion of individuals adopting different dietary lifestyles, through the utilization of different channels in the survey distribution. Nevertheless, it was not possible to guarantee an equal representation of all segments, as vegan consumers represented a significant portion of the sample, possibly influencing the findings. Research could benefit from a more extended sample that equally represented the various alimentary choices adopted by the market consumers, to understand if there is a specially promising market niche worth targeting.

Secondly, while the selection of the used product category was based on market research and customer evaluated credibility, it limits the applicability of the generated knowledge to other products categories with different levels of complexity. As product complexity has been identified as a possible moderator of co-creation success (Fuchs et al., 2013), the same may be

verifiable in the vegan market, leading to dissimilar outcomes. Thus, a research opportunity remains to measure the effect of co-creation across product categories and with complexities.

In addition, the current study aimed to isolate the effect of co-creation in brand perceptions through the usage of a fictional brand. While the study demonstrates that co-creation promotes beneficial outcomes for unknown brands, little is known regarding the possible moderating impact of brand familiarity and established brand personality on the outcomes of co-creation, for the different segments experiencing various levels of product involvement and consequent brand engagement. Since literature has identified great challenges for known brands aiming to change their established brand personality (Aaker, 2004), the same may apply to a co-creation setting. Thus, future research may then deepen the developed knowledge through the comparison of different brands, with various familiarity levels, and distinctly established brand identities.

Lastly, as the study found that communication competence plays a crucial role in the perceived brand personality, trust, and purchase intentions of vegan products, it creates an opportunity to explore different communicating agents. While the identified competence of co-creators was not sufficiently strong to potentialize the impact of co-creation on brand perceptions, other external agents might. Future research could investigate the outcomes of utilizing health professionals or vegan celebrities as they are highly influential in the promotion of healthier lifestyles (Phua et al., 2020, Barratt, 2001).

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## APPENDIX

- APPENDIX 1: Pre-Survey Product's Visual Stimuli



- APPENDIX 2: Study 1 Sample Characterization

Criteria	Options	Frequency	%	Criteria	Options	Frequency	%
<b>Gender</b>	Male	44	27.5	<b>Education Level</b>	Elementary	0	0
	Female	112	70		High School	18	11.3
	Non-Binary	0	0		Bachelor's Degree	80	50
	Prefer not to say	4	2.5		Master's Degree	55	34.4
<b>Age</b>	Under 18	1	0.6		Ph.D. or higher	2	1.3
	18-25	75	46.9		Other	3	1.9
	26-35	46	28.7		Prefer not to say	2	1.3
	36-45	13	8.1		<b>Dietary Habits</b>	Vegan	50
	46-55	19	11.9	Lacto-ovo-vegetarian		11	6.9
	Older than 55	6	3.8	Pescatarian		9	5.6
<b>Nationality</b>	Portuguese	123	76.9	Lacto-vegetarian		3	1.9
	Australian	1	0.6	Ovo-vegetarian		8	5
	German	1	0.6	Non-vegetarian balanced diet		60	37.5
	Spanish	2	1.3	Non-vegetarian mainly meat		14	8.8
	Brazilian	6	3.8	Other		5	3.1
	Canadian	1	0.6	Never		13	8.1
	Indian	4	2.5	Rarely (1/2 a month)		29	18.1
	Nigerian	1	0.6	Sometimes (weekly)	47	29.4	
	American	21	13.1	Regularly (every other day)	17	10.6	
<b>Aggregated Monthly Income</b>	<1000	14	8.8	Frequently (almost every day)	15	9.4	
	1001-2500	72	45	Always (every day)	39	24.4	
	2501-3500	54	33.8				
	3501-4500	14	8.8				
	>4501	6	3.8				
				<b>Frequency of consumption</b>			

- APPENDIX 3: Study 1 Scenarios

Scenario Prof – Company Designed Product	Scenario CC – Co-Created Product
<p>Imagine the following:</p> <p>You are shopping in a <b>supermarket</b> of your choice. As you walk around on the frozen section, you encounter a <b>new product</b> that catches your attention, from the brand <i><b>Tastetastic</b></i>, which you are used to seeing on different supermarket shelves.</p> <p>It is a <b>new Thai Pasta Ready-to-Go Vegan Meal</b>, with vegetables and tofu, based on a new recipe.</p> <p>This meal was developed by an <b>internal <i>TasteTastic</i> team of employees</b>, experts in new product development. After the <b>ideation and testing</b> of several prototypes, <i><b>TasteTastic employees</b></i> created a product plant-based, with low saturated fat, high protein levels, and a great source of fiber.</p>	<p>Imagine the following:</p> <p>You are shopping in a <b>supermarket</b> of your choice. As you walk around on the frozen section, you encounter a <b>new product</b> that catches your attention, from the brand <i><b>Tastetastic</b></i>, which you are used to seeing on different supermarket shelves.</p> <p>It is a <b>new Thai Pasta Ready-to-Go Vegan Meal</b>, with vegetables and tofu, based on a new recipe.</p> <p>This meal was developed by a <i><b>TasteTastic team</b></i>, expert in new product development, <b>in collaboration with consumers just like you</b>. The <b>brand’s social media community</b> contributed with <b>product ideas</b> that were transformed by <i><b>TasteTastic employees</b></i> into <b>prototypes</b>, and later <b>tested and adjusted</b> according to <b>customer feedback</b>. <b>Together</b> they created a product plant-based, with low saturated fat, high protein levels, and a great source of fiber.</p>

- APPENDIX 4: Study 1 Product Description

Scenario Prof – Company Designed Product	Scenario CC – Co-Created Product
<p>Here is the <b>final product</b> developed by <i><b>TasteTastic</b></i>:</p> <p>The <b>meal</b> consists of sautéed Thai pasta, with protein-rich tofu, a variety of vegetables, and sauced with lime, coriander, and ginger, providing it an amazingly fresh taste. It is a balanced and unique explosion of flavors!</p> <p>Either being vegan, or just curious about the fresh and healthy new offerings, this product was designed just for you!</p>	<p>Here is the <b>final product</b> developed by <i><b>TasteTastic</b></i> in <b>collaboration with consumers</b>:</p> <p>The <b>meal</b> consists of sautéed Thai pasta, with protein-rich tofu, a variety of vegetables, and sauced with lime, coriander, and ginger, providing it an amazingly fresh taste. It is a balanced and unique explosion of flavors!</p> <p>Either being vegan, or just curious about the fresh and healthy new offerings, this product was designed just for you!</p>

- APPENDIX 5: Study 1 Visual Stimuli

Scenario Prof – Company Designed Product

Scenario CC – Co-Created Product



- APPENDIX 6: Study 1 and 2 Variable Description and Sources

Variable	Measure	Source
<b>Consumption Characterization</b>	<p><b>Do you consume vegan food products? (<i>Filter Question</i>)</b>            (1) Yes (2) No, Never</p> <p><b>How do you describe your dietary habits?</b>            (1) Vegan (8) Other</p> <p><b>How often do you consume vegan food products?</b>            (1) Never (6) Always (Everyday)</p> <p><b>What are the attributes you value the most when purchasing vegan products? (<i>Rank Question</i>)</b>            (1) Price; (2) Brand; (3) Innovation; (4) Healthiness; (5) Information of the Production Process; (6) Taste</p>	<i>Own Construct</i>
<b>Involvement with Vegan Products</b>  (7-Point Likert Scale)	<p><b>Identify your level of agreement with the following statements:</b></p> <ul style="list-style-type: none"> <li>▫ Vegan products are very important to me.</li> <li>▫ I am concerned about guaranteeing that the products I purchase are vegan.</li> <li>▫ I would be interested in reading information about vegan food products, including how they are made.</li> <li>▫ I have compared vegan food product characteristics among brands.</li> <li>▫ I think there are plenty of differences among brands that provide vegan food products.</li> <li>▫ I have a favorite brand for vegan food products.</li> </ul> <p>(1) Strongly Disagree; (7) Strongly Agree</p>	<i>Adapted from Cheung et al., 2011 and Zaichkowsky, 1985</i>

<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>  (1) Only the company; (2) The company and consumers; (3) Only consumers</p>	<p><i>Adapted from Van Dijk et al., 2014</i></p>										
<p><b>Attention Check</b></p>	<p><b>To ensure the quality of the data, and that you are reading the questions carefully, please select the option red.</b>  (1) Blue; (2) Yellow; (3) Red; (4) Green</p>	<p><i>Own Construct</i></p>										
<p><b>Brand Personality Perceptions: Competence (7-Point Likert Scale)</b></p>	<p><b>To what extent do you believe the following adjective describes the presented brand?</b></p> <table border="0" style="width: 100%;"> <tr> <td>▫ Reliable</td> <td>▫ Confident</td> </tr> <tr> <td>▫ Hard Working</td> <td>▫ Corporate</td> </tr> <tr> <td>▫ Secure</td> <td>▫ Intelligent</td> </tr> <tr> <td>▫ Successful</td> <td>▫ Technical</td> </tr> <tr> <td>▫ Leader</td> <td></td> </tr> </table> <p>(1) Not at all descriptive; (7) Fully Descriptive</p>	▫ Reliable	▫ Confident	▫ Hard Working	▫ Corporate	▫ Secure	▫ Intelligent	▫ Successful	▫ Technical	▫ Leader		<p><i>Adapted from Aaker, 1997</i></p>
▫ Reliable	▫ Confident											
▫ Hard Working	▫ Corporate											
▫ Secure	▫ Intelligent											
▫ Successful	▫ Technical											
▫ Leader												
<p><b>Trust Perceptions (7-Point Likert Scale)</b></p>	<p><b>Identify your level of agreement with the following statements:</b></p> <ul style="list-style-type: none"> <li>▫ I trust the presented brand to comply with vegan standards.</li> <li>▫ I trust the presented brand to have my best interests at heart.</li> <li>▫ The presented brand is making every effort to address its customer needs.</li> <li>▫ Overall, I think consider the presented brand to be trustworthy.</li> </ul> <p>(1) Strongly Disagree; (7) Strongly Agree</p>	<p><i>Adapted from Ennew et al., 2007</i></p>										
<p><b>Communication Competence (7-Point Likert Scale)</b></p>	<p><b>Identify your level of agreement with the following statements:</b></p> <ul style="list-style-type: none"> <li>▫ I think that the people who communicated this new product have the skills to do it successfully.</li> <li>▫ I think that the people who communicated this new product have enough experience to communicate it.</li> <li>▫ I think that the people who are communicating this new product know the needs of consumers well enough, to communicate it effectively.</li> </ul> <p>(1) Strongly Disagree; (7) Strongly Agree</p>	<p><i>Adapted from Casalo et al., 2007</i></p>										
<p><b>Purchase Intentions (7-Point Likert Scale)</b></p>	<p><b>Indicate the level of likelihood of the following situations:</b></p> <ul style="list-style-type: none"> <li>○ I would purchase the presented product.</li> <li>○ I would recommend the presented product to family and friends.</li> </ul> <p>(1) Extremely Unlikely; (7) Extremely Likely</p>	<p><i>Adapted from Mohr et al., 2005, and Hoeffler, 2003</i></p>										

- APPENDIX 7: Study 2 Sample Characterization

Criteria	Options	Frequency	%	Criteria	Options	Frequency	%
<b>Gender</b>	Male	86	53.1	<b>Education Level</b>	Elementary	2	1.2
	Female	76	46.9		High School	16	9.9
	Non-Binary	0	0		Bachelor's Degree	117	72.2
	Prefer not to say	0	0		Master's Degree	27	16.7
<b>Age</b>	Under 18	2	1.2		Ph.D. or higher	0	0
	18-25	42	25.9		Other	0	0
	26-35	64	39.5		Prefer not to say	2	1.3
	36-45	22	13.6		<b>Dietary Habits</b>	Vegan	81
	46-55	24	14.8	Lacto-ovo-vegetarian		3	1.9
	Older than 55	8	4.9	Pescatarian		6	3.7
<b>Nationality</b>	Portuguese	54	33.3	Lacto-vegetarian		9	5.6
	Armenian	1	0.6	Ovo-vegetarian		6	3.7
	German	1	0.6	Non-vegetarian balanced diet		36	22.2
	Italian	1	0.6	Non-vegetarian mainly meat		18	11.1
	Azerbaijani	1	0.6	Other		3	1.9
	French	1	0.6	Never	11	6.8	
	Indian	5	3.1	Rarely (1/2 a month)	23	14.2	
	Brazilian	1	0.6	Sometimes (weekly)	50	30.9	
	American	94	58	Regularly (every other day)	28	17.3	
	<b>Aggregated Monthly Income</b>	<1000	7	4.3	Frequently (almost every day)	33	20.4
1001-2500		53	32.7	Always (every day)	17	10.5	
2501-3500		62	38.3				
3501-4500		22	13.6				
>4501		18	11.1				
				<b>Frequency of consumption</b>			

- APPENDIX 8: Study 2 Scenarios

<p><b>Scenario 1 –</b> <i>Co-Created Product Communicated by Company</i></p>	<p>Imagine the following:</p> <p>You are scrolling on your Facebook feed. Among various publications, you encounter a <b>post made by <i>TasteTastic</i></b>. The post states:</p> <p>“At <i>TasteTastic</i> we love food and wish to develop the best products for our consumers. The new ready-to-go Thai pasta vegan meal was <b>developed</b> by our <b>amazing team of product developers in collaboration</b> with <b>consumers just like you!</b></p> <p>Our <b>social media community</b> developed creative <b>product ideas</b>, that were transformed by <i>TasteTastic</i> employees into <b>prototypes</b>, and later <b>tested</b> and <b>adjusted</b> according to <b>customer feedback</b>.</p> <p>The result is nothing other than an amazing new plant-based product, with low saturated fat, high protein levels, and a great source of fiber. What are you waiting for?”</p>
<p><b>Scenario 2 –</b> <i>Co-Created Product Communicated by Co- Creators</i></p>	<p>Imagine the following:</p> <p>You are scrolling on your Facebook feed. Among various publications, you encounter a <b>post made by the <i>TasteTastic</i> consumer community</b>. The post states:</p> <p>“The <b><i>TasteTastic</i> consumer community</b> consists of <b>consumers like you and me</b>. We are a group of people that loves food and wish to eat the best products. The new ready-to-go Thai pasta vegan meal was developed <b>by us</b> in <b>collaboration</b> with <i>TasteTastic</i>.</p> <p>Our <b>social media community</b> developed creative <b>product ideas</b>, that were <b>transformed</b> by <i>TasteTastic</i> employees into <b>prototypes</b>, and later <b>tested</b> and <b>adjusted</b> according to our <b>feedback</b>.</p> <p>The result is nothing other than an amazing new plant-based product, with low saturated fat, high protein levels, and a great source of fiber. What are you waiting for?”</p>