



# **Development of a co-creation model that streamlines the fashion process from the consumer to the manufacture**

**Paulo Gabriel Correia Martins**

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Orientador: Prof. Doutor Rui Alberto Lopes Miguel

Júri:

Prof. Doutor Fernando José Carneiro Moreira da Silva  
Prof. Doutor Carlos Alberto Miranda Duarte  
Prof. Doutor Rui Alberto Lopes Miguel  
Prof. Doutor João António de Almeida Mota  
Prof. Doutor Álvaro Miguel Céu Gramaxo Oliveira Sampaio  
Prof. Doutora Catarina Isabel Grácio Moura

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# Abstract

Nowadays, co-creation, a relatively new concept in the fashion field, is managing to approach consumers directly and thus get a detailed understanding of their needs and desires. Some brands already use this concept as the basis of their business, which is an added value for the product and consequently for its suitability.

However, the adoption of this concept has been addressed in the literature in an isolated way concerning consumers or brands, and its impact on the supply chain is still unknown, so its applicability also needs research. There is also no clear idea of the role of the fashion designer in co-creation fashion brands, and its role has also not been taken into account in the literature.

In a real business context, the management of the processes of the different brands is done autonomously. There is no pre-defined model for the structuration or application that can serve as a basis for brands that want to adopt this concept. Thus, this research focused on creating a co-creation model that can simplify the process from consumer to production, focusing on fashion design, the product and the fashion designer, and the supply chain, with the aim of creating a co-creation model, so that brands that want to adopt the co-creation concept can apply it in real life.

An initial literature review revealed problems in the co-creation process that need a solution and helped to identify the research problems. Subsequently, a comprehensive literature review was carried out on co-creation, other concepts complementary to co-creation, fashion design and the fashion business, consumers and the supply chain. Secondly, a cases study focused on fashion brands already working with co-creation was done to better understand how it works. Finally, a survey to consumers and interviews with fashion designers and supply chain experts were conducted to understand each party's point of view. These contributed to the revelation of important information, subsequently implemented in the new co-creation model that allowed the simplification of the process and its simultaneous suitability to consumers, brands and supply chain.

The results obtained allowed answering the research questions, the proposed objectives and structuring a new co-creation model.

# Keywords

Co-creation; fashion design; consumer; designer; supply chain

# Resumo

Atualmente, a co-criação, um conceito relativamente novo no campo da moda, está a conseguir abordar os consumidores diretamente, conseguindo desta forma perceber com detalhe as suas necessidades e desejos. Algumas marcas já utilizam este conceito como base do seu negócio, o que é um valor acrescentado para o produto e para a sua consequente adequação.

No entanto, a adoção deste conceito tem sido abordada na literatura de forma isolada relativamente aos consumidores ou marcas, e o seu impacto na cadeia de abastecimento é ainda desconhecido, pelo que a sua aplicabilidade também necessita de investigação. Também não há uma ideia clara do papel do designer de moda em marcas de moda de co-criação, e o seu papel também não foi explorado na literatura.

Num contexto empresarial real, a gestão dos processos das diferentes marcas é feita de forma autónoma. Não existe um modelo pré-definido para a estruturação ou aplicação que possa servir de base para as marcas que queiram adotar este conceito. Assim, esta investigação centrou-se na criação de um modelo de co-criação que pudesse simplificar o processo desde o consumidor até à produção, concentrando-se no design de moda, no produto, no designer de moda e na cadeia de abastecimento, com o objetivo de criar um modelo de co-criação para que as marcas que queiram adotar o conceito de co-criação o possam aplicar na vida real.

A revisão bibliográfica prévia revelou problemas no processo de co-criação que necessitam de uma solução que ajudaram a identificar os problemas de investigação. Posteriormente foi feita uma revisão bibliográfica completa sobre a co-criação, outros conceitos complementares à co-criação, design de moda e o negócio da moda, consumidores e a cadeia de abastecimento. Segundo, foi feito um estudo de casos centrado em marcas de moda que já trabalham com a co-criação para melhor compreender o seu funcionamento. Finalmente, foi feito um questionário aos consumidores e entrevistas a designers de moda e especialistas da cadeia de abastecimento para compreender o ponto de vista de cada parte. Estes contribuíram para a revelação de informações importantes, posteriormente implementadas no novo modelo de co-criação que permitiram a simplificação do processo e a sua adequação simultânea aos consumidores, marcas e cadeia de abastecimento.

Os resultados obtidos permitiram responder às questões de investigação, aos objetivos propostos e estruturar um novo modelo de co-criação.

## **Palavras-chave**

Co-criação; design de moda; consumidor; designer; cadeia de abastecimento



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## List of acronyms

2D	Bidimensional
3D	Tridimensional
ADN	Identity
AI	Artificial intelligence
ATP	Associação Têxtil e Vestuário de Portugal
B2B	Business to business
CO <sub>2</sub>	Carbon dioxide
DART	Dialogue, access, risk-return and transparency
DM	Fashion designer
DNA	Deoxyribonucleic Acid
ECA	Supply chain specialist
H&M	Hennes & Mauritz
JIT	Just in time
KPMG	Klynveld Peat Marwick Goerdeler
MRP	Material Requirement Planning
NPD	New product development
QR	Quick Response
VSM	Value stream mapping



# **1. Introduction**

## **1.1. Purpose of the research**

This research aims to understand the benefits, especially the problems that affect co-creation regarding the consumer, brands, and the supply chain, and ultimately find methods and processes to solve them and optimize the already in place benefits. From the analysis of a series of results, solutions that can enable the development of a new co-creation model that can streamline the entire process are expected. For this is needed the understanding of what makes the consumers have interest in co-creation, how co-creation affects brands and their products, and what methods and processes are also adequate for the supply chain. Furthermore, for an improved co-creation model to be created, it is also essential to understand the role of one of the main intervenient in fashion brands. This intervenient, the fashion designer, is necessary for the overall performance of a co-creation fashion brand in which he has a unique role and is usually ahead of every other player involved (Maltzahn, 2016).

Other co-creation problems identified are the gap of time between the co-creation process and the delivery of the product that might discourage consumer participation and, consequently, the purchase intention (Füller, 2010). Therefore, finding methods and processes that can be implemented in this new model that can improve the time that the process takes and, consequently, the delivery of the products to the consumers is essential. Other problems reported by the authors are the difficulty in maintaining long relationships with consumers and adapting the type of communication so that consumers can be more motivated and involved (Payne et al., 2008). Xie et al. (2008) and Heidenreich et al. (2015) also refer that consumers will also only be satisfied if they get some benefit from the process of co-creation, being the understanding of what benefits are expected by the consumers important. Also, Millspaugh & Kent (2016) refer that relying too much on ideas from consumers may create a loss of direction for the company, so it is also necessary to understand how this can be overcome. Furthermore, many are afraid of losing control over the brands (S. O'Hern & Rindfleisch, 2010), so it is also important to understand how the brand can be managed along with the consumers' insights.

## **1.2. Object of study**

The proposed object of study is co-creation and its impact on the fashion business, especially on the consumers, brands and supply chain and its influence on the role of the fashion designer. The research will explore co-creation and its associated benefits and problems regarding literature and what exists on the market. Many brands have been

adapting themselves to a new reality that asks them to ear the consumer and better adequate products to their needs to diminish the risk of product failure. Brands working with co-creation already understood that they could benefit from the consumers' knowledge and, at the same time, make them more satisfied. Although, some problems may arise in the future as more brands start working with this concept because existing supply chains are still mainly focused on mass production. However, consumers are asking ever more for individualization.

### **1.3. Importance of the research**

Brands already working in this model and even larger groups like Adidas have invested in this new thinking. The existing ones, like Threadless or Away to Mars, have proved to be successful. The public seems interested in co-creation brands and their ability to communicate and create experiences more closely with the consumers. This is an advantage over traditional fashion brands, not to say the possibility of leaving aside all the forecasting, especially in an age where everything is available. More and more consumers want to communicate, and communication is ever more accessible. So it seems natural that brands offering this can be successful, especially by focusing on experiences that can help co-create value for both the consumer and the brand. As Prahalad & Ramaswamy (2004) said, consumers want to create value while working together with the brands, and creating unique experiences with consumers will be the future.

However, till now, few authors have explored co-creation in fashion since most of the studies related to the consumers or brands specifically and their relationship with the fashion designer or the supply chain have been disregarded. Its benefits are in part known when discussing the relationship with the consumers, and some problems have already been identified in the literature. However, not much has been investigated about the fashion designer role and the possible problems this business model can encounter with the supply chain. Also, on the consumer side, there is still a lack of information on this subject as it is still a relatively new business trend in fashion. Therefore, it has not been much explored, so the consumer relationship with co-creation also needs to be studied to know the consumers' interests and opinions.

It is expected that more brands, existing or new ones, will follow the implementation of co-creation, as consumers are now looking more for value and less for quantity. On the other side, could be expected resistance from the industry that is still used to large bulk productions, and there is the need to find suitable solutions that can benefit all the intervenient. According to a study from McKinsey & Company in 2014, "90 percent of

executives were eager to get consumers involved in co-creation, only 12 percent of Internet users had actually done so. In fact, only a quarter of consumers were even aware of the concept, while an additional 5 percent knew about co-creation but not how it actually worked<sup>1</sup>. This regards all businesses in general and not just fashion. Furthermore, according to Statista, in 2017, there were almost 3.6 billion internet users<sup>2</sup>, and from those, 2.47 billion persons were using social networks<sup>3</sup>. Being this one of the easiest ways to reach consumers and start co-creating with them, it is expected that this business model will continue to increase its share.

So, this research is expected to find a balance between the needs of consumers, brands and their fashion designers and the supply chain regarding the co-creation business model. Developing a new model of co-creation within fashion will benefit all counterparts and contribute to an improved process timewise and be more in line with the consumers' interests, the brands' design process needs, and the supply chain.

#### **1.4. Motivation**

The motivation to do this research for the doctoral appeared mainly because of self-interest in following new business trends in fashion. Previously the author researched about the sale of fashion products online, being at the time a relatively new trend in terms of business model and now, is an essential part of the fashion businesses. So, naturally, looking for and following new business trends is of interest, and co-creation looks like the next big fashion business trend. Like any new fashion business, much is still undone or can be improved, as is the case of co-creation. Also, there is an interest in co-creation because of the difficulties that the garment industry faces with the constant changes in fashion that make this business very volatile. By self-experience and seeing the evolution of the Portuguese industry, although the development and the improvement of its capabilities in the last years, it is still necessary to study what can be expected for the future. The fashion business is in constant change, but the industry generally does not seem to be yet fully adapted for the needs of co-creation that can bring added value for all the intervenient but also additional difficulties to an already complex business. Also, an additional motivation is that there is still a lack of studies on how co-creation brands will be able to include the designer and what will be his roles. With the increase in the number of brands working within this model, new needs will arise. They can dictate

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<sup>1</sup> <https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/three-ways-companies-can-make-co-creation-pay-off>

<sup>2</sup> <https://www.statista.com/statistics/273018/number-of-internet-users-worldwide/>

<sup>3</sup> <https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/>

difficulties in what concerns the fashion professional's suitability and the supply chain. Many suppliers still work with high production minimums. The supply chain is still prepared mainly for large bulk productions and not for what this new type of business is looking for that are smaller quantities and/or more complex products.

### **1.5. Problem**

The central problem in this research is that there is no available information that can guide brands in the implementation of the co-creation process from the initial contact with the consumer until the product delivery. The research looks mainly at the consumer and brands in a generic form. The ones looking into the industry look specifically to creating co-creation opportunities and not for a working model. By looking to the entire supply chain, it is possible to understand that minimum amounts of production are required across the supply chain because the whole process is only profitable if specific amounts of the same product are produced. The exception is the production of premium products as, for example, made to measure or mass-customized products, but for that, a different supply chain organisation is required. So, if co-creation is looking into more personalized experiences with consumers, most likely, we will be looking for fewer amounts per style. So, there is the need to structure a model that can be sustainable for all the intervenient while still reaching the consumers with a good product, price and timewise and with a process simple enough to retain consumers' interest.

Additionally, there is also an essential singularity to solve in co-creation brands, that is, the role of the fashion designer. Since creativity will probably be coming from the consumers, its role and contribution are still a question, as in non-co-creation brands, the designer is mainly focused on creating the products.

### **1.6. Research benefits**

As stated previously, this research intends to improve co-creation processes for the consumers, brands, and the supply chain with a streamlined co-creation process that can be implemented in a real business context. Since no studies ever focused on the whole process, the new model that is to be developed, is intended to be based on what makes the consumers have interest in co-creation, how co-creation affects brands and their products, which can be the future roles of the fashion designer and what methods and processes are also adequate for the supply chain. Brands will then have guidelines for the co-creation process implementation and management, including the fashion designer and the definition of its roles.

This research is also expected to decrease the whole process's time and consequently deliver products faster to the consumer. To maintain longer relationships with consumers and also motivate and involve them more. To understand what to give the consumers in return for their contribution and finally, to understand how brands should manage the process with the consumer so that what is proposed by the consumers does not make the brand lose direction.

## **1.7. Dissemination**

One of the main goals of this research is to create knowledge, in this case, the development of a new model of co-creation that is meant to reach brands, designers and the industry apart from the scientific community. In this sense, in the beginning, the dissemination will focus on the scientific community through the publication of papers and participation in conferences. The focus will be on events with themes related to fashion design, fashion business and the fashion industry.

It would also be pertinent to later disseminate the results outside the scientific community to reach brands, designers, and the fashion industry. This could be possible through publications and interviews with fashion magazines and business magazines to reach the public. In addition, the possibility of doing communications at fairs related to the fashion field would also be a good way to reach the fashion community, brands and industry in general.

## **1.8. Questions and objectives of the research**

### **1.8.1. Questions of investigation**

Four main questions need to be made because of their pertinence regarding co-creation and the fashion designer itself. These will lead to an understanding of what can be changed, improved or implemented in the co-creation process.

- What makes the consumer have an interest in co-creation?
- How does the co-creation process affect the brand and its products?
- What can be the fashion designer's roles in co-creation brands?
- What methods and processes are adequate for the supply chain when working with co-creation?

### **1.8.2. General objective**

- Develop a co-creation model that can maximize the benefits and minimize the problems for the consumers, brands and supply chain.

### **1.8.3. Specific objectives**

- Know what consumers desire and expect from co-creation.
- Understand how fashion designers think co-creation should work with the consumer and the supply chain.
- Comprehend what can be the fashion designer's overall contribution for co-creation.
- Understand what can provide stability to the supply chain to achieve greater production efficiency and assertiveness when working with co-creation.

## **1.9. Research framework**

The research was divided into five chapters beginning with an introduction to the research where it is stated the purpose of the research and its importance, the object of study and the objectives of the research itself. An overview of the research structure is also given to contextualize the readers. In the second chapter, a literature review of a series of themes related to co-creation and surrounding business models is made. A review was also done about fashion design, the consumer, and the supply chain. The third chapter was dedicated to a cases study about fashion brands already working with co-creation and to the empirical study by defining the methodology, research methods, and results from the survey and interviews. In the fourth chapter, the results from the analysis of the surveys and interviews are discussed and it is proposed a new co-creation model. The fifth chapter is dedicated to the conclusions.

Figure 1 explains the research outline that starts with the literature review, which gave the basis for this research's chosen methodology, approaches, and methods.

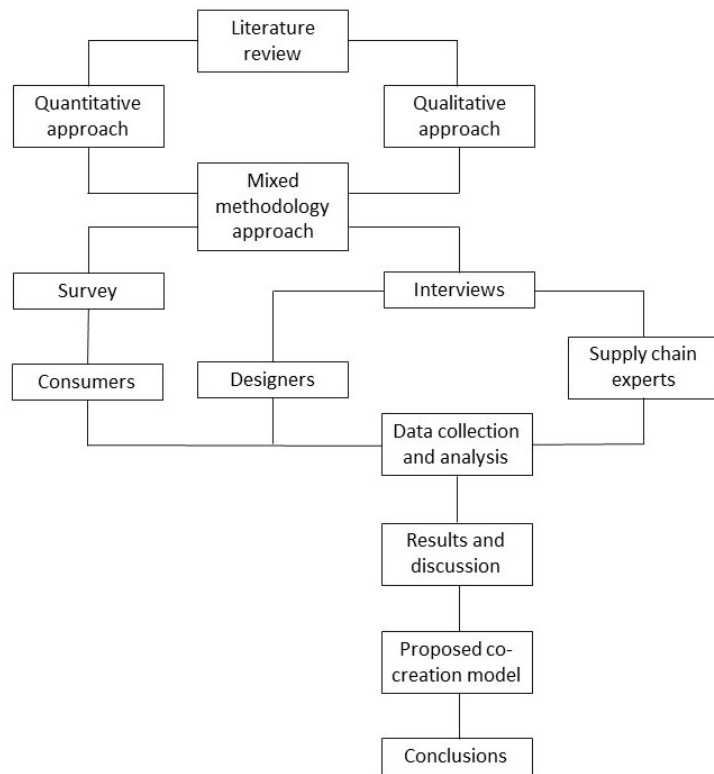


Figure 1 – Diagram of the research outline. Source: Author

For a better comprehension of the research, in diagram 2, it is possible to understand the research plan and how the different steps of the research are interconnected.

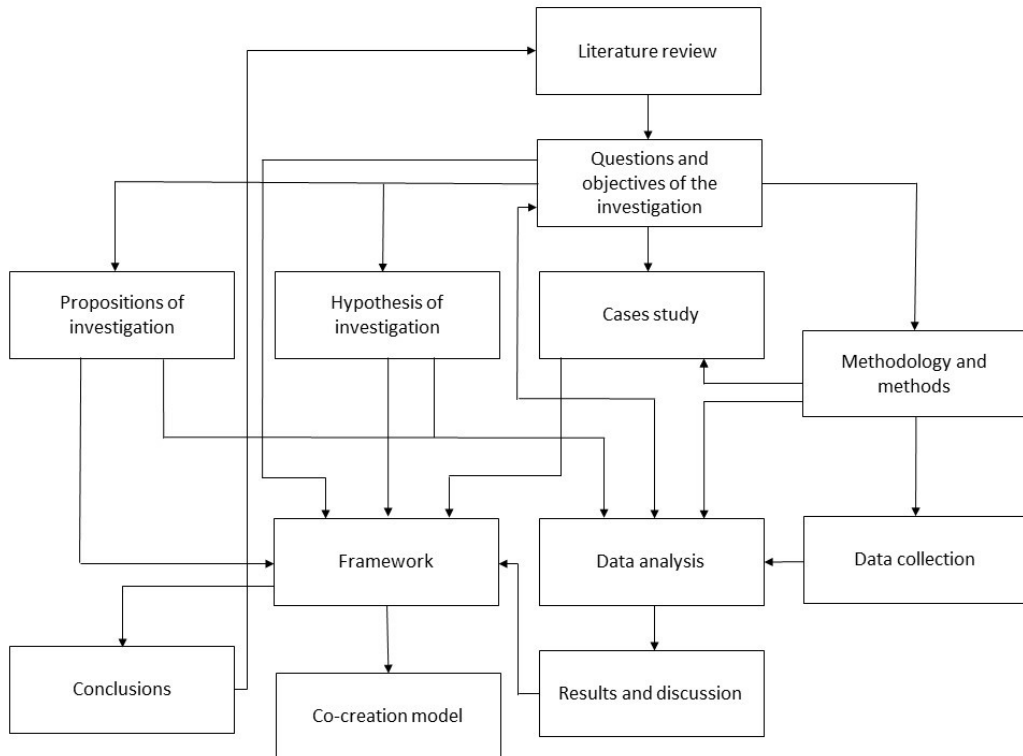


Figure 2 – Diagram of the research plan. Source: Author

## **1.10. Document writing**

This document has been written in British English. For numbering, the pre-textuals were used Roman numerals. For the remaining texts were used Arabic numerals.

## **2. State of the art**

### **2.1. Co-creation**

#### **2.1.1. Co-creation definition and scope**

According to Ramaswamy & Gouillart (2010), co-creation is the development of products, services, or systems in collaboration with consumers, managers, and even employees. For Maltzahn (2016), co-creation is how companies interact with their clients and can integrate the consumers' values into their marketing and retail. Voorberg, Bekkers, & Tummers (2017) also refer that the participation of consumers is viewed as co-creation, indicating that in the service management, co-creation is seen as innovation through the customization of services or products in cooperation with consumers. Kristensson et al. (2008) and Chathoth et al. (2013) also say that co-creation is more than the customization of services or products in line with the consumers' needs. In co-creation, interaction with consumers is much higher than in customization. Therefore, a broader definition of the co-creation of value is given, being a sort of innovation that happens on activities promoted by the company and activities promoted by consumers or communities with the support of the companies' platforms (Zwass, 2010; Alves et al., 2016). Frow et al. (2015) also refer co-creation as open innovation, from which the outcome of the interactions in the co-creation process is valuable. According to Piller et al. (2012), co-creation can also be referred to as co-design or user/open innovation and can involve the design of products by consumers for product development. Wylie-Harris (2018) also states that the cooperation between consumers and brands or organizations to develop products, services or campaigns is viewed as co-creation. For Sanders & Stappers (2008), co-creation enables brands to put new products or services in a competitive market.

There is a collaboration between consumers and producers to generate value based on creative, active and social processes. It is also pointed out that several activities can be understood as co-creation, such as co-design, co-conception, co-outsourcing, co-production, co-promotion, co-distribution, co-pricing, co-consumption, co-maintenance and co-disposal (Frow et al., 2013). Co-creation becomes, in this way, one of the main alternatives to renewing and improving the company's results (Carvalho, 2016). Besides are also identified by Frow et al. (2013) the different kinds of co-creation, the key actor groups that will interact between them along with the processes and the focal actor, supported by the co-creation platform.

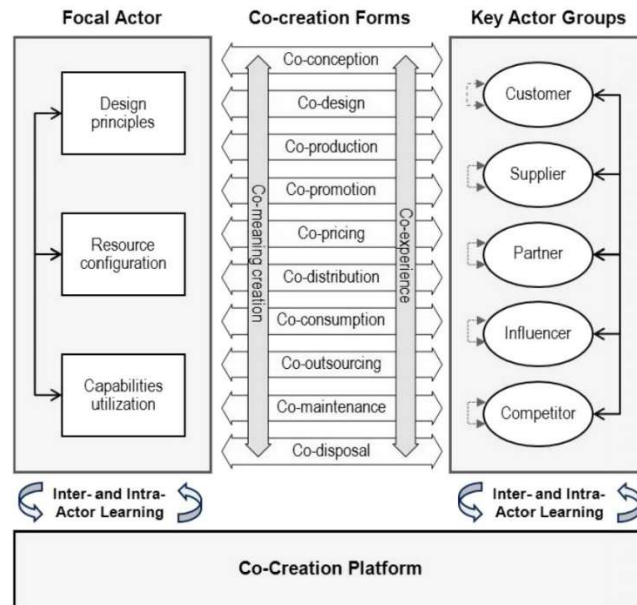


Figure 3 – Diagram of the conceptual design for co-creation design. Source: Frow et al. (2013)

Voorberg et al. (2017) additionally divide co-creation into a vision of a consumer as a co-producer who performs specific tasks in the production chain and consumers as co-creators that experiment services or products. Perks et al. (2012) define the creation of value by the company in conjunction with consumers, suppliers or distributors as co-creation. The relationship between consumers and firms can be understood as interactive experiences or activities performed by both parties using tools or practices that will create value (Payne et al., 2008; Chathoth et al., 2013). Co-creation involves consumer integration and is no more centred on the company. This direct involvement with the consumers enables addressing them and, at the same time, enables the joint co-creation of value (Chathoth et al., 2013). Also, the creation of value depends significantly on the consumers even more because each consumers' uniqueness will influence the process differently (Prahalad & Ramaswamy, 2004a; Etgar, 2008). So, co-creation empowers consumers by letting them create and/or vote for new product ideas within a collective. This way also gives them the sensation of being in charge of developing the products that ultimately will lead to improved new products (Pee, 2016).

Product design and commercialization stages are where the consumer mainly interacts with the brand. In the design stage, the design and technical functions of the product are the most worked ones. In contrast, in the commercialization stage, the consumer mainly interacts with ideas over the marketing and promotion of the product (Pee, 2016).

As for Prahalad & Ramaswamy (2004), in table 1, several topics that are considered and not considered co-creation are presented.

Table 1. What co-creation is and is not. Source: Prahalad & Ramaswamy (2004)

WHAT CO-CREATION IS NOT	WHAT CO-CREATION IS
Customer focus	Co-creation is about joint creation of value by the company and the customer. It is not the firm trying to please the customer
Customer is king or customer is always right	Allowing the customer to co-construct the service experience to suit her context
Delivering good customer service or pampering the customer with lavish customer service	Joint problem definition and problem solving
Mass customization of offerings that suit the industry's supply chain	Creating an experience environment in which consumers can have active dialogue and co-construct personalized experiences; product may be the same (e.g., Lego Mindstorms) but customers can construct different experiences
Transfer of activities from the firm to the customer as in self-service	Experience variety
Customer as product manager or co-designing products and services	Experience of one
Product variety	Experiencing the business as consumers do in real time
Segment of one	Continuous dialogue
Meticulous market research	Co-constructing personalized experiences
Staging experiences	Innovating experience environments for new co-creation experiences
Demand-side innovation for new products and services	

Co-creation wants to address consumers on an eye level to understand their motivations to make a purchase through contests, questionnaires, or interviews and find the most important value connections (Maltzahn, 2016).

Although Ramaswamy & Ozcan (2018) indicated that even though there is diversity in what comes to the co-creation meaning, there is not much consensus on what it really is.

Consumer involvement in co-creation is essential in developing new products because of the inputs for better meeting needs and creating solutions that are still not available in the market (Hoyer et al., 2010). Consumers are significant for service and product innovation (Prahalad & Ramaswamy, 2000; Vargo & Lusch, 2004a). A good co-creation experience may increase consumers' will into participating again in the future (Füller et al., 2011). Interaction over several weeks may create a better relationship between both parties (Nambisan & Baron, 2009; Gebauer et al., 2013). Co-creation also needs clear guidelines that include systems, processes and mechanisms for the process (Frow et al., 2015). For co-creation to be successful, there is usually the need for a platform (Ramaswamy & Guillard, 2010) that will enable interaction between parties. Some examples of platforms include the Adidas and Nike platforms used for footwear design (Frow et al., 2015). These engagement platforms tend to evolve during co-creation.

However, according to Frow et al. (2015), there is not much knowledge about the process behind and how contributions from consumers are dealt with and with which mechanisms.

Dialogue, besides the platforms, is also an important element in co-creation. Transparency and access are vital for developing a meaningful dialogue (Prahalad & Ramaswamy, 2004a). The service is also of great importance. Moreover, listening to the consumers is crucial (Maltzahn, 2016).

In this sense, Prahalad & Ramaswamy (2004) and Maltzahn (2016) say that the four blocks that build co-creation are dialogue, transparency, risk reduction or risk benefits, and access. Companies that adopt these will better understand consumers' desires and needs and become more communicative and assertive. However, aside from the previous aspects, co-creation is also dependent on other aspects such as cultural and social issues, economic issues and political regulations, and industry maturity that might be or not be able to meet co-creation needs (Frow et al., 2015).

Companies that embrace co-creation, although the requirement of adopting a service-dominant process, will be benefited (Chathoth et al., 2013). Besides influencing consumer satisfaction or loyalty, co-creation also helps firms get competitive advantages and opportunities for innovation (Frow et al., 2015). Although, detailed studies looking into the companies seem to be lacking in the literature, according to Frow et al. (2015). In a study made by Frow et al. (2015), a co-creation framework was built focusing on categories and dimensions. However, that can only help companies create opportunities for innovation and not implement a process from the initial design to the product delivery. Company managers were also able to identify other forms of co-creation and co-creation motives and appropriate platforms for co-creation. Of ten dimensions initially identified as the most important for developing co-creation activities, four were excluded. They also identified nine motives for the companies' advance with co-creation (Frow et al., 2015). In table 2, it is possible to see in detail the result of the study and which dimensions and categories were considered relevant.

Table 2 – Co-creation design framework. Source: Frow et al. (2015)

		Dimensions				
Categories	Co-creation motive	Co-creation form	Engaging actor	Engagement platform	Level of engagement	Duration of engagement
	Access to resources	Co-conception ideas	Focal firm	Digital application	Cognitive	One-off
	Enhance customer experience	Co-design	Customer	Tool or product	Emotional	Recurring
	Create customer commitment	Co-production	Supplier	Physical resources, spaces/events	Behavioural	Continuous
	Enable self-service	Co-promotion	Partner	Joint processes		
	Create more competitive offerings	Co-pricing	Competitor	Personal groups		
	Decrease cost	Co-distribution	Influencer			
	Faster time to market	Co-consumption				
	Emergent strategy	Co-maintenance				
	Build brand awareness	Co-outsourcing				
		Co-disposal				
		Co-experience				
		Co-meaning creation				

Nevertheless, the adoption of co-creation might not mean losing conventional product development as this has been seen as complementary to consumer co-creation. Piller (2012) also states that a company can face uncertainty on demand when implementing co-creation. The products being co-created should be modular to help reduce the lead times, diminish the difficulties of the process, and allow consumers to cooperate on just one part of the development (Piller, 2010). Threadless is an excellent example as they made standard a basic t-shirt but let consumers create the graphics that have a higher demand uncertainty. The companies also need to understand what can drive the interest of consumers up, but first, the company must be able to create a community of consumers, being this one of the most challenging tasks.

### 2.1.2. Consumer integration in co-creation

Consumers are contributors to the process of co-creation and also to the creation of brand equity and not mere buyers of products or brands (Boyle, 2007; Moon et al., 2012; Millspaugh & Kent, 2016). Consumers actively contribute to the production process (Prahalad & Ramaswamy, 2000; Chathoth et al., 2013). In co-creation, consumers are even asked to contribute with their problem-solving skills and creativity besides their desires, needs or opinions (Füller, 2010). Furthermore, co-creation can give life to newer products that are optimized when the ideation process and the decision making process

are mediated with the consumers (Pee, 2016). Because of this the marketing focus is now on the consumer needs and desires and not on the product (Millsbaugh & Kent, 2016). The consumer now can build a personalized experience together with the companies experience (Prahalad & Ramaswamy, 2004). Service dominant logic supports the previous with the decentralised control of the product and brand experience (Chathoth et al., 2013). Consumers began to challenge the corporate logic of value creation as they can now easily communicate and be better informed. They want to be heard, products in line with their needs, and define what is value (Maltzahn, 2016). Communities and their consumers want two-way conversations with cooperation and the possibility to create their content, so brands need to put consumers at the centre of their brand (Wylie-Harris, 2018). However, none of them has control over the co-creation process. The process can be complicated due to the different goals of consumers that look for the best price/quality and companies that look into maximizing profits. Companies also need to build trust with consumers and share benefits with them. (Chathoth et al., 2013).

Besides, consumers might also expect to have tools like designs for virtual co-creation or other toolkits that easily enable them to develop their products/solutions (Füller, 2010). Companies can also adapt to changes in demand (Etgar, 2008). Moreover, companies need to constantly pursue technological solutions to build opportunities to co-create with consumers, like platforms that should be built taking into account the processes and experiences of the consumers. Business-to-consumer e-commerce businesses that have direct contact with the consumers are the ones that are exceptionally well-positioned to take advantage of the consumers' co-creation (Pee, 2016).

Also, these experiences should be based on dialogue and learning and not just listening to consumers (Chathoth et al., 2013). Offering platforms that motivate consumers' participation and enable them to create relationships, even with the company's development team, can let anyone see who contributed and how. That gives them recognition for their efforts and will create a more robust engagement over time (Füller, 2010).

“These processes require certain types of expertise and different input forms from the consumers including expertise, control, cultural and physical capital, experiential and economic benefits and time.” (Chathoth et al., 2013, p. 14).

As for the product, a higher level of co-creation from the consumer in the initial stage could contribute to a better performance from the company (Gruner and Homburg, 2000; Hoyer et al., 2010). At the beginning of product development, consumer feedback

is important as it helps identify and integrate consumers' preferences in the initial stages. Integrating consumers' feedback will enable finding solutions and approaching consumers more personally (Maltzahn, 2016).

Consumer participation may happen due to various reasons. For example, the need for pride and self-expression, but also psychological reasons (Etgar, 2008) and some may contribute only for altruism, or they can also do it because they believe in the objectives of the process. However, they can also do it simply because they are unsatisfied with the product (Hoyer et al., 2010). Others may be motivated by financial rewards or social benefits that can increase status and esteem (Nambisan & Baron, 2009; Hoyer et al., 2010). Füller (2010) also enumerates other rewards that are non-monetary such as thanking the consumer, communicating and giving feedback, or having the name associated with the developed product. Monetary rewards are also enumerated, such as monetary compensation, offers, prize draws, giveaways or lotteries. Their motives can be heterogeneous and depend on their personalities, and their motives will significantly determine what can be expected (Füller, 2010).

Companies can stimulate consumers by enhancing the benefits of their participation or simplifying the process by reducing the time spent and the effort needed (Hoyer et al., 2010). This process should be reviewed constantly, and issues found should be repaired (Heidenreich et al., 2015). Understanding what is expected from the co-creation process is also essential, as consumers can share ideas and preferences and spend time only if their expectations are met. Also, consumers may not want to be involved in all co-creation processes, so it is important to define the stages as some might like to create, but others might only like to evaluate the ideas (Füller, 2010). So, it is important to understand which tasks should be offered and the frequency in which consumers can co-create so that they can be frequently engaged. Giving them a reason to return continuously will easily retain them as co-creators, and it is also important to let them know how others reacted to their creations (Füller, 2010). Wylie-Harris (2018) reported that most companies feel that they are outstanding in communication and understanding consumers' needs, although consumers, on the other side, feel mostly disconnected. Still, consumers think that brands that involve them in creation, value their opinions and include them in the decision-making process are more trustworthy. But, although brands understand the value of the consumer-brand interaction they still lack, budget, technology and capability for that.

As for the communities, these are understood as a promising way for companies to communicate and raise the consumers' loyalty and get marketing value to the companies

(Füller, 2010). Consumers from a community are tendentially very loyal and regularly recruit other consumers (Algesheimer et al., 2010). These can bring onto the company positive reactions and negative ones and the risk of conflict that is usually made public among the community, so it is also important to consider the interactions between consumers and not only from the consumers with the company. Management of these conflicts will then be a dialogue between multiple users and should be managed by the company and the community itself (Gebauer et al., 2013). Direct interaction with consumers and their communities is significant. When the brand is co-creating jointly with the consumer, needs are best understood (Prahalad & Ramaswamy, 2004a).

Besides communities, other interesting topics are the tribes. These can co-create products through their leaders' vision that are already trendsetters. Consumer tribes are different from historical tribes as status is achieved by different emotional values (Cova & Cova, 2002). For Mitchell & Imrie (2011), tribal bonds are based on affective bases and not commercial or rational ones. A tribe can be understood as shared social interaction, behaviour, or consumption guided by shared values and interests. Usually, consumers are grouped by characteristics. However, tribes are groups that express individual identities and create "[...] communities based on shared beliefs, passions and ideas." (Mitchell & Imrie, 2011, p. 52). This model can be seen in the fashion business, for example, through fashion blogs usually developed by influencers. They also act as indicators for current fashion styles and those coming soon (Maltzahn, 2016). These influence consumers, and their posts and comments, engage consumers with the current and upcoming trends. The Sartorialist is an example of an influential figure. These blogs are ever more important sources of information about fashion preferences, and the extraction of this information will be important to succeed in the fashion field (Maltzahn, 2016). An example of a co-creation brand based on tribes was Nyden. This brand relied on influencers to design new products and their followers to create a basis for consumers.

Adidas, for example, indicates that product development is increasingly about co-creation. The mix of different backgrounds and perspectives makes new things happen, and products that would not have been otherwise created are. Adidas abandoned the miadidas project to go from mass customization into co-creation. Creative director Paul Gaudio believes that nothing works better than face to face contact to be in contact directly with the culture. They collaborate with high profile collaborators, athletes,

artists, and high school students. For Gaudio, co-creation empowers consumers to understand the brand and the brand to understand the consumers<sup>4</sup>.

### **2.1.3. Co-creation problems**

Co-creation may create additional problems in business to consumer contexts as there is the need to cope with many ideas and input into the product the consumer's desire. For example, Etgar (2008) refers that packaged goods might not work as well as services in a co-creation context. Also, the process may have many problems, like not understanding the nature of the relationship between the company and the consumer (Algesheimer et al., 2010; Hoyer et al., 2010).

Furthermore, when a company decides to become co-creative, it can go through a substantial process of organizational changes. There will be the need to develop new capabilities centred on the collaboration of the intervenient involved in the value creation process. Companies should weigh the benefits or risks of creating an offer centred on co-creation and what level of co-creation they are willing to use, considering their resources, skills, and knowledge. There is also the need of maintaining long relationships with consumers and adapt the type of communication so that consumers can be more motivated and involved (Payne et al., 2008). Companies with low co-creation experience should consider working products or services with a low co-creation level in an initial stage. Co-creators tend to negatively view the company when they believe their ideas are not being given the attention they deserve (Pee, 2016). Later, companies should evaluate the process to avoid problems caused by human mistakes.

A higher level of co-creation will also generate a higher dissatisfaction when the outcome is not what is expected (Heidenreich et al., 2015). In a higher level of co-creation, consumers might understand a problem as being co-created as they are also very involved in the process (Zhu et al., 2013). In a lower level of co-creation, consumers will see the company as accountable, and they will expect the company to take the initiative to solve the problems (Heidenreich et al., 2015). Therefore, the volatility of co-creation consumers' satisfaction is higher for higher levels than for lower levels of co-creation (Heidenreich et al., 2015). Furthermore, unfairness or dissatisfaction with the outcome may not be compensated by a joyful experience. Consumers will be interested in the product and will only give a positive word of mouth if they consider it a fair process with a satisfying outcome (Gebauer et al., 2013).

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<sup>4</sup> <https://www.inc.com/stephen-denny/how-adidas-approaches-co-creation-by-swimming-in-culture.html>

Co-creation also has other problems because, despite company efforts, consumers usually do not improve their efforts in the co-creation process, and consumers will also only be satisfied if they get some benefit from the process (Xie et al., 2008; Heidenreich et al., 2015). Also, if participation costs in the co-creation process are too high or the benefits are too low, consumers might not want to engage in the co-creation process (Hoyer et al., 2010). Consumers compare benefits with costs and risks of the co-creation process (Etgar, 2008; Rindfleisch, 2010; Hoyer et al., 2010). Co-creation can cost time, resources and psychological or physical efforts, and there is the risk of failure even though the invested efforts in the process (Etgar, 2008; Bolton & Saxena-Iyer, 2009; Hoyer et al., 2010). The process also has risks for companies because an eventual loss of control is required if the company goes forward with full implementation. Many are resistant to increasing consumer autonomy because they are concerned about letting consumers access the company's proprietary information or losing track of the brands' control (S. O'Hern & Rindfleisch, 2010).

Conversely, co-creation will allow a completely different approach to consumers' ideas, desires, and needs. Therefore, the interaction between consumers and companies will be needed (Maltzahn, 2016). Pee (2016) additionally indicates that this interaction should be done during the idea and selection processes and not just in one of the stages. This results in creating better and more innovative products and increased sales. Although, Pee (2016) warns that product innovativeness in the consumers' view can decrease in the commercialization stage because consumers might identify similar products when trying to find ideas to generate content.

To reduce costs, Hippel & Katz (2002) proposed that user toolkits that are provided can ease the creation of new ideas. Another possibility is modularizing the process so that consumers can work on the parts that they feel more passionate about and have more expertise (Hoyer et al., 2010). For Sepoetro (2018), finding the balance between personalization and standardization is what co-creation needs.

Co-creation requires transparency from the company since it involves the revelation to consumers of information about new projects, ideas and products (Prahalad & Ramaswamy, 2004a). Also, there is the question of intellectual property. Depending on the consumers, some might not care about proprietary questions, but others may not want to deliver ideas without keeping the ownership of the intellectual property. Poor intellectual property policies might lead to legal issues and sentiment of unfairness from the consumers. Therefore, companies that keep proprietary rights will be less likely to achieve a higher level of co-creation.

There can also happen information overload due to the submission of too many ideas, so companies also involve consumers in evaluating ideas. However, information overload can be challenging in later stages due to the product development deadlines (Hoyer et al., 2010). Also, relying too much on ideas from consumers may create a loss of direction for the company (Millsbaugh & Kent, 2016). Moreover, many consumer ideas might not be feasible production-wise (Magnusson et al., 2003). Therefore, many companies still rely more on co-creation in the commercialization stage (Hoyer et al., 2010).

In the sale stage, other problems might also come to stage as consumers that co-create fashion products hardly will be able to have them in a short period. This gap of time between the co-creation process and the delivery of the product might discourage consumer participation being that Füller (2010) indicates that those might only be available in the market 6 to 12 months later.

#### **2.1.4. Value creation**

According to Arvidsson (2011), value creation can be named, among others, value co-creation or service-dominant logic of marketing. Value derives from the interaction with consumers or stakeholders while attracting contributions from non-proprietary processes (Arvidsson, 2011). Payne et al. (2008) present a comprehensive scheme about how value creation can occur by relating the supplier with the consumer and how encounters can be value creators by learning from both parties in figure 4.

Alves et al. (2016) refer that Prahalad & Ramaswamy (2004) first talked about value co-creation, still as a business management concept. However, that same year, Prahalad & Ramaswamy (2004b) created a diagram (figure 5) about value creation that already included the consumer, its experiences, its importance for value creation, and the experience environment.

More specifically, value can be classified as being value-in-exchange or value-in-use. Goods' dominant logic is based on value created by the company (Vargo et al., 2008). In the service-dominant logic, consumers are always value co-creators, and products or services are consumer-oriented. The company and the consumer work together towards a common goal (Vargo & Lusch, 2008; Ertimur & Venkatesh, 2010).

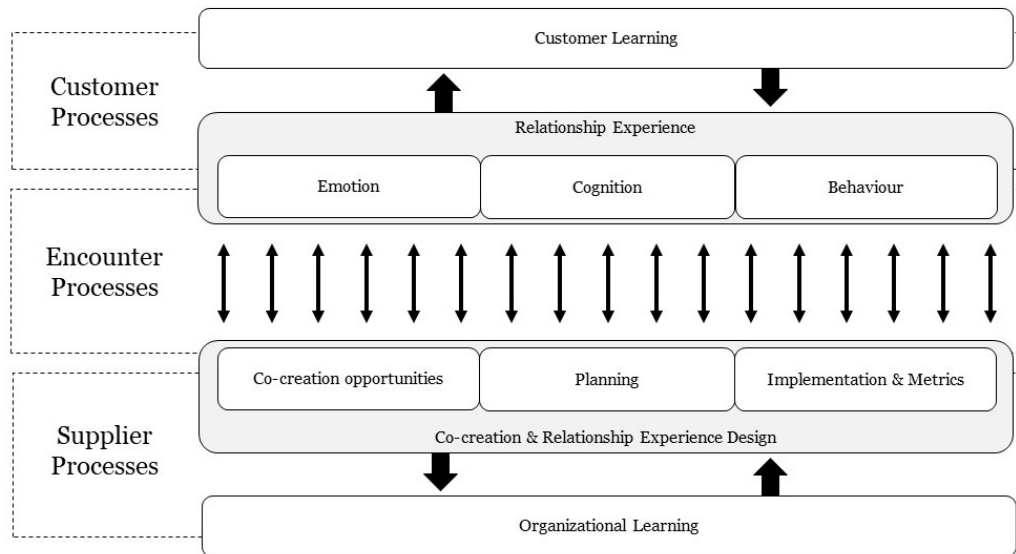


Figure 4 - Diagram of the conceptual framework for value creation. Source: Payne et al. (2008)

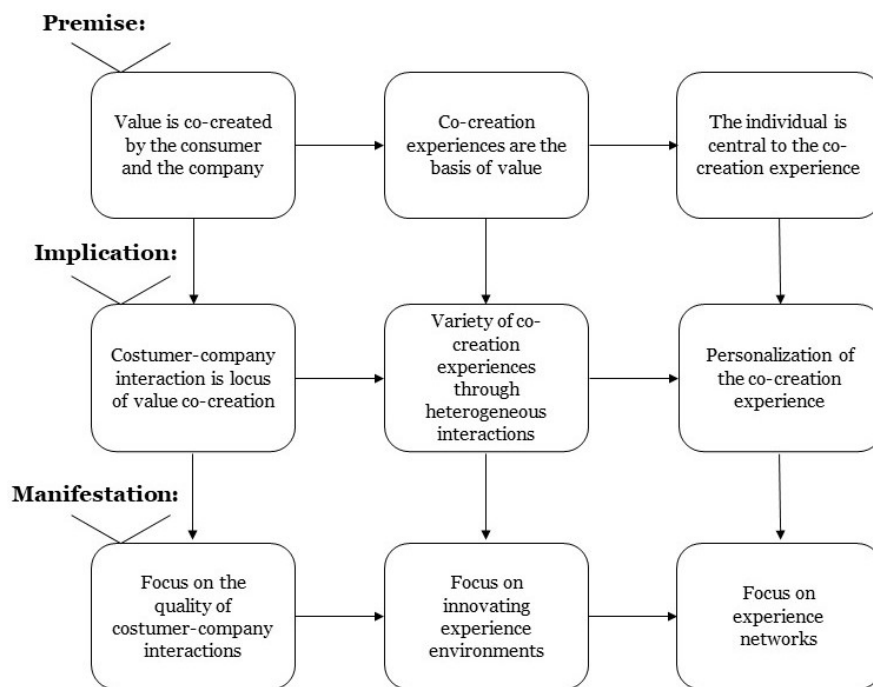


Figure 5 - Diagram of the new frame of reference for value creation. Source: Prahalad & Ramaswamy (2004b)

Consumers are value co-creators with the company through collaboration in the entire value chain (Yi & Gong, 2013). According to the service-dominant logic, consumers and companies are part of the process of value creation (Grönroos, 2011; Millspaugh & Kent, 2016), challenging the view of consumers as mere buyers (Vargo & Lusch, 2006; Xie et al., 2008).

Marketing changed its focus to intangible resources instead of tangible, such as creating relationships with consumers and co-creating value (Hunt et al., 2012). Value co-creation is key for the business management and marketing (Saarijärvi et al., 2013; Alves et al., 2016). Although traditional marketing still wants to treat consumers as mere buyers targeted with a product (Maltzahn, 2016).

Service-dominant logic research proposes that consuming and producing are complementary activities, and consumers are involved in the value creation process (Chathoth et al., 2013) from the beginning of the design and throughout the entire lifecycle of the product (Lusch et al., 2007; Hunt et al., 2012). Co-production is one of the components of value co-creation. The other is the consumption and usage of the product (Vargo & Lusch, 2008; Ertimur & Venkatesh, 2010).

Co-creation is a learning process in which the company enhances capabilities, spots possible consumers, creates connections, and understands market feedback connected to the service-dominant logic (Vargo & Lusch, 2004). Co-creation moves value creation from the company into collaborations beyond the companies' walls (Storbacka et al., 2012; Frow et al., 2015). Value creation processes focus on the consumers and their experiences as co-creators (Ramaswamy & Ozcan, 2018). Furthermore, consumers now want a more significant role in companies' decisions (Hoyer et al., 2010). The orientation towards consumers as value creators reflects theoretical and methodological innovations and society and marketing trends and developments (Xie et al., 2008). Value co-creation no longer distinguishes between what the company does and what the consumer does, implying that the consumer determines the value and the company can only make proposals for the value (Vargo & Lusch, 2006; Ertimur & Venkatesh, 2010). The most important source of value are affective relationships and experiences within communities (Arvidsson, 2011). Ramaswamy & Ozcan, (2018) refer that value is co-created through co-creation experiences and that the consumer is essential for the experience.

Technological improvements allowed quick and almost costless interconnections between consumers and companies and between consumers, allowing savings in costs and time in consumer participation (Etgar, 2008). A social media platform can be a source of value co-creation where dual learning is made, and information and interests are shared (Choi et al., 2016).

Brand–consumer interactions increase consumer value and brand value (Gentile et al., 2007). “High-quality interactions that enable an individual customer to co-create unique

experiences with the company are the key to unlocking new sources of competitive advantage.” (Prahalad & Ramaswamy, 2004a, p. 7). Consumers create value through design, feedback, or production know-how and not just at the end of the process (Humphreys & Grayson, 2008). Before, value creation was not understood as being able to exist in the interconnections between consumers and companies (Wikström, 1996).

Value chain thinking divides a company into design, production, marketing, and distribution (Ramaswamy & Ozcan, 2018). By putting first consumers’ processes, companies can adjust their processes to better fit consumers (Chathoth et al., 2013). Value creation opportunities will grow significantly for companies that will use the concept of co-creation to create value (Prahalad & Ramaswamy, 2004a). “The meaning of value and the process of value creation are rapidly shifting from a product and firm-centric view to personalized consumer experiences.” (Prahalad & Ramaswamy, 2004a, p. 5). Companies cannot continue to design products by themselves because the centre of value is now focused on the interaction of companies and consumers. Consumers now envision the creation of value together with companies (Prahalad & Ramaswamy, 2004a). In the value creation process, there can be three types of encounters. Namely, communicational, service or usage encounters that can be started by the consumer, the company or both (Chathoth et al., 2013).

Many companies have been trying to maximize their value for years by moving from a company-centric model to one that privileges consumer demand (Wang et al., 2017). Consequently, many have begun to include consumers in the value creation process (Gebauer et al., 2013). Although, according to Chowdhury (2014), there is still not much research that can lead to the understanding of what happens, on a micro-level, in the value co-creation process. Companies can also create value when consumers let them intervene in the value creation activities (Grönroos, 2008; Alves et al., 2016). Of course, a company's cost of production can also increase or decrease and can influence the price of the product. Depending on the amount of work required from the consumers, the perceived value may also increase or decrease. However, consumers will often benefit from participating in value creation processes (Humphreys & Grayson, 2008). Ikea is a good example because of the need to assemble furniture to lower the prices (Humphreys & Grayson, 2008). Finally, value co-created by consumers will depend on what they can use or access in terms of information, knowledge, skills or other resources (Chathoth et al., 2013).

## **2.2. Other creation concepts**

### **2.2.1. Co-production**

Of the co-creation activities that can enhance the value chain, co-production has been the one that attracted the most attention (Frow et al., 2015). Voorberg et al. (2017) state that for Vargo & Lusch (2004b), both concepts seem to be related and are used as interchangeable concepts. They also say that co-creation looks more to co-creation as value than co-production. Nevertheless, co-creation is more than creating value and can be interpreted in several ways, such as co-production or co-design (Sanders & Stappers, 2008; Millspaugh & Kent, 2016). Co-creation sees consumers as co-designers, while co-production sees consumers as co-implementers. Voorberg et al. (2017) also stated that the two concepts are related, and some consider co-production to what is co-creation and vice-versa. Co-production is also defined as the implementation of a proposed solution preceded by co-design that aims to find a problem and its solution. Co-creation is the process that englobes both<sup>5</sup>.

Co-production and co-creation are on opposite sides, and in the middle, it is possible to find company-driven service innovation and consumer-driven customization. Companies can move between both to find the best balance for the intended development outcomes, depending on their production and sector (Chathoth et al., 2013).

Table 3 shows the differences between co-production and co-creation on several key topics.

Co-production is connected to a company-centric view of consumer involvement and focuses on a production-oriented philosophy. In co-production, the company is at the centre of value creation. It does not work based on reciprocity with consumers, ignoring it and the mutual dependence (Chathoth et al., 2013).

Conversely, co-creation is connected to the service-dominant logic that encompasses consumer engagement through the entire process of value creation and is focused on the experience and the consumer (Chathoth et al., 2013).

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<sup>5</sup> <https://www.stakeholderdesign.com/co-production-versus-co-design-what-is-the-difference/>

Table 3 - Comparison of co-production with co-creation. Source: Chathoth et al. (2013)

	Co-production	Co-creation
Value creation	Extraction of economic value Quality products and services	Creation of unique personalized experiences
Customers' role	Passive (rely on the physical environment provided) Perceived as a resource	Active (provide input to service provider before, during, and after the service) Information provider Value creator
Customers' participation	Mainly at the end of the value chain	Repeated interactions and transactions across multiple channels Serves as an operant resource
Customers' expectations	Suit their needs to what is available	Co-create products and services with customers
Key actors	Managers and employees	Customers, managers and employees
Focus	Production and company centric	Customer and experience centric Engaging customers High level of information processing
Innovation	Led by the firm	Co-innovate and co-design with customers Learning from customers (opinion leaders and trendsetters) and the process
Communication	Listening to costumers Less transparent	Ongoing dialogue with customers Open and transparent communication

Co-creation and co-production refer to consumer cooperation with companies to create value (Humphreys & Grayson, 2008). Co-production involves the efforts of consumers and companies who define the output of their collaboration (Rice, 2002). Co-production is also defined as all cooperation forms between companies and consumers (Etgar, 2008) and consumer participation with constructive content through co-design (Lusch et al., 2007; Chen et al., 2011). So, firms create innovation through co-production, but the consumer's role is in part passive. There is less transparency meaning that some consumer needs might not be met due to non-continuous communication. At the same time, in co-creation, companies let consumers or stakeholders have more of a say on the product in ways that the company would not think while incentivizing an intensive dialogue (Chathoth et al., 2013). Still, consumer knowledge strongly contributes to co-production (Lusch et al., 2007; Chen et al., 2011). Consumers with expertise, knowledge or information are more prone to be involved in co-production (Lusch et al., 2007; Chen et al., 2011). It is then important to define the consumer's participation, train the consumer, and reward the consumer so that the co-production process can positively affect the company and the consumer (Ertimur & Venkatesh, 2010).

Co-production can also create risks reflected by a consumer's poor performance, conflicts with other partners in the process, and legal issues (Etgar, 2008). Moreover, there can also be opportunistic behaviours that can impact brand images and companies'

reputations (Ertimur & Venkatesh, 2010) as consumers can act out of self-interest. However, consumers can also act out of altruistic intentions in open-source movements that are characterized as an extreme form of co-production. Linux and Wikipedia are two major examples of contributions that do not have any proprietary attachments or associated payment (Ertimur & Venkatesh, 2010).

Co-production and co-creation can also be seen as a way to control the market and exploit the consumer (Humphreys & Grayson, 2008; Zwick et al., 2008; Ertimur & Venkatesh, 2010). Unlike workers or freelance workers that have a contract and payment for their services, the consumer cooperates under a social and not a formal contract (Ertimur & Venkatesh, 2010). Consumers' costs can englobe economic costs such as material resources and time and non-economic costs such as possible psychological and social losses due to loss of freedom of choice resulting from the partnerships with other production partners (Etgar, 2008).

If companies want to innovate, they need to discuss their needs with every party involved to promote cooperation and gather knowledge and expertise. The ones who can see value in the activities will be more interested in contributing to the process (Chen et al., 2011). Co-production can be of interest if it allows consumers to learn and improve new skills and techniques (Etgar, 2008). Furthermore, the more companies motivate consumers to cooperate, the less the distance between companies and consumers (Humphreys & Grayson, 2008). Consumers value more the products they produce than those produced by others (Humphreys & Grayson, 2008). In this sense, co-production involves consumers in the value chain process that will create additional value (Humphreys & Grayson, 2008; Ertimur & Venkatesh, 2010). Consumer participation in co-production provides a collaborative partnership between consumers and producers that work toward common goals (Hunt et al., 2012) and reduces the risks of receiving less appropriate products (Etgar, 2008; Hunt et al., 2012).

Product customization is one of the main goals of co-production. The demands for individual experiences increase its applicability while expanding the offer for consumers. Therefore, co-production can be successful in product categories with evident differences in the product attributes, such as computers. Moreover, it is usually successful in mature economies as the consumption of essential products mainly characterises emerging markets, and only mature markets recognize an added value in customization (Etgar, 2008).

## **2.2.2. Mass customization**

### **2.2.2.1. Definition and scope**

Some time ago, luxury manufacturers produced tailor-made items with the consumers' preferences and tastes, involving various face to face contacts and spending much time till the end of the process<sup>6</sup>. Nowadays, brands still do tailor-made garments at a premium price that is not suitable for most consumers. So, in the 21st century, mass customization emerged as a mainstream production model that tries to keep scale in productions and at the same time meet the individual needs of consumers, being one of the biggest challenges of this model (Da Silveira et al., 2001). For Tseng & Jianxin (2001), mass customization is the manufacture of products or services that can go onto consumers' desires and at the same time keep efficiency near mass production. Kaplan & Haenlein (2006) characterises it as a type of consumer interaction aimed at doing customised goods but with a cost close to a mass-produced product. Mass customization is the technologies and systems that allow a closer efficiency to mass production, which can meet individual needs (Piller et al., 2012). Mass customization combines mass production efficiency and costs with the unique products of craft manufacturing (Duray et al., 2000). Pine II (1993) defined mass customized products as fair cost products or services with a good range of options and customization possibilities that can meet almost everyone's preferences. Mass customization combines flexible processes that enable the production of products accordingly to consumers' guidelines in a combination of personalization from a limited range of options and mass production with good cost-efficiency.

Companies that offer mass customization are turning customer-centric (Tseng & Piller, 2003) by trying to capture the heterogeneity of consumers (Piller et al., 2012). In this way, they can do the development, production, and sale and deliver fair priced services or products in a variety that can meet almost everyone. So, technological information, while producing quality, uses modularity but also standardization and combines cooperation with management innovation (Liu & Yao, 2018). In addition, mass customization can use the personalization and flexibility used in custom-made manufacture while lowering the cost of the products<sup>7</sup>. Table 4 shows the differences between mass production and mass customization.

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<sup>6</sup> <https://hapticmedia.com/blog/mass-customization-definition-goal-examples/>

<sup>7</sup> <https://www.cleverism.com/mass-customization-what-why-how/>

Table 4 - Comparison of mass production with mass customization. Source: Jin et al. (2020)

Comparison project	Mass production	Mass customization
Target	Develop, produce, sell and deliver products at low prices that everyone can afford	Develop, produce, sell and deliver affordable products and services
Focus	Achieve high efficiency through stability and control	Achieve diversification and customization through flexible and quick response
Management thought	Product centred	Customer centred
Production driven mode	Arrange production promotion mode according to market forecast	Pull mode according to order arrangement
Strategy	Cost leadership strategy	Differentiation strategy
Scope of application	Stable demand and unified market	Dynamic demand and discreet Market

It is possible also to find four different types of mass customization as in figure 6.

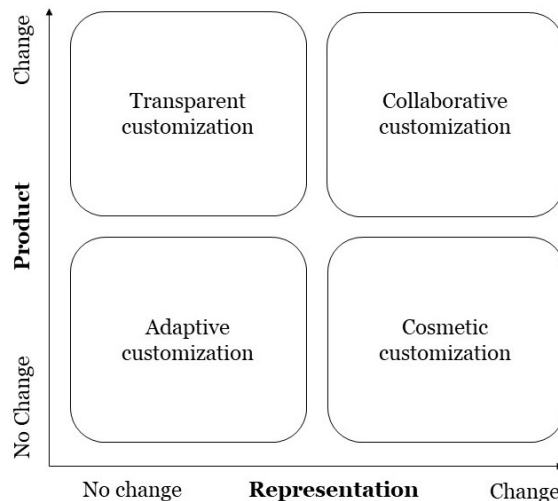


Figure 6 - Diagram of the approaches to mass customization. Source: <https://www.cleverism.com/mass-customization-what-why-how/>

In cosmetic customization, products are not customized but only packed in a different package to suit different consumers creating a tailored and high-end experience. Personalization of labels with names or messages is a good example of cosmetic customization<sup>8</sup>.

Adaptive customization works with some customization options for a standard product that can be easily used by the consumer<sup>9</sup>. For example, Adidas Glitch was a product marketed as being the first boot that gave consumers the possibility to customize the

<sup>8</sup> <https://www.cleverism.com/mass-customization-what-why-how/>

<sup>9</sup> <https://www.cleverism.com/mass-customization-what-why-how/>

interior and exterior so that they could be worn on distinct occasions. This is probably the most used solution as production is only done after the customers' order has been made<sup>10</sup>.

Transparent customization does not involve consumers, as the brand offers products after predicting consumers' preferences through their consumer behaviours, choices and demands. Netflix, for example, recommends content accordingly to the consumers' habits that should better suit their tastes<sup>11</sup>.

Collaborative customization consists of cooperating with consumers to help them understand what they need. It is appropriate mainly for businesses with consumers that desire highly customized products. However, this approach can also help consumers when they do not find what they need among a vast portfolio of options<sup>12</sup>.

#### **2.2.2.2. Mass customization and business**

Mass customization can help to align businesses with consumers in markets that are more and more competitive, complex and with unpredictable demand (Zhang et al., 2017). In competitive businesses and markets where the demand changes rapidly, companies need to offer products at a reasonable price and that their customization level is closer to mass production (Jin et al., 2020). Also, it is a way to reduce the variety and complexity associated with a forecast model (Piller et al., 2012). Mass customization is also a way to balance costs and flexibility (Wiengarten et al., 2017) by using resources efficiently (Piller et al., 2012). Although, according to Humphreys & Grayson (2008), producing individualized goods usually has an added cost when compared with mass produced goods, so companies usually charge more to achieve profitability. In recent years the quantity of manufactured mass customized products has been gradually increasing (Wang et al., 2017). Companies that let consumers customize products usually are more profitable as they also charge a higher price and are also more susceptible to enter high end markets<sup>13</sup>. Companies can also achieve differentiation from competitors with mass customization and at the same time treat costumers distinctively depending on their needs (Wang et al., 2017) that will lead to an higher level of consumer

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<sup>10</sup> <https://hapticmedia.com/blog/mass-customization-definition-goal-examples/>

<sup>11</sup> <https://hapticmedia.com/blog/mass-customization-definition-goal-examples/>

<sup>12</sup> <https://www.cleverism.com/mass-customization-what-why-how/>

<sup>13</sup> <https://hapticmedia.com/blog/mass-customization-definition-goal-examples/>.

satisfaction<sup>14</sup>. Consumers can create unique products and the company gains the ability of reducing stock availability<sup>15</sup>. When consumers are included in the production from an earlier stage the potential of customization of the product can be substantially increased (Wiengarten et al., 2017).

Based on the choices that consumers have available, companies can prepare the supply chains to satisfy orders without consumer intervention (Wang et al., 2017).

The development of internet services created several opportunities for mass customization, allowing companies to interact with consumers in real-time, letting them have instant updates, whether through apps or emails<sup>16</sup>. Improved configurators or co-design toolkits that allow consumers to choose product features brought custom manufacturing and mass production (Piller & Blazek, 2014). Nike started working with mass customization in 1999 with NikeiD, enabling consumers to buy personalized shoes in terms of comfort, colour or style<sup>17</sup>. Adidas also created a mass customization program called miadidas that was available to the public in 2001, offering performance shoes with measurements, climate control, insole, and colour options. This service was offered online and in some flagship stores (Piller et al., 2012). Adidas had many product programs and variants, making forecast and planning difficult. This created an enormous supply chain complexity, not to talk of overstocks and the regular need to do high discounts to sell the stocks. So, Adidas noticed that the made-to-order instead of made-to-stock could be a good option for offering a broader number of options with lesser risk. However, of course, the price was higher than regular retail by about 30% (Berger & Piller, 2003). Although the success, Adidas decided to discontinue the service in 2019 to start working on a co-creation model. According to Sole Collector<sup>18</sup>, Adidas made the following comment: “We’ve made the strategic decision to close our custom footwear business, miadidas. We believe that the future of customization lies in co-creation, and we’re working diligently to offer a new experience for the consumer who wants to join in the creation of our products at a deeper level. Thank you for being a fan of miadidas, and

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<sup>14</sup> <https://hapticmedia.com/blog/mass-customization-definition-goal-examples/>

<sup>15</sup> <https://hapticmedia.com/blog/mass-customization-definition-goal-examples/>

<sup>16</sup> <https://www.cleverism.com/mass-customization-what-why-how/>

<sup>17</sup> <https://hapticmedia.com/blog/mass-customization-definition-goal-examples/>

<sup>18</sup> <https://solecollector.com/news/2019/02/here-is-why-adidas-discontinued-the-miadidas-customization-program>

we can promise an even better digital experience in the future.”<sup>19</sup>. Adidas now wants to understand what a co-creation experience for apparel, footwear or accessories for the Millennials and Generation Y consumers, whether in-store or online, can be.

Meanwhile, Adidas partnered with Foot Locker to collect designs from local creatives. The objective was to produce sneakers, in limited editions, based on a co-creation process. These can be delivered faster, up to 36 times, than traditional manufacturing. These will be produced in the Adidas Speedfactory. Andrew Gray from Foot Locker North America said that “this initiative allows us to get closer to market and deliver products that are created from local and cultural insights to engage and excite our customers”<sup>20</sup>.

Back in 2009, Keds launched Kedsstudio.com. Eighteen thousand designs were published in the 48 hours following the launch. Later the number of designs reached the millions, and in a matter of weeks, the brand had received more designs than they had been able to create in the 100 years of history of the brand. In addition, consumers could upload any picture or design, which was then printed on the shoes’ canvas (Piller et al., 2012).

Other examples of brands working with mass customization are, for example, Hockerty, which was created by three young entrepreneurs in their early 20s in 2008 as they realized it was challenging to find affordable tailor-made clothing. As a result, the brand now has various styles, fabrics, and details. Figure 7 illustrates the success that the brand has had.

Other brands united knowledge and technology with brand and market recognition. Unmade that makes knitwear used by Rapha and New Balance can offer a complete digital consumer experience. Unmade positions itself as a non-fast fashion company, and its goods are made to last, manufactured in the United Kingdom<sup>21</sup>. Rapha, a cycling company, saw an opportunity to work with smaller teams to create outfits with much lower minimums and with an improved consumer experience. Custom outfits traditionally require high manual involvement for processes related to design or production, besides the long lead times, making them not ideal for smaller teams.

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<sup>19</sup> <https://medium.com/@mindsumo/what-should-co-creation-look-like-for-our-next-generation-consumers-269ac2525b91>

<sup>20</sup> <https://www.lsnglobal.com/fashion/article/23531/adidas-co-creates-shoes-with-local-communities>

<sup>21</sup> <https://fashionista.com/2015/06/knyttan>

Rapha's customization platform provides easy to use templates and previews of the new designs<sup>22</sup>.

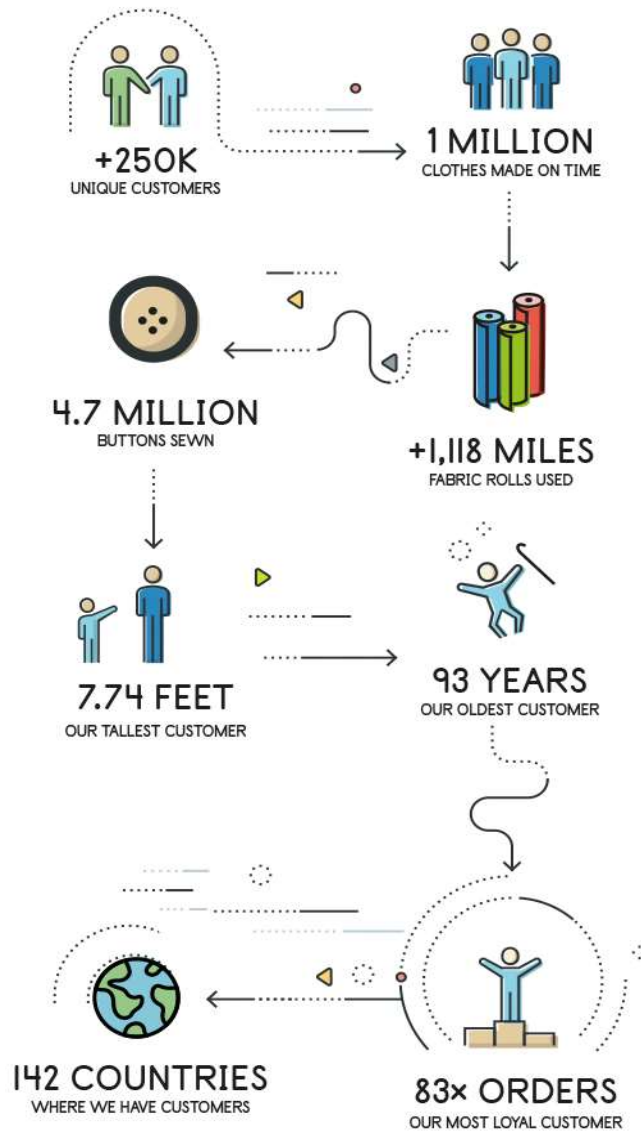


Figure 7 - Hockerty business scope. Source: <https://www.hockerty.com/en-us/info/aboutus/>. Accessed on 01/08/21.

New Balance and Unmade have partnered to allow consumers to create the upper part of a knitted shoe. Available at NB1, it offers three patterns that can be manipulated and

<sup>22</sup> <https://www.unmade.com/case-studies/rapha-custom-uses-unmade-technology-to-deliver-its-print-offering/>

six colour options. This allows New Balance to be more efficient and sustainable across the value chain and be on top of consumers' choices<sup>23</sup>.

At Levi Strauss, 80% of the orders of custom jeans are made in available sizes. However, even though there are readily available options, consumers like to customise their items<sup>24</sup>.

Other brands are also trying to innovate through mass customization to enhance consumer interaction in the luxury sector. Louis Vuitton (figure 8) is one of them, allowing consumers to personalize items with an 8-week delivery time<sup>25</sup>. In addition, customization can be made for colours (inside and out), sizes or details.

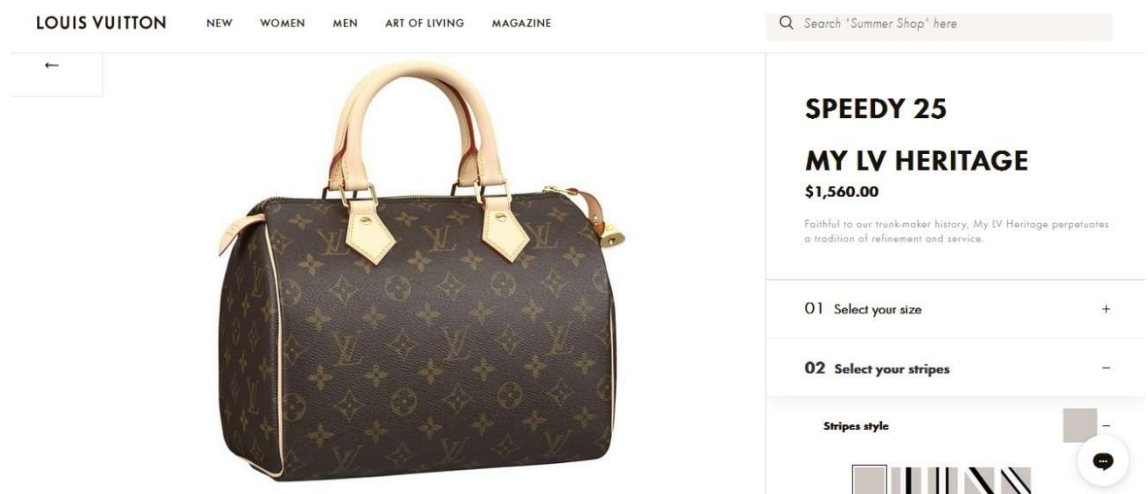


Figure 8 - Mass customization at Louis Vuitton website. Source: <https://us.louisvuitton.com/eng-us/products/speedy-25-my-lv-heritage-monogram-008929>. Accessed on 03/08/21.

Ralph Lauren (figure 9) is another example. The brand lets consumers customize several online items with an 8-week delivery time<sup>26</sup>. For example, there are six different designs with 24 colour combinations for polos. A text or different colour logos can also be added.

Although a few years back, Etgar (2008) considered that consumers would not be willing to alter or individualize a well-known brand as they feared losing its social or

<sup>23</sup> <https://www.unmade.com/case-studies/new-balance/>

<sup>24</sup> <https://www.cleverism.com/mass-customization-what-why-how/>

<sup>25</sup> <https://www.crfashionbook.com/fashion/a9988638/louis-vuitton-customized-bags/>

<sup>26</sup> <https://mr-mag.com/ralph-lauren-doubles-down-on-customization-programs/>

psychological benefits. Not many consumers would want to alter a Louis Vuitton bag (Etgar, 2008).

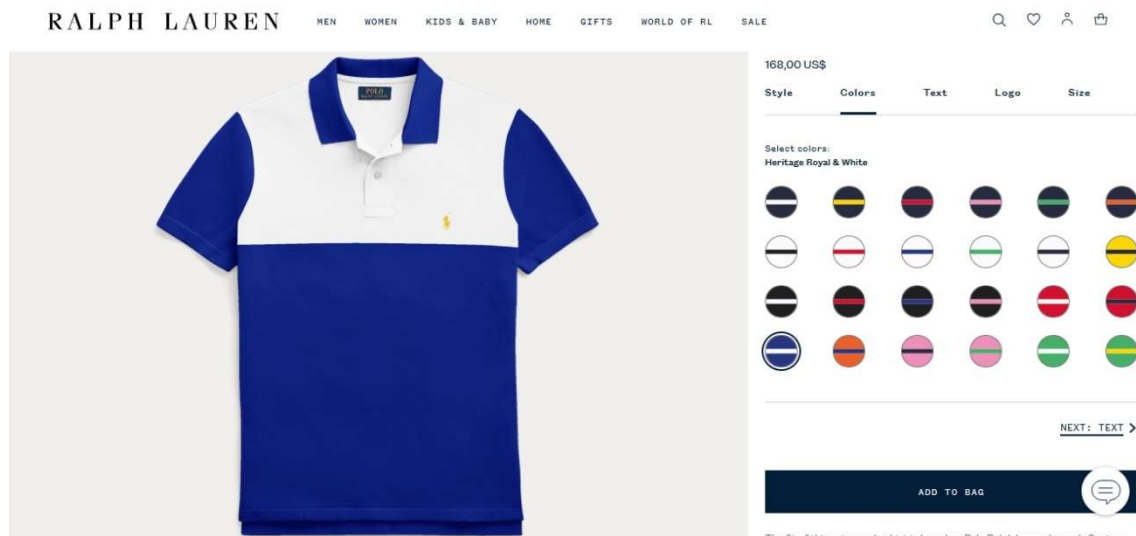


Figure 9 - Mass customization at Ralph Lauren website. Source: [https://www.ralphlauren.com/women-clothing-polo-shirts/the-custom-polo-made-to-order/588160.html?ab=CYO\\_BESPOKE\\_Slot\\_2\\_S1\\_L1\\_SHOP](https://www.ralphlauren.com/women-clothing-polo-shirts/the-custom-polo-made-to-order/588160.html?ab=CYO_BESPOKE_Slot_2_S1_L1_SHOP). Accessed on 03/08/21.

There is also the need to consider that mass customization can be successful for luxury products but not for basic products, as mass customization works better for luxury or high-end items<sup>27</sup>. However, mass customization can be a good strategy for companies that want to offer differentiated and innovative products and services in the long run<sup>28</sup>.

Mass customization can also diminish risks by being able, in the initial stages, to signal products that possibly will not thrive in the market. The initial consumer feedback and mass data can reveal real-time market demands<sup>29</sup>.

Also, in mass production, the product is firstly produced and then paid for by the consumer. In mass customization, the consumer pays the product up-front, giving the company economic leverage (Berger & Piller, 2003).

On the negative side, companies that provide complex products or services based on mass customization can confuse consumers with various products and, consequently, customization parameters. This will lower the probability of consumers making a purchase (Tiihonen & Felfernig, 2017). The cognitive weight of evaluating too many

<sup>27</sup> <https://www.cleverism.com/mass-customization-what-why-how/>

<sup>28</sup> <https://hapticmedia.com/blog/mass-customization-definition-goal-examples/>

<sup>29</sup> <https://hapticmedia.com/blog/mass-customization-definition-goal-examples/>

choices can erase the benefits of having a large offer (Piller, 2004). Companies also need to be able to support consumers with problems and solutions and be able to simplify the navigation experience for the consumers' experience (Piller et al., 2012)

Another issue that mass customization can face is product returns. Of course, it is less usual as products are made accordingly to consumers' requirements, but it still happens. This can create several problems for the companies, especially if the customization of the product cannot be reversed. Furthermore, the chance of another consumer wanting the same product is scarce<sup>30</sup>.

### **2.2.2.3. Mass customization and manufacturing**

Mass customization has been having a sizable effect on the industry's productivity<sup>31</sup>. For some business theorists, mass production will probably be replaced by mass customization. For some businesses will mean less waste and less excess production. Although mass production is still the best production for most companies, the ones adapting to mass customization are now able to get a higher revenue for their products<sup>32</sup>. The two models have significant differences, so mass customization cannot use the same supply chain management of mass production. Also, many companies that try to implement a new management model fail in its implementation, resulting in added cost and lower efficiency (Chandra & Grabis, 2007). So, companies need to lose the normal process of trend identification to develop a small number of standard products. Instead, they need to start looking at and understanding consumers to define the most divergent product attributes. With this knowledge, the company will be able to create an offer that adequately covers consumers' needs, which does not lead to a less profitable operation. To fulfil the different requirements of mass customization and its consumers, companies need to reconfigure their resources and internal organization. With a well-thought process, efficiency can range the one seen in mass production (Piller et al., 2012). However, many companies are not equipped with automated planning that allows them to produce productions other than prearranged amounts.

So, the objective is to create a customizable offer without extreme individualization or else the complexity of the process will increase exponentially (Jin et al., 2020). It is also important to create a relationship with suppliers that can be maintained for an extended period and integrate them into the process (Wiengarten et al., 2017). The management

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<sup>30</sup> <https://www.cleverism.com/mass-customization-what-why-how/>

<sup>31</sup> <https://www.business2community.com/strategy/a-snapshot-of-mass-customization-trends-02244014>

<sup>32</sup> <https://www.cleverism.com/mass-customization-what-why-how/>

of information is another crucial internal or external factor that needs to be combined with manufacturing technology to achieve the best performance. Information flow needs to be fast, and information sharing with suppliers can bring added competitive advantage (Jin et al., 2020). Mass customization can bring abilities, resources and power to companies that can enable them to be leaders in supply chains (Zhang et al., 2017).

Nevertheless, current supply chains are based on the push model, and mass customization is based on the pull model, which is much more complex to manage. Therefore, economically it can be difficult for companies to implement mass customization right from the beginning of the supply chain. However, companies can compromise between mass production and mass customization by creating standard products that can be customized in a subsequent stage. Even when used partially, mass customization can be beneficial as it can attract different consumers. This concept can be applied to both large companies and small companies<sup>33</sup>. Although, according to Brenda French, to achieve the goal of mass customization, a company needs to have its own internal production, as outsourcing cannot achieve this<sup>34</sup>.

When applied in the design phase, it will better satisfy consumers' needs and create a large pool of ideas to be worked on<sup>35</sup>. The reuse of designs already tested and proved to work on the market and configuration variants based on modularity is the essence of mass customization (Wang et al., 2017). Modularity is a design ability related to mass customization (Duray et al., 2000; Peng et al., 2011; M. Zhang et al., 2017). Modularity allows the use of standard parts that can be arranged in different ways or can be used even in different products (Tu et al., 2004). Product modularity also allows companies to have higher flexibility and a quicker response to the changing requirements of the markets (Peng et al., 2011; Salvador, 2007; M. Zhang et al., 2017).

Although all the positive aspects, there are also some limitations, such as the scarcity of the consumers' participation in the design stage and the possible combinations that the designers choose. Additionally, mass customization does not intend to assure that individual needs are met, and it does not provide personalized products or services (Wang et al., 2017).

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<sup>33</sup> <https://hapticmedia.com/blog/mass-customization-definition-goal-examples/>

<sup>34</sup> <https://www.cleverism.com/mass-customization-what-why-how/>

<sup>35</sup> <https://www.cleverism.com/mass-customization-what-why-how/>

So, it is expected, according to Muehlbauer (2017), that companies will start looking at mass customization to satisfy consumers better and consequently increase brand reckoning and the disposition of consumers to pay more for the products.

## **2.3. Fashion design**

### **2.3.1. Design methodologies**

Before fashion design is looked into, it is important to understand fashion and its design. It is a process, usually long and interconnected with many intervenient from different areas to reach the consumer with a product. For this process to be possible, work methodologies had to be implemented so that fashion design projects could be created, worked on, and done quickly. Some of these methodologies gave the first steps in the 1950s, and according to Burdek (2006), with methodologies, initially, design became teachable and could then be communicated. Nowadays, design methodologies are well accepted and important as there is a need to do developments in a short amount of time but with greater quality. So, these methodologies can conduct innovative solutions while letting designers be creative simultaneously (Weber, 2010). Burdek (2006) also says that it is ever more necessary to test products before producing them to guarantee that they will meet consumers' needs and wants. This requirement is because most consumers have difficulties stating their preferences over the design, and it is simpler for them to see or hear.

As a multidisciplinary activity, the design seeks to solve problems and create the best product aesthetically and practically. Although, basic needs should be fulfilled before satisfying more demanding needs.

Also, in developing the products and their design, several different methods can be used depending on the project type and its intervenient, as seen in figure 10.

Some of the most interesting methodologies for the fashion design field were compiled, as these can give a broader idea of how design methodologies can be different from area to area and even between them. Although methodologies focused on design should be the ones to be explored, engineering-focused ones are also relevant as they cross boundaries and can also be important for design developments.

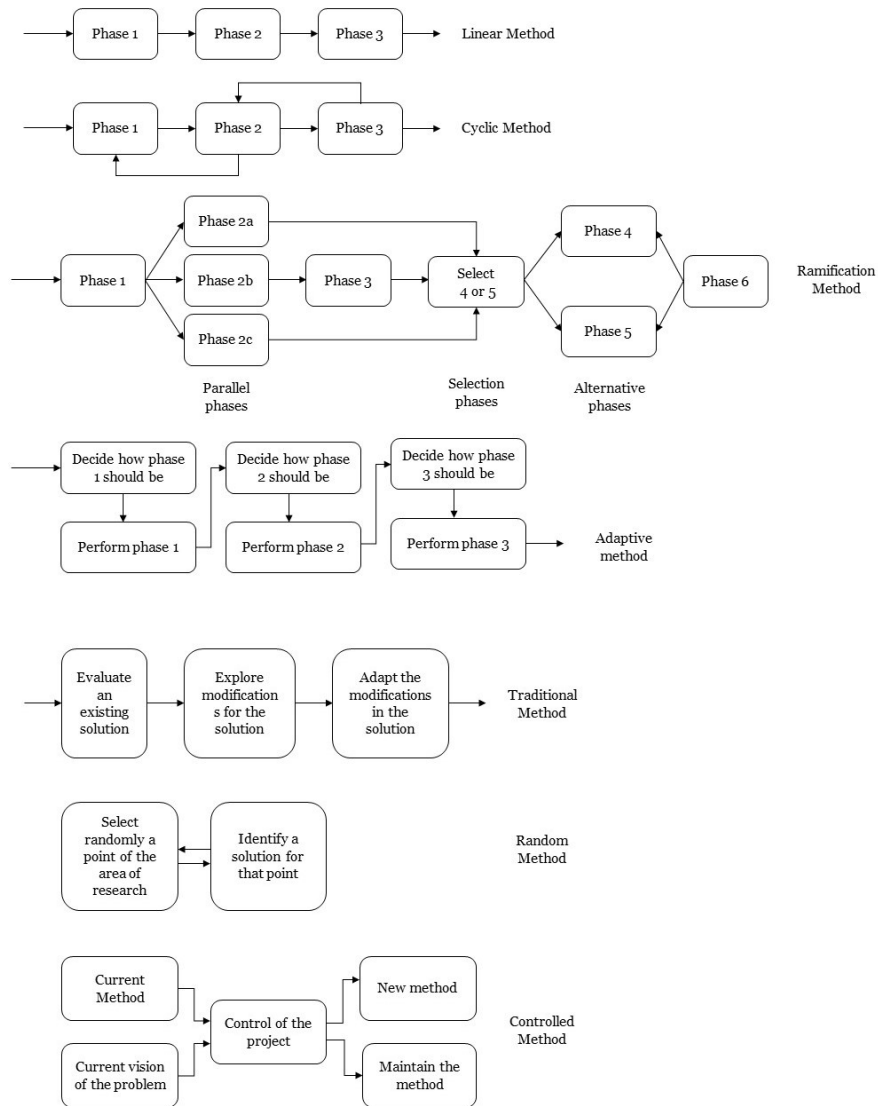


Figure 10 – Diagram of the methods classification. Source: Weber (2010)

Morris Asimow developed a methodology (figure 11) that is seen as more focused on engineering, although the chronological order in which it is applied makes it suitable for most projects. It has a series of main stages that usually are not started until the previous one is mostly finished. The methodology is divided into the feasibility study, preliminary design, detailed design, planning for manufacturing, planning for distribution, planning for consumption and planning for the removal. This methodology is based on the combination of a cyclic method and a control method. So, this model could be easily applied to a design project as these basic stages are common in the field, and the planning for removal could be an important factor for applying a circular model in terms of sustainability (Linden et al., 2011).

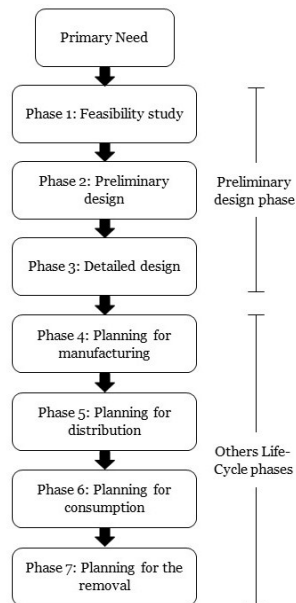


Figure 11 – Diagram of the Morris Asimow methodology. Source: Linden et al. (2011)

The Bruce Archer methodology (figure 12), also related to engineering, is an interesting one as it involves interactions with consumers and other information sources as it happens in a co-creation context. The methodology is divided into planning, data collection, analysis, synthesis, development and communication. This methodology is based on the combination of a cyclic method and an adaptive method (F. Barbosa et al., 2010).

Bruno Munari's methodology (figure 13) is connected to design and is a linear one. The tasks are supposed to be made progressively. The process is divided into the problem, the definition of the problem, components of the problem, data collection, data analysis, creativity, materials and technology, experimentation, models, verification, constructive design and solution. This methodology uses Bruce Archers' methodology to unfold the problem so that the various solutions to the subproblems can be balanced to find the ideal path (T. Barbosa, 2013).

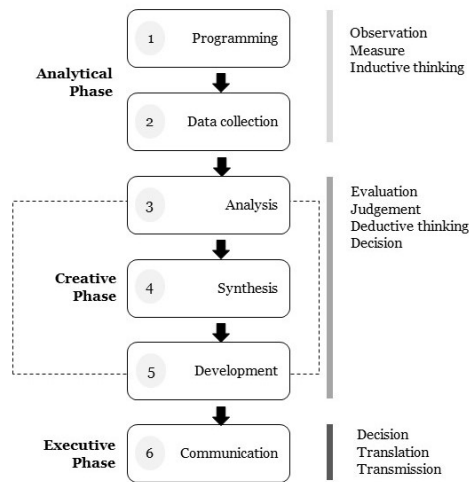


Figure 12 – Diagram of the Bruce Archer methodology. Source: F. Barbosa et al. (2010)

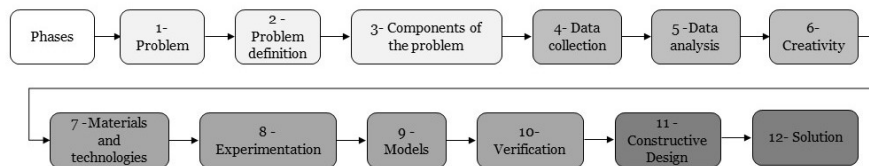


Figure 13 – Diagram of the Bruno Munari methodology. Source: T. Barbosa (2013)

Gui Bonsiepe's methodology (figure 14) is also related to design and emphasizes the analysis, the definition of the problem and drafting of the project. The methodology is divided into problematization, analysis, problem definition, draft of the project/alternative generation, project and additionally, gives an idea of methods to be used in different phases. This methodology is based on a cyclic method, although there is no feedback/forward indication. Although, Bonsiepe finds that returning to previous project phases is acceptable (Fillmann, 2013).

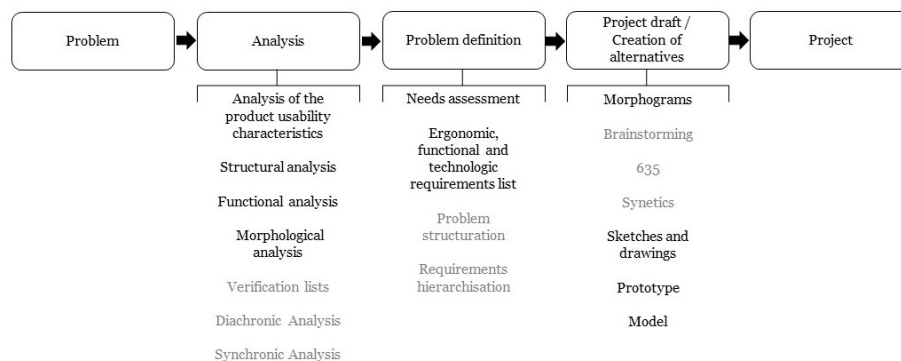


Figure 14 – Diagram of the Gui Bonsiepe methodology. Source: Fillmann (2013)

Pahl and Beitz's methodology (figure 15) is complete and precise. The methodology is divided into task, requirements list, concept, preliminary layout, definitive layout, product documentation and solution. Each phase unfolds in different stages and activities that must be concluded to advance to the next phase. However, there is the possibility to improve the project till the final stage, until the solution is reached. This methodology is based on a cyclic method with pre-determined regressions (Mocko & Fenves, 2003).

The Stuart Pugh methodology (figure 16) is multidisciplinary, allowing different professionals from different areas to work together, making it suitable for design when it is part of a process. The group should analyse the ideas and not in an isolated way, and there should be constant information sharing. It also focuses on improving products in what comes to manufacturing ease by using fewer and standard components and recycling. This methodology is divided into market, specification, concept design, detail design, manufacture, and sell. This methodology is based on a cyclic and adaptative method.

Mike Baxter's methodology (figure 17) can be applied to both engineering and design. Baxter's methodology is based on design management and is complemented by professionals from several company areas that will define the strategies to achieve innovation, supported by market testing. The methodology is divided into business opportunity, project specification, conceptual project, configuration project, detailed project and manufacturing project. This methodology is based on a cyclic method with pre-determined regressions (Weber, 2010). It is also available what project activities were used in product development (figure 18).

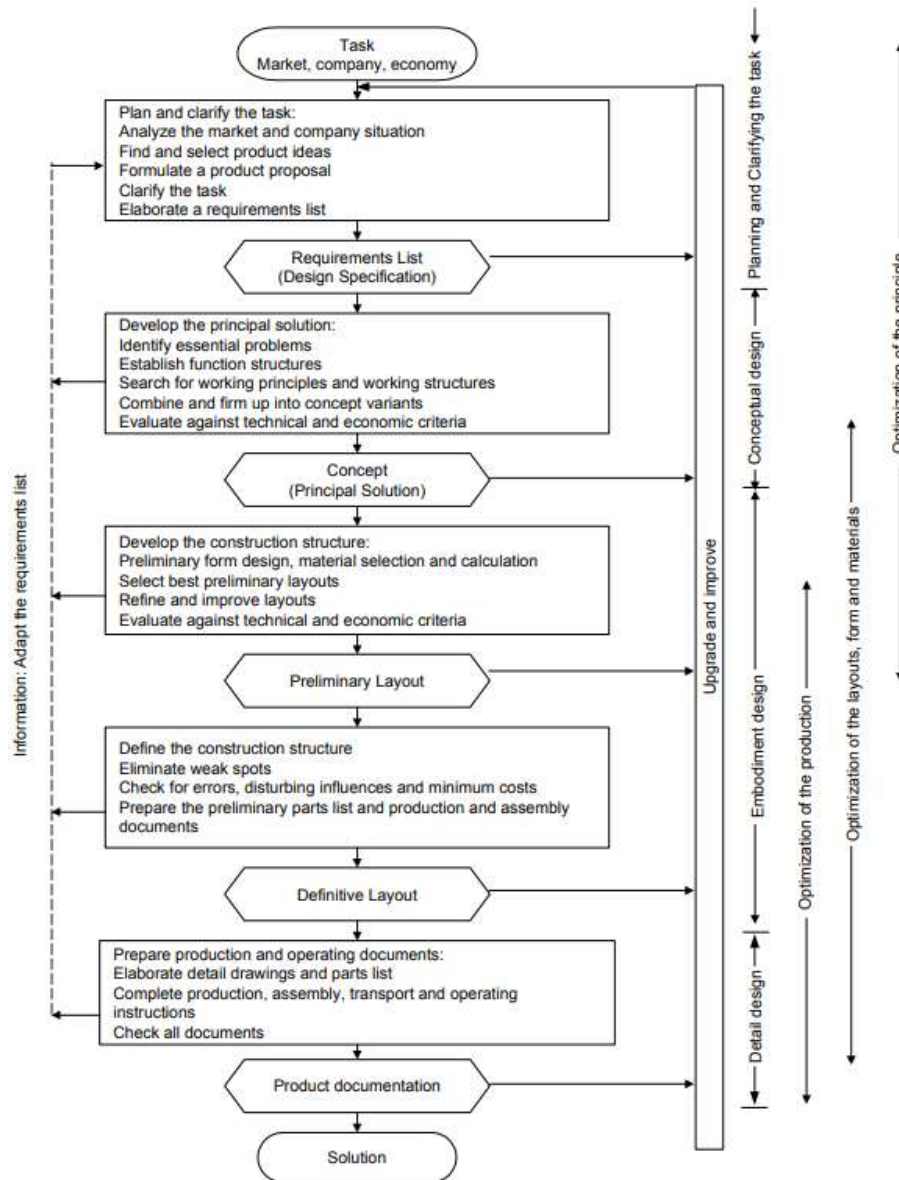


Figure 15 – Diagram of the Pahl and Beitz methodology. Source: Mocko & Fenves (2003)

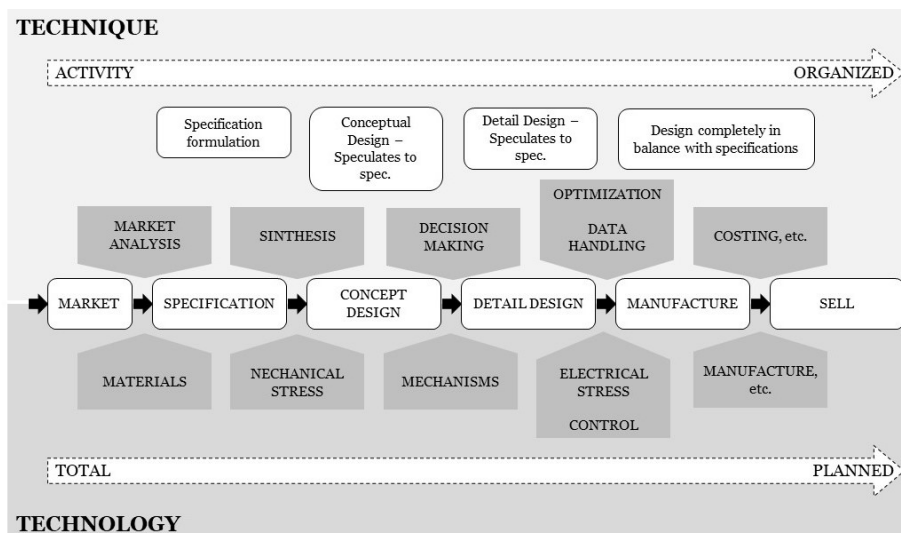


Figure 16 – Diagram of the Pahl and Beitz methodology. Source: Owens (2009)

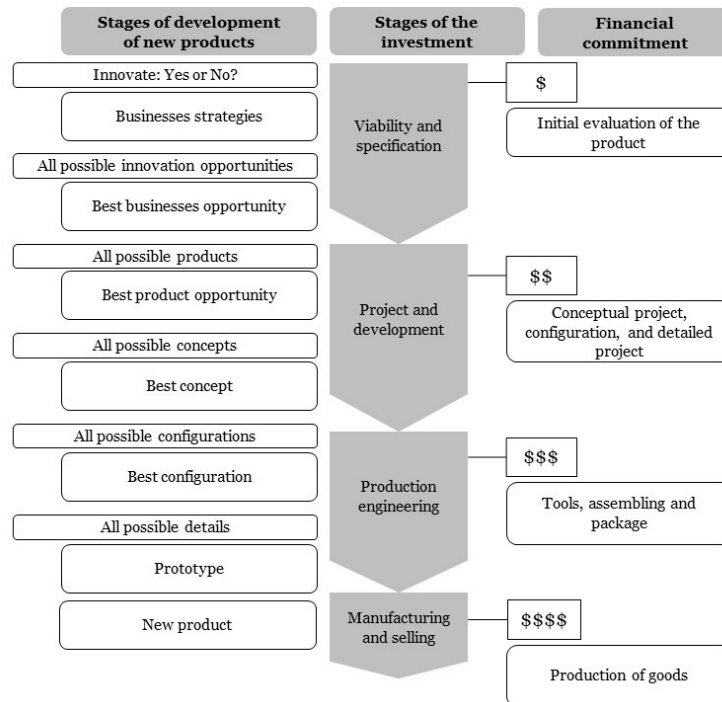


Figure 17 – Diagram of the Mike Baxter methodology decision making stages. Source: Weber (2010)

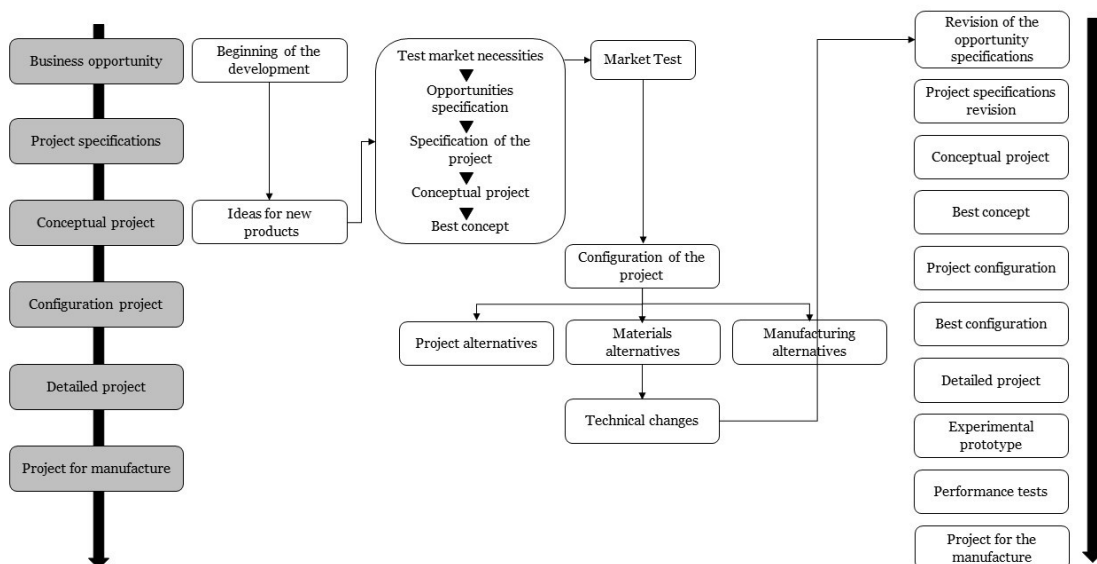


Figure 18 – Diagram of the Mike Baxter project activities in product development. Source: Weber (2010)

### 2.3.2. Fashion and design

The design itself appears when there is the intention or objective of finding a solution for a problem. According to Dieter Rams, design is created based on innovation, combining

utility with aesthetics. Good design should be discreet and durable, looking into details and environmental concerns (Klemp & Ueki-Polet, 2011). Design is also seen as a problem solver for situations that need creativity to find a solution (Frow et al., 2015). The design is developed throughout a series of phases being its final objective the conception that can reflect the solutions found along the several stages of the methodology. That knowledge allows the designer to find solutions that best suit the consumers' preferences.

The designer itself is someone free of artistical preconceptions that do not value more aesthetics than functionality or other qualities of the product and constantly works so that the public can understand the product. Analysis of social, scientific or artistic areas is done to understand what already exists and why and how it was created to develop more suitable products. So that this is possible, the designer needs to understand consumer demands, how aesthetics and functionality can coexist, and the technicalities regarding materials and manufacturing.

The sustainable design aims to reduce environmental impacts based on renewable resources and ecoefficiency (Pal, 2017). Also, it aims to create a sustainable industrial process based on product, design and processes in order to improve natures' well-being and culture and, at the same time, generate economic value (McDonough & Braungart, 2002). Sustainable design also aims to create products that can balance the economy and society and create products or services for long-term usage (Pal, 2017).

Regarding design in fashion, the division of collections into two seasons was initiated in the 19th century. It is understandable the usage of warm clothes in the winter and light clothes in the summer. However, in the beginning, seasons were also influenced by cultural divisions, especially the lifecycle of the upper classes in the western largest cities. There were theatre and balls in winter, and in summer, it was the time to move to the countryside. So, winter was characterised by tailored and festive garments, and summer was characterised by informal and simple garments with lighter and colourful materials. During the 20th century, the fashion industry left the bi-seasonal calendar minimizing the risk of consumers changing their tastes due to shorter production cycles. The frequent inclusion of new products in stores made consumers come back more often, knowing that products would not be available for long (Skov, 2006).

Fashion will always attract and influence individuals in their choices. Thorstein Veblen in 1899 and Georg Simmel in 1904 were among the first to relate fashion with social differences and integration (Charles-Clemens, 2000). Veblen indicates three situations

that caused fashion to appear and to evolve later. First, the higher classes wanted distinction between themselves. Secondly, they also wanted to be distinct from the lower classes. Thirdly, clothes should be swapped as soon as they are out of the current fashion standards. Simmel, in 1904 prefers to explain fashion as being a social process that can offer at the same time social distinction but also integration. Fashion emerges from the higher classes' imitation, creating new styles to continue differentiating themselves (Charles-Clemens, 2000).

As for fashion itself, it is seasonal and has several interconnected factors, from the prototype creation to the orders, manufacture and sales (S. J. Jones, 2005). New trends usually need some time until they are accepted, and generally, they come up in one season, but only in the following season or even the following year will they be accepted (S. J. Jones, 2005). Although consumers are always looking for new products, they are usually ready to pay higher prices for the novelties. When new garments first enter the market, they will be gradually accepted while their price also gradually decreases. Similar products come into the market with increased competition, and prices go down, reaching their maturity. The product decline starts when the product wears out its novelty and importance in terms of trends, leading to a lower number of sales and, consequently, going into sale. After the sale season, a new cycle is started with new products. Also, it is not unusual for brands to launch limited editions or capsule collections along with seasonal collections.

Fashion is also a very scheduled process due to the number of intervenient involved in the supply chain. Development and presentation of collections involve a series of steps starting with trend research and the development of moodboards. These moodboards help with the definition and visualization of the products' meaning and facilitate the creation of alternatives and the definition of the semantic and symbolic aspects of the product (Weber, 2010). According to Baxter (2000), the moodboard should represent its meaning and the emotions that it intends to transmit at even the first glance. The moodboard should have images that simplify the products' meaning. It also has the objective of guiding the team to develop products within the same style and enabling a consensus among the team. The moodboard must be clear and coherent and should also represent the needs and style of the target audience. It can guide the team so that the colours, shapes and textures identified can be applied in the product's development. Baxter (2000) even adds that an additional panel can be built, considering the moodboard, that can have several products in line with the previous and have the same meaning as the intended image that wants to be transmitted. That will enable the team to explore well-succeeded products from the present and the past. Images of these

products should be clear and in colour so that all the aesthetic elements like colour, shape, style and configuration can be easily understood.

After these first stages visiting or being visited by suppliers, in fairs or at their/our offices to see the new fabric and trim collections is the next step. Furthermore, an important one, as materials will profoundly influence the product's aesthetic and functionality and ultimately its success in the market. Although it is easier to visit all suppliers simultaneously, as the information acquired during this process is vast, and it is better understood when everything is seen and done in the same timeline or in a couple of weeks in a row. For a few days, twice a year, fashion fairs like Milano Unica, Première Vision or Munich Fabric Start, among others in different geographical areas, are held, bringing together suppliers, manufacturers and brands from different countries. These fairs can provide meetings, networking, trade and dissemination of knowledge (Skov, 2006). Usually, these fairs can be more orientated toward menswear, womenswear or childrenswear. They can also be segmented by type of product and also by high, medium or low-end products (Skov, 2006). It is possible to find new suppliers or new B2B clients at these fairs. They are a source of relevant information about what products textile and trim companies are looking for and what innovations are coming into the market. It is also a way of having a more in-depth look into trends and a source of new creative ideas.

After this stage is the product development of new products that might have been started prior to or after this stage. In this process, the brand identity is important as every brand has a different strategy and style already defined that will be the basis for new developments. Usually, a collection will have a formal coherence that comes from a series of garments interconnected through repeated details or evolutions of these, colours and or silhouettes. At this stage, products are designed and tested in one or more prototyping stages, and colours, textiles, and trims are selected and tested. Material selection is crucial for the success of a garment and for its overall behaviour in what comes to garment usability and aesthetics. According to Costa (2021), garment development is now more connected to materials. The advances in machinery, processes and finishes have been making it possible to produce, for example, fabrics with anti-virus properties, among others, that were not possible some time ago and have been in part enabling the reinvention of even the simplest of garments.

Soon after the production of the collection is done, after all the developments have been fully finished, or, in the case of some of the styles, cancelled.

At the end of the process, the collection is presented to buyers or in fairs like Pitti or Momad, and it still can be further presented directly to B2B customers, depending on the business type. When it comes to buyers from large department stores, these can request alterations to specific garments or request key garments missing, taking into account sales reports from previous seasons. Sales reports are usually shared between buyers and brands for better accuracy in new product developments (Millspaugh & Kent, 2016).

Although depending on the brand and its business, the process might be different. For example, a fast-fashion brand will develop new products at least monthly and does not rely on fairs to present collections. They can have their stores or be also present in department stores that usually will display part of the entire collection. Brands working in a model that the costumers can mix and match styles with a series of fabrics on offer usually will show only a selected part of the offer and not the entire collection. Brands working on mass customization or co-creation will still follow trends. However, the seasonal concept and presentation might differ as the consumer will be more important in the process. So, fashion design itself can be conducted differently from brand to brand, and it is bounded by the social and technological advances, as it has been from its early times. Still, what the designer does is unique, and the designer will always want to stay ahead of every other intervenient involved (Maltzahn, 2016).

As for technologies, 3D virtual designs are starting to gain notoriety and will likely let fashion design advance further in the digital world by letting brands design and present, in an easier way, their collections through digital catalogues or digital showrooms.

“In order to fulfil customer’s requirements, 3D software gives the possibility to simulate, evaluate and modify within the same environment by shortening time and realizing a virtual presentation of garment prototypes. Starting from an idea to a virtual garment design, sewn, draped over a 3D body model and evaluated in terms of fit can contribute even to sustainable fashion. This is evident by realizing adjustments, modifications, and reducing the number of prototypes evaluated as not attractive.” (Spahiu et al., 2021, p. 4).

Gonçalves (2021) referred that it is already possible to create a garment collection without producing them, based on the videogames and cinematographic technologies. However, specific garments will still need to be produced depending on their fit. Also, designers are not as connected with 3D as with 2D, so the process might be challenging to introduce without specialized personnel and the right software.

According to Maghan McDowell from Vogue business, Carlings sold out a digital collection of genderless, sizeless garments with a limited production to as many as twelve units in a week (figure 19). Customers supplied photos, and Carlings worked them to look like the customer was wearing the garment. They used digital tailors and are expecting to launch a second collection with added styles (McDowell, 2019).

The Fabricant is another example of a company already working on digital design, having projects with brands such as Tommy Hilfiger, Puma (figure 20), Adidas or Under Armour (figure 21). Puma reduced its time to market the products and reached 30% cost efficiency. Reducing waste goes beyond the production cycle. Puma wanted to make its marketing more sustainable. The images are 100% digital, eliminating the need for sampling, handling, travelling and logistics<sup>36</sup>.



Figure 19 - Digitally designed Carlings's Silverhood metallic track pants. Source: McDowell (2019). Accessed on 08/07/21.

“Under Armour benefited from higher engagement 3D visuals and significantly reduced time to market and waste of resources.”<sup>37</sup>

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<sup>36</sup> <https://www.thefabricant.com/>

<sup>37</sup> Under Armour — The Fabricant



Figure 20 - Digitally designed Puma sneakers. Source: <https://www.thefabricant.com/puma>. Accessed on 08/07/21.

Kerry Murphy, the founder of The Fabricant, believes consumers will spend as much on digitally designed clothes as they will on physical items. However, this is still a slow process, as Kerry Murphy reported that a team of five spent three weeks plus overtime visualizing 15 pieces (McDowell, 2019).

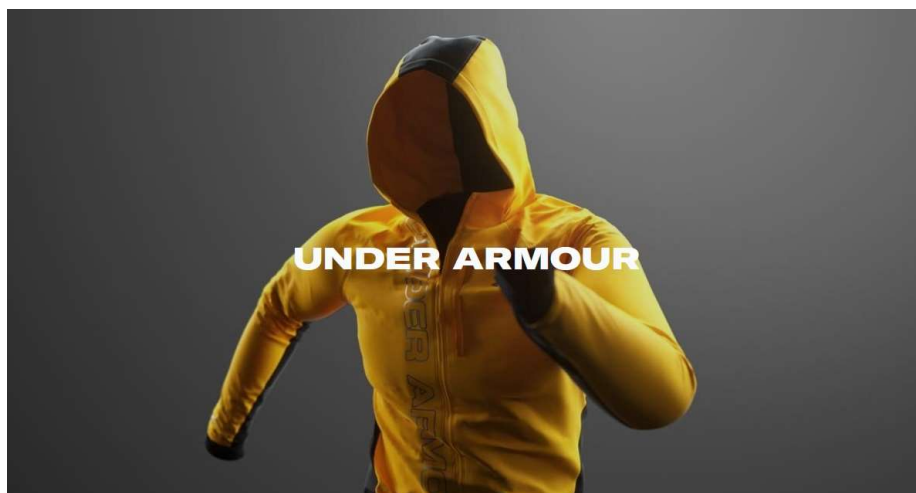


Figure 21 - Digitally designed Under Armour hoodie. Source: <https://www.thefabricant.com/underarmour>. Accessed on 08/07/21.

For Hedrich et al. (2021), the virtual design will enable faster, cheaper and more flexible product development. This recent trend related to the metaverse happens as younger consumers spend more time online, and virtual goods gain interest and, consequently, value. These virtual goods can be explored having in mind non-fungible tokens, gaming and virtual fashion (Balchandani, Ekelof, et al., 2021). One example was Adidas which collaborated with The Fabricant and model Karlie Kloss and launched a contest to create the WindRdy parka jacket as a non-fungible token (Amed et al., 2021). With live

streaming and augmented reality, this path seems to be aligned with what markets expect (Amed et al., 2021).

As for design, in the co-creation process, “it will change how we design, what we design, and who designs. It will also affect the tools and methods that the new teams of co-designers will use.” (Sanders & Stappers, 2008, p. 15). Nevertheless, the highly developed skills that characterize designers will be needed. Designers are good at capturing visual information with creative processes. They have expert knowledge, so they will also be involved in designing tools for consumers to use for creative expression. Designers will also keep track of new trends, and besides, they have production and business knowledge (Sanders & Stappers, 2008) which makes them the ideal middle-man. They have more expert knowledge than others and will be needed on the teams. “[...] even in the design profession there is considerable specialisation. The skills, knowledge and methods of an interior designer, an interaction designer, a graphic designer, etc., are quite different. These professions will not disappear overnight as “users” become co-designers.” (Sanders & Stappers, 2008, p. 12). “Bringing co-creation into design practice will cause a number of changes to occur. It will change how we design, what we design, and who designs. It will also affect the tools and methods that the new teams of co-designers will use.” (Sanders & Stappers, 2008, p. 12).

Millspaugh & Kent (2016) also give an overview of the points of interaction of the designer on co-creation in figure 22.

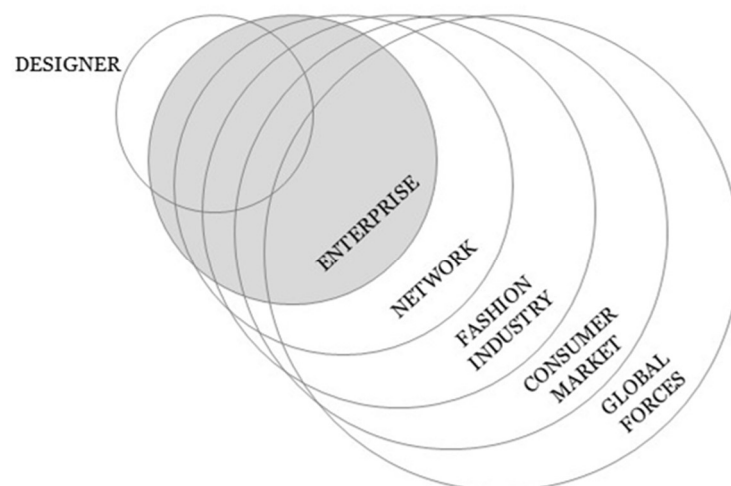


Figure 22 - Diagram of the co-creation points of interaction. Source: Millspaugh & Kent (2016)

The points of interaction of the designer on co-creation are with the enterprise and its network, meaning that the designer knows the brand and its network. The fashion

industry with its suppliers and manufacturers, the consumer market and finally, the global forces, giving him a complete perspective about the product cycle that will enable it to be essential in the co-creation process.

### **2.3.3. Fashion and business**

In Europe, in terms of the manufacturing industry, the textile and clothing one is significant as it employs around 1,7 million persons, representing 6% of the workforce in the manufacturing industry in Europe, and at a turnover of around 166 billion Euros per year<sup>38</sup>. Unfortunately, however, it is one of the most polluting sectors, the most usual ones the energy, water and chemicals usage and the emission of CO<sub>2</sub> and the post-life creation of waste by the garments themselves (Resta et al., 2016; Koszewska, 2018).

Furthermore, to add to the previous, one of the most significant industry problems is the culture of excess and how much is needed to be produced to achieve a sale. Because forecasts are no longer guaranteed to work along with consumers' needs, overstocks became standard, along with clothes discarded by consumers only after a few uses (Carvalho, 2016).

As for the brands, the top 20% actually have profit, while the remaining ones try to be seen and survive. What can explain this is their diversity in terms of the type of products, the number of different channels they use to reach the consumers, and their focus on consumer behaviour changes (Hunter et al., 2018).

Recently with the massive decrease in the profits in 2020 due to the dissemination of COVID-19, the industry was affected hardly. This led to an expected decrease in consumer shopping even in 2021, although consumers are buying more online (Achim Berg, 2021) and not relying as much on offline channels. Consumers also are not adopting digital solutions equally for all types of commerce or services. For example, in the United States and Europe, digital channels grew less in the apparel sector than in other sectors, probably because the already highly digitized sectors had less room to grow. Also, in the six months prior to April 2021, some consumers decreased their use of digital channels favouring physical spaces (Hajro et al., 2021).

Although, social media shopping seems to be starting to be an exciting market for fashion companies by captivating the consumer with a seamless shopping experience. An example of this was the launch of the Shop feature on Instagram, which captivated

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<sup>38</sup> [https://ec.europa.eu/growth/sectors/fashion/textiles-clothing\\_en](https://ec.europa.eu/growth/sectors/fashion/textiles-clothing_en)

brands such as Chloé, Marc Jacobs, Oscar de la Renta and Michael Kors (Amed et al., 2021).

Nevertheless, consumers now are buying fewer clothes and footwear than they used to and not only because of the interruption in stores' availability to receive consumers but also because the occasions to dress up are now far more scarce (Achim Berg, 2021). On the reverse side, athleisure and casual wear have been far more in demand (Balchandani & Berg, 2021). So the consumer now wants less but with more transparency, which brands are now trying to achieve. Additionally, it became more challenging to forecast what would be on-demand, making brands change their offers to have fewer products, sizes, and stocks on standby (Achim Berg, 2021). Although, it is expected to be a surge in demand again, and with it, most likely inflation of the prices in 2022 due to supply chain stresses like material shortages, increased materials costs, logistics delays and increasing shipping costs (Amed et al., 2021).

McKinsey & Company surveyed fashion executives (figure 23) to understand the main measures they intended to implement to avoid overstock, and 61% responded that having less stock standing by would be the most critical measure, followed by the improvement of the analytics to analyse consumers. Not far behind, it is possible to see in figure 23 that 56% want to implement a more agile supply chain, and 54% also intend to revise the offer either seasonal or for the basics. Furthermore, 47% also want to implement advanced analytics in the assortment planning, and 43% expect to reduce the product development lead time (till the moment it reaches the supplier). Finally, with less impact, 37% want to change their assortment to a seasonless one, and 30% expect to reduce the number of collections<sup>39</sup>. So, fewer stocks, more agility, digitization and rethinking the offer for easy to sell products can also be seen as general goals for an industry reorganization from the creation to the consumer.

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<sup>39</sup> <https://www.mckinsey.com/featured-insights/coronavirus-leading-through-the-crisis/charting-the-path-to-the-next-normal/for-the-fashion-industry-and-fashionistas-everywhere-less-is-the-new-more>

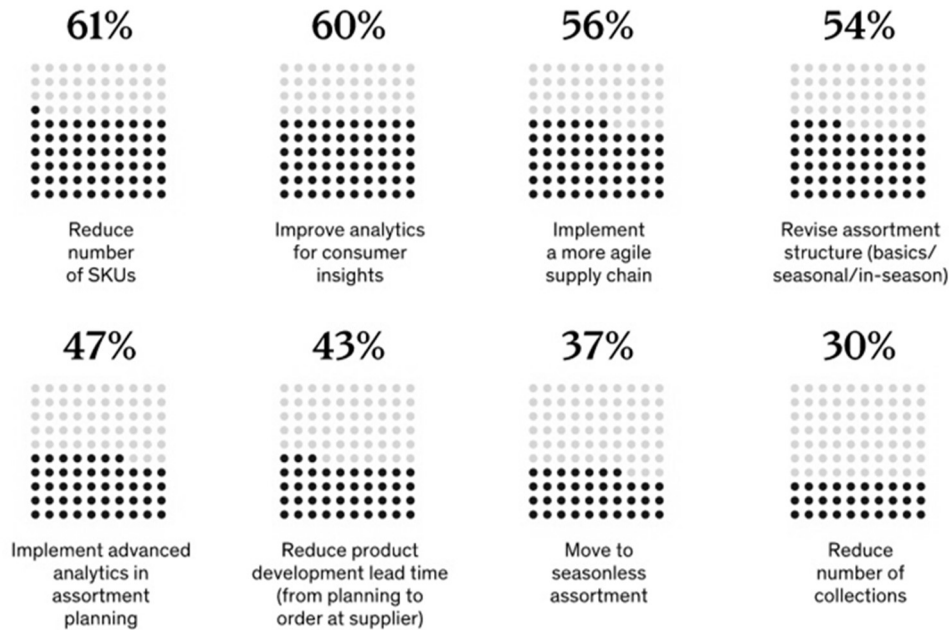


Figure 23 - Levers that fashion executives say they will implement to avoid overstock, % of respondents. Source: <https://www.mckinsey.com/featured-insights/coronavirus-leading-through-the-crisis/charting-the-path-to-the-next-normal/for-the-fashion-industry-and-fashionistas-everywhere-less-is-the-new-more>. Accessed on 17/04/21.

Additionally, Amed et al. (2021) also refer that consumer engagement should also be on top of the priorities. Executives see it as a new opportunity for 2022 as differentiated online, and offline experiences are becoming more important for both online and offline brands to differentiate themselves from others. Moreover, about consumer engagement, personalization matters more than ever, along with the digital surge. Now 71% of the consumers want companies to have personalized interactions that are very effective in creating engagement and loyalty. In terms of product personalization, 76% of the brands already consider it a critical point for its success (Rodrigues, 2020). Furthermore, consumers share this ideology as 76% also consider that they are more likely to buy from brands that personalize, and 78% are more likely to return, purchase or refer the brand to friends or family if the brand personalizes products (Arora et al., 2021).

And let us not forget that companies that will implement advanced analytics in the assortment planning will also be able to personalize consumer experiences. According to Devillard et al. (2021), digital sales have grown between 30% and 50% for those companies that could use the gathered data referred in figure 23. Data impact can reach many domains such as the store, online or offline, merchandising, supply chain and logistics, and even sustainability and its management are of the utmost importance.

When forecasting what the consumer is looking for, it is always quite hard to predict what should be produced and what will sell. Susana Bettencourt, a fashion designer entrepreneur, agrees that this is a critical moment as the risk is enormous. If sales are not achieved as the whole business can be lost. However, she does not still know what will be the business model that can achieve a solution to this problem. She thinks that those who can shape their business for nowadays and not look into the market history will have many opportunities (Fernandes, 2018). Costa (2021) also expresses his opinion that doing a collection for selling to resellers is getting outdated.

Maybe the digital channels can help with new business models as consumers who are trying the digital channels are becoming loyal to them. They have as much as 60% of their budget allocated to online purchases, and 33% stated that they would be buying more online in the future (Balchandani, Lau, et al., 2021).

There is an expectation that during 2021 the fashion share online will increase between 20% and 40% in Europe and North America. In April of 2020, the top 100 fashion brands saw a 45% increase in website traffic, and some even cut back on promotions to cope with the number of orders (Gonzalo et al., 2020).

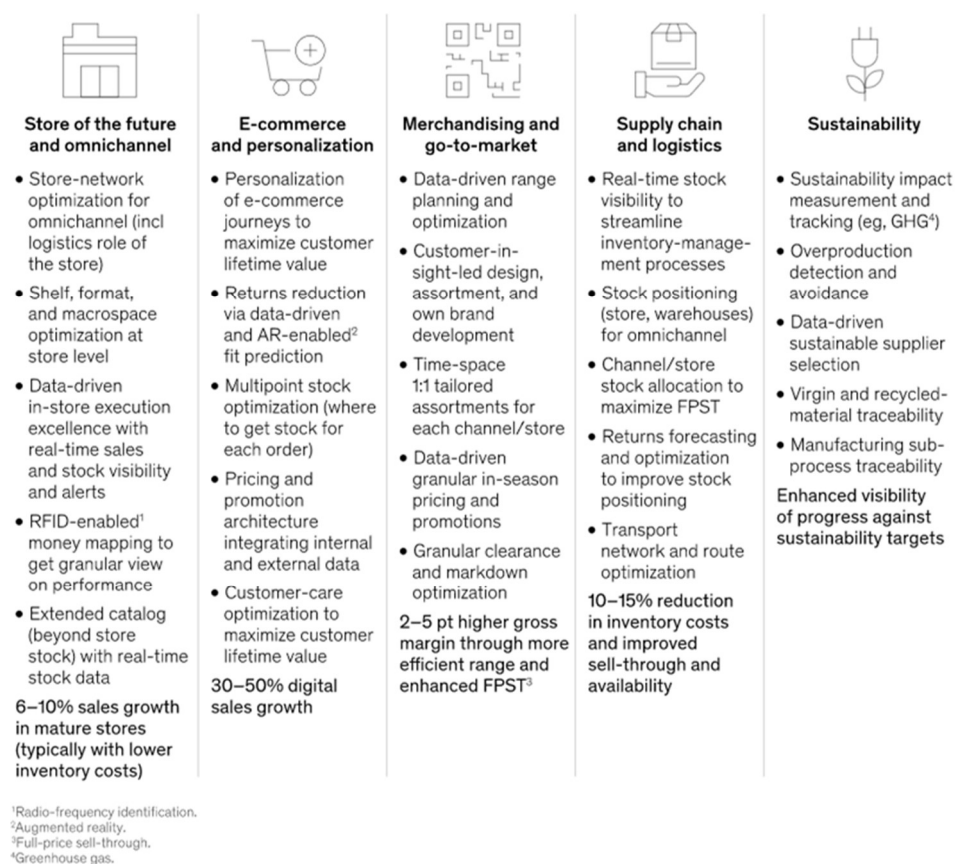


Figure 24 - Data impact domains across the fashion value chain. Source: Devillard et al. (2021). Accessed on 05/12/21.

In 2021, 71% of the fashion executives worldwide were expecting a growth of more than 20%, close to the rise seen in 2020 (Balchandani, Lau, et al., 2021). In 2021 it was expected that 40% of sales would be done through digital channels, and even with the reopening of stores, the online sales would continue to rise (Balchandani & Berg, 2021). Increases of 30% or 50% were seen depending on the type of products and geographical area, although without offline stores, it is impossible to achieve the values of 2019 (Achim Berg, 2021). Digital channels can also help companies with the value chain making it cheaper and faster and decreasing costs with structures (Gonzalo et al., 2020). However, according to Hajro et al. (2021), there is still needed an increase in privacy and security as 44% of consumers do not fully trust digital services, and 56% were dissatisfied with the user experience and the lack of information about products or services.

So, being trendy is now no longer a guarantee of being able to sell and make profits in fashion. Consumers can see or share a trend rapidly on social media, making sales more focused on specific products and leaving others in stock and not being sold even with a great deal (Hunter et al., 2018). Therefore, there is a need to have a reactive capability to create new products (Gonçalves, 2021) to be in line with the demand. Forecasting needs to deal more than ever with the volatility of the consumers' demand, besides the seasonality, trendy products and lack of a history of sales (Thomassey, 2010). In the fashion market, there is a constant need of giving response to questions, such as what categories of products should be created for the different seasons, what segments of the market should be approached, what number of products should be produced, what will be the pricing strategy, what are the consumers' preferences, who will the products be sold to and how sales management will be done. For fashion brands, success in supply chain management also means forecast accuracy. This accuracy can bring the brand a reduction in stocks and markdowns and an increase in profits (Mattila et al., 2002) and reduce the bullwhip effect (Thomassey, 2010).

This reality is even more difficult for small businesses as their forecasting capability is far smaller and producing vast amounts for stocking without certainties is not an option. Paulo Vaz, ATP general director, also stated that many small companies find it hard to find suppliers that want to develop and produce small series. These need larger orders to sustain the influx of productions because they cannot cope with small orders (Fernandes, 2018).

A high risk of failure is related to new products, sometimes reaching 50%. The main reason for this is the lack of understanding of consumers' needs and not due to technical

problems (Piller, 2010). However, Ogawa & Piller (2006) and Hoyer et al. (2010) also agree that the lack of adequation of the products to satisfy consumer needs is usually an important reason for the failure of new products.

Four different phases define the lifecycle of products: when they are launched, when they rise in the market, reach the maturation point, and start to decline by losing sales. Although these might be different in the fashion business depending on the type of products, some basic items are sold all year round or, for example, every summer, like a white t-shirt. Trendy products are sold only for a short period. Bestsellers are sold each year, usually with minor or no modifications. So the forecast focuses mainly on the basics and best-sellers, and the trendy products will not be considered in the forecasts (Thomassey, 2010). Usually, a first order is put to supply the beginning of the season needs, for inventory in-store and in the warehouses, and some additional ones, are put during the season mainly for the basic and best-selling items. The sourcing and manufacture are usually done on a one-year timeline. The replenishment of some products is usually done in a few weeks, meaning that it would be appropriate to have different sales forecasts to cope with the different needs in the long-term and short-term (Thomassey, 2010).

Sales are usually seasonal, as so are the garments, and weather changes might involve increases or decreases in sales. Besides this, also promotions can make a change in sales. Moreover, fashion trends will also impact sales, especially regarding colours, depending on whether they are neutral or trendy. Finally, the availability of sizes and their adequation to the consumers also influence the success of the sales (Thomassey, 2010).

For Little (1998), weather is significant for the sale of clothes, but its forecast horizon is too short. Competition is also an important factor in sales variation, as are their branding or advertising campaigns, but it is also challenging to integrate into a forecast. However, marketing, promotions, and advertisement can be considered by the brand itself. The stores' geographic location also influences sales. Important dates or holidays are other factors of influence, and these can be included in the sales forecast. The places of sale and their evolution also need to be considered. The number of styles, colours and sizes can also influence sales. Additionally, purchasing power or the unemployment rate can also influence (Thomassey, 2010).

Granskog, Lobis, & Magnus (2017) referred that up to 40% of clothes are sold only when they are on sale. Continued discounts also made the selling periods at full price shorter<sup>40</sup>. American Eagle Outfitters are, for example, taking inventory out of the stores and reducing the number of online orders being sent directly by them (Kumar et al., 2021). Others, like Gonçalves (2021), refer that companies now have a model of selling for 48h and then produce only what they sell.

A group of well-known brands, including Isabel Marant and Erdem, have joined efforts to propose a new vision for the industry. They currently believe that retailers need to push the end-of-season sale further on the calendar and stop mid-season discounts. Discounts such as Black Friday or Cyber Monday and put an end to the consumer addiction to discounts. They are already expecting the markdowns, making profitability drop even more significantly for the whole value chain<sup>41</sup>. Additionally, they also stated that this system is ever more damaging to creativity and that it is time to rediscover fashion and slow down<sup>42</sup>.

Besides their branding, what differentiates brands is still the designer's vision with its point-of-view. When it comes to brand value in the fashion industry, there are still two ways brands acquire it. One is through its identity and the services that the brand can get to consumers, considering their needs. The other is through the designer's contribution, especially to designer brands (Millspaugh & Kent, 2016). If designers did not design and put new products into the market, the brand identity would not exist (Millspaugh & Kent, 2016). Although many brands have their own identity, the designer's team changes from time to time. New teams usually follow the brands' branding guidelines not to distort their identity and not risk losing consumers, but of course, with their vision mixed with the brand's vision. In other cases, yes, the designers may be the source of the brand identity when the brand goes through a profound reshaping of its identity through the vision of a new designer. As it happened with Christopher Bailey, at a time when the Burberry check became a symbol of conspicuous consumerism, in some instances hurting the branding. Bailey changed how this was used by changing the consumers' vision of the brand.

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<sup>40</sup> <https://www.rewiringfashion.org>

<sup>41</sup> <https://www.rewiringfashion.org>

<sup>42</sup> <https://www.rewiringfashion.org>

Moreover, recently Riccardo Tisci made a more audacious change in the brand, blending streetwear with high fashion, that nowadays is highly relevant to the luxury consumer. This has been a massive change in its identity for a more classical brand. Even the brands' logo, untouched for more than 20 years, was changed<sup>43</sup>.

Millspaugh & Kent (2016) say that the brand's identity comes from the collections and its products and not from the industry, consumers or designers. To some extent, we could agree with this author. However, although collections are designed by the designer(s) or in collaboration with consumers, it is not only the brand identity that is its source.

So, brand identity cannot be imposed only by brand managers but also need to have the consumers' insights (Brown et al., 2003; Ertimur & Venkatesh, 2010). Contemporary brand management needs to work around particular forms of life, looking into their core consumers (Zwick et al., 2008; Arvidsson, 2011). Still, the academic literature about brands is quite divided between the idea of consumers as creators of brand value and the idea of brand management that looks into brands as a company resource (Arvidsson, 2011). Nevertheless, looking at today's market, it is possible to see that, to some extent, not including or at least looking into the consumer will only lead brands back. The sale of fashion products will depend on the brands' knowledge of its consumers.

Now companies are rewarded for their ability to attract value from external processes, and before, companies were rewarded for extracting value from their internal processes (Arvidsson, 2011). Paulo Vaz, ATP general director, said that a project being built for the fashion design sector must be focused on the market and have marketing concerns. By looking into the market and understanding what it wants, how it wants it and how it should be communicated. Richa Aggarwal, a fashion designer entrepreneur, also agrees that there is a need of understanding the market before going out in the real world. Paulo Vaz, ATP general director, also says that when we can respond to almost the individual needs of consumers, it will be possible to fit even small designer businesses. However, this is pendent on the technological evolution, equipment, companies' layouts, and how they are organized and managed to respond to these needs (Fernandes, 2018).

Moreover, in the last decades, there has been a change in the connection between consumers and companies that Prahalad & Ramaswamy (2004) segmented in table 5.

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<sup>43</sup> <https://www.businessoffashion.com/articles/workplace-talent/riccardo-tisci-is-the-new-creative-director-of-burberry>

Table 5 - Relationship between firms and consumers. Source: Prahalad & Ramaswamy (2004)

From	To
One-way	Two way
Firm to consumer	Consumer to firm
Controlled by firm	Consumer to consumer
Consumers are “prey”	Consumer can “hunt”
Choice? buy/not buy	Consumer wants to/can impose her view of choice
Firm segments and targets consumers; consumers must “fit into” firm’s offerings	Consumer wants to/is being empowered to co-construct a personalized experience around herself, with firm’s experience environment

The general goal now should be to provide emotional experiences beyond the purchase act and not only integrate the consumer into the already existing business models (Maltzahn, 2016). Co-creation should also look for the individual needs in micro-level consumer segments and not only try to make the consumer a cooperator in the product's design.

Consumer retention can be achieved by appealing to central value connections (Maltzahn, 2016). For example, Rowley et al. (2007) said that Kristensson et al. (2004) “[...] examined the benefits of involving users in suggesting new product ideas, finding that ordinary users created significantly more original and valuable ideas than professional developers, whilst professional developers and advanced users created more easily reliable ideas.”

Sepoetro (2018) referred that Wylie-Harris (2018) indicated that more authentic brands are understood by 81% of consumers to be the ones that collaborate with their consumers. Furthermore, 86% think that they are also more trustworthy. For Paulo Vaz, ATP general director, in the future, we will see the well-successful luxury brands and fast-fashion or low-cost brands already with well-structured businesses like Zara or Primark. And somewhere in the middle, we will be seeing brands looking into some kind of customization that will not be for the general public but will also not be in line with the luxury ones (Fernandes, 2018). 25% to 30% of consumers already have a high level of interest in this type of product, making it a market with potential for new brands<sup>44</sup>. According to their needs and preferences, three out of ten consumers already have a product design. Moreover, even consumers who have not bought custom-made products will likely do it<sup>45</sup>. KPMG conducted interviews with around 500 consumers in 2017 and

<sup>44</sup> <https://hapticmedia.com/blog/mass-customization-definition-goal-examples/>

<sup>45</sup> <https://hapticmedia.com/blog/mass-customization-definition-goal-examples/>

found that 43% expect more customization, and 55% do not mind paying more and can pay more for those items<sup>46</sup>.

Nevertheless, although there is consumer interest and managerial interest, Frow et al. (2015) referred that firms usually do not have a process that enables them the identification of co-creation opportunities. Co-creation can offer the potential for managers that wish to improve on innovation. Moreover, if implemented and managed successfully, it can bring to the company two advantages (Prahalad & Ramaswamy, 2000; Payne et al., 2008). Productivity gains will reduce the costs of the operation and improvements in effectiveness by bringing more value to the products, more innovation and more suitable products for the consumers. The reduction of costs comes from the non-existent costs of acquiring new ideas from the consumers, less need for inputs from a marketing perspective, the possibility of outsourcing the development, reduction of the risk of product failure and reduction of inventory holding (Ogawa & Piller, 2006). These can positively influence the company with increased efficiency, product turnover, employee satisfaction, and higher gains (Ostrom et al., 2010). Also, co-created products usually have a novelty factor and are more in line with consumers' expected benefits, adding more commercial attractiveness (Magnusson et al., 2003; Franke et al., 2006; Hoyer et al., 2010). Companies will be more creative if they focus on innovation (Chen et al., 2011).

In business terms, one of the biggest problems of the co-creation process is the lower control from the company over the management and planning. (Hoyer et al., 2010). Also, when a company relies on outside input, it will rely more on consumers' inputs. So that these inputs continue to happen, there is the need to set values that can create a sense of belonging between the company and the consumers (Arvidsson, 2011). The higher the inputs, the higher should be the service (Heidenreich et al., 2015). Companies in the same markets will likely be competing in the future to attract and retain essential co-creators. Although, this competition may damage the co-creation process and its benefits (Hoyer et al., 2010).

Also, the normal process of product development is slow. Hunter et al. (2018) investigated the differences between top and bottom performers brands. They found that the ones performing better usually get consumers' insights and use them in the product design's first stages, enabling them to have products ready in weeks instead of months.

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<sup>46</sup> <https://assets.kpmg/content/dam/kpmg/de/pdf/Themen/2017/consumer-barometer-1-2017-KPMG.pdf>

As a result, these companies can market the products in six to eight weeks instead of the usual forty weeks. For this to happen, fashion brands also need to start operating flexibly in the value chain by adjusting the product development process to shorter lead times and a more comprehensive understanding of consumers' needs (Berg et al., 2020). Furthermore, to stay competitive and efficient, it is also needed to reduce costs in the production process (Thomassey, 2010). For this, industries can be influential by using, for example, new machinery (Gonçalves, 2021).

#### **2.3.4. Sustainability in fashion**

Besides the consumers' inputs, other topics of contemporary importance should be considered in the fashion process. McKinsey & Company made a survey in April 2020 that showed that more than 60% of the consumers make efforts to recycle and want to purchase products with environmentally friendly packaging and 63% consider that a brand that promotes sustainability increases the purchasing factor (Granskog & Lee, 2020). Miriam Lobis refers that younger generations will change the business because of sustainability. Consumers' new demands will change brands, as fully sustainable brands will be on-demand (Granskog et al., 2017). 78% of millennial consumers expect brands to become more sustainable, and 72% feel happier when they buy sustainable products (Rodrigues, 2020). Consumers want to know more about materials provenience, products manufacture and social ethics. Companies are extending sustainability to ever more products and their supply chains, even with passports that will support resale or recycling in the future (Balchandani, Ekelof, et al., 2021). However, although much is being made regarding sustainability, only 13% of clothes are recycled mainly into products with less value, while only 1% are recycled to make new clothes (Pamésa et al., 2021). Another survey from McKinsey & Company made in April 2020, predominantly in North America and Western Europe, to sourcing executives from fashion retailers and brands, revealed that besides coping with the current issues caused by the pandemic, the future focus would be on a more sustainable and demand-centric industry (Berg et al., 2020). Executives also face sustainability as an opportunity even with added costs or problems, as these can be outweighed by the improvement of their company's effect on the society and environment (Amed et al., 2021).

Around the world, the fashion industry creates a vast amount of textile waste yearly. Moreover, textile manufacturing consumes enormous amounts of water besides raw materials. The textile sector in the European Union is the fourth consumer of raw materials and water. A circular loop could reduce the production of raw materials and diminish the amount of textile waste and, consequently, the carbon footprint of this industry (Amed et al., 2021). However, not everything is easy as used clothes, besides

being collected need to be sorted. For this sorting to be effectively done, first products need to be explicitly designed for this end with an easier way to separate the different materials (Amed et al., 2021).

Circular Material Library from Circular Fashion that englobes already tested materials for future recyclability<sup>47</sup> is a good example of where to start the circular process. Products are also being created in this sense, for example, Ecocycle, a dissolvable thread from Coats enabling the easier separation of the different materials (Amed et al., 2021). As these technologies get more familiar, collection and sorting will need to be implemented considerably. In previous stages, such as the product design, the product will need to be thought to correspond to the possible outcomes at the end of life (Amed et al., 2021).

So, sustainable business models are the ones that help the society and the environment by reducing possible negative impacts (Bocken et al., 2014; Pal, 2017). These businesses can be included circular business models that are key for a minor environmental impact because they can extend the life of products and reduce the need for resources, new or finite, and enable the recycling of products (Granskog & Lee, 2020). Figure 25 illustrates how a circular loop works.

The circular economy is a model in which the supply chain focuses on regenerative and restorative aspects enabling the industry to suppress toxic materials, and eliminate waste through design models, material design and product systems (Heyes et al., 2018; Rajput & Singh, 2019). It is a loop based on McDonough & Braungart (2002) cradle-to-cradle principle in which product design focus on being biodegradable or having multiple life cycles. Henninger et al. (2017), as seen in figure 26, illustrates four possibilities of design for the circular economy, taking into account the objectives for the later usage of the product, including the intervenient and its process.

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<sup>47</sup> <https://circular.fashion/en/software/brands.html>

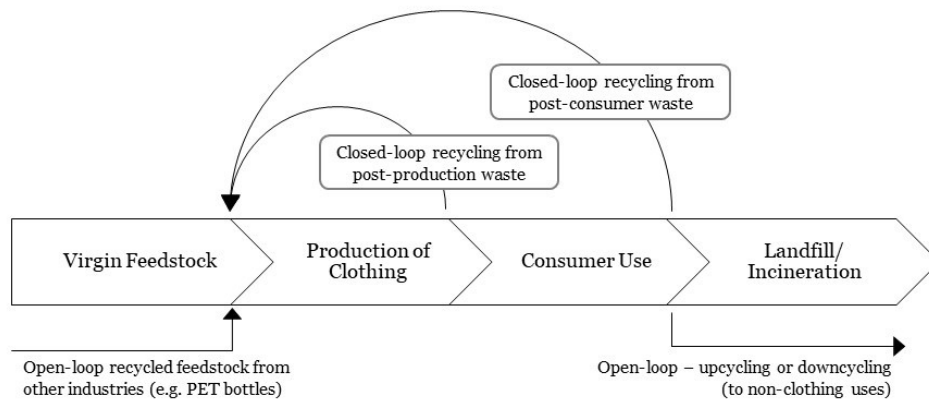


Figure 25 – Diagram of the circular loop. Source: Amed et al., (2021)

Recycling garments at the end of the loop is still a new concept that makes garments recycled into new fibres and then new yarn. Although not losing product quality in the process is still a challenge. Waste recovered during the manufacturing process, as for example, the recovery of fibres lost during the manufacture of textiles and later included in other new products is easier to deal with than waste coming from the consumers. The main problems in the process of products coming from the consumers are the collection and separation and the more problematic unknown usage of chemicals or the composition of the materials. Also, the product quality is hard to know, so it is difficult to understand if it is suitable for recycling (Henninger et al., 2017).

Sustainability will be mainstream in the future, meaning that the efforts of the value chain will be focused on that. We already have organic fibres, artificial from natural sources, animal biodegradable fibres and fibres made from plastic waste. Technological processes must keep evolving to lower the prices of these materials (Pamésa et al., 2021).

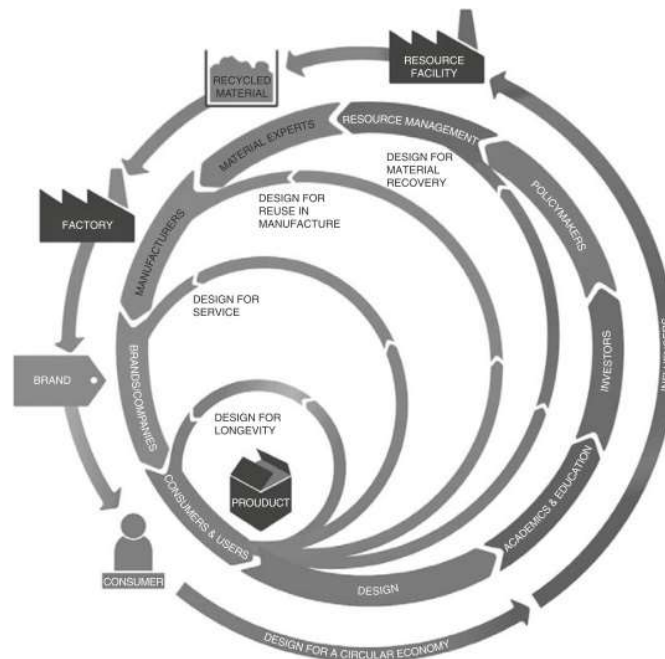


Figure 26 - The four models of design in a circular economy. Source: Henninger et al. (2017). Accessed on 25/06/21

Lane Bottoli, for example, has been offering in the last seasons a range of products that are undyed with the natural colours of the wool<sup>48</sup> or Lanificio Subalpino that offers several products with bio or recycled fibres and with natural dyeing<sup>49</sup>. Penteadora already has fabrics made in part with fibres collected after manufacturing other fabrics, which otherwise would be considered waste.

Nevertheless, of course, sustainability is more than bio or recyclable fibres. It also has much to do with water, energy, or logistics management in the production process. For example, Guabello has a line of products called Impatto Zero that consumes less than 1/3 of water during production and has reduced detergent usage up to 90%. Consumers' traceability of all the processes will also be vital (Pamésa et al., 2021). For example, Dormeuil currently has QR codes for its Tonik® Wool and Echo fabrics that allow the consumer to see the whole supply chain till the manufacture of the fabric<sup>50</sup>.

Pal (2017) also compiled a series of topics considering a sustainable process. For example, the design of ecological products uses a lean and clean supply chain with waste reduction. Product design for an easier disassembly, reuse or recycling. It is made with

<sup>48</sup> <https://www.lanificiobottoli.com/en/pages/lana-italiana-lanificio-bottoli>

<sup>49</sup> <https://www.lanificiosubalpino.com/en/sustainability>

<sup>50</sup> <https://www.dormeuil.com/en/commitments/#tra%C3%A7abilite>

renewable or natural processes. That is functional and not just a product. That includes responsibility from the company for environmental impacts. That encourages sufficiency. That gives priority to social and environmental benefits instead of only economic profits.

As for textile waste management, besides the brand's approaches, governments can still do much. For example, extended producer responsibility is a policy already in place in some countries. For example, since 2008, in France, producers, distributors, or importers have had an obligation to receive back used products for clothes, linens or footwear. Extended producer responsibility puts in place a mandatory process where the company needs to have a system to receive used products or needs to pay entities accredited by the government that will take care of the process (Tojo et al., 2012; Henninger et al., 2017).

Karl-Hendrik Magnus from the Business of Fashion envisions a consumer experience that can eventually bring mass participation to the circular process, where brands create ways of returning the products without hassle. As knowing what consumers have in the wardrobe and reminding them that maybe it is time to bring back those products into the circularity cycle (Granskog et al., 2017). In the near future, a system like this, backed by better data management from the brands, can influence consumers to be more proactive in the process.

Although there is still much to be done and as for the current macro trends, ATP suggests that for the Portuguese Textile and Garment Sectors, till 2030 will be, environmental sustainability as consumers are ever more sensitive to this topic, either for products, materials or services.

Eco-friendly fashion with the resource of digital technologies and new materials for developing new products. Companies' ethic needs to be defended and worked on social media. The evolution of the purchasing power in western countries is expected to rise for women. New ways of advertising and selling are changing with the current crisis and going more digital. Omnichannel 2.0 with a new relationship between online and offline channels for the demand and offer. Bet on e-commerce and marketplaces for a broader model of reaching consumers.

Due to cultural barriers, cooperation between companies is still tricky (Pamésa et al., 2021). In this sense (Costa, 2021) also agrees that cooperation between companies is

needed. This cooperation might secure future innovations and better business outcomes through shared experience, knowledge, and resources for all parties involved.

Besides all the processes that might be put in place to guarantee a new life for used garments, other options might be considered, such as working the garment's attributes to create a greater attachment. Furthermore, designing products to better meet the consumers' needs, making them important and adding value that can make a relationship grow will make the consumer take better care of it and repair it to have a longer lifespan (Niinimäki & Armstrong, 2013).

Niinimäki & Armstrong (2013) found that the attributes that generated a greater attachment to the garment were functionality, the evoking of a memory, the sense of emotional satisfaction, aesthetics, personal values and level of quality. In terms of use, it depends on what type of garment it is, and in terms of meaningfulness, everyday items were the most selected as a simple t-shirt, a pair of jeans or even active wear.

In terms of product attributes, Niinimäki & Armstrong (2013) also compiled the most important ones. The consumers rated comfort followed by a good fit as the most important in terms of functionality. Memories related to youth or childhood were also rated as important. For emotional satisfaction, the fact that the consumer looks good in it and feels good in it. Finally, in terms of design, consumers aim to find products with a good design that are beautiful, pretty and cool looking.

Regarding the materials, the most important attributes were that the garment would have a nice colour and a silky or soft tactile feeling. Uniqueness and durability also appeared as the top ones. In terms of effort invested, the reward for self and being handmade were the most important. Finally, in terms of financial value, the price was seen as the main attribute when related to a good deal and with very expensive.

## **2.4. Consumer behaviour**

### **2.4.1. Consumer needs and elements for the purchase**

For Arriaga (2005), fashion is intimately connected to the consumer, and it is with the consumer that has its start and end. Consumption is nowadays more emotional, and the interest for a designer or a brand appears out of personal feelings because the garment favours the individual, makes him feel good, and brings a sense of well-being (Lipovetsky, 2007).

Murray (2007) stated that the consumer needs to acquire and possess products or services, has needs self-realization by overcoming obstacles, needs to show himself, and attract others' attention. Visual communication is far too important for us to undervalue our self-image. Also, our groups tend to have influence, but our style is the reflex of our personality, being a big mix of influences (Guedes, 2009). The desire to be dressed according to the trends makes the consumers buy modern garments. Buying these modern and seasonal garments usually happens because of the pleasure of buying and not because of a need. The need for consumption has internal and external influences due to our society, habits, social influences, economic power, and age. All of these can influence the choice of a product. Age will influence and change the choices over time. The economic power, for example, will make the difference at the moment of the purchase (Medeiros & Cruz, 2006). Political, economic, social, technological, and ecological factors will directly influence consumers' choices (Arriaga, 2005). When a motivation is identified, it is usually followed by the purchase act. Buying a product or a service out of the ordinary means that it is no longer a need but a desire. That desire often leads us into buying unnecessary products just because they are beautiful (Kotler, 2000).

So, understanding why consumers buy is fundamental in what comes to design or retail strategies (Parment, 2013). Arriaga (2005) states that there are several parameters in the consumer behaviour being that the consumer is increasingly demanding, knows what he wants and how to mix and match the clothes, renews the wardrobe more often, it is always looking for the best price/quality, wants a more personalized experience and buys more in the sale season.

The most common attributes used for product evaluation are the style, price, fabric and store environment. However, design and exclusivity were the factors that had the most significant importance on the buying decision. May-Plumlee & Little (2006) indicate 13 criteria for evaluating garments that can directly influence the consumers' opinion of the product. These comprise the brand, price, colour, style, fabric(s), fashionability, appearance, care label, manufacture, durability, cut, quality and comfort.

Henninger et al. (2017) divided some of the previous into intrinsic quality cues such as the material, manufacture, and fit related to the product's physical part. Where it is manufactured, the brand and the price are extrinsic quality cues. These last are crucial elements for the purchase decision. Also, product quality will be remembered longer. Sometime after the purchase, the price is forgotten (Henninger et al., 2017). Furthermore, many things can dictate the end of the interest in a product, such as not

having the best colour, not having a good quality, the price being too high, not being comfortable or the manufacturing quality not being the best (H. Li et al., 2001).

Nowadays, looking into e-commerce, consumers regard on-time delivery as important (Fogliatto et al., 2012; Wiengarten et al., 2017). Recently, Mckinsey & Company conducted a survey about what consumers deem as most important in retail, as in figure 27, being that communication appears as an important topic. Relevant products and product recommendations are also seen as important. Having the right price/quality and stock/size availability in relevant brands is also seen as important, and good delivery is also expected and wanted. If the delivery is not as expected, the customer will not be satisfied and will be more likely to return the product (Bechwati & Siegal, 2005). The decision to buy or return a product is also based on expectations about the products' behaviour (Minnema et al., 2016).



Figure 27 - What consumers care most about, listed by order of importance in the United Kingdom. Source: Anita; Balchandani et al. (2021). Accessed on 29/05/21.

#### 2.4.2. Consumer engagement and interaction

Besides the previous, Gonzalo et al. (2020) indicate that engagement with consumers via email, social media, and other digital channels has recently increased. Keeping in touch with consumers will help increase sales and, at the same time, will help the brand not to be forgotten by consumers. Consumers appreciate high-quality digital

interactions and innovation. Generation Z is proof of that for social media brand marketing. Brands must create meaning, as this generation, for example, is more likely to buy due to peer-to-peer recommendations (Wylie-Harris, 2018). Online feedback and the products' price are usually the primary factors consumers look for when buying. If a product gets well rated, it can rapidly become a best seller, especially if it is better priced than the ones from the competition.

Moreover, while brands cannot manage online reviews, they can still get information from them to improve products or even create new products (Fedewa et al., 2021). Alldredge et al. (2021) also added that consumers change to a new brand, especially the younger generation, often because of what the company stands for and how it looks after its employees. As a result, brand loyalty has decreased, and “Consumers are now more willing than ever to try new brands, including those recommended on popular sites. Of the 75 percent of Americans who have changed their shopping behaviour since the pandemic began, around 40 percent said they have switched brands [...]”<sup>51</sup> consumers are now more willing than ever to experience new brands, especially those scoring high on popular sites. 75 percent of Americans changed their shopping behaviour because of the pandemic, and around 40 percent changed to new brands (Fedewa et al., 2021). Although consumers still prioritise more basic situations such as buying products suitable for the purpose, having the right value for money, appealing with the correct product information, and having size availability and good delivery options (Balchandani, Lau, et al., 2021).

Engagement that was already referred to as an important point to focus on in 2022 by Amed et al. (2021) will depend on the context (Brodie et al., 2011; Frow et al., 2015). The intensity of an interaction will depend on cognitive, emotional, and/or behavioural engagement (Patterson & Yu, 2006; Frow et al., 2015). Considering the Theory of Reasoned Action (figure 28), intentions are predicted by attitudes and subjective norms. Furthermore, understanding if an individual will engage in a particular behaviour is the best way to understand their intentions. The more positive behaviour, the more likely it is that an intention to engage in it is formed (LaCaille, 2020).

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<sup>51</sup> Five-star growth: Using online ratings to design better products | McKinsey

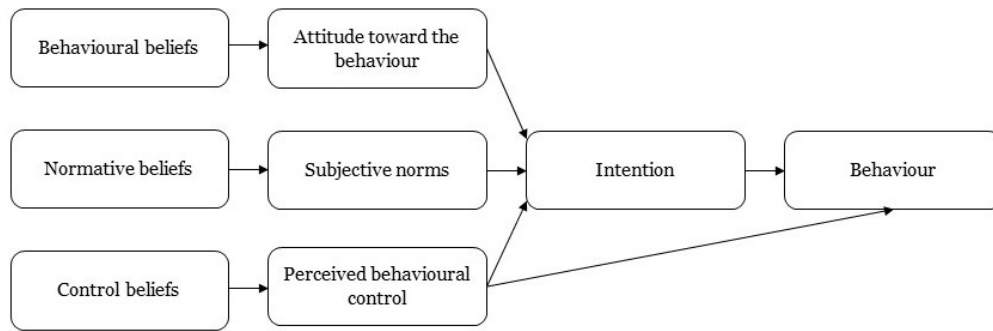


Figure 28 – Diagram of the Theory of Reasoned Action. Source: LaCaille (2020)

Additionally, Frow et al. (2015), based on Macey & Schneider (2008), also listed three categories for the level of engagement. They are cognitive engagement, emotional engagement and behavioural engagement (Frow et al., 2015).

Consumers provide necessary inputs also coming from the engagement, although they are usually seen only as someone who wants to purchase and consume products or services due to desire (Ertimur & Venkatesh, 2010). Therefore, marketing traditionally limits its attention to the decision-making process till the transaction is done (Xie et al., 2008). However, the products, quality, and associated consumer experience may now be the most important marketing tool (Fedewa et al., 2021).

As for the firm–consumer interaction, this is a way to get value from the consumers and, at the same time, for the company to sell its goods (Prahalad & Ramaswamy, 2004a). As a result, the company's dominance over the consumer as the dominant actor has been dissolving (Ertimur & Venkatesh, 2010). Some company workers can feel a shallow connection with the company, and some consumers can feel a very high connection (Humphreys & Grayson, 2008).

The consumer's feedback can help identify and integrate consumer preferences on product development so that products can better fit consumers' needs on a more personal level (Maltzahn, 2016). It also helps create value patent on the service-dominant logic that pursues cooperation between consumers and firms that can be mutually beneficial (Ertimur & Venkatesh, 2010). Although, depending on the consumer, he can be willing to engage in co-creation once and for a short while, and others will be looking for continuous cooperation and willing to invest considerable amounts of time. Füller (2010) gives as an example the Swarovski watch design contest. Some consumers only submitted their idea for one design, but others submitted several designs and voted or commented other submissions while building relationships with them.

In terms of communication, introduced by Theodore M. Newcomb in 1953, The New Comb's model (figure 29) illustrates the communication between the consumers and the brands that can be applied to the co-creation context, which is a social one, made in equilibrium between both parties. This theory intends to show that all communication is a mean of sustaining relationships<sup>52</sup>.

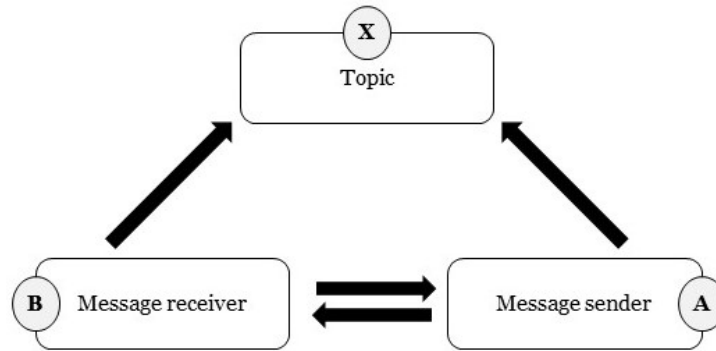


Figure 29 - Diagram of the New Comb's model of communication. Source: <https://www.communicationtheory.org/the-newcomb%e2%80%99s-model/>

Nevertheless, although it explains the context of the interaction, it is simplistic, and the Social Exchange Theory can better explain how this is processed. This theory is important regarding online communities (Lambe et al., 2001). This theory regards that consumers interact with companies through co-creation as they expect it to be rewarding not only because of the outcome but also during the interaction itself (Füller, 2010).

The focal point of the Social Exchange Theory is that people will determine whether to end or continue a social relationship depending on the balance between rewards and costs. Therefore, in this theory, each counterpart will pursue to maximize his interaction and if it is worthwhile competing for rewarding situations that will determine the end or the continuation of the relationship (Jeong & Oh, 2017).

However, Social Exchange Theory cannot give an understanding of why there is an engagement in virtual co-creation, by the consumers, for the creation of new products. So, Self-determination Theory (figure 31) might be able to explain this. This theory came from human motivation research regarding the effect of rewards in it (Wehmeyer et al., 2017). So, according to this theory, consumer engagement comes from a combination of intrinsic and extrinsic motives, such as fun or altruism and for the interest in learning or

<sup>52</sup> <https://www.communicationtheory.org/the-newcomb%e2%80%99s-model/>

gaining a reputation or even receiving a reward or for a question of eventual career prospects (Füller, 2010).

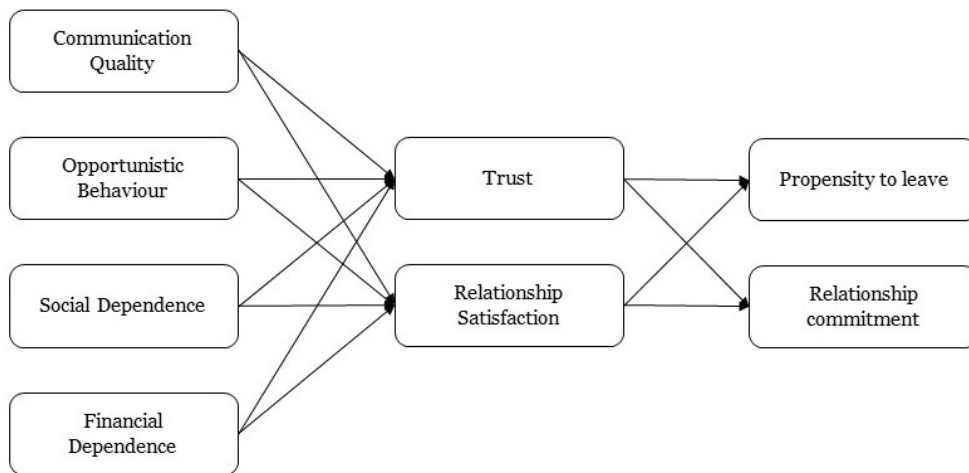


Figure 30 - Diagram of the Social exchange theory. Source: Jeong & Oh (2017)

However, Social Exchange Theory cannot give an understanding of why there is an engagement in virtual co-creation, by the consumers, for the creation of new products. So, Self-determination Theory (figure 31) might be able to explain this. This theory came from human motivation research regarding the effect of rewards in it (Wehmeyer et al., 2017). So, according to this theory, consumer engagement comes from a combination of intrinsic and extrinsic motives, such as fun or altruism and for the interest in learning or gaining a reputation or even receiving a reward or for a question of eventual career prospects (Füller, 2010).

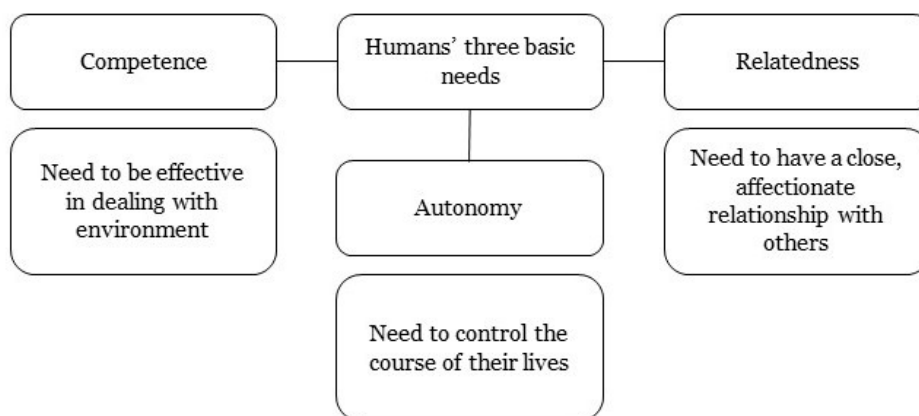


Figure 31 - Diagram of the Self-determination theory. Source: [https://medium.com/@jenniemdunlap\\_3164/what-is-self-determination-theory-e4d508936da2](https://medium.com/@jenniemdunlap_3164/what-is-self-determination-theory-e4d508936da2)

So, consumers engaged in product design or marketing are now seen as consumers/creators (Humphreys & Grayson, 2008) with autonomy to make their own

decisions. The larger the consumer heterogeneity in the firm/consumers interaction, the larger the gain in terms of product utility (Piller et al., 2012). Consumer needs have increased with the development of technology and internet services, and they now expect more specific products and solutions<sup>53</sup>. More consumers now want more individualized products or services (Hessman, 2014). Although, consumers, when faced with a large number of choices, can get confused, and the increased utility can be outweighed by the complexity of choosing the right product (Piller et al., 2012).

Companies are a facilitator of the process for consumers who like to consume products that they have made. Distance between companies and consumers is getting smaller, and now consumers can be contributors, creators or just simple consumers. Many consumers like to intervene in the product's design which can be important for the end product. Also, if involved in the value chain, consumers are inclined to pay more when involved in the value chain (Humphreys & Grayson, 2008). Tu et al. (2017) also found that they were inclined to pay more if the degree of co-creation was higher.

### **2.4.3. Consumer motivations and behaviours in co-creation**

Moreover, online consumer co-creation can also improve consumer satisfaction, purchase intention and loyalty while improving the companies' ability to better customize and better offer their services (Pee, 2016). Consumers can participate in these activities because of a need for self-expression or uniqueness (Tian et al., 2001) or use their capabilities (Etgar, 2008). Uniqueness is more appreciated in hedonic product attributes connected with sensations and experiences (Zaggl et al., 2019). Consumers can also participate due to the rewards and interest in innovation activities. These are usually highly motivated to be engaged or participate due to a need. This mostly happens because they are not satisfied with the products available on the market. However, participation can also occur out of curiosity, and these participants do it mainly out of motivational aspects and not for expecting monetary rewards (Füller, 2010). Füller (2010) also indicates that extrinsically driven consumers have goal-oriented behaviours while intrinsically motivated consumers have experiential-oriented behaviours, as seen in figure 32.

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<sup>53</sup> <https://hapticmedia.com/blog/mass-customization-definition-goal-examples/>

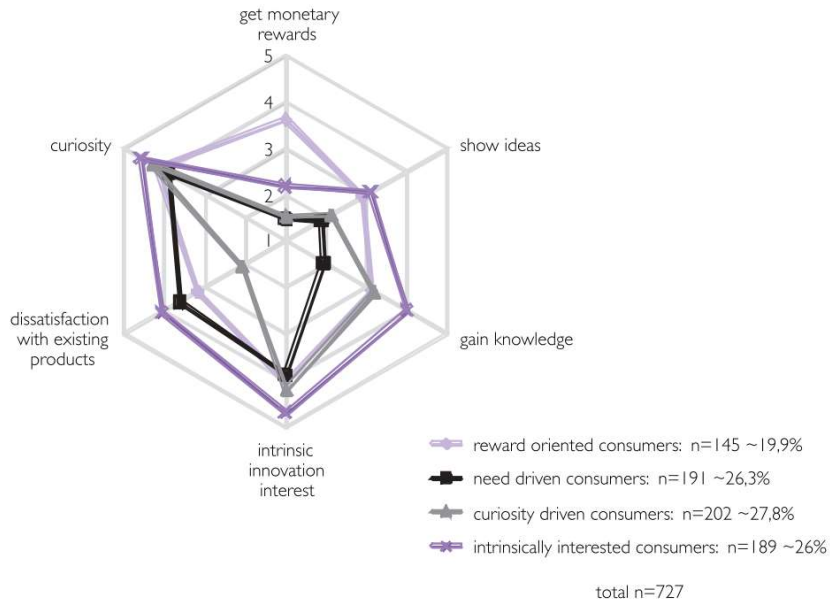


Figure 32 - Diagram of the reasons for participating in co-creation of four different consumer types. Source: Füller (2010)

To better understand which are the extrinsic and intrinsic motivations, figure 33 is presented.

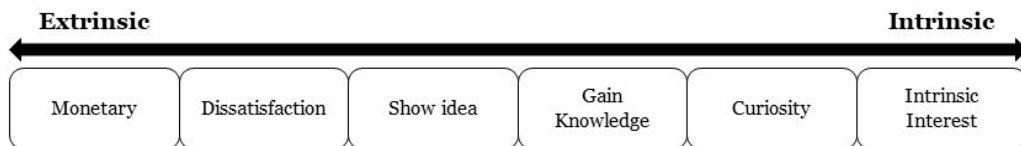


Figure 33 - Diagram of the extrinsic and intrinsic motives for participating in co-creation. Source: Füller (2010)

These four types of consumers have different characteristics, as seen in table 6.

Additionally, Füller (2010) refers that consumers that are looking for something new are more captivated by intrinsically rewarding activities, while goal-oriented consumers are the ones that are looking to achieve something or have power. They usually are interested in the end result.

Table 6 - Consumer types. Source: Füller (2010)

Reward-Oriented Participant	Intrinsically Interested Participant
<ul style="list-style-type: none"> <li>- Highly skilled</li> <li>- Likes to solve problems and fiddle around</li> <li>- Late adopters: wait till a new product has shown proof before s/he is convinced to buy it</li> </ul>	<ul style="list-style-type: none"> <li>- Early adopter</li> <li>- High exploratory behaviour, novelty seeker</li> <li>- High innovativeness</li> <li>- Highly skilled</li> <li>- Likes to fiddle around and solve problems</li> <li>- High interest in virtual NPD</li> </ul>

<ul style="list-style-type: none"> <li>- Moderate interest in virtual NPD</li> <li>- Moderate web usage</li> <li>- Previously innovated new or modified existing product and further advanced them</li> </ul>	<ul style="list-style-type: none"> <li>- More previous innovation activities in all development stages</li> </ul>
Curiosity-Driven Participant	Need-Driven Participant
<ul style="list-style-type: none"> <li>- Little web usage</li> <li>- Little previous innovation activity</li> <li>- Moderate to low exploratory and novelty seeking behaviour</li> <li>- High internet specific task involvement</li> <li>- Early majority in product adaptation</li> </ul>	<ul style="list-style-type: none"> <li>- Low in domain-specific skills and innovativeness</li> <li>- Moderate to low exploratory or novelty seeking behaviour</li> <li>- Moderate web usage</li> <li>- Well educated</li> </ul>

So, resuming, the consumer who participates in co-creation activities can do it for several reasons. The consumer has most likely a number of characteristics, as enumerated in figure 34 by Füller (2010). For that, participants also need processes and tools, well-defined contents or tasks, and the possibility to create and communicate with others for a better and more exciting process.

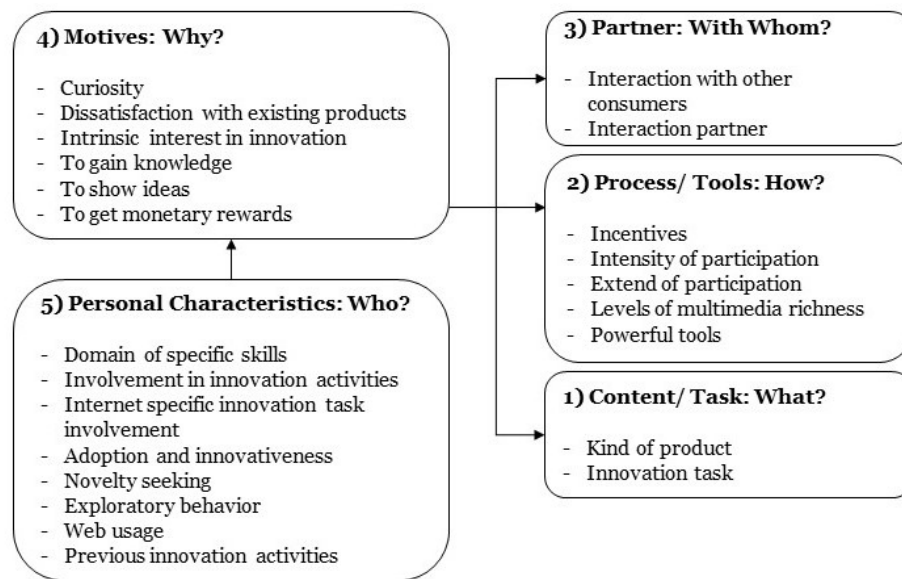


Figure 34 - Diagram of the characteristics of the virtual co-creation process. Source: Füller (2010)

Fournier & Avery (2011) stated that the consumers decide if the brand can interact with them. This interaction does not appear from a neutral standpoint but from the perceived benefits involved, even with no financial benefits (Nambisan & Baron, 2009; Füller, 2010; Alves et al., 2016). Consumers want to get the most benefits as rational decision-makers (Etgar, 2008).

For example, in co-creation, this process will result in product adjustments and more value for the product, especially when the contact happens in the design stage that will define product attributes and functionalities (Parment, 2013). The more the contact

points in the process, the better the company/consumer relationship (Hoyer et al., 2010). Although, Maltzahn (2016) questions if the companies will actually disclose all the information or just the basics to keep the consumer interest. Etgar (2008) also points out the importance of trust. Consumers expect that the product/service will be delivered according to the consumers' expectations in the outcome of the process. On other occasions, there might be an opposition between what the company wants and what the consumer expects. For example, the company might want efficiency and cost reduction, and the consumer might expect a higher level of customization (Hoyer et al., 2010). Therefore, consumers and companies only have partial overlapping goals (Arnould et al., 2006; Ertimur & Venkatesh, 2010).

Consumers can also have opportunistic behaviours as companies and consumers cooperate to co-create value. However, both also want to extract the best value from the process (Prahalad & Ramaswamy, 2004a). However, the interactions between companies and consumers still happen in a suitable manner (Ertimur & Venkatesh, 2010). A negative impact on the company can happen due to opportunism in collaborative processes and might mean lower profit and fewer collaboration opportunities in the future can also affect the experience of other participants. They can even spread to other consumers causing financial costs to the company (Ertimur & Venkatesh, 2010). These behaviours may also result in a negative perception of the brand, loss of reputation and monetary costs for the company (Fisk & Keeffe, 2010; Gebauer et al., 2013). As consumers tend to focus on the negative parts, the service might be categorized as low quality (Heidenreich et al., 2015). Offline negative word of mouth usually spreads to an average of five other persons, but online it can spread to a much larger number. Opinions posted online will be available to the public indefinitely, so the negative effect of word of mouth can be much more significant. Dissatisfaction or perceived unfairness can also create negative word of mouth. Contrarily, when consumers that co-create perceive fairness, that can lead to positive actions (Gebauer et al., 2013).

Collaboration with communities for innovation may induce angry reactions or create frustration. Being members of these communities able to use social media channels can give place to significant conflicts that can harm the brand. Management for social media requires action as critical situations spread quicker to a large audience (Gebauer et al., 2013). Social media also increased the importance of consumers and brand communities in the co-creation of value (Schau et al., 2009; Frow et al., 2015). Consumers with long-term participation in communities have emotional solid, and moral connections (Hunt et al., 2012). Although frustrated members that before were enthusiasts can become

actively resistant and attack the brand. These attacks can take up ample proportion through social media. In large communities, these conflicts are inevitable, and community management needs to provide the means for this to happen without censorship. In co-creation communities, the dialogue needs to be public and co-moderated (Gebauer et al., 2013). Two examples of situations that left communities upset were when Kraft chose a new name for its popular spread Vegemite and consumers were not in agreement with the brand. After a new online and telephone survey, the brand successfully launched the new product to keep consumers involved until the end (Gebauer et al., 2013). The other example came from Spar when choosing a design for their new bags in Austria. Highly committed members of its community expressed strong disagreement with the choice of the winning design and Spar chose, in the end, to print the second and third chosen designs as these had the support of its community (Gebauer et al., 2013).

## **2.5. Supply chain**

### **2.5.1. Definition and scope**

The industrial revolution changed the world. In the first industrial revolution, Industry 1.0, products were manufactured accordingly to consumers' requirements and on a limited number. The first to be influenced in the 1770s were the English cotton mills due to the invention of the steam engine, meaning that energy supply could now exist anywhere, making work possible wherever (Wang et al., 2017). In Industry 2.0, the second industrial revolution, mass production was introduced, making possible the manufacture of low-cost products. Still, in the beginning, the offer availability was small. As a result, assembly lines were born, and so was labour standardization (Wang et al., 2017). However, mass production ends up diminishing the voice of individual consumers.

Moreover, it took with it personalization<sup>54</sup>. Industry 3.0, the third industrial revolution, introduced mass customization as consumers demanded a more extensive offer of products (Pine II, 1993). Computers, automatization and information were the backbones for developing machinery, robots, integrated systems, management systems and flexible manufacturing, meaning high production, wide variety and low costs (Wang et al., 2017). Industry 4.0 will be the next step based on communication and information systems that can connect and control devices and systems, bringing mass personalization production to respond to consumers increasingly looking for personalized products that

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<sup>54</sup> <https://hapticmedia.com/blog/mass-customization-definition-goal-examples/>

are not available now. As a result, companies adopting Industry 4.0 will have the opportunity to have better costs, more variety and flexibility, reduced time to produce, and improved quality (Wang et al., 2017).

The fashion industry is very demanding in what concerns logistics, with a wide range of colours and styles available at any time, even more, when the shelf lives of these products are shortened every year (Christopher et al., 2004). In addition, this industry is characterized by changing markets, product variety and short lifecycles in what concerns products. Also, it is a business with low margins so having stocks is not a good option. Instead, companies need to develop and manufacture the goods as soon as possible to keep pace with the retailers (Bruce et al., 2004).

Also, this business usually manages to take into account the large retailers at the end of the chain that dominates the demand even more because down the supply chain, there are usually small companies with little power (Stengg, 2001). Even though there are sometimes partnership agreements, it is questionable if these are profitable for all the intervenient or if this is only another power retailers can have over manufacturers (Bhamra et al., 1998). However, this sort of agreement decreased as the industry was pressured by globalization to reduce prices to increase profits (R. M. Jones, 2000). Although, according to Wong (1999), this is essential for the best performance to be achieved in the supply chain since cooperation is crucial for the success of all the parties (Bruce et al., 2004). For Prajogo & Olhager (2012), there are significant effects on the supply chain performance regarding the flow of information and materials. This can only be managed when there are lasting relationships between all the supply chain intervenes. Besides, by involving suppliers, lead times and costs can be reduced as mistakes on materials and others (Romano & Vinelli, 2001; Yeung et al., 2009; M. Zhang et al., 2017). Also, for Christopher & Towill (2000), information sharing in the supply chain can only be achieved by cooperation between the ones who buy and those who supply, by doing the product development together, by using common systems. Kraljic (1983) was one of the first to propose that companies must have purchase strategies to respond to supply uncertainty. So supply selection should be worked on to achieve close collaboration with the suppliers. Fisher (1997) said that demand depends on the industry, and products or services can be functional or innovative. According to Fisher's model, supply chains can also be efficient or responsive (Sabet et al., 2017). Companies need to collaborate closely with suppliers and manufacturers by considering their competencies and dynamic characteristics because the supply chain changes depend on market demand (Jin et al., 2020). It is also necessary to balance the supply chain with the products as supply chain management at this time is focused mainly on the fact that the products can be functional

or innovative (Langenberg & Seifert, 2012; Sabet et al., 2017). Also, companies usually produce both, functional and innovative products simultaneously although this further complicates supply chain management and product alignment (Langenberg & Seifert, 2012). And to determine the best value chain setup is necessary the identification of the risks from social or geographical factors so that it is possible to safely schedule capacity across the entire chain (Dilda et al., 2021).

So, suppliers, manufacturers, logistics and consumers are part of the supply chain that is connected via feedback and a feed-forward of materials (Naylor et al., 1999), and for Bruce et al. (2004) supply chain is the flow of products from the first process in the supply chain till the final sale.

As for supply chain management, its purpose is to keep pace with the other intervenient in the supply chain while looking into markets and consumers' needs (Arbaugh, 2014). This is a very complex process as supply chains are usually of large scale, are dynamic and not static, and have numerous inputs along the process for very different outputs at the end (Jin et al., 2020). Therefore, good management is needed to shorten lead times and fulfil orders. In figure 35, it is possible to observe the different parts of the supply chain network and its management.

So, the textile-apparel supply chain is complex and diversified, and the products themselves do not ease the complexity of the process. Thomassey (2010) explains in figure 36 how the textile-apparel supply chain works.

Supply chain activities have high costs, so supply chain optimization is a priority for many companies (Langenberg & Seifert, 2012). However, due to its size, there is the risk of stock-outs, stock obsolescence, and keeping unwanted inventory somewhere in the supply chain (Christopher et al., 2004).

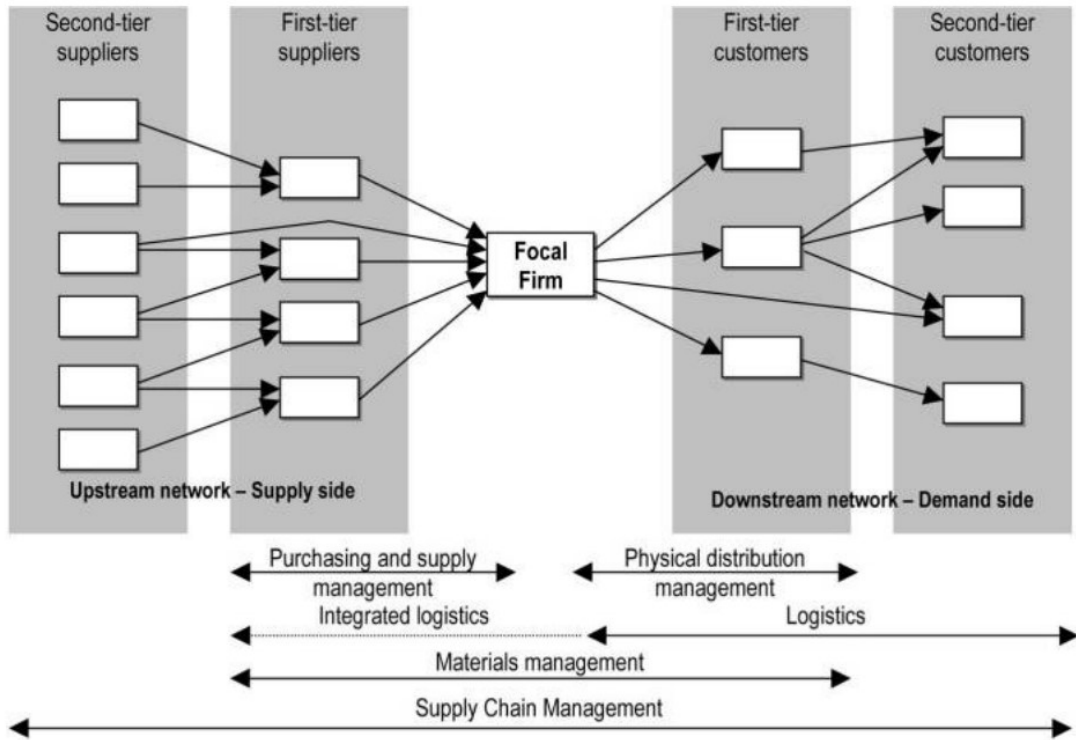


Figure 35 - Diagram of the management of the different parts of the supply chain network. Source: Romano & Vinelli (2001)

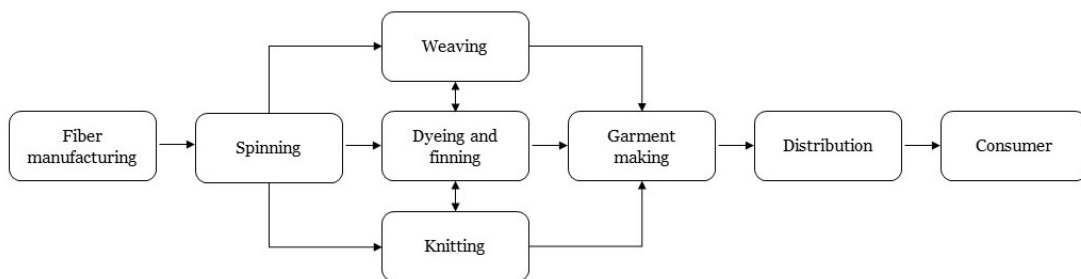


Figure 36 - Diagram of the textile-apparel supply chain. Source: Thomassey (2010)

“[...] globalization leads to increase the lead time and lot size of supplies. Consequently, distributors have to rely on rigorous supply chain management to avoid delay, out of stock, unsold and to keep the right inventory level. In the last decade, many supply chain management tools have enabled distributors to improve scheduling and synchronizing of material and information flows. Most of these tools can be customized to the specific constraints of the clothing retailing, however, their efficiency is mostly dependent of the accuracy of sales forecasts.” (Thomassey, 2010, p. 471).

Usually, retailers deal directly with manufacturers, but according to Popp (2000), there is a middle man in many chains, resulting from the globalization of the industry. Sourcing or manufacturing overseas in countries with lower labour costs is one of the visible results (Jones, 2002; Bruce et al., 2004). This also led to a decline in textiles and apparel in industrialized nations. However, global sourcing does not always meet all the demands, especially when there is a need for quick service. Lawson (2001) emphasizes that overseas sourcing can have hidden costs not typically anticipated. For example, the investment needed in the first stages to establish the business is high with initial training costs, lower efficiency, delays or added costs in transportation, quality issues, long lead times and human cost (Christopher et al., 2004).

A lack of understanding of demand for most supply chains is a problem. Especially for the fashion one, which is long, predictability is scarce, so inventory is created with a resource to forecast instead of being done only when there is an actual demand (Christopher & Towill, 2000). Moreover, in a demand-driven supply chain, the batch sizes are smaller, and the products are more diversified, so there is a need of using highly efficient processes (Berg et al., 2020). Gupta & Jain (2013) refer that nowadays, the value is attributed to the consumer and not by the company meaning that companies need to look evermore for the final customer even more because now manufacturing is in part composed of customized products that lead to more demanding planning for production (Bhamu & Sangwan, 2014).

For example, in mass customization, customized product production is done based on consumers' orders. Although there is the disadvantage of the available time to produce in contrast with the forecasting model for mass production (Smith et al., 2013), there is also the advantage of producing quicker and cheaper customized products (Jin et al., 2020). So that the process can be successful integrating all the intervenient in the supply chain is needed. Downstream, consumers will customize the products (Salvador et al., 2009), and upstream suppliers will postpone the final product as most as possible to introduce a production based on push/pull (Wiengarten et al., 2017). This supply chain is based on a demand-pull and push-pull. Being driven by the market and not the production will reduce the bullwhip effect (Jin et al., 2020).

Christopher & Towill (2000) gave an insight, in table 7, on how the supply chain has been evolving, which is perceptible, for example, in the changes through time relative to the supply chain philosophies:

Table 7 - Migratory model summarizing the transition in PC supply chain operations. Source: Christopher & Towill (2000)

Supply chain evolution phase	I	II	III	IV
Supply chain time marker	Early 1980s	Late 1980s	Early 1990s	Late 1990s
Supply chain philosophy	Product driven	Market orientated	Market driven	Customer driven
SC type	Lean functional silos	Lean supply chain	Leagile supply chain	Customized leagile supply
Market winner	Quality	Cost	Availability	Lead time
Market qualifiers	Cost Availability Lead time	Availability Lead time Quality	Lead time Quality Cost	Quality Cost Availability
Performance metrics	Stock turns Production cost	Throughput time Physical cost	Market share Total cost	Customer satisfaction Value added

The fashion industry has to focus on speed and efficiency to quickly produce and maintain some level of stocks or to produce exact quantities regarding consumer orders (Bruce et al., 2004). All of this, while trying to avoid another challenge that is the waste that, according to Hodge et al. (2011, p. 237), is “[...] overproduction, time on hand, transportation, over-processing, inventory, movement and defective products. waste is “[...] overproduction, waiting, transportation, inappropriate processing, excessive inventory, excess motion and defects.” (Gupta & Jain, 2013, p. 243).

However, some constraints are challenging, as stated previously, such as short life cycles, because products are designed to follow trends that will be saleable but that are only seasonal. As a result, the demand for products is not always the same, causing high volatility. Variations in demand make the forecasting process more complex and cause low predictability. Moreover, the product needs to be available to be seen and desired to create more impulse purchasing (Christopher et al., 2004).

Nevertheless, not every product needs a quick supply chain because not all products are the same in the fashion business, and the predictability of sales can vary. For example, basics or products sold continually across seasons can have extended lead times that will help push the price down as these are not urgently manufactured. On the contrary, products that will need replenishment during the season will need a fast supply chain to put products in-store within the shortest lead time possible to maximise sales. Furthermore, close monitoring of sales can help move some products faster in the supply chain and eventually cancel others that have not sold as much as expected. So, being market sensitive and close to the consumer is vital in fashion, and data analysis should be a must to better understand demand (Christopher et al., 2004).

Moreover, the overall coordination of the supply chain will also help obtain the best performance level (Arbaugh, 2014). However, many social or technological factors can affect companies in improving the supply chain coordination (Lin, 2014). More recently, social factors have created logistical disruptions and rising costs that, combined with materials shortages, added layers of complexity to an already complex process. As a result, companies now need to rethink sourcing strategies and create flexibility in line with consumer demand. Recently companies are choosing to go on a nearshoring strategy, now choosing to source themselves closer to their operations to safeguard access to raw materials and guarantee production capacity (Amed et al., 2021). Fast and flexible sourcing are now top priorities for fashion companies, with half of the companies, according to a McKinsey & Company survey, stating that they have already started changing sourcing, design and commercial processes along with the ways they work (Hedrich et al., 2021) although, according to Carvalho (2016), for larger organizations that already have a defined work flux is difficult to change the logical already patent in their products and in their production methodologies.

### **2.5.2. Lean manufacturing**

For Bhamu & Sangwan (2014), lean has been accepted as being more beneficial. The elimination of waste that also includes time is one of the purposes of lean manufacturing so that a levelled schedule can be established (Christopher & Towill, 2000). It is called lean because it uses the less possible of what is needed to produce a particular product (Naylor et al., 1999). Other lean manufacturing purposes are improving processes and employee satisfaction (Gupta & Jain, 2013). Bhamu & Sangwan (2014) refers that lean manufacturing is set to increase the efficiency of operations by reducing costs, times and non-value added activities. Gupta & Jain (2013, p. 243) also referred that the adoption of the lean philosophy will help with the use of “[...] less material to create their work, less human efforts to perform the work, less time to design and develop less energy and space.”. So, lead times also need to be shortened as spare time is classified as waste in the lean philosophy to achieve a more competitive, agile, and market-responsive company. Gupta & Jain (2013) also referred to lean manufacturing to produce the best products at the lowest cost and time possible. Although, Christopher & Towill (2000) refers that an agile supply chain is not possible in companies that adopt lean manufacturing.

These objectives can be achieved by disseminating the lean philosophy to change the companies culture, including team leaders and by stratifying the company with the creation of teams that can be multifunctional, the employee's commitment, the

integration of the supply chain from the first process to the consumer and by innovate and adapt the organization (Bhamu & Sangwan, 2014).

According to Bhamu & Sangwan (2014), various authors documented the benefits of a lean approach, such as improved lead times, processing times, diminution of inventory and defects and increased equipment effectiveness. Benefits also include a rise in employee morale, communication, satisfaction and team decision making.

Hodge et al. (2011) conducted interviews that gave an insight into the benefits of implementing lean. Among them was the reduction of lot sizes, raw materials, product complexity, inventory, changeover times, finished goods in inventory and production time. In addition, there were increases in production, space for new productions and quality.

Regarding the barriers to lean implementation, one of the main ones is the company's culture. However, Hodge et al. (2011) say that this barrier can be overcome with communication and training, which are usually lacking, for every worker, to allow a clearer understanding of what is to be achieved and motivation (Gupta & Jain, 2013).

According to James (2006), there are barriers to the implementation: a poor understanding of lean manufacturing and a lack of interest from the management. Employees and the company's culture are the main barriers to lean implementation, whether because of resistance to change or the lack of suggestions. Besides the internal constraints, the company can also face other external barriers from suppliers and distribution networks. Also, poor logistics, lack of supplier integration and frequent changes in demand are other barriers when implementing lean manufacturing. Moreover, there is no standard implementation of lean manufacturing, so every company needs to understand what tools, techniques or methodologies are needed to implement leanness (Bhamu & Sangwan, 2014). Other problems were indicated by Chong (2007) as the lack of time, and Achanga et al. (2006) said that insufficient financial resources are also a problem for small scale industries.

As for the implementation itself, Mohanty et al. (2007) noticed that for many companies, improvements remain localized although there were initial gains. The inability to have continuous improvements contributed to this outcome.

### **2.5.3. Agile manufacturing**

Agility is the capability of using market knowledge to create opportunities for profit in a volatile market. Agility is a philosophy that uses organized structures, logistics and

systems for information flow. An agile organization is flexible (Christopher & Towill, 2000). Handscomb et al. (2020) said that an agile company is adaptable, resilient, and fast on its processes, and its teams need to be empowered and cross-functional.

According to Bruce et al. (2004), a company could grow even in a business of rapid and unpredictable change if agility could be achieved. This could be achieved by giving responses constantly. In agile manufacturing, lead times need to be small so that production can be done accordingly to volatile demand. Christopher & Towill (2000) also stated that the agile supply chain is sensible to the market and can respond to actual demand. Forecast support is the norm for most companies instead of supporting themselves in actual demand. Forecasts are usually based on past sales that could not be what customers are expecting in the present. Also, Christopher et al. (2004, p. 370) suggested that “[...] the agile supply chain is:

- . Market sensitive – it is closely connected to end-user trends.
- . Virtual – it relies on shared information across all supply chain partners.
- . Network-based – it gains flexibility by using the strengths of specialist players.
- . Process aligned – it has a high degree of process interconnectivity between the network members.”

As for the agile network, some work with many suppliers instead of only a few long-term. In agile networks, firms will change their demand to the other players according to the requirements they face (Christopher et al., 2004).

#### **2.5.4. Leagile manufacturing**

Lean and agile manufacturing have different goals being that lean aims to reduce the waste of resources, and agility intends to achieve flexibility and be adaptable to changes in demand. But, on the other hand, agility can use more resources (Christopher and Towill, 2000; Bhamu & Sangwan, 2014).

Bruce et al. (2004) referred Mason-Jones et al. (2000) about the distinguishing attributes of a lean and an agile supply chain in table 8.

Table 8 - Distinguishing attributes of lean and agile supply. Source: Bruce et al. (2004)

Distinguishing attributes	Lean supply	Agile supply
Typical products	Commodities	Fashion goods
Marketplace demand	Predictable	Volatile
Product variety	Low	High
Product lifecycle	Long	Short
Customer drivers	Cost	Availability
Profit margins	Low	High
Dominant costs	Physical costs	Marketability costs
Stock out penalties	Long-term contractual	Immediate and volatile
Purchasing policy	Buy goods	Assign capacity
Information enrichment	High desirable	Obligatory
Forecasting mechanism	Algorithmic	Consultative

This means that cost will differentiate a lean from an agile supply chain (Naylor et al., 1999). Product quality of a higher level can be seen in agility and leanness. However, for agility to deal with volatility, there is the need to shorten the process lead-time. Quick response to the demand will not be possible if there is a long lead time. If this is overturned, improvements in productivity and costs can be achieved.

Bruce et al. (2004) referred that Childerhouse and Towill (2000) said that lean is suitable for products with steady and reliable demand, and agile is suitable for products where demand is unpredictable. On the other hand, Naylor et al. (1999) referred that agile manufacturing is more suitable for fluctuating demand, and lean manufacturing works when there is a scheduled demand. Also, the supply chain members' location will influence the development of the manufacturing structure to be lean or agile. However, a mixture of both, leagile, can even have, downstream, better service levels and upstream a better cost effectiveness. An example of that is “[...] the mass customization supply chain [...]” that “[...] is a agile supply chain based on lean basis.” (Jin et al., 2020, p. 653).

Suppliers that are more distant from the consumers usually focus on efficiency, while those close to consumers tend to focus on flexibility (Wiengarten et al., 2017).

It was also “[...] argued that the textiles and clothing industry does not neatly fit into either a lean or agile paradigm, but instead it is a combination of the two driven by low margins and volatility of demand.” (Bruce et al. 2004, p.653).

Although there are differences between the two paradigms, neither of them is better nor worse than the other, being that when mixed in the proper supply chain, they can be very effective (Naylor et al., 1999).

### **2.5.5. Other supply chain philosophies**

Other supply chain philosophies besides lean and agile are, for example, Kaizen, “[...] a Japanese term which is used for continuous improvement [...]” (Gupta & Jain, 2013, p. 245). It involves every worker of the company to find and remove waste in machines, labour or manufacturing methods (Gupta & Jain, 2013). It is also referred that the pillars of kaizen are “[...] housekeeping, standardization and waste elimination.” (Gupta & Jain, 2013, p. 245).

In Kanban, “[...] if the demand is stable and predictable, for instance upstream, in terms of material flow, from the decoupling point [...]” (Naylor et al., 1999, p. 113), it is doable to apply Kanban. On Kanban, it is not supposed to have parts in the production area when they are not needed, and these should only be delivered when they are in need by the supplier (Gupta & Jain, 2013).

“Just-In-Time (JIT) is a tool of lean manufacturing that stands on the pillars of successful planning and the execution of events necessary to produce a final product.” (Gupta & Jain, 2013, p. 244), in the right time, accordingly to the needs.

Value Stream Mapping or VSM is a graphical tool that enables workflow analysis and finding valuable and non-valuable activities. Techniques and concepts from lean are used in VSM. “VSM is mainly dedicated to reducing wastes, the decrease in lead times, and improvement in the material-flow.” (Gupta & Jain, 2013, p. 245).

“Material Requirement Planning or MRP is a powerful tool that converts the requirements for end products into a detailed schedule of raw materials.” (Gupta & Jain, 2013, p. 245) to avoid mistakes that can decrease productivity and to avoid the production of stocks that are not needed (Gupta & Jain, 2013).

### **2.5.6. Decoupling point**

The decoupling point is the point that separates the demand for variety from the demand for a smaller variety. It is also where strategic stock is usually held to respond to variations in consumer orders and product variety, managing a smoother production output (Naylor et al., 1999). The decoupling point is the separation, in the supply chain, between the consumer demand and the stocks held by the company to give the faster response possible to variations in demand (Naylor et al., 1999). To define the decoupling point, there is the need to understand the longest lead time possible that costumers are willing to accept vs where the variability of products is too broad, so an agile approach is needed. Downstream from the decoupling point, all products are driven by the market,

and upstream from the decoupling point are driven by forecasts (Naylor et al., 1999). This happens because forecasting is easier for raw materials than for finished products.

Also, as Christopher & Towill (2000), in reality, supply chains have two decoupling points: the first is where generic inventory is kept, and this should be as downstream as possible to be as closest as possible to the end consumer. “The idea here is that this should lie as far as possible upstream in the supply chain - it is in effect the furthest point to which information on real final demand penetrates.” (Christopher & Towill, 2000, p. 210). It is easier to create agility in the supply chain with two decoupling points.

Naylor et al. (1999) propose a series of different decoupling points depending on the type of product intended to be produced in figure 37.

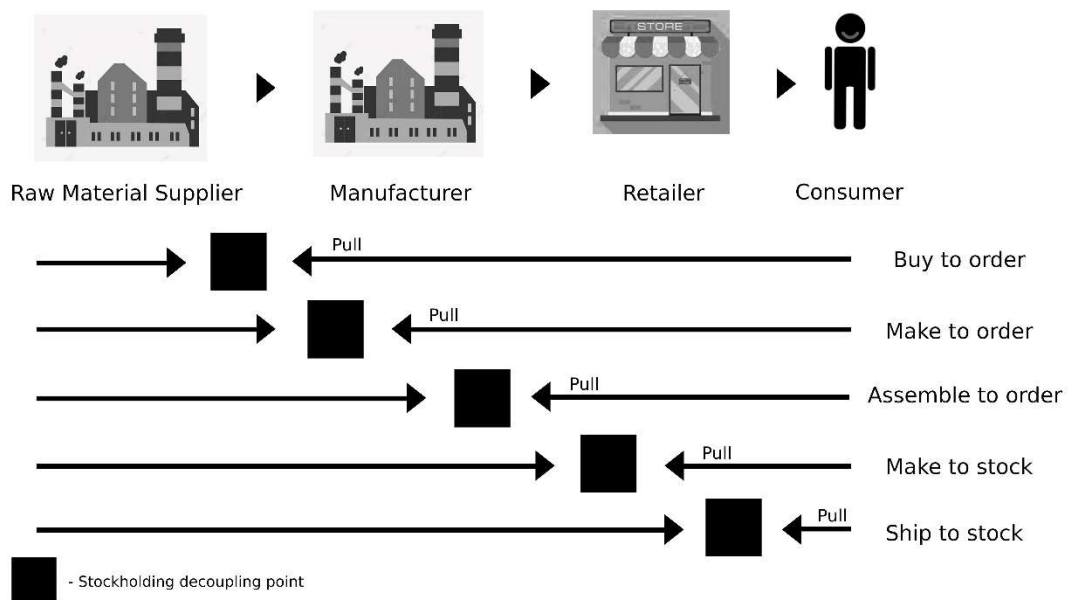


Figure 37 – Stockholding decoupling point. Source: Naylor et al. (1999). Accessed on 26/08/18.

The Buy to Order could be suitable for an industry producing unique products or where variation is high, for which customers are willing to accept a longer lead time. This could also mean that holding stocks could be a risk as obsolescence of the need for a particular product can happen quickly. The Make to Order supply chain can produce different products manufactured with the same raw materials. It is also possible for this supply chain to work with different loads or products and even high levels of customization in the same timeline. The risk in this supply chain is the risk of maintaining in stock raw materials and other components. The Assemble to Order supply chain structure has the decoupling point in the manufacturer. In this chain, customization is held until it is

possible. This means that it is possible to respond to a broader variation of products that can be or not be customized in this supply chain. The risk of overstock or understock is higher than in the previous ones. However, not the risk of obsolescence, as the decoupling point is in a position where it is easier to benefit from products in the growth stage of their sales. It can hold orders from different locations easily. Make to Stock can deal with demand from several locations but needs steady demand, and Ship to Stock can provide a nonstop stock of products in different locations simultaneously. There is a need for correct sales forecasts for these two strategies to avoid overstock or understock (Naylor et al., 1999).

So, independent of where the decoupling point is, the rule is that the demand is driven after the decoupling point, and up the decoupling point, it is forecast driven (Christopher & Towill, 2000).

Moreover, the need for agility or leanness can also be understood by considering the market and, consequently, the position of the decoupling point (Naylor et al., 1999).

Usually, leanness can be applied upstream of the decoupling point because demand is smoother and more standard products are available. On the other hand, agility should be used downstream of the decoupling point because there is more variation in demand and products (Naylor et al., 1999).

### **2.5.7. Industry 4.0**

The technology development in computers and their networks improves supply chain management and the agile and virtual supply chains (Sahay et al., 2014). These tools allow interaction that ultimately allows coordination between the supply chain intervenient. Although, nowadays, interaction is still insufficient, and companies are still in the data sharing stage (Kazemian & Aref, 2016). The concept of the industry 4.0 aims to change this with the inclusion of new technologies that integrate artificial and biological systems, machine learning (Cardoso da Silva et al., 2021), “Vertical and horizontal integration and fusion of the physical and the virtual worlds [...]” (Ghobakhloo, 2018, p. 924).

In the future, real-time planning will enable flexibility and agility to be reactive to changes in demand or suppliers. All stakeholders will be able to see the information so that decisions can be made effectively<sup>55</sup>. This will be possible with Industry 4.0 and the

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<sup>55</sup> <https://supplychaindigital.com/technology-4/mckinsey-and-company-next-generation-digital-supply-chain>

introduction of the internet of things (Tjahjono et al., 2017). It aims to achieve precision in an environment with a higher degree of automatization (Thames & Schaefer, 2016; Tjahjono et al., 2017), bringing the possibility of transforming supply chains into circular economy sustainable supply chains (Rajput & Singh, 2019). Linear supply chains that use the model of taking, making and disposing of cannot balance the consumption of natural resources but can be transformed with recycling, reducing and reusing into circular supply chains. This model aims to improve the use of resources and environmental performance (Heyes et al., 2018). So, sustainability can be achieved by joining the circular economy and Industry 4.0 (Rajput & Singh, 2019). These new technologies related to automation will make processes like stocking, product development, production time and distribution more agile. They will also be an enabler for the delocalization of production centres to locations closer to the consumption areas (Rodrigues, 2020).

Industry 4.0 will englobe several technologies and paradigms like the Industrial Internet of Things that results “[...] from the convergence of industrial systems with advanced computing, sensors, and ubiquitous communication systems.” (Thames & Schaefer, 2016, pag. 13), cloud-based manufacturing that “[...] can be described as a networked manufacturing model that exploits on-demand access to a shared collection of diversified and distributed manufacturing resources to form temporary, reconfigurable cyber-physical production lines which enhance efficiency, reduce product lifecycle costs, and allow for optimal resource allocation in response to variable-demand [...]” (Thames & Schaefer, pag. 13, 2016) and social product development that “[...] can generally be described as the use of social computing technologies, tools, and media, influencing the product life cycle at any stage through the use of a defined and qualified crowd with the goal of enhancing the value of communication.” (Thames & Schaefer, pag. 14, 2016).

Industry 4.0 will also involve a significant change in factory settings with the digitalization of processes (Tjahjono et al., 2017). Smart manufacturing will help with rapid organisational or structural changes and a faster response to market changes (Wang et al., 2017). Tjahjono et al. (2017) reported that industry 4.0 has four main features: vertical networking of intelligent production systems that enables factories to be reconfigured enabling mass customization. Resources and products can be located at any time, and process stages can be checked. Horizontal integration requires business models, networks and strategies, and transparency on the value chain, allowing them access to the consumer requirements so that they can be implemented from the development to the distribution. Through-life engineering is supported across the entire value chain so that innovations can be implemented in the development and

manufacturing with big-data support and acceleration through technologies such as artificial intelligence and others, enabling faster manufacturing, customization, flexibility, and reduction of costs. Finally, these factories will make possible the human-machine connection focusing on smart processes and products that will enable the industry to rapidly adjust to market changes (Tjahjono et al., 2017).

Moreover, in terms of processes, in fashion, “[...] big data-based fashion trend forecasting also emphasises the ability of data science to target upcoming trends and allow companies to more quickly create popular and best-selling items based on concrete numbers.” (DuBreuil & Lu, 2020, p. 70). “[...] the current application of big data by fashion companies is particularly popular in the business aspects, such as demand forecasting, pricing optimisation, supply chain management, and consumer behaviour analysis.” (DuBreuil & Lu, 2020, p. 70).

Industry 4.0 will enable unprecedented operational efficiency and productivity growth (Thames & Schaefer, 2016), although digitization also means the need to work more on the protection of systems, partners and consumers (Balchandani, Ekelof, et al., 2021). Still, artificial intelligence technologies can indeed deal with complex problems and help companies change faster and avoid risks for more significant value creation (Dilda et al., 2021).

## **3. Empirical study**

### **3.1. Cases study**

#### **3.1.1. Co-creation brands**

For years, many brands have seen the potentialities associated with co-creation. As a result, they have been implementing services and features capable of reaching the consumers and bringing into the company new ideas and solutions and giving new content and experiences to the consumers.

One of the early examples is Nike's website which represented an interesting case by letting consumers co-create footwear through multiple templates and a series of choices in terms of colours, materials and others. When implemented, in the beginning, Nike offered this service in their flagship stores and some other selected ones. Consumers could then personalize their footwear. Besides that, consumers were incentivized to submit their designs in a competition where the three winning models were later sold in limited series. In this way, Nike created a unique experience for the consumer, making possible uniqueness instead of only offering a mass-produced product. Also, Nike had the input of many new designs that could be used in the future and got information about the consumer trends in several countries<sup>56</sup>.

Another brand that has been successfully exploring for years co-creation involving their consumers and at the same time building a community of fans is Threadless. It was founded in 2001 with a one-of-a-kind infrastructure that involved consumers in the development process. In 2012 the company had 51 employees and sold between 160000 and 170000 t-shirts per month with an average profit margin of 30%. They have a vast input of ideas that is much larger than the one that the company itself could do. Then, the product was a simple t-shirt with a graphic (Piller, 2010). Nowadays the range of products is much broader than before. Consumers can make submissions according to a theme and get voted by the community to get cash prizes and royalties. The print ideas are rated so that the brand can better understand which designs are more sellable<sup>57</sup>. This process has been improved over time, and for example, the number of designs at a certain point started to be limited so that the users did not get confused by an overwhelming number of choices.

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<sup>56</sup> <https://news.nike.com/news/new-nikeid-studio-opens-at-niketown-london>

<sup>57</sup> <https://www.threadless.com/>

According to Piller (2010), each design can be scored over seven days, but it will be removed if it gets a low score during the first 24 hours. Early feedback from users was proved as being a good indicator of success. This process allows the creation of products without risk or investment in market or forecasting research.

Still in the fashion business, Awaytomars was launched, looking into co-creation as the brand's primary focus. Awaytomars allows their community to submit ideas for products for selected time-framed projects that get voted by the same community. The most voted turn into actual products after an eventual successful crowdfunding is done. If successful, the products will be sold to the general public outside the community<sup>58</sup>.

In an interview, Alfredo Oróbio, co-founder of Awaytomars, said that the brand took form in 2014/2015 when he was finishing his master thesis about the online sharing of creative information. He noticed that in fashion groups, there was much potential. However, many ideas did not get anywhere, so he decided to group those ideas in a single space together with production management, sale, and marketing. Through co-creation, these ideas could become actual products. The most challenging task when entering the market is to understand the consumers. That is why he trusts the business model of Awaytomars because the contact is direct with the end consumer, and their needs can be worked right away (Fernandes, 2018).

Fluevog shoes is another example of a brand that works with co-creation. This brand asks consumers for online submissions of designs (Tapscott & Williams, 2006; Humphreys & Grayson, 2008). Designs can be accepted, and the shoes will be named after the person who submitted the design. In addition, a free pair of shoes will be awarded to the creator.

As for Nyden, it was part of the H&M group. Nyden also wanted to explore co-creation but differently from the previous ones. Nyden wanted to focus on the tribes and their leaders to reach as many customers as possible within those tribes. Inviting the leaders of these tribes to design capsule collections would allow the brand to better understand the trends that would come within these, and even more, understand more precisely and with fewer resources what consumers are looking for. Unfortunately, the H&M group gave up on the brand, saying that a lot was learned. Eventually, the premium price of the first launched products may have been too high for the basis of a young community with less economic resources than an older audience. Other brands that worked with co-

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<sup>58</sup> <https://www.publico.pt/2017/03/11/culturaipilon/noticia/uma-marca-portuguesa-em-direccao-a-marte-ate-ao-infinito-e-mais-alem-1764797>

creation have also disappeared from the market in the past, such as laFraise or Dream Heels.

Other cases include, for example, Swarovski, which at one time invited designers and consumers for a watch design contest. As a result, over 2000 watch designs were created from the participation of 1650 persons, besides evaluations and comments on other proposals. Furthermore, these proposals served as a basis for creating a book of watches trends (Füller, 2010). This process can also be implemented in the fashion field. Also, a good example entirely outside the fashion business is John Deere Tractors. Users of John Deere can discuss with groups of engineers problems and strong points of the machines and future improvements (Maltzahn, 2016). Besides that, John Deere also opened to the public the possibility to provide applications and software that could improve products and operations<sup>59</sup>. This process after the sale could also be implemented in fashion to receive information for the products future improvement. Co-creation has also been essential for the Lego toy company through the Ideas website, allowing its community to co-create new designs and vote or comment on them. With 10000 votes, a design moves on to be reviewed by Lego, and if successful, the co-creator will receive 1% of the net sales. This process allowed Lego to attract new consumers that they had yet not been able to reach (Wylie-Harris, 2018). Similar processes have also been implemented in fashion brands with the voting of the products and the reward through royalties for the co-creators.

### **3.1.2. Methodology for the cases study**

The study of the brands was made based on a descriptive and exploratory approach (Yin, 1993), including several entities (Gerring, 2007) and different processes (Yin, 2001). Taking into account a qualitative methodology (Fortin et al., 2009), the case study method (Yin, 1993; Stake, 1995; Gerring, 2007) consists of a complete and detailed examination of the entities regarding the topics that are most important in the co-creation context, in order to obtain a single set of cross-case conclusions (Yin, 2009).

The cases study design analysis has multiple units of analysis (Yin, 2009). First, the study focused on understanding the brands' methods and means regarding the submission of ideas and their approval, their timelines, and what prizes and proprietary rights are offered in return. Additionally, the available offer in terms of products was also studied

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<sup>59</sup> <https://medium.com/harvard-business-school-digital-initiative/from-product-to-platform-john-deere-revolutionizes-farming-14dc8b4e791f>

to understand how the brands worked in the co-creation of products by using a descriptive and exploratory approach (Yin, 1993).

### **3.1.3. Studied brands**

The studied brands were chosen because, among the ones that are already working with co-creation, these are some of the ones that are most invested in being co-creative in the fashion scene.

Although Nike changed how they interacted with consumers, it is important to acknowledge and understand their approach to co-creation. This was one of the early examples of major fashion brands taking the initiative to become co-creative. Besides Nike as an introductory example, the two studied brands were Threadless, a brand that has been working on a co-creation model for many years and Awaytomars, the most recent one that implemented the co-creation concept for a larger number of different products. For Threadless and Awaytomars, which are entirely active at this time, co-creation wise, it was made a comparison of how they work and what they offer to consumers.

Nikes' most well know initiative regarding co-creation was through NIKEiD. Nikes' website represented an interesting case by letting consumers co-create footwear through multiple templates and a series of choices in terms of colours, materials and others. When implemented, in the beginning, Nike offered this service in their flagship stores and some other selected ones. Consumers could then personalize their footwear. However, besides implementing personalization concepts into the business, consumers were incentivized to submit their designs in a competition where the three winning models would later be sold in limited series. In this way, Nike created a unique experience for the consumer, making possible uniqueness instead of only offering a mass-produced product. Also, Nike had the input of several new designs that could be used in the future and got information about consumer trends<sup>60</sup>.

Nike initially based its process on the DART model: dialogue, access, risk-return, and transparency to manage value co-creation. Among many projects connected to co-creation, NIKEiD was one of the most well-known. Back in 2006, for example, twenty individuals related to the sneaker culture were invited to a competition to design new sneakers that were later voted by Nike's community. These initiatives were a challenge for Nike, but the later acknowledgement of gaining competitive advantage through

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<sup>60</sup> <https://news.nike.com/news/new-nikeid-studio-opens-at-niketown-london>

creating value based on experiences made the brand start a path to distance itself from a product-centric culture that was the basis for Nike's product development. Nike also won knowledge from the input of its consumers, reducing possible failures in the launching of products and misalignment with the market. In addition, the consumers gained valuable experiences in which they could participate in the creation and design of products and services and interact with other consumers (Ramaswamy, 2008).

Currently, Nike still offers the possibility to create products on their website, but it now works more as product customization as seen in figure 38.

Choosing a model and changing the colours or materials of its integrating parts is still possible, but the early contests or competitions are no longer part of the experience. So, the co-creation side of the process might have been lost along the way. Although, Nike still has the input of its consumers regarding purchase trends and still keeps proprietary rights over the inputted ideas from its consumers that can be used for the creation, development, modification, improvement, manufacturing or commercialization of products or services<sup>61</sup>.

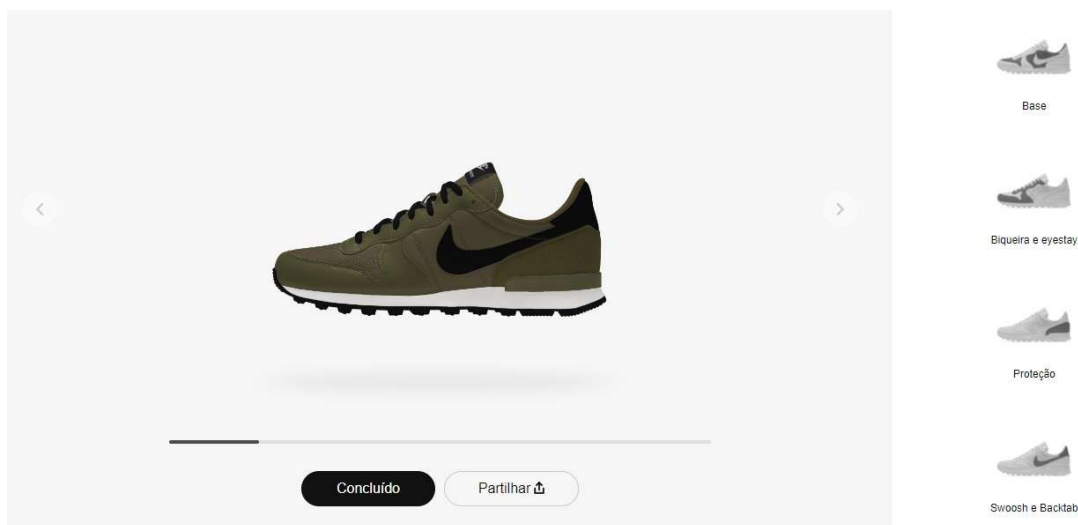


Figure 38 - Nike By You / NIKEiD website. Source: <https://www.nike.com/id/>, now <https://www.nike.com/pt/nike-by-you>. Accessed on 20/09/20.

As for brands that are currently working and gaining input from co-creation, Threadless is one of the cases that have been on the market for years. Based in Chicago since the year 2000, founded by designers Jake Nickell and Jacob DeHart, Threadless is a brand

<sup>61</sup>[https://agreementservice.svs.nike.com/pt/pt\\_pt/rest/agreement?agreementType=termsOfUse&uxId=com.nike.commerce.nikedotcom.web&country=PT&language=PT&requestType=redirect](https://agreementservice.svs.nike.com/pt/pt_pt/rest/agreement?agreementType=termsOfUse&uxId=com.nike.commerce.nikedotcom.web&country=PT&language=PT&requestType=redirect)

that has been working with the concept of co-creation for more than 20 years successfully. The brand gives users the possibility of submitting print designs through challenges (figure 39). These are usually launched weekly, and there is the chance to participate for around three weeks.

If the Threadless team approves the design, it will be available for the voting stage in a few days (figure 40). After that, the most voted products can be put up for sale. According to Humphreys and Grayson (2008) and Daamen (2015) at Threadless, users can have all the control when submitting ideas and vote on the designs they would like to see on sale.

Piller (2010) states that usually, designs are scored an average of 2500 times, and there are an average of 100 comments per submission. The winning designs need to be evaluated for their originality, copyright issues, how timeless they are, if they are similar to other recent winners and how the design can contribute to the variety of offers. And not always do the top-scored ones get chosen at the end (Piller, 2010).

**DESIGN CHALLENGES**  
 This is where the magic happens. If you've got an awesome idea for a design, submit it here. If your design is chosen for print, it could end up for sale as a real product that people all around the world can have! [How it works](#)

Our never-ending, no-themes, no-holds-barred, open-ended design challenge

475,758 designs submitted

**SUBMIT A DESIGN**

9,692 designs printed

Need help with your design? [Submit for Critique](#)

**HOW IT WORKS!**

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**NEED INSPIRATION? CHECK OUT OUR THEMED CHALLENGES**

By Name / Prize / End Date




 <p><b>Shoes</b>        3837 designs        Weekly winners!        Submit a design</p>	 <p><b>Wellness</b>        0 designs        GC        18 days left        Submit a design</p>	 <p><b>Modern Classics</b>        56 designs        GC        11 days left        Submit a design</p>
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Figure 39 - Threadless challenges. Source: <https://www.threadless.com/>. Accessed on 06/09/20.

Consumers can also purchase the design as soon as the community has chosen it by selecting a pre-buying option. Six new products are usually produced each week and reproduced only if many customers commit to purchasing the item. Annually, around 600 creators are awarded prizes.

### DESIGNS FROM THIS CHALLENGE



Figure 40 - Designs submitted for a Threadless challenge and available for voting. Source: <https://www.threadless.com/>. Accessed on 06/09/20.

Also, to help with the idea's submission, there are templates available to put the print up to vote for several different products (figure 41).

Besides the regular voting, there is also the possibility to fund a design when prospective purchasers indicate a desire to purchase a product featuring the design. If so, there will be the opportunity to reach the funding threshold in the following ten days.

**Design art for custom shoes**  
Create unique designs specifically for slip-ons. In partnership with Bucketfeet, Threadless is excited to offer custom slip-on shoes to showcase your art. All Bucketfeet shoes are handmade-to-order, featuring a classic slip-on silhouette, rubber sole for traction, removable cushioned in-soles, and machine-washable material. Designs are sublimation printed on the fabric for high-quality, long-lasting colors. Add your aesthetic to a fresh pair of Bucketfeet and help customers kick up their heels while wearing your art.

Optimal files should be 25" wide by 20" tall, 300 dpi, raster or vector file

Share: [f](#) [t](#) [t](#) <https://www.threadless.cc>

**YOU COULD WIN** Legal stuff

- Earn up to \$10 on each pair of shoes their design sells on Bucketfeet.com! [Read more...](#)
- \$150 Threadless gift code

**SUBMIT A DESIGN** Submission kit

**DOWNLOAD THE TEMPLATE**

Figure 41 - Available template for idea submission at Threadless Designs submitted for a Threadless challenge and available for voting. Source: <https://www.threadless.com/>. Accessed on 06/09/20.

From time to time, Threadless also partners with other brands, for example, Dell, in 2010, to create designs for the exterior of special editions of computers. Alpergatas, known for the Havaianas flip-flops, also in 2010 had an open call for a unique line of designs that ended up being the second more sold category online. This was the first incursion of Threadless on accessories (Piller, 2010).

On the challenges, there is a fixed prize or prizes in the form of money (Humphreys & Grayson, 2008) or others, for example, gift vouchers, and also, when selling, the designer will receive a share of the sale of every item that includes its design. For example, back in 2012, creators were getting a 2000\$ prize and 500\$ to buy t-shirts being its name printed on the garments' label (Piller, 2010).

When submitting ideas, the rights to use, portray, display, and publish the user's name, appearance, voice, likeness, photographic image, and biographical information are automatically granted to Threadless. Although regarding the design, the user owns and will maintain ownership of the Design but at the same time grants Threadless a worldwide, irrevocable, non-exclusive right and license to use, upload, modify, reproduce, copy, exhibit, create derivative works of, distribute, sell, advertise, and display the design in any manner.

As for the products, Threadless uses the same print in different products, as seen in figure 42, so a print can either be available on home décor products, footwear or clothing, among others. On clothing, the same print can also be available, in some cases, for menswear, womenswear and childrenswear in a wide range of material qualities, models and sizes. However, there is only an offer for tops without choices for bottoms.



Figure 42 - Some products available with the same print at Threadless. Source: <https://www.threadless.com/>. Accessed on 06/09/20.

Other ranges of products are also available among the many options, such as phone cases, backpacks, masks, socks, or travel mugs, as in figure 43.



Figure 43 - Other ranges of products available at Threadless. Source: <https://www.threadless.com/>. Accessed on 06/09/20.

Awaytomars was founded in 2015 and works with co-creation but on a different model that allows users to propose a complete product in terms of style, silhouette, colour or print. In addition, it is possible to submit garments and/or artwork for prints (figure 44). However, these submissions can only happen with challenges with pre-proposed themes or challenges that involved collaborations with other brands, such as Missoni or Harvey Nichols/The Woolmark Company, to create capsule collections.

Submission of ideas is usually available for around three to four weeks through a submission form, and templates are also available to help design the products.

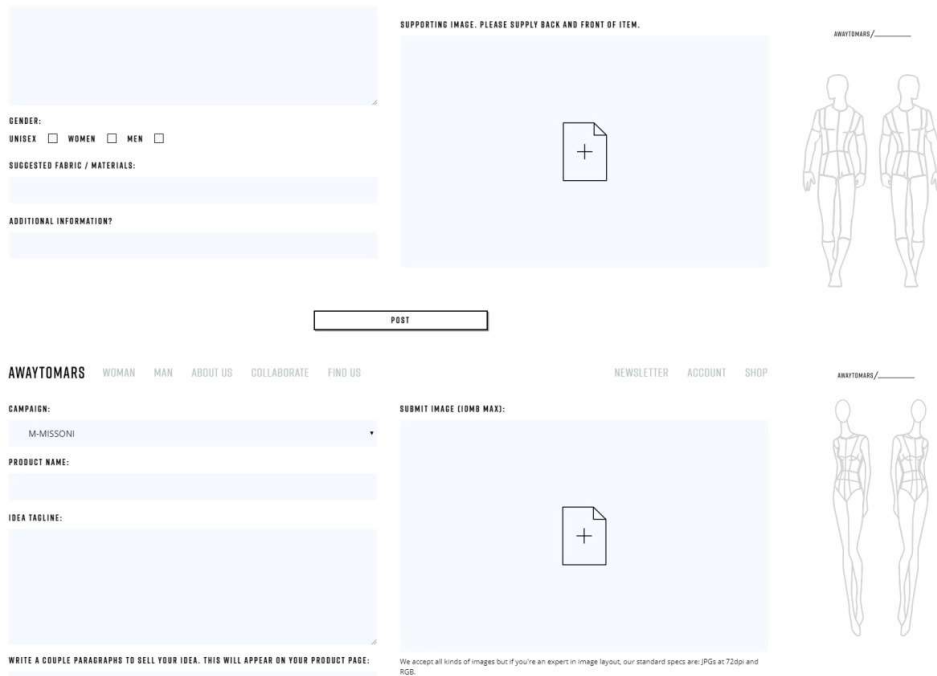


Figure 44 - Available submission for and templates at Awaytomars. Source: <https://www.awaytomars.com/#/>. Accessed on 13/09/20.

After the submission, the Awaytomars team will select the best ideas and regardless of whether the members of the community share an idea or not, they will be able to vote,

comment and adapt the ideas to improve the designs in the co-creation phase that takes place after the end of the submissions. This phase usually lasts around one week. After the co-creation phase is finished, the most voted designs are made available to pre-order among the community members (figure 45). All products are usually available to the general public in around two months.



Figure 45 - Available offer for woman's pre-order at Awaytomars. Source: <https://www.awaytomars.com/#/>. Accessed on 13/09/20.

According to Bujor, Avasilcai and Alexa (2017), the prize that the participants get is 20%. The other 80% is divided between Awaytomars for its services (20%), 50% for manufacturing the products, and 10% is divided between the members of the brand's website that contributed to the development of the product.

When submitting ideas, the rights to use the users' names and photos are automatically granted to Awaytomars. The user will automatically transfer all the property rights in a nonexclusive way regarding the design. The rights will be royalty-free, irrevocable, and sub-licensable right to use, modify, adapt, create derivative works from, reproduce, publish, and display the design worldwide.

As for the products, Awaytomars has a range of products for men and women that include clothing (tops and bottoms), accessories and footwear (figure 46).



Figure 46 - Part of the available offer at Awaytomars website. Source: <https://www.awaytomars.com/#/>. Accessed on 13/09/20.

Bujor, Avasilcai and Alexa (2017) state that Awaytomars has made it possible for anyone to make fashion without having studies or experience. It is an innovation in the sector, offering the everyday user the opportunity to create the brand and, at the same time, share the profits. This also applies to Threadless, although the consumers only give ideas for prints and not for the whole of the garment.

### **3.1.4. Results**

Regarding the idea submission, both brands have similar means. Threadless launches contests with themes, as Awaytomars do, and both have available templates and guidelines for participation. Threadless has more weekly challenges, held for around three weeks, than Awaytomars, which can be an incentive for more continuous participation by the community. However, Awaytomars manages partnerships with other well-known brands, which can be a plus in terms of adding value to the consumer experience. Awaytomars also allow users to submit ideas for around three to four weeks. One problem in the idea submission on Awaytomars is that the website information introduces the users to the co-creation of garments but not accessories or footwear, instead of Threadless, which supplies templates for all the products available for sale on the website. After the initial stage of the idea submission, both brands allow the community to vote on the brand's team's choices to select the ones put up for sale. On Awaytomars, the most voted ones will be put up for pre-orders which means that the delivery will take some time. On the other hand, the community has instant access to be the first buying, but it will take around two months to receive the purchased items.

As for the prizes, both brands rely on incentivising consumers with monetary rewards. Awaytomars gives a percentage of the sales revenues to the co-creator and the intervenient in the development process. On Threadless, it can be in the form of vouchers

or fixed money prizes besides a value that varies depending on the item and the price sold. On Awaytomars, the rewards that the contributors might get are unclear, while on Threadless, all the information is available and easily accessible on the website.

Regarding the proprietary rights, both brands will own the rights of the submitted ideas. This is positive and, in legal terms, almost essential for the brands, but if the incentives are not the right ones, this can make some users automatically not want to cooperate with the brand with newer designs.

Finally, regarding the available offer in terms of products at Threadless, the concept of co-creation is explored to let the brand give extensive use to the submitted ideas. However, this also reverts to excess in terms of the offer that can be overwhelming for the consumers. On Awaytomars, the contrary happens, and the offer is more limited. For example, in some cases, the same print is also applied to different pieces, giving extra use to a single idea as it happens in Threadless.

The concept behind Threadless allows, most likely, the brand to produce only what they sell in most product ranges. However, on the other hand, the concept behind Awaytomars allows the brand to fund the manufacturing of some garments put for sale on pre-order that might also help manufacture other products that will be put up for sale later.

## **3.2. Methodology**

### **3.2.1. Introduction**

This chapter will analyse the several topics already reviewed, from the choice of the theme to the objectives. Furthermore, the type of research, its approaches and methods are also part of this chapter that aims to define how the hypothesis and propositions considered for this research will be tested, the survey and the interviews and its data collection and the statistical or non-statistical procedures applied.

### **3.2.2. Research methods and design**

When initiating research, it is needed to understand why it is being done and to who is directed. The methodology will answer the questions that were made at the beginning of the research.

Considering that this research aims to concretize the development of a new co-creation model, it will involve a mixed methodology that allows reaching the entire co-creation

process from the consumer to the manufacture. The variety of methods used will reinforce the results and help create a more solid basis for the research.

For the empirical study was considered a non-interventionist, interpretivist approach and positivist approach.

The non-interventionist approach focuses on the literature review for, which were considered articles from informing magazines and newspapers, scientific papers, academic thesis and books.

An interpretivist approach is used for the fashion designers and supply chain experts through interviews, allowing the understanding of complex social phenomena (Fortin et al., 2009). The qualitative method will be applied through interviews with designers and supply chain experts. The interviews will be non-structured with open questions. The qualitative method was used to approach a particular sample with deep-in knowledge of their expertise. This approach is referred to as providing richer and in-depth data (Sampieri et al., 2006). The interviews will bring into the research reliable technical knowledge that is also more systematic and better thought-through than knowledge collected from other sources.

A positivist approach is dedicated to analysing a sample of consumers through a survey. The quantitative method was applied to study the consumers with a resource to a survey with closed questions. The quantitative method was used to approach as many as possible a sample of consumers. While this approach allowed for data collection from a much wider audience, it also allowed better control over the data collection (Sampieri et al., 2006).

The mixture of both approaches boosts the development of knowledge, the construction of theories and problem-solving abilities (Sampieri et al., 2006; Flick, 2018). The merge of these two methods is referred to by Denzin (1978) as triangulation (Sampieri et al., 2006; Flick, 2018). Triangulation uses multiple sources and data sources to validate better the findings (Silverman, 2006; Flick, 2018). In the case of this research, some of the findings of the consumer survey will be compared with the findings from the interviews with designers and the literature, and the interviews with designers to the interviews to supply chain experts and the literature, in order to understand the different perspectives of the different sources, applying in this way a between-methods triangulation (Flick, 2018).

Data collection will enable answering the research questions through the obtained results, confirm or not hypotheses and propositions, and be the basis for the proposal of a streamlined co-creation model.

### **3.2.3. Questions of investigation**

The research began by defining the problem and the research questions. Then, looking at the overall research, four main questions need to be made because of its pertinence regarding the fashion business and the fashion designer itself. That will lead to understanding what can be improved in the co-creation process.

- What makes the consumer have an interest in co-creation?
- How does the co-creation process affect the brand and its products?
- What can be the fashion designer's roles in co-creation brands?
- What methods and processes are adequate for the supply chain when working with co-creation?

### **3.2.4. General objective**

- Develop a co-creation model that can maximize the benefits and minimize the problems for the consumers, brands and supply chain.

### **3.2.5. Specific objectives**

- Know what consumers desire and expect from co-creation.
- Understand how fashion designers think co-creation should work with the consumers and the supply chain.
- Comprehend what can be the fashion designer's overall contribution for co-creation.
- Understand what can provide stability to the supply chain to achieve greater production efficiency and assertiveness when working with co-creation.

These investigation questions and objectives gave origin to concepts and, consequently, conceptual definitions and were also created hypothesis or propositions as in table 9.

### **3.2.6. Research structure and conceptual framework**

In table 9, it is possible to see an overview of the research structure and the interrelation of the objectives of the research with the questions of investigation, the type of research methods, the concepts, the conceptual definitions, the hypothesis or propositions and the methods for data collection. The development of the concepts was based on several authors and were created in order to organise the different topics of interest for the

research. In the conceptual definitions it is possible to see in detail the various points addressed in each of the concepts. These concepts and their respective definitions were the basis for the development of the questions of the consumer survey and the questions for the interviews for the fashion designers and supply chain experts. Different authors may have influenced the same concept, so they may vary depending on whether that concept is applied in the consumer survey or the interviews with fashion designers or supply chain experts. The concepts and conceptual definitions along with the questions and objectives helped with the creation of hypothesis and the propositions and its interconnection can be seen in the diagram of the conceptual framework of the research available on figure 47.

Table 9 - Overview of the research structure and the interrelation of the objectives of the research with the questions of investigation, the type of research method, the concepts, the conceptual definitions, the hypothesis or propositions and the methods for data collection. Source: Author

General objective: Develop a co-creation model that can maximize the benefits and minimize the problems for the consumers, brands and supply chain.			
Specific objective(s)	Know what consumers desire and expect from co-creation.	Understand how fashion designers think co-creation should work with the consumer and the supply chain.  Comprehend what can be the fashion designer's overall contribution for co-creation.	Understand what can provide stability to the supply chain to achieve greater production efficiency and assertiveness when working with co-creation.
Question(s) of investigation	What makes the consumer have an interest in co-creation?	How does the co-creation process affect the brand and its products?  What can be the fashion designer's roles in co-creation brands?	What methods and processes are adequate for the supply chain when working with co-creation?
Research method	Quantitative	Qualitative	Qualitative
Concepts	<p><b>Motives to co-create</b> Gentile et al. (2007); (Murray (2007); Etgar (2008); Humphreys &amp; Grayson (2008); Nambisan &amp; Baron (2009); Hoyer et al. (2010); Füller (2010); Arvidsson (2011); Parment (2013); Frow et al. (2015); Tu et al. (2017)</p> <p><b>Co-created fashion products</b> Medeiros &amp; Cruz (2006)</p> <p><b>Willingness to co-create</b> Hoyer et al. (2010); Füller (2010)</p> <p><b>Type of co-creation</b> Hippel &amp; Katz (2002); Füller (2010); Hoyer et al. (2010)</p> <p><b>Brand-consumer connection</b></p>	<p><b>Consumer influence</b> Magnusson et al. (2003); Arnould et al. (2006); Franke et al. (2006); Zwick et al. (2008); Ertimur &amp; Venkatesh (2010); Hoyer et al. (2010); Arvidsson (2011); Parment (2013); Millspaugh &amp; Kent (2016); Hunter et al. (2018)</p> <p><b>Brand-consumer connection</b> Brown et al. (2003); Prahalad &amp; Ramaswamy (2004); Ogawa &amp; Piller (2006); Gentile et al. (2007); Humphreys &amp; Grayson (2008); Ertimur &amp; Venkatesh (2010); Hoyer et al. (2010); Piller (2010); Arvidsson (2011); Parment (2013); Hessman (2014); Frow et al. (2015); Carvalhal (2016); Maltzahn (2016); Millspaugh &amp; Kent (2016); Tu et al. (2017); Fernandes (2018); Berg (2021)</p>	<p><b>Process suitability</b> Bruce et al. (2004); Chandra &amp; Grabis (2007); (Salvador et al., 2009); (Thomassey, 2010); Hodge et al. (2011); Piller et al. (2012); Gupta &amp; Jain (2013); Wiengarten et al. (2017); Berg et al. (2020); Jin et al. (2020)</p> <p><b>Process agility</b> Tu et al. (2004); Salvador (2007); Hoyer et al. (2010); Piller (2010); Peng et al. (2011); Bhamu &amp; Sangwan (2014); Wang et al. (2017); Zhang et al. (2017); Fernandes (2018); Li &amp; Chen (2018); Berg et al. (2020)</p> <p><b>Information flow</b></p>

	<p>(Pralhad &amp; Ramaswamy 2004); Murray (2007); Xie et al. (2008); Etgar (2008); Bolton &amp; Saxena-Iyer (2009); Hoyer et al. (2010); Heidenreich et al. (2015); Bujor, Avasilcai and Alexa (2017); Pal (2017); Granskog et al. (2017); Granskog &amp; Lee (2020); Alldredge et al. (2021); Amed et al. (2021); Costa (2021); Pamésa et al. (2021)</p> <p><b>Product expectations</b> Berger &amp; Piller, (2003); Bechwati &amp; Siegal (2005); Füller, (2010); Minnema et al. (2016); Guo et al. (2020)</p>	<p><b>Type of co-creation</b> Piller (2004); (Füller, 2010); Piller et al. (2012)</p> <p><b>Process agility</b> Lowson (2001); Christopher et al. (2004); Tu et al. (2004); Salvador (2007); Hoyer et al. (2010); Piller (2010); Thomassey (2010); Peng et al. (2011); M. Zhang et al. (2017); Wiengarten et al. (2017); Li &amp; Chen (2018)</p> <p><b>Designer influence</b> Sanders &amp; Stappers (2008)</p> <p><b>Information flow</b> Christopher &amp; Towill (2000); Bruce et al. (2004); Prajogo &amp; Olhager (2012); Jin et al. (2020); Amed et al. (2021); Hedrich et al. (2021)</p>	<p>Christopher &amp; Towill (2000); Bruce et al. (2004); Prajogo &amp; Olhager (2012); Jin et al. (2020); Amed et al. (2021); Hedrich et al. (2021)</p>
Conceptual definitions	<p><b>Motives to co-create</b> Consumers value co-creation Reasons to co-create Incentives to co-create</p> <p><b>Co-created fashion products</b> Styles of fashion products Types of fashion products</p> <p><b>Willingness to co-create</b> Frequency to co-create</p> <p><b>Type of co-creation</b></p>	<p><b>Consumer influence</b> Importance of the consumers' ideas Excessive submission of ideas and their impact</p> <p><b>Brand-consumer connection</b> Co-creation influence on the brand DNA Consumers value co-creation Product failure risk</p> <p><b>Type of co-creation</b></p>	<p><b>Process suitability</b> Creation and production processes Co-created products integration in mass production supply chains Best supply chain philosophy for co-created products Continuous production all year round</p> <p><b>Process agility</b> Number of manufactured products per style and efficiency Modular products and efficiency</p> <p><b>Information flow</b></p>

	<p>Co-creation of several types of products in the same timeline  Co-creation of details or full product  Co-creation of the fashion product from the initial design till the end  Co-creation of pre-proposed fashion products</p> <p><b>Brand-consumer connection</b>  Information received along the process  Negative factors of the co-creation process</p> <p><b>Product expectations</b>  Expectations of product delivery  Willingness to receive the product</p>	<p>Co-creation of details of fashion products or full products  Co-creation of several products in the same timeline</p> <p><b>Process agility</b>  Benefits of modular products  Product sourcing quickness</p> <p><b>Designer influence</b>  Designer role in a co-creation brand</p> <p><b>Information flow</b>  Information sharing between the brand and the supply chain</p>	<p>Information sharing in the supply chain</p>
Hypothesis /Propositions	<p>H1 – There is a strong correlation between the perception of the added value of co-created products and the consumers that already co-created products.</p> <p>H2 – Personal factors can influence the preference in the type of incentives that can lead consumers to participate more actively in co-creation processes of fashion products.</p> <p>H3 – There are significant differences in the incentives that can lead consumers to participate more actively in the co-creation processes regarding the frequency in which the consumer would like to co-create fashion products.</p> <p>H4 – Personal factors can influence the styles of fashion products that the consumers would like to co-create.</p>	<p>P1 – The direct connection with the consumers affects the brand DNA.</p> <p>P2 – Products co-created with the consumers have added value.</p> <p>P3- The ideas received from the consumer are important for the creation of new fashion products.</p> <p>P4 – An excessive number of submission of ideas negatively affects the co-creation process.</p> <p>P5 – Co-created products have a lesser risk of market failure.</p> <p>P6 – The application of modularity to co-created products increases the efficiency and success of the co-creation process.</p>	<p>P8 – Co-creation is more beneficial for the production management and efficiency of the supply chain than co-production or mass customization.</p> <p>P9 – Production of small quantities of co-created products based on modularity increases the production efficiency.</p> <p>P10 – Continuous production all year round is an incentive for manufacturers to produce co-created brands.</p>

	<p>H5 – Personal factors can influence the types of fashion products that the consumers find more interesting to co-create.</p> <p>H6 – Personal factors can influence the frequency that consumers would like to co-create fashion products.</p> <p>H7 – There is a strong correlation between the frequency in which the consumer would like to co-create fashion products and the interest in creating several types of fashion products in the same timeline.</p> <p>H8 – Personal factors can influence the frequency that consumers would like to co-create fashion products.</p> <p>H9 – There is a strong correlation between the interest in co-creating products pre-proposed by the brand through comments, suggestions, or proposals for alterations and/or improvements of the design or materials and the interest in sharing photographs of his/hers wardrobe with a fashion brand, so that, the products created can better met his/hers desires and expectations.</p> <p>H10 – Personal factors can influence the consumers’ action if the delivered product did not meet his/hers expectations.</p> <p>H11 – Personal factors can influence for how long the consumer would be willing to wait for the product delivery if it was bought on pre-sale.</p>	<p>P7 – The application of modularity to co-created products is able to give response to consumers’ expectations.</p>	
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	H12 - There is a strong correlation between the time the consumer would be willing to wait longer for the product delivery if it was bought on pre-sale and the consumers that already co-created fashion products.		
Data collection method	Survey with closed questions (except Q27)	Interview with open questions	Interview with open questions

A conceptual framework was built to better understand these correlations, as seen in figure 47.

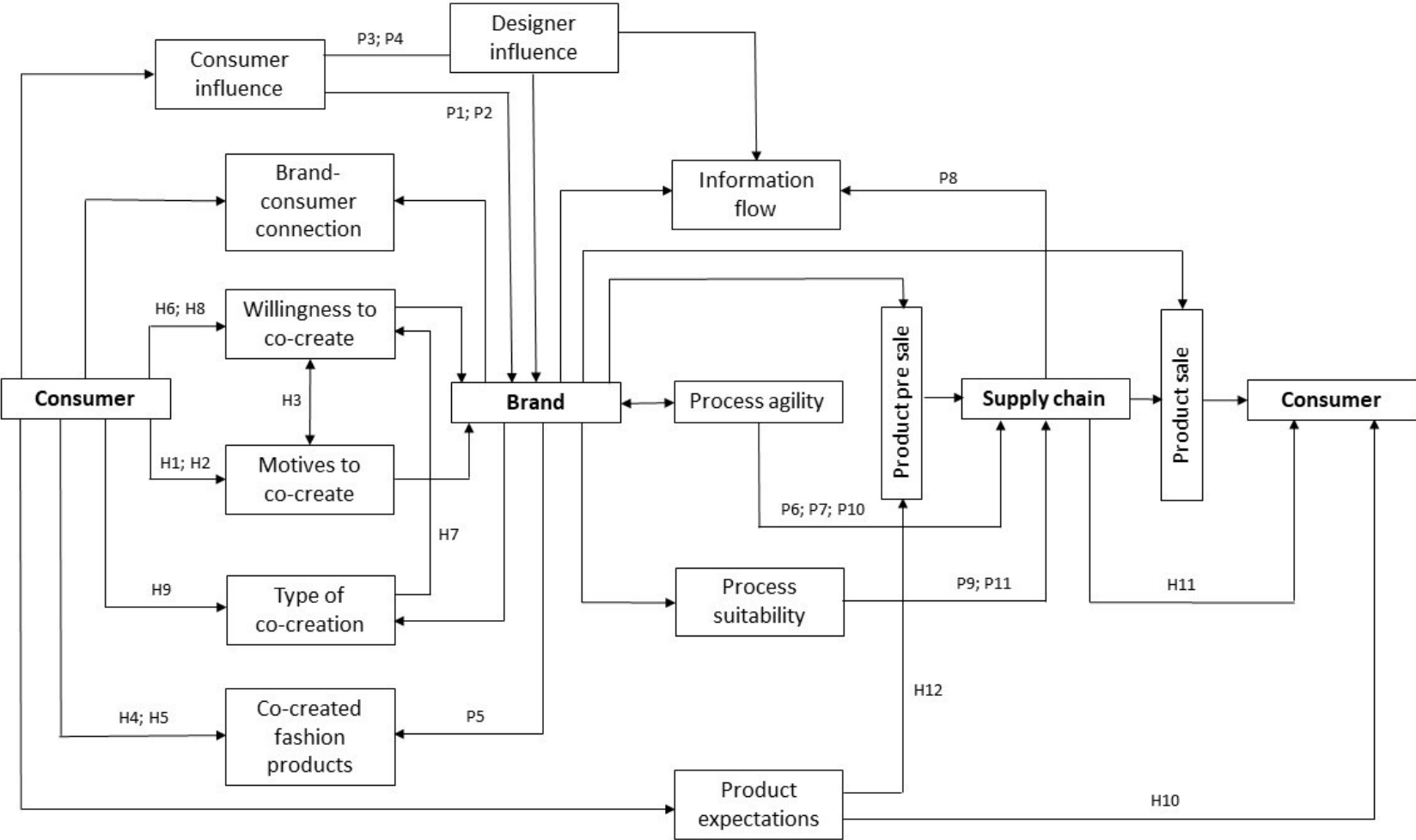


Figure 47 - Diagram of the conceptual framework of the research and its relationship with the hypothesis and propositions. Source: Author

### **3.3. The survey**

The aim of the survey for the consumers is the understanding of the motives to co-create, co-created products fashion products, willingness to co-create, type of co-creation, brand-consumer connection and product expectations from the consumer's point of view.

The survey was structured taking into account the literature review and had 27 questions, being the last one a question open to individual suggestions from the consumers. All the questions and possible answers were thought to have the most approachable and straightforward type of language and terminologies for the respondents' faster and simpler understanding. After an initial version that was tested with a sample of six consumers, alterations were made to some of the questions and clarifications on the possible answers.

After this stage, the survey was submitted for appreciation to the Ethics Committee of the University of Beira Interior on 21/09/21, and on 11/10/21, clarifications were requested by the committee. After changes to the survey in terms of contents and structure, the committee approved the survey on 19/10/21 with the code CE-UBI-Pj-2021-054. The Ethics Committee approval letter can be found in attachment 9.1.

The survey was made in Portuguese (see appendixes) as the sample that was meant to be approached were residents in Portugal with ages between 18 and 64 years old. The final format was reached after the Ethics Commission's approval. The survey was made available to the consumers online through Jotform between 27/10/21 and 04/01/22. The responses were completely anonymous.

The survey was structured with an initial part informing about the scope and objectives of the research and the survey, who was directed for and how the collected data was to be used, and email contact for any doubts that could arise during the survey completion. A brief description of the co-creation process was also available so that the consumers less related to the concept could better understand it and explore it if it was their will.

The first part of the survey is dedicated to personal questions regarding gender, age, level of studies, professional situation, the field of work, income and residence. The second part is dedicated to co-creation and fashion products. The third part is focused on the co-creation process itself, and the fourth and last part has questions related to the after-sale of the product. The division of the survey into four parts helps better understand the

consumers and the order in which the contents are presented also follow a path from the idea until the product purchase.

The questions presented in the survey are closed questions with the possibility of response on a Lickert scale from 1 to 7 to assess the concordance or not of the respondents over the several topics under study or on a dichotomous scale (Malhotra, 2019) with two possible answers and were also made questions with multiple answering options with the possibility of choosing one single answer between the different options. An exception to the last question that allowed respondents to express any other opinions freely. Only question 18 could be skipped depending on the answer given to question 17.

Some of the questions made in this survey connect with the questions made in the interview to the designers to cross the results and understand the point of view of both parties over the same matter.

### **3.3.1. Sample selection and data collection for the survey**

Considering that co-creation mainly exists in an online format, it was then plausible to find respondents online. This was also the easier way to disseminate the survey in terms of simplicity and coverage of the consumers and their geographical areas. The only pre-requisite for the respondents was that they had between 18 years old and 64 years old and that they already had co-created a fashion product or would like to co-create a fashion product. The survey dissemination was made through email and social networks directly to several contacts and groups on social networks dedicated to academic research. It was also made through dedicated websites such as Survey Circle or Survey Swap and disseminated through the Public Relations Office from the University of Beira Interior. During this period, were collected 415 answers on a national level in Portugal.

From the 415 obtained answers, 404 answers were considered valid. The questions that were not considered valid were because when answering question 17 with the option “Just details of the fashion product”, the respondent should answer question 18, which was not always the case. It was the case in 7 survey answers in that there was no answer to question 18 or the answer was incomplete. Also, some respondents answered question 11 with low values on a scale of 1 to 7 on all options and also responded “No” to question 9, revelling that they actually would not intend to participate, in the future, in the co-creation of fashion products nor they ever co-created fashion products. So, in this way, they did not meet the criteria to be eligible for participating in the survey. It was the case in 4 survey answers.

Except for question 18 and 27, all the remaining questions were mandatory. If everything was correctly answered, the respondent could submit the survey at the end, making the remaining answers valid.

“In order to generalize from a random sample and avoid sampling errors or biases, a random sample must be of adequate size” (Taherdoost, 2017, p. 237).

So, the number of needed answers was calculated through Qualtrics sample size calculator<sup>62</sup> for an estimated population of 6612242 individuals according to numbers provided by Pordata<sup>63</sup>, taking into account the latest numbers about the Portuguese population regarding the year 2020. The sample was calculated with a confidence level of 95% and a margin of error of 5%. Therefore, the number of answers needed was a total of 385.

This number goes in line with the literature review. For example, Taherdoost (2017) refers that for a confidence level of 95% and a margin of error of 5%, the total number of needed answers for a population over 1000000 is 384.

The highest level of responses considered needed for the population approached in this research was referred by Naing (2003), which indicates that 400 answers were needed to represent the population accurately and have a confidence level of 95% and 5% margin of error. The data collection summary can be seen in detail in table 10.

Table 10 - Data collection summary. Source: Author

Sample	Consumers between 18 years old and 64 years old
Field of action	National
Data collection method	Survey
Sampling method	Non-probabilistic sampling technique, snowball sampling
Survey availability dates	From 27/10/21 to 04/01/22
Number of answers	415 answers in Portugal (404 valid answers)

### 3.3.2. Data analysis

After the collection of all the answers, the data was organized and coded in an Excel chart in order to be tested through the program IBM SPSS Statistics V. 28.0, which according

<sup>62</sup> <https://www.qualtrics.com/blog/calculating-sample-size/>

<sup>63</sup> <https://www.pordata.pt/Portugal/Popula%C3%A7%C3%A3o+residente++m%C3%A9dia+anual+total+e+por+grupo+et%C3%A9ria-10>

to Pereira & Patrício (2013), is a tool that allows doing complex statistic calculus with clear and straightforward results.

A series of statistical methods were used to analyse the data collected.

Descriptive statistics were used for the demographic and social data and for questions 9, 10, 15, 16, 17, and 26.

For the remaining questions, a mean and standard deviation analysis was done for the results to be easily understood.

As for the questions for which was posed a hypothesis, depending on the data analysed, several tests were used being them the following:

The non-parametric Chi-square test is used to understand if there is a relationship between two categorical variables (Kremelberg, 2010; Martins, 2011). Moreover, it tells us if two variables are independent of one another. This test was used for H1, H6a, H6b, H6c, H6d, H7, H11a, H11b and H12. For the kind of data being analysed on these hypothesis, Marôco (2021) refers that the Chi-square test should be used for a correct analysis of the data. Phi and Cramer's V test was additionally used to assess the level of the correlation.

The non-parametric Kruskal Wallis H test was used to analyse the variants presented on a Likert scale where a normal distribution was not verified (Pestana & Gageiro, 2014). This test is appropriate to compare two or more distributions of a variable observed in two or more independent samples (Marôco, 2021). The aim was of determining if there were significant differences between a continuous dependent variable and a categorical independent variable as it was for H2a, H2b, H2c, H3, H4b, H5b, H8a, H10a and H10b.

The non-parametric Mann Whitney U test is adequate to compare the distribution of a continuous dependent variable when measured on an independent variable that has two samples (Marôco, 2021; Martins, 2011). This test was used on H4a and H5a, where was not verified a normal distribution.

Also used was the non-parametric Spearman's Rank test, which allows testing the strength and if a correlation is positive or negative when testing two continuous variables (Martins, 2011). This test was used on H9.

Additionally, other tests were made that were not reported during the analysis, as the Kolmogorov-Smirnov test that was used to understand if there was a normal distribution among the answers as Shapiro-Wilk is only adequate for samples with less than 30 participants (Yazici & Yolacan, 2007; Marôco, 2021), so from the data obtained were considered the results from the Kolmogorov-Smirnov test.

As for the variables, gender (Q1), age (Q2), level of studies (Q3), professional situation (Q4), the field of work (Q5), income (Q6) and residence (Q7 & Q8), these will be of use not only to define the type of respondents but also to give an answer to several hypotheses.

### **3.3.3. Objectives of the consumer survey**

In table 11, it is possible to see the general objective and the specific objective and the objectives of the survey questions. It is also possible to understand their relationship with the survey questions posed to the consumers and the hypotheses. The last column specifies the type of statistical treatment applied to validate or not the proposed hypotheses and give results to some questions made to understand the consumers' preferences. It is also possible to see the authors that fundament the construction of the questions and hypothesis.

Table 11 - General objective, specific objectives, questions objective, references, survey questions, hypothesis and statistical treatment for the consumers' survey. Source: Author

General objective: Develop a co-creation model that can maximize the benefits and minimize the problems for the consumers, brands, and supply chain.					
Specific objectives	Question objective	References	Survey question	Hypothesis	Statistical treatment
Know what consumers desire and expect from co-creation.	Identify the percentage of consumers that already have co-created fashion products.		Q9 - Have you ever co-created fashion products?		Descriptive statistics
	Understand if a co-created product has added value for the consumer.  Understand if there is a correlation between the perception of the added value of co-created products and the consumers that already co-created fashion products.	Gentile et al. (2007); Humphreys & Grayson (2008); Arvidsson (2011); Parment (2013); Frow et al. (2015); Tu et al. (2017)	Q10 - Do you consider that a fashion product has added value when it is co-created by means of cooperation between the consumer and the brand?	H1 – There is a strong correlation between the perception of the added value of co-created products and the consumers that already co-created products.	Descriptive statistics  H1 - Chi-square test
Know why consumers would like to co-create fashion products.	Know why consumers would like to co-create fashion products.	Murray (2007); Etgar (2008); Humphreys & Grayson (2008); Nambisan & Baron (2009); Hoyer et al. (2010); Füller (2010)	Q11 - Why do you like or would like to participate in the co-creation of fashion products?		Mean and standard deviation analysis
	Understand what incentives would make consumers participate more in the co-creation of the fashion products.  Understand if there are differences in personal factors that can influence the preference in the type	Humphreys & Grayson (2008); Nambisan & Baron (2009); Hoyer et al. (2010); Füller (2010)	Q12 - What incentives would make you participate more times in the co-creation of fashion products?  Does it vary taking into account the age, net monthly income or professional situation?	H2 – Personal factors can influence the preference in the type of incentives that can lead consumers to participate more actively in the co-creation processes of fashion products.	Mean and standard deviation analysis  H2a – Kruskal Wallis H test  H2b - Kruskal Wallis H test

	<p>of incentives that can lead consumers to participate more actively in the co-creation processes of fashion products.</p> <p>Understand if there are differences between the incentives that can lead consumers to participate more actively in the co-creation processes regarding the frequency in which the consumer would like to co-create fashion products.</p>			<p>H2a – There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their age.</p> <p>H2b – There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their net monthly income.</p> <p>H2c – There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their professional situation.</p> <p>H3 – There are significant differences in the incentives that can lead consumers to participate more actively in the co-creation processes of fashion products regarding the frequency in which the</p>	<p>H2c - Kruskal Wallis H test</p> <p>H3 – Kruskal Wallis H test</p>
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				consumer would like to co-create fashion products.	
	<p>Understand what styles of fashion products are most interesting to co-create.</p> <p>Understand if there are differences in personal factors that can influence the styles of fashion products that the consumers would like to co-create.</p>	Medeiros & Cruz (2006)	<p>Q13 – What styles of fashion products would you have more interest in co-creating?</p> <p>Does it vary taking into account the gender or age?</p>	<p>H4 – Personal factors can influence the styles of fashion products that the consumers would like to co-create.</p> <p>H4a – There are significant differences in the styles of fashion products that the consumers would like to co-create regarding their gender.</p> <p>H4b – There are significant differences in the styles of fashion products that the consumers would like to co-create regarding their age.</p>	<p>Mean and standard deviation analysis</p> <p>H4a – Mann-Whitney U test</p> <p>H4b - Kruskal Wallis H test</p>
	<p>Understand what types of fashion products are most interesting to co-create.</p> <p>Understand if there are differences in personal factors that can influence the types of fashion products that the consumers find more interesting to co-create.</p>		<p>Q14 - Classify the types of products accordingly with your interest in co-creating them.</p> <p>Does it vary taking into account the gender or age?</p>	<p>H5 – Personal factors can influence the types of fashion products that the consumers find more interesting to co-create.</p> <p>H5a – There are significant differences in the types of fashion products that the consumers find more interesting to co-create regarding their gender.</p>	<p>Mean and standard deviation analysis</p> <p>H5a – Mann-Whitney U test</p> <p>H5b - Kruskal Wallis H test</p>

				H5b – There are significant differences in the types of fashion products that the consumers find more interesting to co-create regarding their age.	
	<p>Identify the frequency in which the consumer would like to co-create fashion products.</p> <p>Understand if there is a correlation with personal factors that can influence the frequency that consumers would like to co-create fashion products.</p> <p>Understand if there is a correlation between the frequency in which the consumer would like to co-create fashion products and the interest in creating several types of fashion products in the same timeline.</p>	Füller (2010); Hoyer et al. (2010)	<p>Q15 - What is the frequency in that you like or would like to co-create fashion products?</p> <p>Does it vary taking into account gender, age, level of studies or professional situation?</p>	<p>H6 – Personal factors can influence the frequency that consumers would like to co-create fashion products.</p> <p>H6a – There is a strong correlation between the frequency that consumers would like to co-create fashion products and their gender.</p> <p>H6b – There is a strong correlation between the frequency that consumers would like to co-create fashion products and their age.</p> <p>H6c – There is a strong correlation between the frequency that consumers would like to co-create fashion products and their level of studies.</p>	<p>Descriptive statistics</p> <p>H6a – Chi-square test</p> <p>H6b - Chi-square test</p> <p>H6c - Chi-square test</p> <p>H6d - Chi-square test</p> <p>H7 – Chi-square test</p>

				<p>H6d – There is a strong correlation between the frequency that consumers would like to co-create fashion products and their professional situation.</p> <p>H7 – There is a strong correlation between the frequency in which the consumer would like to co-create fashion products and the interest in creating several types of fashion products in the same timeline.</p>	
	Understand if co-creating several types of fashion products in the same timeline would be more interesting than co-creating just one.		Q16 – Do you think that co-creating several types of fashion products simultaneously is more interesting than just co-creating one type of product?		Descriptive statistics
	Comprehend if it is more interesting to co-create just details of the fashion product or the full product.	Hippel & Katz (2002); Füller (2010); Hoyer et al. (2010)	Q17 – Would it be more interesting to co-create just details of the fashion product or the full fashion product?		Descriptive statistics
	Understand what details of the fashion products are most interesting to be co-created.		Q18 – What type of details of the fashion product would you like to co-create?		Mean and standard deviation analysis
	Understand if there is interest in co-create a product from the initial design till the final product.	Füller (2010)	Q19 – I have interest in co-creating fashion products from the initial design till the final product.	H8 – Personal factors can influence the frequency that consumers would like to	<p>Mean and standard deviation analysis</p> <p>H8a – Kruskal Wallis H test</p>

	<p>Understand if there are differences in personal factors that can influence the interest in co-creating the product from the initial design till the final product.</p>		<p>Does it vary taking into account the field of work?</p>	<p>co-create fashion products.</p> <p>H8a – There are significant differences between the interest in co-creating the product from the initial design till the final product regarding the field of work.</p>	
	<p>Understand if there is interest in co-create fashion products pre-proposed by the brand through comments, suggestions, or proposals for alterations and/or improvements of the design or materials.</p> <p>Understand if there is a correlation between the interest in co-creating products pre-proposed by the brand through comments, suggestions, or proposals for alterations and/or improvements of the design or materials and the interest in sharing photographs of his/hers wardrobe with a fashion brand, so that, the products created can better met his/hers desires and expectations.</p>	<p>Füller (2010)</p>	<p>Q20 - I have interest in co-creating fashion products proposed by the brand through comments, suggestions or proposals of alterations and/or improvements to the design or materials.</p>	<p>H9 – There is a strong correlation between the interest in co-creating products pre-proposed by the brand through comments, suggestions, or proposals for alterations and/or improvements of the design or materials and the interest in sharing photographs of his/hers wardrobe with a fashion brand, so that, the products created can better met his/hers desires and expectations.</p>	<p>Mean and standard deviation analysis</p> <p>H9 – Spearman’s Rank test</p>

	Comprehend if the consumer has an interest in sharing photographs of the garments available in his/hers wardrobe with the brand so that the co-created products better meet his/hers desires and expectations.	Füller (2010)	Q21 - I have interest in sharing photographs of the garments present in my wardrobe, so that, the products created by the brand better meet my desires and expectations.		Mean and standard deviation analysis
	Comprehend what are the most important informations to be received at the beginning of the co-creation process.	Costa (2021)	Q22 – What informations do you consider to be more important to receive in the beginning of the co-creation process?		Mean and standard deviation analysis
	Comprehend what are the most important informations to be received during and after the co-creation process.		Q23 - What informations do you consider to be more important to receive during and after the co-creation process?		Mean and standard deviation analysis
	Understanding what are the negatives factors in the co-creation process are, that can bring a loss of interest to the process.	(Pralhad & Ramaswamy 2004); Murray (2007); Xie et al. (2008); Etgar (2008); Bolton & Saxena-Iyer (2009); Hoyer et al. (2010); Heidenreich et al. (2015); Bujor, Avasilcai and Alexa (2017); Pal (2017) ; Granskog et al. (2017); Granskog & Lee (2020); Alldredge et al. (2021); Amed et al. (2021); Pamésa et al. (2021)	Q24 - What are the co-creation negative factors that can lead to a loss of interest in the product?		Mean and standard deviation analysis
	Know what the consumers' action would be if the delivered	Bechwati & Siegal (2005); Minnema et al. (2016)	Q25 – If the co-creation fashion product, when delivered, wouldn't	H10 – Personal factors can influence the consumers' action if the	Mean and standard deviation analysis

	<p>product did not meet their expectations.</p> <p>Understand if personal factors can influence the consumers' actions if the delivered product does not meet their expectations.</p>		<p>correspond to the expectations, what would be your action?</p> <p>Does it vary taking into account the age or net monthly income?</p>	<p>delivered product did not meet his/hers expectations.</p> <p>H10a – There are significant differences in the consumers' action if the delivered product did not meet his/hers expectations regarding their age.</p> <p>H10b – There are significant differences in the consumers' action if the delivered product did not meet his/hers expectations regarding their net monthly income.</p>	<p>H10a – Kruskal Wallis H test</p> <p>H10b – Kruskal Wallis H test</p>
	<p>Understand for how long the consumer would be willing to wait for the product delivery if it was bought on pre-sale.</p> <p>Understand if there is a correlation with personal factors that can influence the time the consumer would be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured).</p>	<p>Berger &amp; Piller, (2003); Füller, (2010); Guo et al. (2020)</p>	<p>Q26 – How much time would you be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured)?</p> <p>Does it vary taking into account the age or residence?</p>	<p>H11 – Personal factors can influence for how long the consumer would be willing to wait for the product delivery if it was bought on pre-sale.</p> <p>H11a – There is a strong correlation between the time the consumer would be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured) and their age.</p>	<p>Descriptive statistics</p> <p>H11a - Chi-square test</p> <p>H11b - Chi-square test</p> <p>H12 - Chi-square test</p>

	<p>Understand if there is a correlation between the time the consumer would be willing to wait longer for the product delivery if it was bought on pre-sale and the consumers that already co-created fashion products.</p>			<p>H11b – There is a strong correlation between the time the consumer would be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured) and their residence.</p> <p>H12 - There is a strong correlation between the time the consumer would be willing to wait longer for the product delivery if it was bought on pre-sale and the consumers that already co-created fashion products.</p>	
	<p>Understand if the respondent has any additional considerations, opinions, or suggestions about co-creation.</p>		<p>Q27 - Is there any additional consideration, opinion or suggestion about co-creation that you would like to leave us?</p>		

## **3.4. The interviews**

### **3.4.1. Fashion designers' interviews**

The fashion designers' interviews aimed to understand the consumer influence, brand-consumer connection, type of co-creation, process agility, designer influence, and information flow on co-creation from the fashion designer's point of view.

For creating the interview for the fashion designers, a first draft was elaborated that was later reviewed, taking into account the questions directed to the consumers and the supply chain experts. Once that, the fashion designer and the brand will be the intermediary between the consumers and the supply chain. The interview for the fashion designers has 18 questions. After an initial version was tested with a sample of two fashion designers, minor alterations were made to some of the questions. The interview questions (see appendixes) were available through Jotform. The interview questions were made available to the respondent before the interview. This allowed participants to research the topic and to thought about the answers so that the collected answers would be as complete as possible. The interviews (see appendixes) were coded when their transcriptions were done.

The interview was structured with an initial part dedicated to personal questions regarding age, type and level of studies, professional occupation, number of years of experience, and the company/brand dimension. The remaining questions were related to the brand, consumer, products and the supply chain.

The questions present in the interview were open questions. The respondents were free to answer as they understood what best described their minds over the question, without interference from the interviewer except for clarifications requested by the respondents.

Some of the questions made in this interview connect with the questions made in the survey to the consumers and the interviews with the supply chain experts to cross the results and understand the point of view of both parties over the same matter.

### **3.4.2. Supply chain experts' interviews**

The supply chain experts' interviews aimed to understand the process suitability, process agility, and information flow on co-creation from the supply chain expert's point of view.

For creating the interview for the supply chain experts, a first draft was elaborated that was later reviewed, taking into account the questions directed to the fashion designers once these are in contact with the supply chain. The interview for the supply chain

experts has 12 questions. After an initial version was tested with a sample of one supply chain expert, minor alterations were made to some of the questions. The interview questions (see appendixes) were available through Jotform. The interview questions were made available to the respondent before the interview. This allowed participants to research the topic and to thought about the answers so that the collected answers would be as complete as possible. The interviews (see appendixes) were coded when their transcriptions were done.

The interview was structured with an initial part dedicated to personal questions regarding age, type and level of studies, professional occupation, number of years of experience, and the company/brand dimension. The remaining questions were related to manufacturing, products and supply chain.

The questions present in the interview were open questions. The respondents were free to answer as they understood what best described their minds over the question without interference from the interviewer except for clarifications requested by the respondents.

Some of the questions made in this interview connect with the questions made in the interview to fashion designers to cross the results and understand the point of view of both over the same matter.

### **3.4.3. Sample selection and data collection for the interviews**

The interviews sample was a non-probabilistic sample gathered through a convenience sample, from direct contact with designers and supply chain experts already known by the interviewer. These initial contacts extrapolated for other additional contacts received from the first group of interviewed designers and supply chain experts. Geographically, all the respondents were working nationally. Therefore, the pre-requisite for the interview was that the respondents are or have been working as fashion designers or as experts in the supply chain.

All the interviews took place online and were recorded with the respondents' consent. Scripts for both interviews were also structured (see appendixes) with an initial contextualization of the aim of the research and an explanation of the process of co-creation. Throughout the process, support was given in case of any doubt about the questions. The interviews took place from 13/11/21 till 12/01/22. In total, were done interviews with nine fashion designers and six supply chain experts. The fact that the interviewees know the fashion industry brought to the research critical knowledge related to authentic experiences that mirror the real-world scenario.

#### **3.4.4. Data analysis**

All the interviews occurred directly with the author so that the process for all the interviews occurred similarly for data collection accuracy. A recording of these interviews was made with Zoom, and a second device, a smartphone, was set to record the interview sound in case of any failure with the primary source.

After all the interviews were done, the data was organized and coded to be tested through the NVivo version 1.5.1. It has been reported that this software enables the viewing of the data in ways that surpass the management of information manually (Bazeley & Jackson, 2013).

All the transcripts were uploaded to the software automatically so that an analysis could be made. First, cases and case classification were created. Next, from the transcripts were extracted excerpts that ultimately gave way to the manual codification and creation of nodes to divide information between topics of interest (see appendixes). The quality of the results will depend on the coding phase (Bazeley & Jackson, 2013). Finally, nodes were created, taking into account the interview questions and the frequently used words searched through the word frequency tool (Bazeley & Jackson, 2013).

#### **3.4.5. Objectives of the fashion designers' interviews**

In table 12, it is possible to see the general objective and the specific objectives and the objectives of the interview questions. It is also possible to understand their relationship with the questions posed to the fashion designers and the generated propositions. The last column specifies the type of data treatment applied in order to validate or not the proposed propositions.

Table 12 - General objective, specific objectives, questions objective, references, interview questions, propositions and data treatment for the fashion designers' interviews. Source: Author

General objective: Develop a co-creation model that can maximize the benefits and minimize the problems for the consumers, brands and supply chain.					
Specific objectives	Question objective	References	Interview question	Proposition	Data treatment
Understand how fashion designers think co-creation should work with the consumer and the supply chain.	Understand if co-creation can affect the brand DNA.	Brown et al. (2003); Ertimur & Venkatesh (2010); Millspaugh & Kent (2016)	Q6 – In which way can the DNA of a co-creation brand be influenced, as opposed to a traditional brand, having into account that the basis of a co-creation brand is to be connected directly with the consumers?	P1 – The direct connection with the consumers affects the brand DNA.	NVivo
	Understand if the co-created product is understood as an added value product over one created solely by the designer.	Prahalad & Ramaswamy (2004a); Gentile et al. (2007); Humphreys & Grayson (2008); Arvidsson (2011); Parment (2013); Hessman (2014); Frow et al. (2015); Millspaugh & Kent (2016); Tu et al. (2017)	Q7 - Does a co-created product with consumers have more added value than one created only by the designer?	P2 – Products co-created with the consumers have added value.	NVivo
	Understand the vision of the designer over the idea input from the consumer and its community.	Magnusson et al. (2003); Arnould et al. (2006); Franke et al. (2006); Zwick et al. (2008); Ertimur & Venkatesh (2010); Hoyer et al. (2010); Arvidsson (2011); Parment (2013); Millspaugh & Kent (2016); Hunter et al. (2018)	Q8 – Do you think that the ideas received from the consumers' and their communities are important for the creation of new products and for the creation of more assertive collections?	P3- The ideas received from the consumer are important for the creation of new fashion products.	NVivo

	Comprehend if an excessive submission of ideas can be a problem for the success of the co-creation process.	(Hoyer et al., 2010)	Q9 - Can an excessive submission of ideas be a problem for the success of the co-creation process?	P4 – An excessive number of submission of ideas negatively affects the co-creation process.	NVivo
	Comprehend if AI could be an important tool for the fashion designer in the co-creation process.	Tjahjono et al. (2017); DuBreuil & Lu (2020); Dilda et al. (2021)	Q10 – If it was possible to use an AI software for the analysis and filtering of the data, namely the ideas received from the consumers, would that be an important tool for the fashion designer and for the success of the co-creation process?		NVivo
	Determine if, for the designer, the launch of co-created products means less risk in the market.	Prahalad & Ramaswamy (2004a); Ogawa & Piller (2006); Hoyer et al. (2010); Piller (2010); Carvalhal (2016); Maltzahn (2016); Fernandes (2018); Berg (2021)	Q11 - Do co-created products have a lesser risk to fail in the market than products developed only by the designer as they are voted by the community?	P5 – Co-created products have a lesser risk of market failure.	NVivo
	Identify what informations should be shared by the brand with the consumer.	Prahalad & Ramaswamy (2004a); Füller (2010); Maltzahn (2016)	Q12 - What informations, related with the transparency of the process, as well as, the necessary for the co-creation process do you understand that should and could be made available from the brand to the consumer?		NVivo
	Understand how the number of different products being co-created in the same timeline can be more or less interesting for the brand and the consumer.	Piller (2004); Piller et al. (2012)	Q13 - Co-create simultaneously several types of products can be more or less interesting for the brand and the consumer?		NVivo

	Understand if, for the brand would be better to co-create just details of the fashion product or the full product.	(Füller, 2010)	Q14 - Would it be more beneficial for the brand to co-create just details of the fashion product or the full product?		NVivo
	Comprehend if modularity can increase the efficiency and the success of the co-creation process while corresponding to consumers' expectations.	Tu et al. (2004); Salvador (2007); Hoyer et al. (2010); Piller (2010); Peng et al. (2011); M. Zhang et al. (2017); Li & Chen (2018)	Q15 – Applying the concept of modularity to co-created products can increase the process efficiency and simultaneously respond to consumers' expectations?	P6 - The application of modularity to co-created products increases the efficiency and success of the co-creation process  P7 - The application of modularity to co-created products is able to give response to consumers' expectations	NVivo
	Understand how material sourcing can impact the co-creation process.	Lowson (2001); Christopher et al. (2004); Thomassey (2010); Wiengarten et al. (2017)	Q16 – How can the sourcing for co-created products be done to improve the fastness of the process?		NVivo
	Understanding what informations shared between the brand and the supply chain are the most important for production efficiency and assertiveness.	Christopher & Towill (2000); Bruce et al. (2004); Prajogo & Olhager (2012); Jin et al. (2020); Amed et al. (2021); Hedrich et al. (2021)	Q17 – What informations, from the brand, do you consider to be extremely important to share with the supply chain to achieve a greater production efficiency and assertiveness?		NVivo
Comprehend what can be the fashion designer's overall contribution for co-creation.	Understand the vision of the designer about its possible roles in a co-creation brand.	Sanders & Stappers (2008)	Q18 – In your vision which should be the fashion designer roles in a co-creation brand?		NVivo

### **3.4.6. Objectives of the fashion supply chain experts' interviews**

In table 13, it is possible to see the general objective and the specific objective and the objectives of the interview questions. It is also possible to understand their relationship with the questions posed to the supply chain experts' and the generated propositions. The last column specifies the type of data treatment applied in order to validate or not the proposed propositions.

Table 13 - General objective, specific objective, questions objective, references, interview questions, propositions and data treatment for the supply chain experts' interviews.

Source: Author

General objective: Develop a co-creation model that can maximize the benefits and minimize the problems for the consumers, brands and supply chain.					
Specific objective	Question objective	References	Interview question	Proposition	Data treatment
Understand what can provide stability to the supply chain to achieve greater production efficiency and assertiveness when working with co-creation.	Comprehend if co-creation can be more beneficial for the supply chain than co-production or mass customization.	Chandra & Grabis (2007)	Q6 - Which of the following do you consider to be the least complex for the management, manufacturing efficiency and for the supply chain? Co-creation, co-production or mass customization?	P8 – Co-creation is more beneficial for the production management and efficiency of the supply chain than co-production or mass customization.	NVivo
	Understand what problems can arise from producing co-created products on a production line dedicated to mass production.	(Salvador et al., 2009)Piller et al. (2012); Berg et al. (2020)	Q7 – What problems could arise from the integration of the production of co-created products in a small scale or complex, in a production line dedicated to mass production?		NVivo
	Comprehend which is the best manufacturing philosophy to work efficiently and sustainably with co-creation brands.	Bruce et al. (2004); Hodge et al. (2011); Gupta & Jain (2013); Wiengarten et al. (2017); Jin et al. (2020)	Q8 - Which of the following manufacturing philosophies would you consider to be the most adequate to work with co-creation brands, being that these can bring small batches or complex products, in a more efficient and sustainable way? Lean, agile or leagile?		NVivo

	Understand if the manufacture of unitary products is preferable to small orders.	Bhamu & Sangwan (2014); Fernandes (2018); Berg et al. (2020)	Q9 - For the management and efficiency of production and for the remaining supply chain is preferable to produce small bulk productions or by the unit?		NVivo
	Understand if the use of modularity in co-created products would improve the manufacturing efficiency and of its supply chain.	Tu et al. (2004); Salvador (2007); Hoyer et al. (2010); Piller (2010); Peng et al. (2011); Wang et al. (2017); Zhang et al. (2017); Li & Chen (2018)	Q10 - If the production of small orders would be based on modular products, would this increase the production efficiency?	P9 – Production of small quantities of co-created products based on modularity increases the production efficiency	NVivo
	Understand if producing all year round would be beneficial for co-creation brands	(Thomassey, 2010)	Q11 - The continuous production all year round, even during low seasons, would be an incentive for the industry to produce for co-creation brands even if in a small scale or with complex products?	P10 – Continuous production all year round is an incentive for manufacturers to produce co-created brands	NVivo
	Understanding what informations shared between the brand and the supply chain are the most important for production efficiency and assertiveness.	Christopher & Towill (2000); Bruce et al. (2004); Prajogo & Olhager (2012); Jin et al. (2020); Amed et al. (2021); Hedrich et al. (2021)	Q12 – What informations, from the brands, do you consider to be extremely important to share with the supply chain so that a greater production efficiency and assertiveness can be achieved?		NVivo

## 4. Results and discussion

### 4.1. Data analysis

This chapter will present the results of the data collected from the consumers' survey and the interviews with fashion designers and supply chain experts. First, a descriptive analysis of the respondents' demographic profile will be presented and after will be analysed the responses to the questions related to the thematic. It is also intended to confirm or reject the proposed hypothesis.

#### 4.1.1. Analysis of consumers survey

Regarding the respondents' gender, in question 1, 79% (321 responses) were females, and 21% (83 responses) were males.

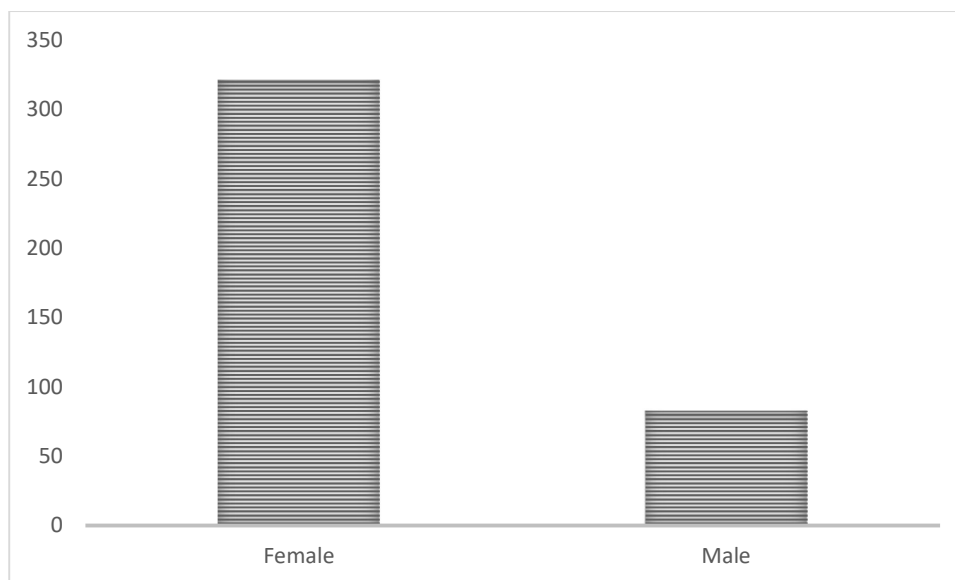


Chart 1 – Respondent's gender. Source: Author

As for the age of the respondents (chart 1), in question 2, 40% (162 respondents) have between 18 and 24 years old, 28% (111 respondents) have between 25 and 34 years old, 18% (74 respondents) have between 35 and 44 years old, 12% (49 respondents) have between 45 and 54 years old, and 2% (8 respondents) have between 55 and 64 years old, meaning, the sample of respondents is mainly composed by a young audience and older caps of the population have a lower representativity.

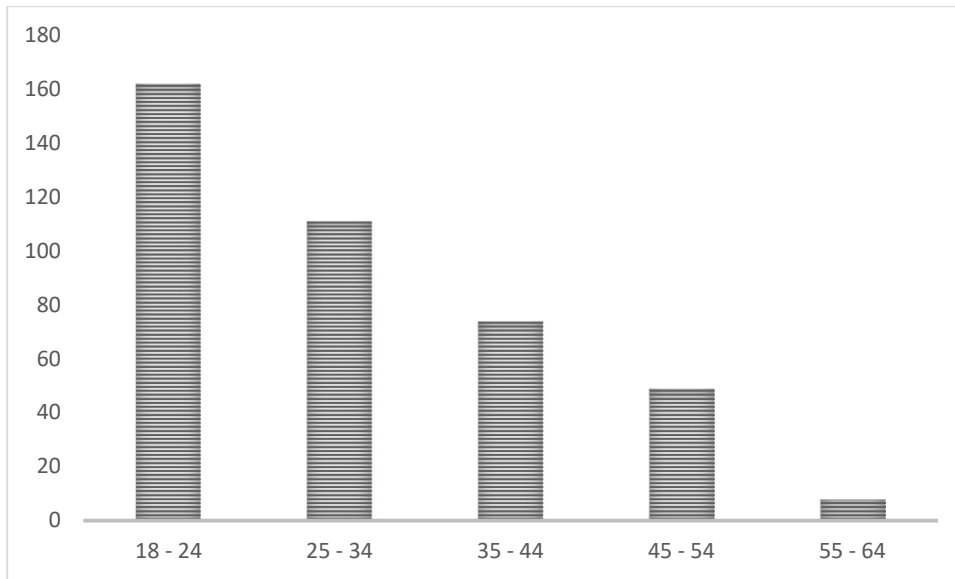


Chart 2 – Respondent’s age. Source: Author

In terms of the level of studies (chart 2), in question 3, only 1% (4 respondents) stated to have only finished middle school. 22% (91 respondents) have a high school level, 45% (181 respondents) have a bachelor’s degree, 23% (95 respondents) have a master’s degree, and 8% (31 respondents) have a doctoral degree, meaning that most of the respondents have a university degree of some kind. Only 2 respondents stated to have another level of studies besides the available ones.

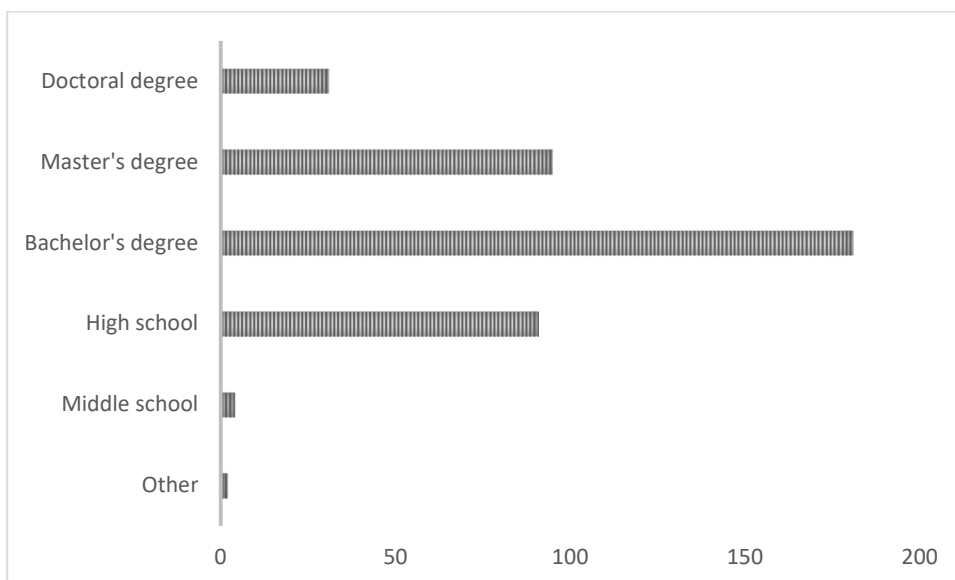


Chart 3 – Respondent’s level of studies. Source: Author

The professional situation of the respondents (chart 3), question 4, is mainly employed or still student. 47% (192 respondents) are employed, 9% (37 respondents) are self-

employed, 4% (17 respondents) are unemployed, 39% (156 respondents) are students and only less than 1% (2 respondents) are already retired.

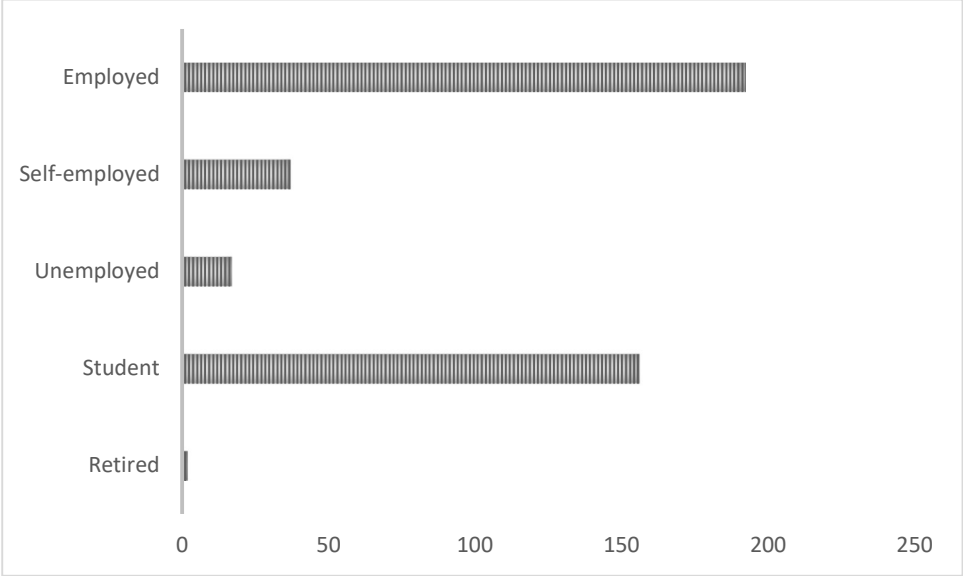


Chart 4 – Respondent’s professional situation. Source: Author

Regarding the field of work (chart 4), question 5, the majority of the respondents, with 24% (95 respondents), come from arts and design, followed by the textiles and garment industry with 19% (78 respondents), administration, business and services with 18% (74 respondents), social and human sciences with 8% (30 respondents), science and technology with 5% (20 respondents), health and well-being equally with 5% (20 respondents), communication and information with 3% (11 respondents), engineering and production with 2% (10 respondents) and another field of work collected 16% of the responses (65 respondents).

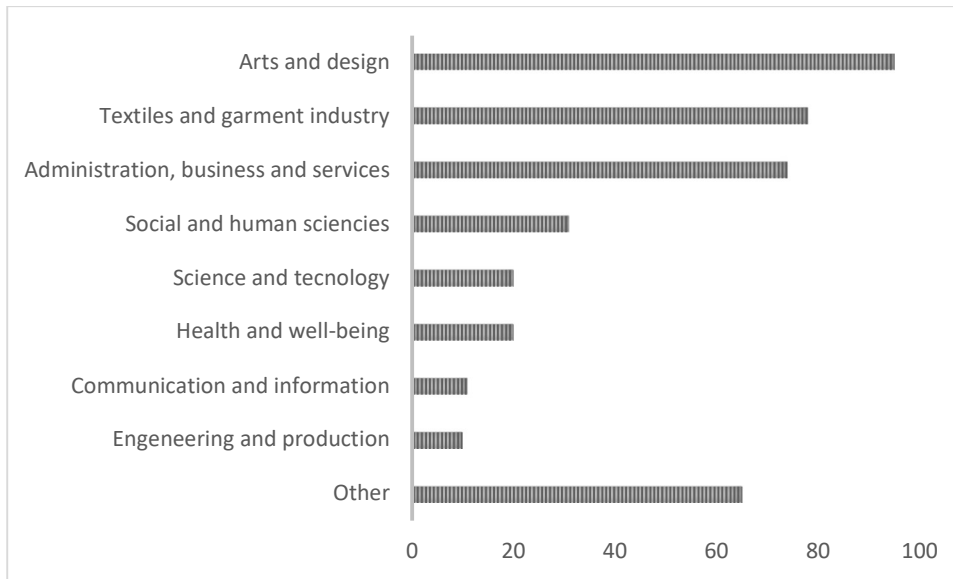


Chart 5 – Respondent's field of work. Source: Author

In what comes to the net monthly income (chart 6), question 6, 10% (41 respondents) gain less than 635€, 17% (67 respondents) gain between 636€ and 799€, 9% (38 respondents) gain between 800€ and 999€, 17% (68 respondents) gain between 1000€ and 1499€, 7% (29 respondents) gain between 1500€ and 1999€, 6% (26 respondents) gain more than 2000€ and 34% (135 respondents) do not have a monthly income.

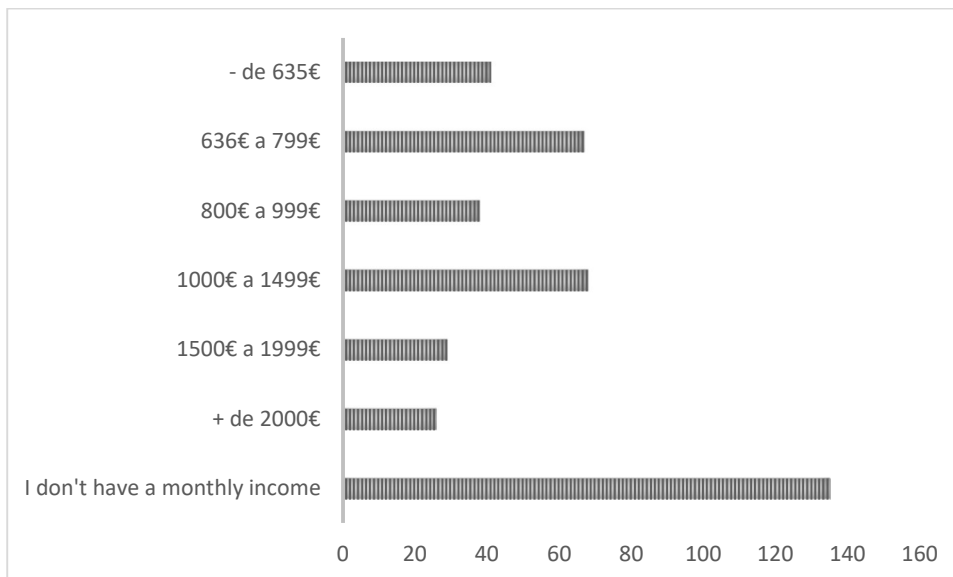


Chart 6 – Respondent's net monthly income. Source: Author

In terms of residence (chart 7), in question 7, most of the respondents live in a city, 66% (266 respondents), 19% (79 respondents) live in a town, and 15% (59 respondents) live in a village.

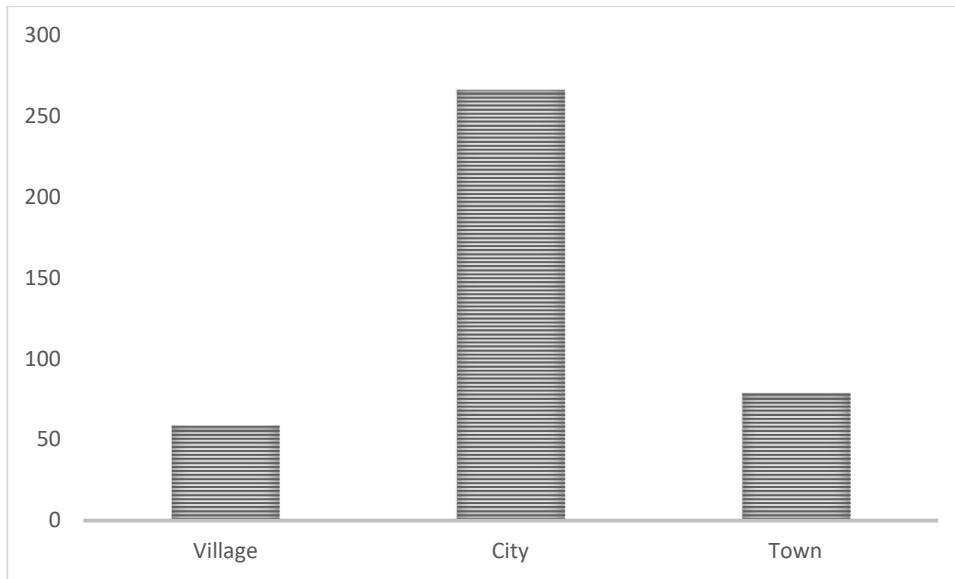


Chart 7 – Respondent’s residence. Source: Author

As for question 8 it is possible to see the results in chart 8. With greater expression, the county of Castelo Branco was where more responses were collected, 29% (116 respondents), followed by Lisboa with 15% (59 respondents), Guarda with 12% (47 respondents), Porto with 8% (30 respondents), Braga with 7% (27 respondents), Viseu with 5% (19 respondents), Aveiro with 4% (18 respondents), Setúbal and Coimbra with 6% total (14 respondents, each), Leiria with 3% (13 respondents), Faro with 2% (9 respondents), Açores with 2% (8 respondents), Santarém, Évora and Bragança with 4% total (6 respondents, each), Vila Real and Viana do Castelo with 2% total (4 respondents, each) and Portalegre and Madeira with 1% total (2 respondents, each).

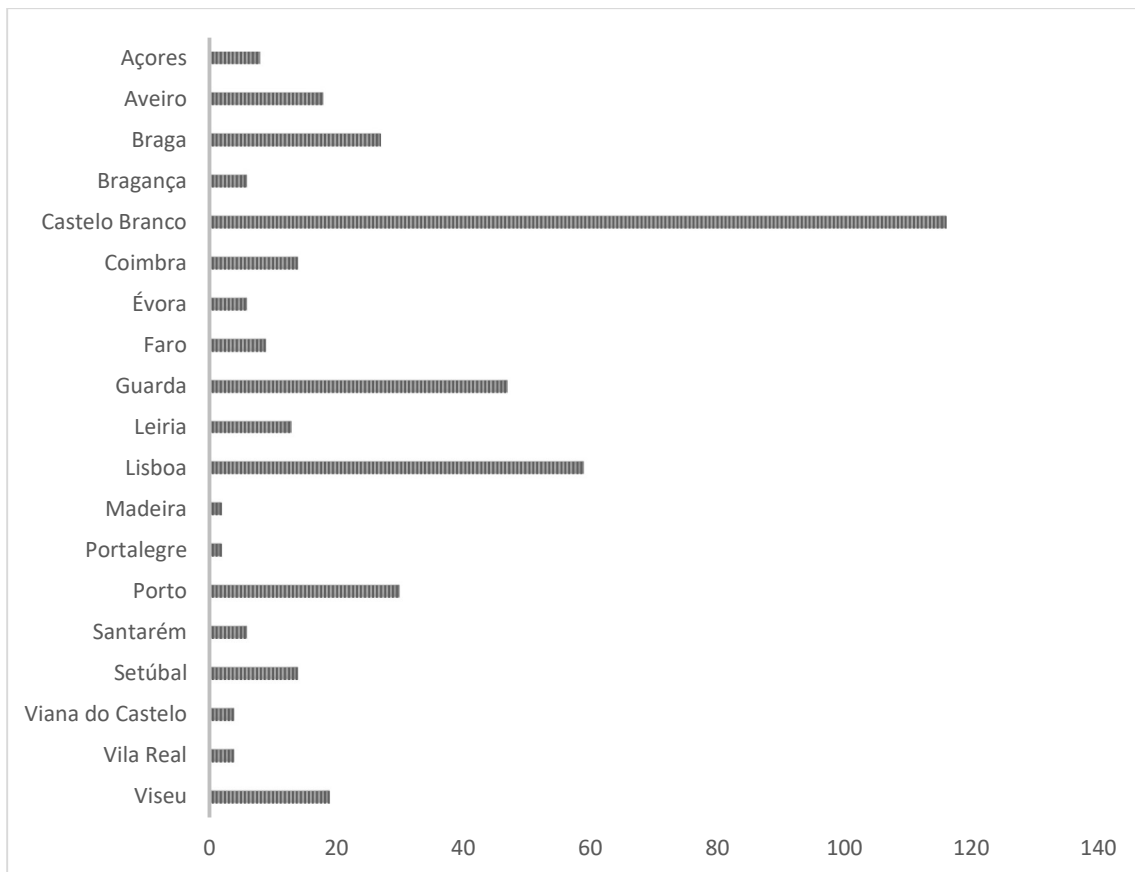


Chart 8 – Respondent’s county of residence. Source: Author

For question 9, “Have you ever co-created fashion products?”, most of the respondents, 72% (292 respondents), indicated that they had never co-created a fashion product and 28% (112 respondents) indicated that they had already co-created fashion products (chart 9).

This question had the aim of identifying the percentage of consumers that already had co-created fashion products.

In question 10, “Do you consider that a fashion product has added value when it is co-created by means of cooperation between the consumer and the brand?” most of the respondents, 94% (379 respondents), indicated that they consider that a co-created product has added value. Only 6% (25 respondents) considered that they do not see an added value in this type of product (chart 10).

This question had the aim of understanding if a co-created product has added value for the consumer.

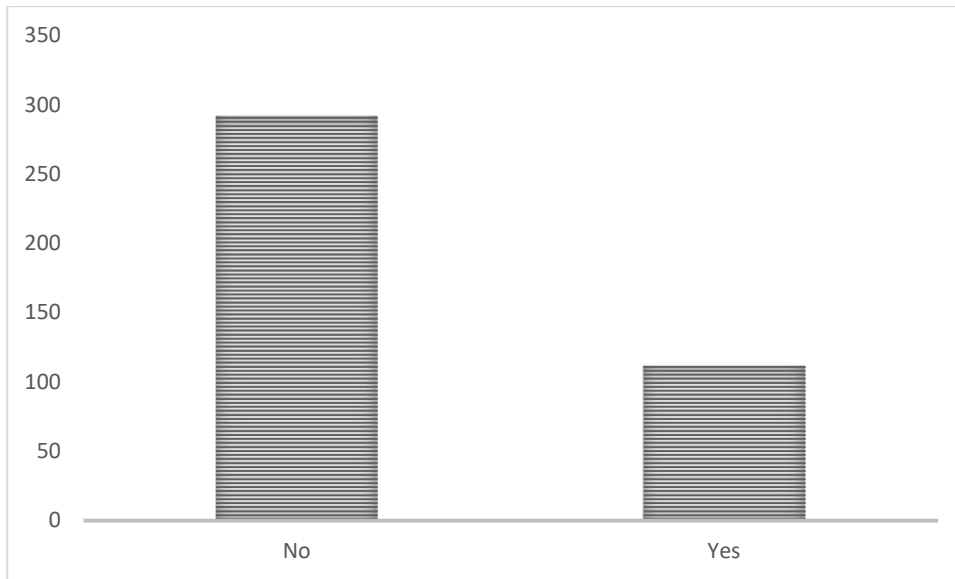


Chart 9 – Consumers that have or have not co-created fashion products. Source: Author

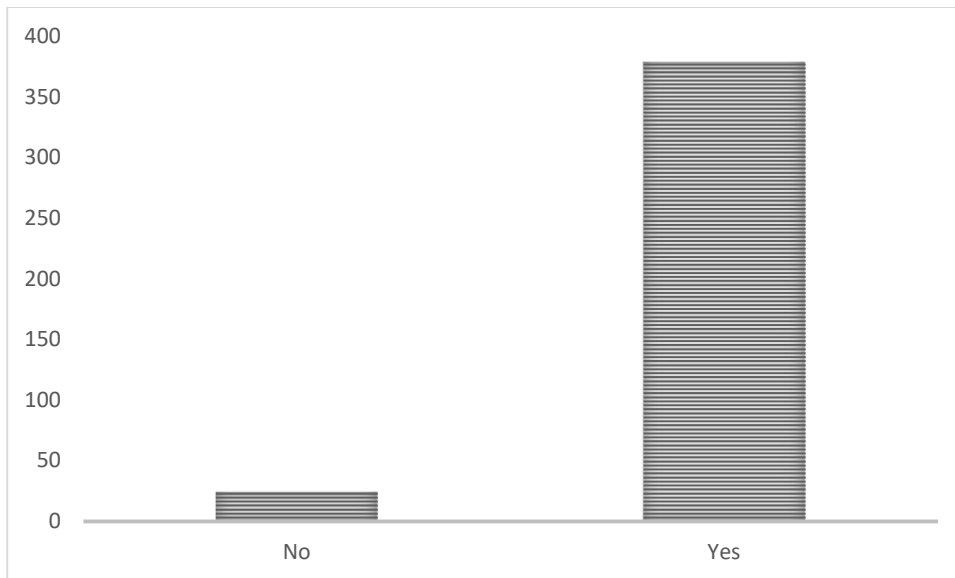


Chart 10 – Number of consumers that consider that a fashion product has or has not an added value when it is co-created by means of cooperation between the consumer and the brand. Source: Author

Still, for question 10, was proposed the hypothesis H1, “There is a strong correlation between the perception of the added value of co-created products and the consumers that already co-created products.”, with the aim of understanding if there is a correlation between the perception of the added value of co-created products and the consumers that already co-created fashion products.

To test H<sub>1</sub>, the Chi-square test was used (table 14 and 15). According to the results, since none of the cells (0%) has a count lower than 5, no assumptions were violated.

Table 14 – Have you ever co-created fashion products? \* Do you consider that a fashion product has added value when it is co-created by means of cooperation between the consumer and the brand? crosstabulation. Source: Author

			Do you consider that a fashion product has added value when it is co-created by means of cooperation between the consumer and the brand?		Total
			Yes	No	
Have you ever co-created fashion products?	Yes	Count	108	4	112
		Expected Count	105,1	6,9	112,0
	No	Count	271	21	292
		Expected Count	273,9	18,1	292,0
Total	Count		379	25	404
	Expected Count		379,0	25,0	404,0

So, we can base the analysis on the Pearson Chi-Square value having into attention the asymptotic significance (2-sided) result. The result of the p-value is 1,76, meaning that it is superior to the alpha-value of 0,05. This means that the p-value obtained is not statistically significant and that we can conclude that there is no correlation between the analysed variants.

Table 15 - Chi-square tests. Source: Author

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1,828 <sup>a</sup>	1	,176		
Continuity Correction <sup>b</sup>	1,257	1	,262		
Likelihood Ratio	2,028	1	,154		
Fisher's Exact Test				,249	,129
Linear-by-Linear Association	1,823	1	,177		
N of Valid Cases	404				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 6,93.

b. Computed only for a 2x2 table

The lack of correlation between the analysed variants is again confirmed in the Phi's test (table 16) as the Value is ,067, so under 0,2 meaning that there is only a very weak correlation.

Table 16 - Symmetric measures. Source: Author

	Value	Approximate Significance
Nominal by Nominal Phi	,067	,176
Cramer's V	,067	,176
N of Valid Cases	404	

Although when looking more closely at the risk estimate (table 17), we can conclude that the consumers that already have co-created fashion products are 2,092 times more likely to understand that the product has added value, as also supported by the cohort between the answering choices "Yes" and "Yes" to both questions with 1,039, than the consumers that have never co-created fashion products, as also supported by the

cohort between the answering choices “Yes” to the question 9, “Have you ever co-created fashion products?” and “No” to the question 10, “Do you consider that a fashion product has added value when it is co-created by means of cooperation between the consumer and the brand?” with ,497.

Table 17 – Risk estimate. Source: Author

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Have you ever co-created fashion products? (Yes / No)	2,092	,702	6,237
For cohort Do you consider that a fashion product has added value when it is co-created by means of cooperation between the consumer and the brand? = Yes	1,039	,990	1,090
For cohort Do you consider that a fashion product has added value when it is co-created by means of cooperation between the consumer and the brand? = No	,497	,174	1,415
N of Valid Cases	404		

So, it can be concluded that H1, “There is a strong correlation between the perception of the added value of co-created products and the consumers that already co-created products.” is rejected, although there is an indicator that consumers that already have co-created fashion products are more prone to consider that a fashion product has added value.

In question 11, “Why do you like or would like to participate in the co-creation of fashion products?” most respondents stated that the main reason for participating in the co-creation of fashion products is because they would like to feel more satisfied with the products available in the market. With very similar numbers, by order of importance, the inquired responded that they also participate because they want to gain new knowledge about fashion products and its co-creation, to express themselves and feel proud of what they are capable of creating and for feeling curious in explore the co-creation process. With a lower degree of importance for participating comes the reason, the rewards for participating interest me, and with the lowest importance comes the reason, it increases my social status on the brands' community (table 18).

Table 18 – Mean and standard deviation for question 11. Source: Author

	N	Mean	Std. Deviation
The rewards for participating interest me	404	4,9233	1,68236
I would like to feel more satisfied with the products available in the market	404	5,8218	1,23952
I participate or would participate to express myself and feel proud of what I am capable of creating	404	5,6436	1,33912
To gain new knowledge about fashion products and its co-creation	404	5,6881	1,38469
For feeling curious in explore the co-creation process	404	5,6089	1,46100
It increases my social status on the brands' community	404	3,9851	1,89023

This question had the aim of knowing why consumers would like to co-create fashion products.

On question 12, “What incentives would make you participate more times in the co-creation of fashion products?”, respondents indicated that the most important incentive would be, being able to get the product that they envisioned to have, followed closely by the possibility of receiving royalties (% from the sales). The brand offering them the product that they co-created and being recognized for the co-creation by the community, and the brand also have a high degree of importance for the consumers, followed by having their name in the product. The possibility of receiving vouchers to buy products from the brand and a monetary reward fully received once are the least important incentives (table 19).

Table 19 – Mean and standard deviation for question 12. Source: Author

	N	Mean	Std. Deviation
Monetary reward fully received once	404	4,9406	1,56622
The brand offering me the product that I co-created	404	5,5644	1,41011
Vouchers to buy products from the brand	404	5,0124	1,55538
Royalties (% from the sales)	404	5,7376	1,25446
Having my name in the product	404	5,2822	1,67438
Be recognized for the co-creation by the community and the brand	404	5,4802	1,59624
Being able to get the product that I envisioned to have	404	5,7772	1,36597

This question had the aim of understanding what incentives would make consumers participate more in the co-creation of the fashion products.

For question 12, was proposed the hypothesis H2, “Personal factors can influence the preference in the type of incentives that can lead consumers to participate more actively in the co-creation processes of fashion products.” with the aim of understanding if there are differences in personal factors that can influence the preference in the type of incentives that can lead consumers to participate more actively in the co-creation processes of fashion products.

To understand if personal factors can pose an influence, hypothesis H2a, “There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their age.”, H2b, “There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their net monthly income.” and H2c, “There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their professional situation.” were made.

To test H2a, “There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their age.” the Kruskal Wallis H test was used (table 20) since the answers were not normally distributed. According to the results, there are differences in the incentives monetary reward fully received once, vouchers to buy products from the brand, royalties (% from the sales), having my name in the product and be recognized for the co-creation by the community and the brand.

Table 20 – Kruskal Wallis test for significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their age. Source: Author

	Monetary reward fully received once	The brand offering me the product that I co-created	Vouchers to buy products from the brand	Royalties (% from the sales)	Having my name in the product	Be recognized for the co-creation by the community and the brand	Being able to get the product that I envisioned to have
Kruskal-Wallis H	20,082	8,506	12,631	23,290	29,294	44,861	8,213
df	4	4	4	4	4	4	4
Asymp. Sig.	<,001	,075	,013	<,001	<,001	<,001	,084

Looking with more detail at the data obtained, we could understand that the monetary reward fully received once is more important for the ages between 55 and 64 years old and less important for the age between 45 and 54 years old than for other age groups. The vouchers to buy products from the brand are more important for the ages between 55 and 64 years old than for the other age groups. Again, royalties (% from the sales) are more important for the ages between 55 and 64 years old and less important for the age between 45 and 54 years old than for other age groups. Having my name in the product is again more important for the ages between 55 and 64 years old and less important for the ages between 35 and 44 years old, and for ages between 45 and 54 years old than for other age groups. The same can be observed for, be recognized for the co-creation by the community and the brand as this is more important for the ages between 55 and 64 years old and less important for the ages between 35 and 44 years old and for ages between 45 and 54 years old than for other age groups.

So, it can be concluded that H2a, “There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their age.” is not rejected for monetary reward fully received once, vouchers to buy products from the brand, royalties (% from the sales), having my name in the product and be recognized for the co-creation by the community and the brand.

To test H2b, “There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their net monthly income.” the Kruskal Wallis H test was used (table 21) since the answers were not normally distributed. According to the results, there are differences in the incentives, vouchers to buy products from the brand, having my name in the product, be recognized for the co-creation by the community and the brand and being able to get the product that I envisioned to have.

Looking in more detail at the data obtained, we could understand that vouchers to buy products from the brand are more important for consumers that gain less than 635€ per month. Having my name in the product is more important for those who gain less than 635€, 800€ to 999€, 1500€ to 1999€ and for those who do not have a monthly income. Be recognized for the co-creation by the community and the brand is more important for those who gain less than 635€, 800€ to 999€, more than 2000€ and for those who do not have a monthly income. Being able to get the product that I envisioned to have is more important for those who gain between 800€ to 999€ and for those who do not have a monthly income and is less important for those who gain between 1000€ and 1499€ per month.

Table 21 – Kruskal Wallis test for significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their net monthly income. Source: Author

	Monetary reward fully received once	The brand offering me the product that I co-created	Vouchers to buy products from the brand	Royalties (% from the sales)	Having my name in the product	Be recognized for the co-creation by the community and the brand	Being able to get the product that I envisioned to have
Kruskal-Wallis H	7,720	6,503	15,426	1,917	23,396	43,258	28,126
df	6	6	6	6	6	6	6
Asymp. Sig.	,259	,369	,017	,927	<,001	<,001	<,001

So, it can be concluded that H2b, “There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their net monthly income.” is not rejected for vouchers to buy products from the brand, having my name in the product, be recognized for the co-creation by the community and the brand and being able to get the product that I envisioned to have.

To test H2c, “There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their professional situation.”, the Kruskal Wallis H test was used (table 22) since the answers were not normally distributed. According to the results, there are differences in the incentives having my name in the product, be recognized for the co-creation by the community and the brand, being able to get the product that I envisioned to have.

Table 22 – Kruskal Wallis test for significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their professional situation. Source: Author

	Monetary reward fully received once	The brand offering me the product that I co-created	Vouchers to buy products from the brand	Royalties (% from the sales)	Having my name in the product	Be recognized for the co-creation by the community and the brand	Being able to get the product that I envisioned to have
Kruskal-Wallis H	2,182	4,907	5,108	4,875	13,960	37,806	18,091
df	4	4	4	4	4	4	4
Asymp. Sig.	,702	,297	,276	,300	,007	<,001	,001

Looking with more detail at the data obtained, we could understand that having my name in the product is less important for the employed respondents. Be recognized for the co-creation by the community and the brand is also less important for the employed. Being able to get the product that I envisioned to have is less important for the unemployed.

So, it can be concluded that H2c, “There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their professional situation.” is not rejected for having my name in the product, be recognized for the co-creation by the community and the brand, being able to get the product that I envisioned to have.

On question 12 was also posed hypothesis H3, “There are significant differences in the incentives that can lead consumers to participate more actively in the co-creation processes of fashion products regarding the frequency in which the consumer would like to co-create fashion products.”, with the aim of understanding if there are differences between the incentives that can lead consumers to participate more actively in the co-creation processes regarding the frequency in which the consumer would like to co-create fashion products.

To make comparisons between the answers to question 12 and question 15, the Kruskal Wallis H test was used (table 23) since the answers were not normally distributed.

Table 23 – Kruskal Wallis test for significant differences in the incentives that can lead consumers to participate more actively in the co-creation processes regarding the frequency in which the consumer would like to co-create fashion products. Source: Author

	Monetary reward fully received once	The brand offering me the product that I co-created	Vouchers to buy products from the brand	Royalties (% from the sales)	Having my name in the product	Be recognized for the co-creation by the community and the brand	Being able to get the product that I envisioned to have
Kruskal-Wallis H	27,751	12,243	12,276	18,898	28,786	33,282	21,684
df	4	4	4	4	4	4	4
Asymp. Sig.	<,001	,016	,015	<,001	<,001	<,001	<,001

Differences were found for all. Looking with more detail at the data obtained, we could understand that for the monetary reward fully received once, there were differences between When I feel like to and Monthly, and between, When I feel like to and Every other day (figure 48).

Although, when looking into the pairwise comparisons for the brand offering me the product that I co-created, no differences were identified (figure 49).

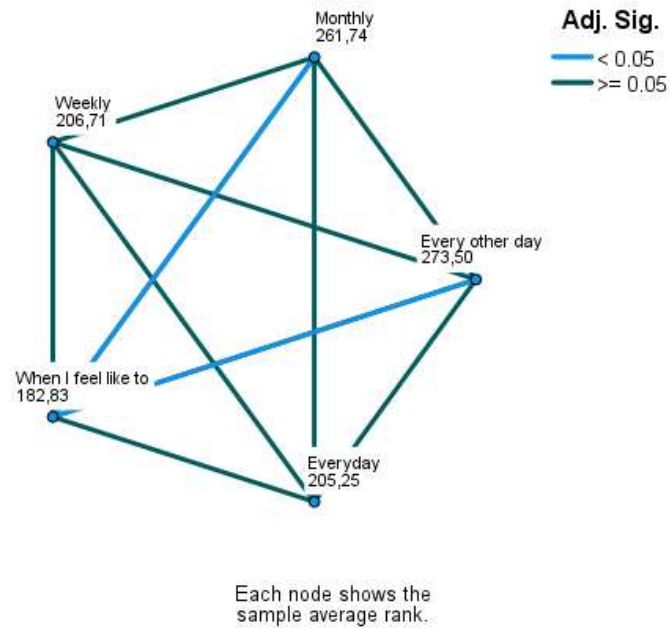


Figure 48 - Diagram of the pairwise comparison for monetary reward fully received once. Source: Author

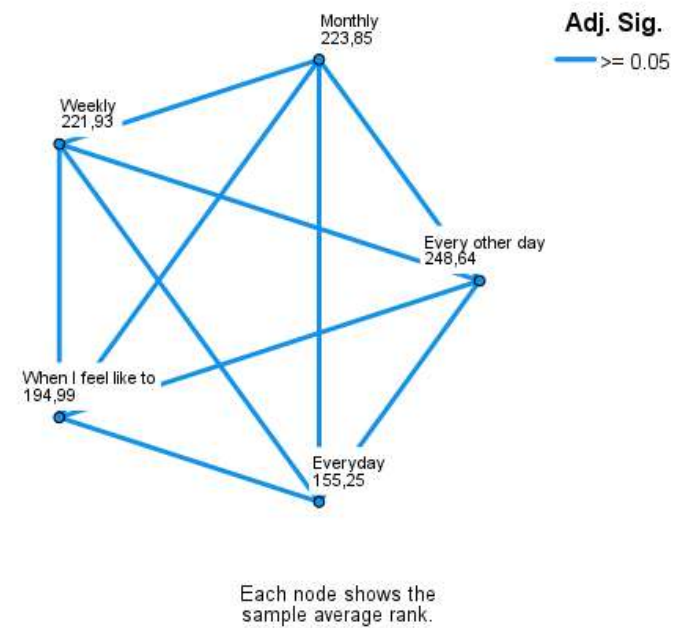
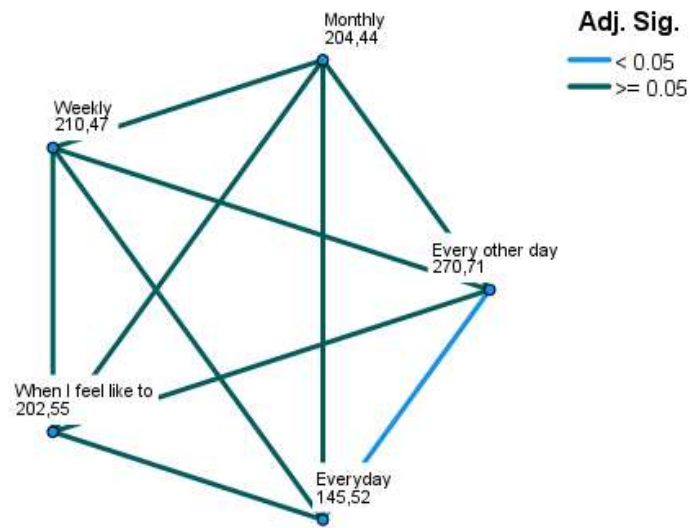


Figure 49 - Diagram of the pairwise comparison for the brand offering me the product that I co-created. Source: Author

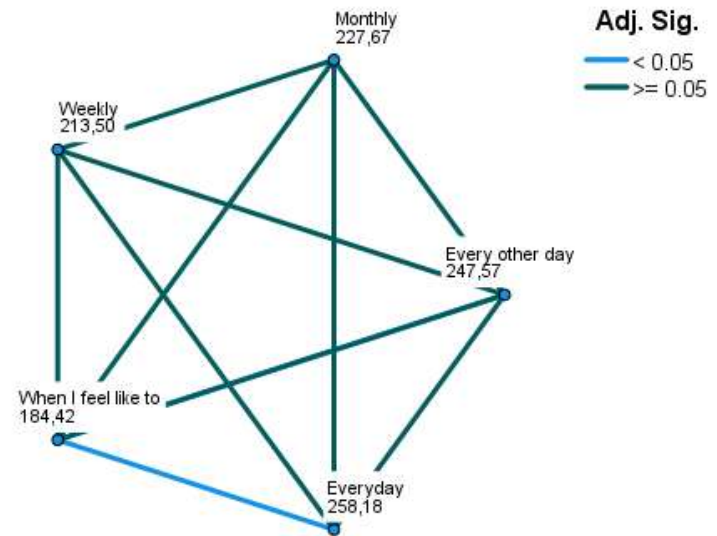
For the vouchers to buy products from the brand, there were differences between Every day and Every other day (figure 50).

For the royalties (% from the sales), there were differences between When I feel like to and Every day (figure 51).



Each node shows the sample average rank.

Figure 51 - Diagram of the pairwise comparison for the vouchers to buy products from the brand. Source: Author

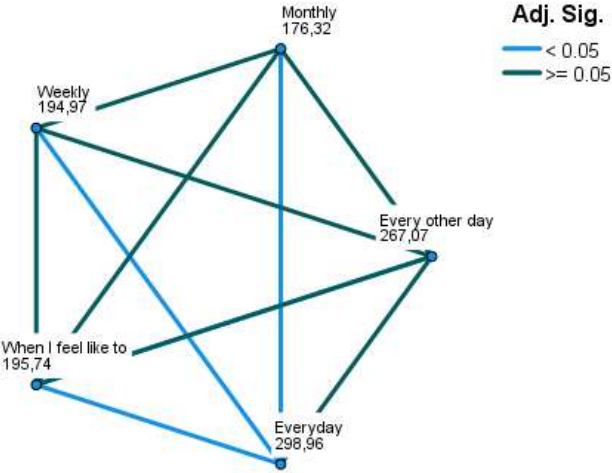


Each node shows the sample average rank.

Figure 50 - Diagram of the pairwise comparison for the royalties (% from the sales). Source: Author

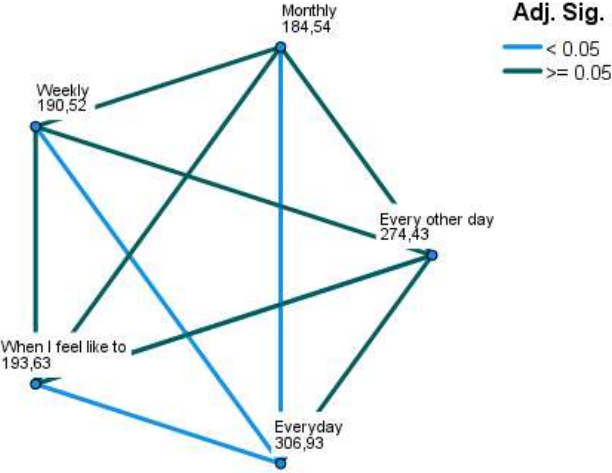
For having my name in the product, there were differences between Monthly and Every day, Weekly and Every day, and, When I feel like to and Every day (figure 52).

For, be recognized for the co-creation by the community and the brand there were differences between Monthly and Every day, Weekly and Every day, and, When I feel like to and Everyday (figure 53)



Each node shows the sample average rank.

Figure 52 - Diagram of the pairwise comparison for having my name in the product. Source: Author



Each node shows the sample average rank.

Figure 53 - Diagram of the pairwise comparison for be recognized for the co-creation by the community and the brand. Source: Author

For Being able to get the product that I envisioned to have, there were differences between Monthly and Every other day, When I feel like to and Every other day, and Weekly and Every other day (figure 54).

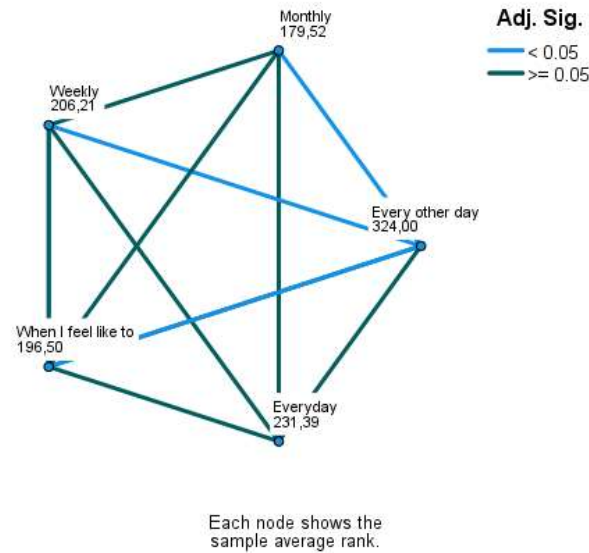


Figure 54 - Diagram of the pairwise comparison for being able to get the product that I envisioned to have. Source: Author

It is also worth noting that Royalties (% from the sales) are more important and of great importance for the consumers that prefer to co-create Everyday, Every other day and Monthly and having my name in the product is more important and of great importance for the consumers that prefer to co-create Everyday, Every other day. Be recognized for the co-creation by the community and the brand is more important and of great importance for the consumers that prefer to co-create Every other day.

So, it can be concluded that H3, “There are significant differences in the incentives that can lead consumers to participate more actively in the co-creation processes of fashion products regarding the frequency in which the consumer would like to co-create fashion products.” is accepted for all the aspects analysed.

The responses to question 13, “What styles of fashion products would you have more interest in co-creating?” indicate to us that the casual style would be the most interesting in terms of co-creation of fashion products. A trendy or classical style also has a good degree of importance for the consumers, and a sporty style or sleepwear gathers the least attention from the consumers (table 24).

Table 24 – Mean and standard deviation for question 13. Source: Author

	N	Mean	Std. Deviation
Sporty	404	4,2525	1,99270
Classical	404	4,9554	1,59029
Casual	404	5,8168	1,01654
Trendy	404	5,0767	1,80887
Sleepwear	404	4,0396	1,87934

This question had the aim of understanding what styles of fashion products are most interesting to co-create.

Still for question 13, was proposed the hypothesis H4, “Personal factors can influence the styles of fashion products that the consumers would like to co-create.”, with the aim of understanding if there are differences in personal factors that can influence the styles of fashion products that the consumers would like to co-create.

To understand if personal factors can pose an influence, hypothesis H4a, “There are significant differences in the styles of fashion products that the consumers would like to co-create regarding their gender.” and H4b, “There are significant differences in the styles of fashion products that the consumers would like to co-create regarding their age.” were made.

To test H4a, “There are significant differences in the styles of fashion products that the consumers would like to co-create regarding their gender.” the Mann-Whitney U test was used (table 25) since the answers were not normally distributed. According to the results, there are differences in the trendy and sleepwear styles, meaning that the distribution of the answers is different from one gender to the other.

Table 25 – Mann-Whitney U test for significant differences in the styles of fashion products that the consumers would like to co-create regarding their gender. Source: Author

	Test	Sig. <sup>a,b</sup>
Sporty	Independent-Samples Mann-Whitney U Test	,140
Classical	Independent-Samples Mann-Whitney U Test	,134
Casual	Independent-Samples Mann-Whitney U Test	,056
Trendy	Independent-Samples Mann-Whitney U Test	,005
Sleepwear	Independent-Samples Mann-Whitney U Test	,009

Looking with more detail at the data obtained, we could understand that the trendy and the sleepwear styles are less important for the males than for the females.

So, it can be concluded that H4a, “There are significant differences in the styles of fashion products that the consumers would like to co-create regarding their gender.” is not rejected for trendy and sleepwear.

To test H4b, “There are significant differences in the styles of fashion products that the consumers would like to co-create regarding their age.” the Kruskal Wallis H test was used (table 26) since the answers were not normally distributed. According to the results, there are differences in the sporty, classical and trendy styles.

Table 26 – Kruskal Wallis test for significant differences in the styles of fashion products that the consumers would like to co-create regarding their age. Source: Author

	Sporty	Classical	Casual	Trendy	Sleepwear
Kruskal-Wallis H	23,009	9,576	9,265	16,588	1,404
df	4	4	4	4	4
Asymp. Sig.	<,001	,048	,055	,002	,844

Looking with more detail at the data obtained, we could understand that the products with a sporty style are less important for the ages between 18 and 24 years old than for the other age groups. The products with a classical style are more important in the ages between 45 and 54 years old than for the other age groups. The trendy products are more important for the ages between 18 and 24, and, 55 and 64 years old than for the other age groups.

So, it can be concluded that H4b, “There are significant differences in the styles of fashion products that the consumers would like to co-create regarding their age.” is not rejected for sporty, classical and trendy.

In terms of the type of products, question 14, “Classify the types of products accordingly with your interest in co-creating them.” The respondents indicated that the most interesting are upper parts (as for example shirts, t-shirts or jackets) followed by dresses or overalls, bottoms (as for example trousers, shorts or skirts) and outerwear (as for example overcoats or raincoats). With an average degree of interest appear the accessories (as for example wallets or backpacks) followed by swimsuits, bikinis and bathing shorts and footwear. With a lower degree of importance appears

the underwear, pyjamas, accessories (as for example ties or socks) and finally leather goods (as for example wallets or backpacks in leather) (table 27).

Table 27 – Mean and standard deviation for question 14. Source: Author

	N	Mean	Std. Deviation
Upper parts (as for example shirts, t-shirts or jackets)	404	5,9257	1,06346
Bottoms (as for example trousers, shorts or skirts)	404	5,4728	1,48500
Outerwear (as for example overcoats or raincoats)	404	5,4332	1,60427
Dresses or overalls	404	5,6238	1,63614
Underwear	404	4,1757	2,02007
Footwear	404	4,4678	1,95519
Accessories (as for example ties or socks)	404	3,7921	2,03842
Other accessories (as for example wallets or backpacks)	404	4,5990	1,91315
Leather goods (as for example wallets or backpacks in leather)	404	3,6931	2,02952
Pyjamas	404	3,9455	1,89606
Swimsuits, bikinis, bathing shorts	404	4,5619	1,93918

This question had the aim of understanding what types of fashion products are most interesting to co-create.

Still for question 14, was proposed the hypothesis H5, “Personal factors can influence the types of fashion products that the consumers find more interesting to co-create.”, was made with the aim of understanding if there are differences in personal factors that can influence the types of fashion products that the consumers find more interesting to co-create.

To understand if personal factors can pose an influence, hypothesis H5a, “There are significant differences in the types of fashion products that the consumers find more interesting to co-create regarding their gender.” and H5b, “There are significant differences in the types of fashion products that the consumers find more interesting to co-create regarding their age.” were made.

To test H5a, “There are significant differences in the types of fashion products that the consumers find more interesting to co-create regarding their gender.”, the Mann-Whitney U test was used (table 28) since the answers were not normally distributed. According to the results there are differences in the bottoms (as for example trousers, shorts or skirts), dresses or overalls, underwear, accessories (as for example ties or socks), pyjamas and swimsuits, bikinis, bathing shorts, meaning that the distribution of the answers is different from one gender to the other.

It is also important to note that females give more importance to bottoms (as for example trousers, shorts or skirts), dresses or overalls, underwear, accessories (as for example ties or socks), pyjamas and swimsuits, bikinis, bathing shorts than males.

So, it can be concluded that H5a, “There are significant differences in the types of fashion products that the consumers find more interesting to co-create regarding their gender.” is not rejected for bottoms (as for example trousers, shorts or skirts), dresses or overalls, underwear, accessories (as for example ties or socks), pyjamas and swimsuits, bikinis, bathing shorts.

Table 28 – Mann-Whitney U test for significant differences in the types of fashion products that the consumers find more interesting to co-create regarding their gender. Source: Author

	Test	Sig. <sup>a,b</sup>
Upper parts (as for example shirts, t-shirts or jackets)	Independent-Samples Mann-Whitney U Test	,334
Bottoms (as for example trousers, shorts or skirts)	Independent-Samples Mann-Whitney U Test	<,001
Outerwear (as for example overcoats or raincoats)	Independent-Samples Mann-Whitney U Test	,902
Dresses or overalls	Independent-Samples Mann-Whitney U Test	<,001
Underwear	Independent-Samples Mann-Whitney U Test	<,001
Footwear	Independent-Samples Mann-Whitney U Test	,183
Accessories (as for example ties or socks)	Independent-Samples Mann-Whitney U Test	,031
Other accessories (as for example wallets or backpacks)	Independent-Samples Mann-Whitney U Test	,088
Leather goods (as for example wallets or backpacks in leather)	Independent-Samples Mann-Whitney U Test	,561
Pyjamas	Independent-Samples Mann-Whitney U Test	,005
Swimsuits, bikinis, bathing shorts	Independent-Samples Mann-Whitney U Test	,021

To test H5b, “There are significant differences in the types of fashion products that the consumers find more interesting to co-create regarding their age.”, the Kruskal Wallis H test was used (table 29) since the answers were not normally distributed. According to the results, there are differences in the bottoms (as for example trousers, shorts or skirts), dresses or overalls and underwear.

Table 29 – Kruskal Wallis test for significant differences in the types of fashion products that the consumers find more interesting to co-create regarding their age. Source: Author

	Upper parts (as for example shirts, t-shirts or jackets)	Bottoms (as for example trousers, shorts or skirts)	Outerwear (as for example overcoats or raincoats)	Dresses or overalls	Underwear	Footwear	Accessories (as for example ties or socks)	Other accessories (as for example wallets or backpacks)	Leather goods (as for example wallets or backpacks in leather)	Pyjamas	Swim suits, bikinis, bathing shorts
Kruskal-Wallis H	6,975	21,584	7,904	39,069	11,563	4,207	1,095	4,948	5,152	4,666	3,424
df	4	4	4	4	4	4	4	4	4	4	4
Asymp. Sig.	,137	<,001	,095	<,001	,021	,379	,895	,293	,272	,323	,490

Looking with more detail at the data obtained, we could understand that the bottoms (as for example trousers, shorts or skirts) are more interesting for the ages between 18 and 24 years old, and, 25 and 34 years old than for the other age groups. The dresses or overalls are more important for the ages between 55 and 64 years old than for the other age groups. Underwear is more important for the ages between 18 and 24 years old and less important for the ages between 55 and 64 years old than for the other age groups.

So, it can be concluded that H5b, “There are significant differences in the types of fashion products that the consumers find more interesting to co-create regarding their age.” is not rejected for bottoms (as for example trousers, shorts or skirts), dresses or overalls and underwear.

In question 15, “What is the frequency in that you like or would like to co-create fashion products?” most respondents, 59% (240 respondents), indicated that they would like to co-create fashion products only when they feel like to, followed by a weekly frequency with 16% (65 respondents), monthly with 14% (57 respondents), every day with 7% (28 respondents) and every other day with 4% (14 respondents) (chart 11).

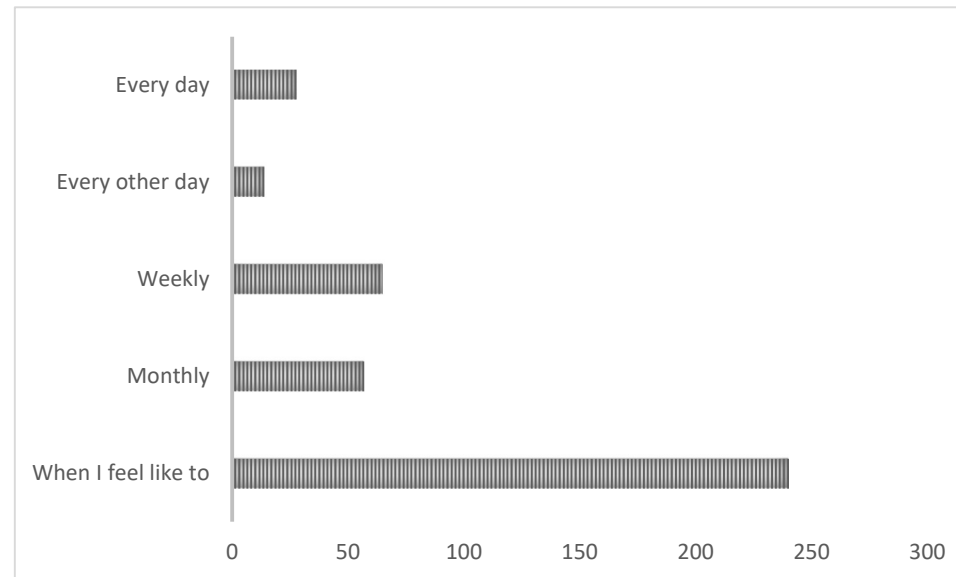


Chart 11 – Frequency in that you like or would like to co-create fashion products. Source: Author

This question had the aim of identifying what is the frequency in which the consumer would like to co-create fashion products.

Still for question 15, was proposed the hypothesis H6, “Personal factors can influence the frequency that consumers would like to co-create fashion products.”, was made with the aim of understanding if there is a correlation with personal factors that can influence the frequency that consumers would like to co-create fashion products.

To understand if personal factors can pose an influence, hypothesis H6a, “There is a strong correlation between the frequency that consumers would like to co-create fashion products and their gender.”, H6b, “There is a strong correlation between the frequency that consumers would like to co-create fashion products and their age.”, H6c, “There is a strong correlation between the frequency that consumers would like to co-create fashion products and their level of studies.”, and H6d, “There is a strong correlation between the frequency that consumers would like to co-create fashion products and their professional situation.” were made.

To test H6a, “There is a strong correlation between the frequency that consumers would like to co-create fashion products and their gender.”, the Chi-square test was used (table 30 and 31). According to the results, since only one of the cells (10%) has a count lower than 5, no assumptions were violated.

Table 30 – Gender \* What is the frequency in that you like or would like to co-create fashion products? crosstabulation. Source: Author

		What is the frequency in that you like or would like to co-create fashion products?					Total	
		Everyday	Every other day	Weekly	Monthly	When I feel like to		
Gender	Female	Count	22	12	49	38	200	321
		Expected Count	22,2	11,1	51,6	45,3	190,7	321,0
	Male	Count	6	2	16	19	40	83
		Expected Count	5,8	2,9	13,4	11,7	49,3	83,0
Total	Count	28	14	65	57	240	404	
	Expected Count	28,0	14,0	65,0	57,0	240,0	404,0	

So, we can base the analysis on the Pearson Chi-Square value having into attention the asymptotic significance (2-sided) result. The result of the p-value is ,063, meaning that it is superior to the alpha-value of 0,05. This means that the p-value obtained is not statistically significant and that we can conclude that there is no correlation between the analysed variants.

Table 31 - Chi-square tests. Source: Author

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8,931 <sup>a</sup>	4	,063
Likelihood Ratio	8,390	4	,078
Linear-by-Linear Association	1,213	1	,271
N of Valid Cases	404		

a. 1 cells (10,0%) have expected count less than 5. The minimum expected count is 2,88.

The lack of correlation between the analysed variants is again confirmed in the Cramer's V test (table 32) as the Value is ,149, so under 0,2, meaning that there is only a weak correlation.

Table 32 - Symmetric measures. Source: Author

	Value	Approximate Significance
Nominal by Nominal Phi	,149	,063
Cramer's V	,149	,063
N of Valid Cases	404	

So, it can be concluded that H6a, "There is a strong correlation between the frequency that consumers would like to co-create fashion products and their gender." is rejected.

To test H6b, "There is a strong correlation between the frequency that consumers would like to co-create fashion products and their age." the Chi-square test was used (table 33 and 34). According to the results, since 9 of the cells (36%) have a count lower than 5, assumptions have been violated.

Table 33 – Age \* What is the frequency in that you like or would like to co-create fashion products? crosstabulation. Source: Author

		What is the frequency in that you like or would like to co-create fashion products?					Total	
		Everyday	Every other day	Weekly	Monthly	When I feel like to		
Age	18 – 24	Count	10	14	29	23	86	162
		Expected Count	11,2	5,6	26,1	22,9	96,2	162,0
	25- 34	Count	10	0	13	22	66	111
		Expected Count	7,7	3,8	17,9	15,7	65,9	111,0
	35 – 44	Count	6	0	10	10	48	74
		Expected Count	5,1	2,6	11,9	10,4	44,0	74,0
	45 – 54	Count	2	0	11	2	34	49
		Expected Count	3,4	1,7	7,9	6,9	29,1	49,0
	55 – 64	Count	0	0	2	0	6	8
		Expected Count	,6	,3	1,3	1,1	4,8	8,0
Total		Count	28	14	65	57	240	404
		Expected Count	28,0	14,0	65,0	57,0	240,0	404,0

Being the previous value above 20% we then need to look at the Likelihood ratio having into attention the asymptotic significance (2-sided) result. The result of the p-value is <,001, meaning that it is inferior to the alpha-value of 0,05. This means that the p-value obtained is statistically significant and that we can conclude that there is a correlation between the analysed variants.

Table 34 - Chi-square tests. Source: Author

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	36,416 <sup>a</sup>	16	,003
Likelihood Ratio	43,808	16	<,001
Linear-by-Linear Association	5,075	1	,024
N of Valid Cases	404		

a. 9 cells (36,0%) have expected count less than 5. The minimum expected count is ,28.

Although, when looking into the Cramer's V test (table 35) as the Value is ,150, so, under 0,2, the correlation between the analysed variants is then only understood as a weak correlation.

Table 35 - Symmetric measures. Source: Author

	Value	Approximate Significance
Nominal by Nominal Phi	,300	,003
Cramer's V	,150	,003
N of Valid Cases	404	

So, it can be concluded that H6b, "There is a strong correlation between the frequency that consumers would like to co-create fashion products and their age." is rejected.

To test H6c, "There is a strong correlation between the frequency that consumers would like to co-create fashion products and their level of studies." the Chi-square test was used (table 36 and 37). According to the results, since 16 of the cells (53,3%) have a count lower than 5, assumptions have been violated.

Table 36 – Level of studies \* What is the frequency in that you like or would like to co-create fashion products? crosstabulation. Source: Author

		What is the frequency in that you like or would like to co-create fashion products?					Total	
		Everyday	Every other day	Weekly	Monthly	When I feel like to		
Level of studies	Middle school	Count	0	0	0	2	2	4
		Expected Count	,3	,1	,6	,6	2,4	4,0
	Secondary school	Count	4	10	21	2	54	91
		Expected Count	6,3	3,2	14,6	12,8	54,1	91,0
	Bachelor's degree	Count	14	4	29	39	95	181
		Expected Count	12,5	6,3	29,1	25,5	107,5	181,0
	Master's degree	Count	8	0	11	11	65	95
		Expected Count	6,6	3,3	15,3	13,4	56,4	95,0
	Doctoral degree	Count	2	0	4	3	22	31
		Expected Count	2,1	1,1	5,0	4,4	18,4	31,0
	Other	Count	0	0	0	0	2	2
		Expected Count	,1	,1	,3	,3	1,2	2,0
	Total	Count	28	14	65	57	240	404
		Expected Count	28,0	14,0	65,0	57,0	240,0	404,0

Being the previous value above 20% we then need to look at the Likelihood ratio having into attention the asymptotic significance (2-sided) result. The result of the p-value is <,001, meaning that it is inferior to the alpha-value of 0,05. This means that the p-value obtained is statistically significant and that we can conclude that there is a correlation between the analysed variants.

Table 37 - Chi-square tests. Source: Author

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	52,245 <sup>a</sup>	20	<,001
Likelihood Ratio	55,626	20	<,001
Linear-by-Linear Association	4,056	1	,044
N of Valid Cases	404		

a. 16 cells (53,3%) have expected count less than 5. The minimum expected count is ,07.

Although, when looking into the Cramer's V test (table 38) as the Value is ,180, so, under 0,2, the correlation between the analysed variants is then only understood as a weak correlation.

Table 38 - Symmetric measures. Source: Author

	Value	Approximate Significance
Nominal by Nominal Phi	,360	<,001
Cramer's V	,180	<,001
N of Valid Cases	404	

So, it can be concluded that H6c, "There is a strong correlation between the frequency that consumers would like to co-create fashion products and their level of studies." is rejected.

To test H6d, “There is a strong correlation between the frequency that consumers would like to co-create fashion products and their professional situation.” the Chi-square test was used (table 39 and 40). According to the results, since 11 of the cells (44,0%) have a count lower than 5, assumptions have been violated.

Table 39 – Professional situation \* What is the frequency in that you like or would like to co-create fashion products? crosstabulation. Source: Author

		What is the frequency in that you like or would like to co-create fashion products?					Total	
		Everyday	Every other day	Weekly	Monthly	When I feel like to		
Professional situation	Employed	Count	15	2	34	32	109	192
		Expected Count	13,3	6,7	30,9	27,1	114,1	192,0
	Self-employed	Count	1	0	2	2	32	37
		Expected Count	2,6	1,3	6,0	5,2	22,0	37,0
	Unemployed	Count	0	0	3	0	14	17
		Expected Count	1,2	,6	2,7	2,4	10,1	17,0
	Student	Count	12	12	26	23	83	156
		Expected Count	10,8	5,4	25,1	22,0	92,7	156,0
	Retired	Count	0	0	0	0	2	2
		Expected Count	,1	,1	,3	,3	1,2	2,0
Total		Count	28	14	65	57	240	404
		Expected Count	28,0	14,0	65,0	57,0	240,0	404,0

Being the previous value above 20% we then need to look at the Likelihood ratio having into attention the asymptotic significance (2-sided) result. The result of the p-value is ,001, meaning that it is inferior to the alpha-value of 0,05. This means that the p-value obtained is statistically significant and that we can conclude that there is a correlation between the analysed variants.

Table 40 - Chi-square tests. Source: Author

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	32,639 <sup>a</sup>	16	,008
Likelihood Ratio	39,013	16	,001
Linear-by-Linear Association	1,161	1	,281
N of Valid Cases	404		

a. 11 cells (44,0%) have expected count less than 5. The minimum expected count is ,07.

Although, when looking into the Cramer's V test (table 41) as the Value is ,142, so, under 0,2, the correlation between the analysed variants is then only understood as a weak correlation.

Table 41 - Symmetric measures. Source: Author

	Value	Approximate Significance
Nominal by Nominal Phi	,284	,008
Cramer's V	,142	,008
N of Valid Cases	404	

So, we conclude that H6d, "There is a strong correlation between the frequency that consumers would like to co-create fashion products and their professional situation." is rejected.

Additionally, for question 15, the hypothesis H7, "There is a strong correlation between the frequency in which the consumer would like to co-create fashion products and the interest in creating several types of fashion products in the same timeline.", was made with the aim of

understanding if there is a correlation between the frequency in which the consumer would like to co-create fashion products and the interest in creating several types of fashion products in the same timeline.

To test H7, the Chi-square test was used (table 42 and 43). According to the results, since only 1 of the cells (10%) has a count lower than 5, no assumptions were violated.

Table 42 – Do you think that co-creating several types of fashion products simultaneously is more interesting than just co-creating one type of product? \* What is the frequency in that you like or would like to co-create fashion products? crosstabulation. Source: Author

		What is the frequency in that you like or would like to co-create fashion products?					Total	
		Everyday	Every other day	Weekly	Monthly	When I feel like to		
Do you think that co-creating several types of fashion products simultaneously is more interesting than just co-creating one type of product?	Yes	Count	26	14	61	44	168	313
		Expected Count	21,7	10,8	50,4	44,2	185,9	313,0
	No	Count	2	0	4	13	72	91
		Expected Count	6,3	3,2	14,6	12,8	54,1	91,0
Total	Count	28	14	65	57	240	404	
	Expected Count	28,0	14,0	65,0	57,0	240,0	404,0	

So, we can base the analysis on the Pearson Chi-Square value having into attention the asymptotic significance (2-sided) result. The result of the p-value is <,001, meaning that it is inferior to the alpha-value of 0,05. This means that the p-value obtained is statistically significant and that we can conclude that there is a correlation between the analysed variants.

Table 43 - Chi-square tests. Source: Author

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	25,536 <sup>a</sup>	4	<,001
Likelihood Ratio	32,155	4	<,001
Linear-by-Linear Association	21,661	1	<,001
N of Valid Cases	404		

a. 1 cells (10,0%) have expected count less than 5. The minimum expected count is 3,15.

The correlation between the analysed variants is again confirmed in the Cramer's V test (table 44) as the Value is ,251, so, above 0,25, meaning that there is a moderate correlation.

Table 44 - Symmetric measures. Source: Author

	Value	Approximate Significance
Nominal by Nominal Phi	,251	<,001
Cramer's V	,251	<,001
N of Valid Cases	404	

So, it can be concluded that H7, "There is a strong correlation between the frequency in which the consumer would like to co-create fashion products and the interest in creating several types of fashion products in the same timeline." is rejected.

In question 16, "Do you think that co-creating several types of fashion products simultaneously is more interesting than just co-creating one type of product?" a large part of the respondents, 77% (313 respondents), indicated that they would like to co-create several types of fashion products simultaneously and only 23% (91 respondents) indicated that for them is more interesting to co-create just one type of fashion product (chart 12).

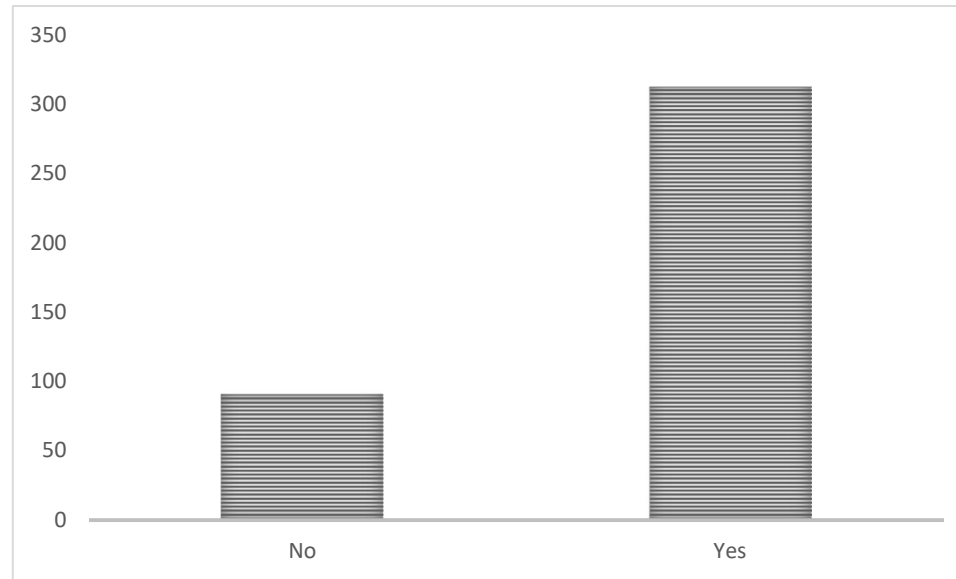


Chart 12 – Number of consumers that consider and not consider that co-creating several types of fashion products simultaneously is more interesting than just co-creating one type of product. Source: Author

This question had the aim of understanding if co-creating several types of fashion products in the same timeline would be more interesting than co-creating just one.

When it comes to the creation of details or the full product, in question 17, “Would it be more interesting to co-create just details of the fashion product or the full fashion product?” similar numbers were obtained when looking to question 16. Most of the respondents, 77% (313 respondents) would prefer to co-create the full fashion product, and only 23% (91 respondents) indicated that they would have a preference in co-creating just details of the fashion product (chart 13).

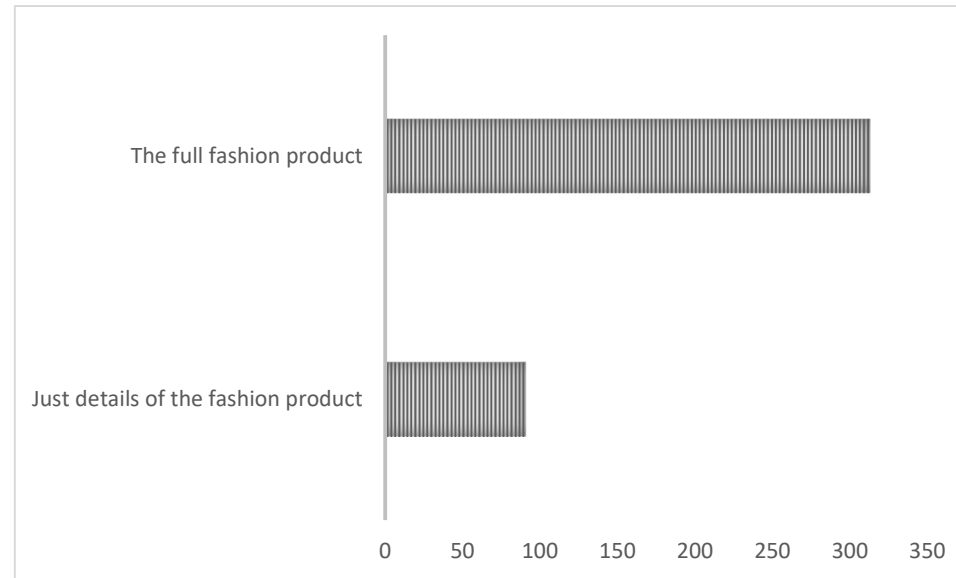


Chart 13 – Number of consumers that consider more interesting to co-create the full fashion product or just details of the fashion product. Source: Author

This question had the aim of comprehending if it is more interesting to co-create just details of the fashion product or the full product.

On question 18, “What type of details of the fashion product would you like to co-create?”, answering was only required for the consumers that answered just details of the fashion product on question 17. So, there were 91 responses to question 18, being that the most important detail that the consumers would like to co-create are the colours, followed closely by prints. With least importance appear the trims (as for example zippers or buttons), small applications (as for example beading or eyelets) and embroideries as the least important detail (table 45).

Table 45 – Mean and standard deviation for question 18. Source: Author

	N	Mean	Std. Deviation
Colours	91	5,7802	1,17191
Prints	91	5,6813	1,28131
Trims (as for example zippers or buttons)	91	4,9670	1,56667
Embroideries	91	4,6154	1,78119
Small applications (as for example beading or eyelets)	91	4,8242	1,56058

This question had the aim of understanding what details of the fashion products are most interesting to be co-created.

On question 19, “I have interest in co-creating fashion products from the initial design till the final product.”, consumers indicated to have interest in doing this with a mean of 5,6881 on a scale from 1 to 7 (table 46).

Table 46 – Mean and standard deviation for question 19. Source: Author

	N	Mean	Std. Deviation
I have interest in co-creating fashion products from the initial design till the final product.	404	5,6881	1,31295

This question had the aim of understanding if there is interest in co-create a product from the initial design till the final product.

Still, for question 19, was proposed the hypothesis H8, “Personal factors can influence the frequency that consumers would like to co-create fashion products.”, with the aim of understanding if there are differences in personal factors that can influence the interest in co-creating the product from the initial design till the final product.

To understand if personal factors can pose an influence, hypothesis H8a, “There are significant differences between the interest in co-creating the product from the initial design till the final product and the field of work.”, was made.

To test H8a, the Kruskal Wallis H test was used (table 47) since the answers were not normally distributed. According to the results, there are differences.

Table 47 – Kruskal Wallis test for significant differences between the interest in co-creating the product from the initial design till the final product and the field of work. Source: Author

I have interest in co-creating fashion products from the initial design till the final product.	
Kruskal-Wallis H	90,200
Df	8
Asymp. Sig.	<,001

Looking with more detail at the data obtained, we could understand that the most interested respondents in this option, regarding their field of work, we're the ones from arts and design showing a high degree of interest, and the least interested ones were from the science and technology field revealing indifference over this option.

So, it can be concluded that H8a, “There are significant differences between the interest in co-creating the product from the initial design till the final product and the field of work.” is accepted.

On question 20, “I have interest in co-creating fashion products proposed by the brand through comments, suggestions or proposals of alterations and/or improvements to the design or materials.”, consumers also show interest in doing this, with a mean of 5,4356 on a scale of 1 to 7 (table 48)

Table 48 – Mean and standard deviation for question 20. Source: Author

	N	Mean	Std. Deviation
I have interest in co-creating fashion products proposed by the brand through comments, suggestions or proposals of alterations and/or improvements to the design or materials.	404	5,4356	1,25953

This question had the aim of understanding if there is interest in co-create fashion products pre-proposed by the brand through comments, suggestions, or proposals for alterations and/or improvements of the design or materials.

Still for question 20, was proposed the hypothesis H9, “There is a strong correlation between the interest in co-creating products pre-proposed by the brand through comments, suggestions, or proposals for alterations and/or improvements of the design or materials and the interest in sharing photographs of his/hers wardrobe with a fashion brand, so that, the products created can better met his/hers desires and expectations.”, with the aim of understanding if there is a correlation between the interest in co-creating products pre-proposed by the brand through comments, suggestions, or proposals for alterations and/or improvements of the design or materials and the interest in sharing photographs of his/hers wardrobe with a fashion brand, so that, the products created can better met his/hers desires and expectations.

To test H9, the Spearman's test was used (table 49) since the answers either on question 20 or question 21 were not normally distributed. According to the results, there is only a small to moderate correlation that is statistically significant.

So, it can be concluded that H9, “There is a strong correlation between the interest in co-creating products pre-proposed by the brand through comments, suggestions, or proposals for alterations and/or improvements of the design or materials and the interest in sharing photographs of his/hers wardrobe with a fashion brand, so that, the products created can better met his/hers desires and expectations.” is rejected.

Table 49 – Spearman's test for the correlation between the interest in co-creating products pre-proposed by the brand through comments, suggestions, or proposals for alterations and/or improvements of the design or materials and the interest in sharing photographs of his/hers wardrobe with a fashion brand, so that, the products created can better met his/hers desires and expectations. Source: Author

		I have interest in sharing photographs of the garments present in my wardrobe, so that, the products created by the brand better meet my desires and expectations.	
Spearman's rho	I have interest in co-creating fashion products proposed by the brand through comments, suggestions or proposals of alterations and/or improvements to the design or materials.	Correlation Coefficient	,361**
		Sig. (2-tailed)	<,001
		N	404

\*\*Correlation is significant at the 0.01 level (2-tailed).

The results of question 21, “I have interest in sharing photographs of the garments present in my wardrobe, so that, the products created by the brand better meet my desires and expectations.”, show a lower degree of interest in this type of connection with the brand than the ones presented in the two previous questions, with a mean of 4,9010 in a scale of 1 to 7 and also with a higher std. deviation than in the two previous questions (table 50).

Table 50 – Mean and standard deviation for question 21. Source: Author

	N	Mean	Std. Deviation
I have interest in sharing photographs of the garments present in my wardrobe, so that, the products created by the brand better meet my desires and expectations.	404	4,9010	1,57212

This question had the aim of comprehending if the consumer has interest in sharing photographs of the garments available in his/hers wardrobe with the brand, so that, the co-created products better met his/hers desires and expectations.

In terms of receiving information at the beginning of the co-creation process, question 22, “What information’s do you consider to be more important to receive in the beginning of the co-creation process?” consumers stated that the most important information’s are the stages of the co-creation process and its starting dates and the theme for the co-creation process. Also important is the recommendation of materials, who keeps the legal rights over the ideas, estimated sale date for the product, type of rewards and print options for use or inspiration. With the least importance appear the options of parts of the fashion product for inspiration or use (as for example sleeve types) and the options of details of the fashion product for inspiration or use (as for example embroidery types) (table 51).

Table 51 – Mean and standard deviation for question 22. Source: Author

	N	Mean	Std. Deviation
Stages of the co-creation process and its starting dates	404	6,0173	1,12592
Who keeps the legal rights over the ideas	404	5,7921	1,25282
Type of rewards	404	5,6238	1,24913
Theme for the co-creation process	404	6,0074	1,15001
Recommendation of materials	404	5,8342	1,14234
Print options for use or inspiration	404	5,5965	1,30397
Options of parts of the fashion product for inspiration or use (as for example sleeve types)	404	5,4777	1,27078
Options of details of the fashion product for inspiration or use (as for example embroidery types)	404	5,3812	1,34708
Estimated sale date for the product	404	5,6782	1,30105

This question had the aim of comprehending what the most important information’s are to be received in the beginning of the co-creation process.

In terms of receiving information during and after the co-creation process, question 23, “What information’s do you consider to be more important to receive during and after the co-creation process?” consumers stated that the most important information’s are the limit date for the submission of proposals of co-created products and the sales numbers of the products co-created by me, but all the options gathered close results. These are followed by the results of the community voting of the co-created products, beginning date of the sale of the co-created products and status of the submission process of co-created products, and the least important information are the dates for the voting of the co-created products (table 52).

Table 52 – Mean and standard deviation for question 23. Source: Author

	N	Mean	Std. Deviation
Limit date for the submission of proposals of co-created products	404	6,1658	1,08210
Status of the submission process of co-created products	404	5,8985	1,13247
Dates for the voting of the co-created products	404	5,7970	1,17813
Results of the community voting of the co-created products	404	5,9901	1,12048
Beginning date of the sale of the co-created products	404	5,9208	1,07240
Sales numbers of the products co-created by me	404	6,0891	1,07854

This question had the aim of comprehending what the most important information’s are to be received through and after the co-creation process.

On question 24, “What are the co-creation negative factors that can lead to a loss of interest in the product?”, consumers gave the most importance to the product not corresponding to what was co-created and knowing that the brand does not have social ethics, with close results. Also important were factors such as low level of communication from the brand with the consumer followed by, in order of importance, loss of the legal rights over the ideas, not knowing where or how the product was produced, absence of rewards, knowing that the brand and its products are not sustainable and not having my name or image associated to the co-created product. Not knowing what will be the price of the product in the

beginning of the process and the time invested in the co-creation process being too long, were the least important factors for the consumers (table 53).

Table 53 – Mean and standard deviation for question 24. Source: Author

	N	Mean	Std. Deviation
Not knowing what will be the price of the product in the beginning of the process	404	4,6114	1,68484
Loss of the legal rights over the ideas	404	5,7030	1,38438
Knowing that the brand and its products are not sustainable	404	5,4554	1,52904
The time invested in the co-creation process being too long	404	4,7153	1,68504
Not knowing where or how the product was produced	404	5,6139	1,39635
Not having my name or image associated to the co-created product	404	5,1114	1,72846
Knowing that the brand doesn't have social ethics	404	6,1658	1,25020
The product not corresponding to what was co-created	404	6,1832	1,16445
Absence of rewards	404	5,5470	1,37336
Low level of communication from the brand with the consumer	404	5,8144	1,17783

This question had the aim of understanding what the negatives factors in the co-creation process are, that can bring a loss of interest to the process.

On question 25, “If the co-creation fashion product, when delivered, would not correspond to the expectations, what would be your action?” consumers stated that mainly, they would return it only if it had lack of material or manufacturing quality followed by the return if the consumer did not identify himself with the product aesthetically in terms of shape, silhouette or colour and they would return it only if the size would not fit. Also, consumers gave importance to the fact that they would make a complaint directly to the brand. Less predictable actions from the

consumers are that they would not participate in further co-creation processes from the brand and would not buy any more products from the brand. The action that the consumers considered less plausible was keeping the product because it was co-created by them (table 54).

Table 54 – Mean and standard deviation for question 25. Source: Author

	N	Mean	Std. Deviation
I would return it only if the size wouldn't fit	404	5,2970	1,68364
I would return it only if it had lack of material or manufacturing quality	404	5,6856	1,36700
I would return it if I didn't identify myself with the product aesthetically in terms of shape, silhouette or colour	404	5,3292	1,62885
I would not participate in further co-creation processes from the brand	404	4,8738	1,85756
I would not buy any more products from the brand	404	4,5569	1,64588
I would make a complaint directly to the brand	404	5,2772	1,61026
I would keep the product because it was co-created by me	404	4,5272	2,03731

This question had the aim of knowing what the consumers' action would be if the delivered product did not meet their expectations.

Still, for question 25, was proposed the hypothesis H10, “Personal factors can influence the consumers’ action if the delivered product did not meet his/hers expectations.”, with the aim of understanding if personal factors can influence the consumers’ action if the delivered product did not meet his/hers expectations.

To understand if personal factors can pose an influence, hypothesis H10a, “There are significant differences in the consumers’ action if the delivered product did not meet his/hers expectations regarding their age.” and H10b, “There are significant differences in the consumers’ action if the delivered product did not meet his/hers expectations regarding their net monthly income.” were made.

To test H10a, “There are significant differences in the consumers’ action if the delivered product did not meet his/hers expectations regarding their age.”, the Kruskal Wallis H test was used (table 55) since the answers were not normally distributed. According to the results there are differences in the answers, I would return it if I did not identify myself with the product aesthetically in terms of shape, silhouette or colour, I would not buy any more products from the brand, and I would keep the product because it was co-created by me.

Table 55 – Kruskal Wallis test for significant differences in the consumers’ action if the delivered product did not meet his/hers expectations regarding their age. Source: Author

	I would return it only if the size wouldn't fit	I would return it only if it had lack of material or manufacturing quality	I would return it if I didn't identify myself with the product aesthetically in terms of shape, silhouette or colour	I would not participate in further co-creation processes from the brand	I would not buy any more products from the brand	I would make a complaint directly to the brand	I would keep the product because it was co-created by me
Kruskal-Wallis H	8,608	1,347	24,885	7,939	16,816	9,026	16,046
df	4	4	4	4	4	4	4
Asymp. Sig.	,072	,853	<,001	,094	,002	,060	,003

Looking with more detail at the data obtained, we could understand that the action I would return it if I did not identify myself with the product aesthetically in terms of shape, silhouette or colour would be put in practice more likely by the ages between 35 and 44 years old, and, 45 to 54 years old than by the other age groups. The action I would not buy any more products from the brand, would be put in practice more likely by the ages between 45 and 54 years old than by the other age groups. The action I would keep the product because it was co-created by me, would be put in practice more likely by the ages between 18 and 24 years old, and 45 and 54 years old than by the other age groups.

So, it can be concluded that H10a, “There are significant differences in the consumers’ action if the delivered product did not meet his/hers expectations regarding their age.” is not rejected, for I would return it if I did not identify myself with the product aesthetically in terms of shape, silhouette or colour, I would not buy any more products from the brand, and I would keep the product because it was co-created by me.

To test H10b, “There are significant differences in the consumers’ action if the delivered product did not meet his/hers expectations regarding their net monthly income.” the Kruskal Wallis H test was used (table 56) since the answers were not normally distributed. According to the results, there are differences in the answers, I would return it only if the size would not fit, I would return it if I did not identify myself with the product aesthetically in terms of shape, silhouette or colour, I would not participate in further co-creation processes from the brand, I would not buy any more products from the brand, and I would keep the product because it was co-created by me.

Looking with more detail at the data obtained, we could understand that the action I would return it only if the size would not fit, would be less plausible for the respondents with an income under 635€ per month and for the respondents that do not have a monthly income, than for the other age groups. The action I would return it if I did not identify myself with the product aesthetically in terms of shape, silhouette or colour would be less plausible for the respondents with an income between 636€ and 799€ per month and for the respondents that do not have a monthly income, than for the other groups. The action I would not participate in further co-creation processes from the brand would be put into practice more likely by the respondents with an income under 635€ per month, 800€ to 999€ per month and more than 2000€ than by the other groups.

Table 56 – Kruskal Wallis test for significant differences in the consumers’ action if the delivered product did not meet his/hers expectations regarding their net monthly income.  
Source: Author

	I would return it only if the size wouldn't fit	I would return it only if it had lack of material or manufacturing quality	I would return it if I didn't identify myself with the product aesthetically in terms of shape, silhouette or colour	I would not participate in further co-creation processes from the brand	I would not buy any more products from the brand	I would make a complaint directly to the brand	I would keep the product because it was co-created by me
Kruskal-Wallis H	18,030	8,699	13,988	16,890	22,376	10,948	13,957
df	6	6	6	6	6	6	6
Asymp. Sig.	,006	,191	,030	,010	,001	,090	,030

So, it can be concluded that H10b, “There are significant differences in the consumers’ action if the delivered product did not meet his/hers expectations regarding their net monthly income.” is not rejected, for I would return it only if the size would not fit, I would return it if I did not identify myself with the product aesthetically in terms of shape, silhouette or colour, I would not participate in further co-creation processes from the brand, I would not buy any more products from the brand, and I would keep the product because it was co-created by me.

On question 26, “How much time would you be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured)?” close numbers were obtained for the response till one month and till two months, with 39% (159 respondents) and 37% (151 respondents) respectively. 23% (92 respondents) indicated that they would be willing to wait over two months for the product delivery and 1% (2 respondents) answered other, indicating that the time they would be willing to wait would depend on the type of product (chart 14).

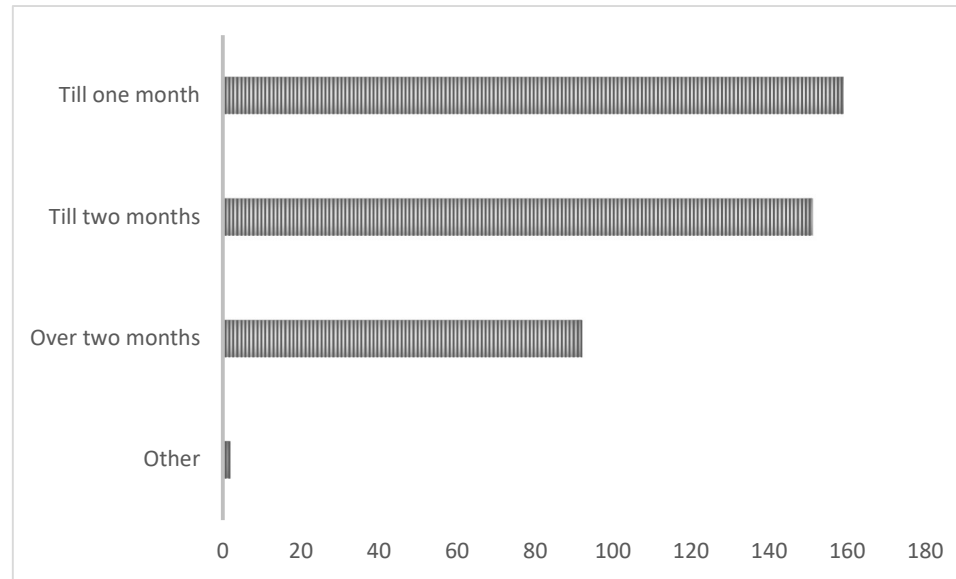


Chart 14 – Time that the consumers would be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured).  
Source: Author

This question was made with the aim of understanding for how long the consumer would be willing to wait for the product delivery if it was bought on pre-sale.

Still for question 26, was proposed the hypothesis H11, “Personal factors can influence for how long the consumer would be willing to wait for the product delivery if it was bought on pre-sale.”, with the aim of understanding if there is a correlation with personal factors that can influence the time the consumer would be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured).

To understand if personal factors can pose an influence, hypothesis H11a, “There is a strong correlation between the time the consumer would be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured) and their age.” and H11b, “There is a strong correlation between the time the consumer would be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured) and their residence.” were made.

To test H11a, “There is a strong correlation between the time the consumer would be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured) and their age.” the Chi-square test was used (table 57 and 58). For this test, the answer “Others” was left aside as it was not significant, accounting only for two answers leading assumptions to be violated. In this way, according to the results, since only 3 of the cells (20%) have a count lower than 5, no assumptions were violated.

So, we can base the analysis on the Pearson Chi-Square value having into attention the asymptotic significance (2-sided) result. The result of the p-value is  $< .001$ , meaning that it is inferior to the alpha-value of 0,05. This means that the p-value obtained is statistically significant and that we can conclude that there is a correlation between the analysed variants.

The correlation between the analysed variants is again confirmed in the Cramer’s V test (table 59) as the Value is ,223, so above 0,2 meaning that there is a moderate correlation.

Table 57 – Age \* How much time would you be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured)?  
 crosstabulation. Source: Author

		How much time would you be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured)?			Total	
		Till one month	Till two months	Over two months		
Age	18 – 24	Count	46	78	36	160
		Expected Count	63,3	60,1	36,6	160,0
	25- 34	Count	43	31	37	111
		Expected Count	43,9	41,7	25,4	111,0
	35 – 44	Count	31	30	13	74
		Expected Count	29,3	27,8	16,9	74,0
	45 – 54	Count	33	10	6	49
		Expected Count	19,4	18,4	11,2	49,0
	55 – 64	Count	6	2	0	8
		Expected Count	3,2	3,0	1,8	8,0
Total		Count	159	151	92	402
		Expected Count	159,0	151,0	92,0	402,0

Table 58 - Chi-square tests. Source: Author

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	39,852 <sup>a</sup>	8	<,001
Likelihood Ratio	40,503	8	<,001
Linear-by-Linear Association	18,357	1	<,001
N of Valid Cases	402		

a. 3 cells (20,0%) have expected count less than 5. The minimum expected count is 1,83.

Table 59 - Symmetric measures. Source: Author

	Value	Approximate Significance
Nominal by Nominal Phi	,315	<,001
Cramer's V	,223	<,001
N of Valid Cases	402	

So, it can be concluded that H11a, “There is a strong correlation between the time the consumer would be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured) and their age.” is rejected.

To test H11b, “There is a strong correlation between the time the consumer would be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured) and their residence.”, the Chi-square test was used (table 60 and 61). For this test, the answer “Others” was left aside as it was not significant, accounting only for two answers leading assumptions to be violated. In this way, according to the results, since 0 cells (0%) have a count lower than 5, no assumptions were violated.

Table 60 – Residence \* How much time would you be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured)? crosstabulation. Source: Author

		How much time would you be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured)?				
		Till one month	Till two months	Over two months	Total	
Residence	City	Count	103	86	75	264
		Expected Count	104,4	99,2	60,4	264,0
	Town	Count	36	37	6	79
		Expected Count	31,2	29,7	18,1	79,0
	Village	Count	20	28	11	59
		Expected Count	23,3	22,2	13,5	59,0
Total	Count	159	151	92	402	
	Expected Count	159,0	151,0	92,0	402,0	

So, we can base the analysis on the Pearson Chi-Square value having into attention the asymptotic significance (2-sided) result. The result of the p-value is ,001, meaning that it is inferior to the alpha-value of 0,05. This means that the p-value obtained is statistically significant and that we can conclude that there is a correlation between the analysed variants.

Table 61 - Chi-square tests. Source: Author

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	18,368 <sup>a</sup>	4	,001
Likelihood Ratio	20,819	4	<,001
Linear-by-Linear Association	1,761	1	,185
N of Valid Cases	402		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 13,50.

The correlation between the analysed variants is again confirmed in the Cramer's V test (table 62) as the Value is ,151, so under 0,2 meaning that there is a correlation, although it is a weak correlation.

Table 62 - Symmetric measures. Source: Author

	Value	Approximate Significance
Nominal by Nominal Phi	,214	,001
Cramer's V	,151	,001
N of Valid Cases	402	

So, it can be concluded that H11b, "There is a strong correlation between the time the consumer would be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured) and their residence." is rejected.

Additionally, was also proposed the hypothesis H12, "There is a strong correlation between the time the consumer would be willing to wait longer for the product delivery if it was bought on pre-sale and the consumers that already co-created fashion products.", with the aim of understanding

if there is a correlation between the time the consumer would be willing to wait longer for the product delivery if it was bought on pre-sale and the consumers that already co-created fashion products.

To test H12, “There is a strong correlation between the time the consumer would be willing to wait longer for the product delivery if it was bought on pre-sale and the consumers that already co-created fashion products.” the Chi-square test was used (table 63 and 64). According to the results, since any of the cells has a count lower than 5, no assumptions have been violated.

Table 63 – Have you ever co-created fashion products? \* How much time would you be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured)? crosstabulation. Source: Author

		How much time would you be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured)?			
		Till two months	Over two months	Total	
Have you ever co-created fashion products?	Yes	Count	44	23	67
		Expected Count	41,6	25,4	67,0
	No	Count	107	69	176
		Expected Count	109,4	66,6	176,0
Total		Count	151	92	243
		Expected Count	151,0	92,0	243,0

So, we can base the analysis on the Pearson Chi-Square value having into attention the asymptotic significance (2-sided) result. The result of the p-value is ,484, meaning that it is superior to the alpha-value of 0,05. This means that the p-value obtained is not statistically significant and that we can conclude that there is no correlation between the analysed variants.

Table 64 - Chi-square tests. Source: Author

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,490 <sup>a</sup>	1	,484		
Continuity Correction <sup>b</sup>	,305	1	,581		
Likelihood Ratio	,495	1	,482		
Fisher's Exact Test				,555	,292
Linear-by-Linear Association	,488	1	,485		
N of Valid Cases	243				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 25,37.

b. Computed only for a 2x2 table

The correlation between the analysed variants is again confirmed in the Phi's test (table 65) as the Value is ,045, so under 0,2 meaning that there is only a very weak correlation.

Table 65 - Symmetric measures. Source: Author

	Value	Approximate Significance
Nominal by Nominal Phi	,045	,484
Cramer's V	,045	,484
N of Valid Cases	243	

Looking more closely at the risk estimate (table 66), we can still conclude that the consumers that have never co-created fashion products are more willing to wait over two months, as also supported by the cohort of ,876, than the consumers that have co-created fashion products, although,

both, that co-created fashion products or have never co-created fashion products are more willing to wait only till two months than over two months.

Table 66 – Risk estimate. Source: Author

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Have you ever co-created fashion products? (Yes / No)	1,234	,685	2,221
For cohort Q26 = Till two months	1,080	,876	1,332
For cohort Q26 = Over two months	,876	,599	1,279
N of Valid Cases	243		

So, it can be concluded that H12, “There is a strong correlation between the time the consumer would be willing to wait longer for the product delivery if it was bought on pre-sale and the consumers that already co-created fashion products.” is rejected.

Question 27 was the only open and optional question for the consumers that would like to leave an additional suggestion regarding the survey. A few suggestions were made by the consumers being, some related to the concept itself, such as, “Co-creation is beneficial and important as it would have the ideas of the participants and would end the design of so many products that look the same.” or how co-creation works, “On one side the idea is interesting as it makes the fashion industry more open and cooperative. On the other side, I question if it cannot be easily used for saving money on a specialized workforce as it has been happening in many other services where the client is put in a self-service mode while maintaining the prices.” and “Co-creation can be difficult if the co-creator is not in the fashion industry. There are many variables to be considered in what it takes to create a product. Many just want to click and collect. This type of behaviour needs to be changed. Right now, only small personalisation can be made to make the demand.”

But the most important and in greater number were related to the type of products that could be co-created and would have an impact on consumers. Some suggestions were made by the consumers, such as, “I think co-creation is especially important for plus-size consumers, as many brands do not create stylish and flattering clothes for people with higher weight.” and, “The reason for my interest in this is how difficult it is for me to find clothes that fit me. I am petite in height with an hourglass figure, and it is only recently that stores started having certain sections dedicated to petites but not enough variety at all!” and “A lot of my co-creation interests are based on the lack of market for certain body types, and/or heights. These are the details I would love to focus on with the brand that I already enjoyed the material and ethics of.” and, “While filling in the questionnaire, I was having in mind the size of clothes. Otherwise, I could say I am not interested in co-creation.”, and “I would have interest in non-mainstream styles (such as punk/gothic and such)”, and additionally, “Consideration of being disabled and easy to fit/wear”.

So, accordingly, with the consumers, co-creation could be very beneficial for niche markets or to co-create products that are suited for specific situations with specific consumers, as this seems to be what has been lacking in the mainstream market accordingly to the suggestions left. Special emphasis is made on sizes and shapes.

To end the analysis of the consumers survey, table 67 resumes the accepted, partially accepted or rejected hypotheses.

Table 67 – Outcome of the proposed hypotheses. Source: Author

H1, “There is a strong correlation between the perception of the added value of co-created products and the consumers that already co-created products.”	Rejected
H2a, “There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their age.”	Partially accepted 5 out of 7
H2b, “There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their net monthly income.”	Partially accepted 4 out of 7
H2c, “There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their professional situation.”	Partially accepted 3 out of 7
H3, “There are significant differences in the incentives that can lead consumers to participate more actively in the co-creation processes of fashion products regarding the frequency in which the consumer would like to co-create fashion products.”	Accepted
H4a, “There are significant differences in the styles of fashion products that the consumers would like to co-create regarding their gender.”	Partially accepted

	2 out of 5
H4b, "There are significant differences in the styles of fashion products that the consumers would like to co-create regarding their age."	Partially accepted 3 out of 5
H5a, "There are significant differences in the types of fashion products that the consumers find more interesting to co-create regarding their gender."	Partially accepted 6 out of 11
H5b, "There are significant differences in the types of fashion products that the consumers find more interesting to co-create regarding their age."	Partially accepted 3 out of 11
H6a, "There is a strong correlation between the frequency that consumers would like to co-create fashion products and their gender."	Rejected
H6b, "There is a strong correlation between the frequency that consumers would like to co-create fashion products and their age."	Rejected
H6c, "There is a strong correlation between the frequency that consumers would like to co-create fashion products and their level of studies."	Rejected
H6d, "There is a strong correlation between the frequency that consumers would like to co-create fashion products and their professional situation."	Rejected
H7, "There is a strong correlation between the frequency in which the consumer would like to co-create fashion products and the interest in creating several types of fashion products in the same timeline."	Rejected
H8a, "There are significant differences between the interest in co-creating the product from the initial design till the final product and the field of work."	Accepted
H9, "There is a strong correlation between the interest in co-creating products pre-proposed by the brand through comments, suggestions, or proposals for alterations and/or improvements of the design or materials and the interest in sharing photographs of his/hers wardrobe with a fashion brand, so that, the products created can better met his/hers desires and expectations."	Rejected
H10a, "There are significant differences in the consumers' action if the delivered product did not meet his/hers expectations regarding their age."	Partially accepted 3 out of 7
H10b, "There are significant differences in the consumers' action if the delivered product did not meet his/hers expectations regarding their net monthly income."	Partially accepted 5 out of 7
H11a, "There is a strong correlation between the time the consumer would be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured) and their age."	Rejected
H11b, "There is a strong correlation between the time the consumer would be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured) and their residence."	Rejected
H12, "There is a strong correlation between the time the consumer would be willing to wait longer for the product delivery if it was bought on pre-sale and the consumers that already co-created fashion products."	Rejected

#### 4.1.2. Analysis of the fashion designers' interviews

In a first instance, there is the need to characterize the interviewed sample. Table 68 gives an overview of the data obtained from questions 1 to 5. Namely, the age, level and field of studies, professional category, years of experience and company dimension.

Table 68 - Characterization of the fashion designers' sample. Source: Author

Code	Age	Level and field of studies	Professional category	Years of experience	Company dimension
DMo1	36	Bachelor's degree and Specialization in Fashion Design	Fashion Designer	7	+ / - 300 workers
DMo2	29	Professional course in Fashion Design	Senior Fashion Designer	8	+ / - 180 workers
DMo3	27	Professional course and Master's in Fashion Design	Fashion Designer	5	+ / - 350 workers
DMo4	25	Bachelor's degree in Fashion Design	Fashion Designer	3	+ / - 170 workers
DMo5	56	Professional course in Fashion Design and Pattern Making	Senior Fashion Designer	29	+ / - 250 workers
DMo6	30	Bachelor's degree and Master's in Fashion Design	Fashion Designer	6	+ / - 200 workers
DMo7	38	Bachelor's degree and Master's in Fashion Design	Senior Fashion Designer	12	+ / - 200 workers
DMo8	22	Bachelor's degree and Master's in Fashion Design	Assistant Fashion Designer	1	+ / - 180 workers
DMo9	25	Bachelor's degree and Master's in Fashion Design	Fashion Designer	2	+ / - 25 workers

Regarding question 6, "In which way can the DNA of a co-creation brand be influenced, as opposed to a traditional brand, having into account that the basis of a co-creation brand is to be connected directly with the consumers?" the node "The brand DNA can be influenced by co-creation was created" was created to organize the orality excerpts that were considered interesting for properly answer this question.

In general, all the interviewees agreed that the brand could have its DNA influenced by the consumers.

Some like DMo1 gave a more general opinion stating that the influence can be positive or negative and that it will depend on the consumer's input, "The brand can be influenced in a positive or negative way. It depends on what kind of feedback you might get." or, as said by DMo2, that the brand will need to define its DNA very well to be influenced at a minimum, "[...] the brand will have to really define its DNA".

Others associated the possible influence on the brands' DNA with the ability of the brand to filter the consumer inputs as DMo5, "There always has to be a good capacity to do this filtering so that there is no adulteration of what the brand had originally set out to do.",

or DM06, “[...] all the information received would have to be very well filtered, in advance by the design sector.”.

The fact that co-creation brands are open to the consumers suggestions is seen as maybe the most important influence on the brands DNA as said by DM09 that each consumer as its own personality, so many variants are expected, “[...] will always influence because each person has his or her own personality.”, or DM08, that understands that the brand, in the attempt of trying to reach the vast majority of the consumers could not be able to maintain its DNA, “It should be open to receive several ideas from several different people, with several different ways of thinking, and therefore I think this can affect, in the sense that, the brand to try to reach several different consumers may not be able to maintain its DNA.”. DM03 also has an opinion similar to the previous interviewed stating that “[...] the co-creation brand by working directly with the consumer knows what is needed, so, it influences their DNA as they may in a way be creating just for the end consumer.”, as the brand in a certain way might be only creating having solely on focus the end consumer. Although DM04 adverts for the fact that it is needed to let the consumer create but not to let him change things at will, “It is important for the consumer to have the power of change but not in such a way that they can change everything.”. Still, DM04 also says that “In a way if consumers are always making changes it's going to be something that is constantly changing, which may not be a bad thing because brands have to modernize themselves.” saying this way that at the same time the consumer's intervention can be till a certain point very beneficial.

DM03 also indicates that besides the brand being focused on the consumer also has the problem of eventually being too wide in what comes to the input reception, “A co-creation-only brand has the risk of losing its identity or being over-reaching.” and in this way risking to lose its identity, also supported by DM09 that indicates “It always influences the DNA of the brand because it becomes very thorough.”.

DM07 connects the eventual DNA influence more to a managerial and economic decision, “[...] this will always depend on the opinion or the direction the brand wants to take, and really on the profits or results the company gets from it.” and “[...] they will have to really give up a bit on the DNA to be able to grow.” and also adding that brands can end up losing themselves, “There are others where maybe that openness to product expansion will hurt or lose themselves because, in the meantime, you don't have a focus and you can't grow or direct the brand.”, and “[...] if the brand gives too much importance or wants to have more sales through consumer opinion, to get to the consumer's tastes, sometimes it can lose itself a bit.”

Question 7, “Does a co-created product with consumers have more added value than one created only by the designer?” the nodes “Added value of the fashion product co-created by the designer alone”, “Added value of the fashion product co-created with consumers” and “Added value for the brand” were created to segment the orality excerpts that were considered interesting for properly answer this question.

A large majority of the interviewed agree that the product has added value when co-created with the consumer.

DMO6 confirms that the collaboration with the consumer can indeed add value to the products because “[...] If the client transmits this information to us at the beginning it will be more assertive and more advantageous for the brand because it will sell more.”, or as said by DMO1, “[...] A product that is created by consumers will always have the added value of meeting an existing market need.”. DMO8 also adds that “If a consumer is creative enough to create a product that is commercial enough, or that gets a lot of recognition for its high value, it probably has much more value than a product created by the designer alone.”. It is also “[...] an added value for the brand in the sense that consumers nowadays want to intervene more and more in the product development process.” (DMO3).

The interviewee also talked about the designer and its relationship with the brand in the sense of contextualizing the consumer's value in the process of co-creation. DMO4 said that “[...] when it is done by a designer we are talking about a single person, while when it is the consumer there may be several points from which to get several ideas.” and “The consumer may perhaps feel more connected to the brand because he or she is getting a more personalized product, and is getting another kind of attention that the designer won't give, because the designer creates more with a group in mind.” (DMO9).

It is also worth noting that according to DMO4, “The fact is that sometimes the problem with a brand having the same designer many years is that nothing evolves.” or, as said by DMO1, that sometimes “[...] the designer always has its own idea and may even be addicted to his own product [...]” meaning that the consumers’ contribution might help break these kinds of loopholes that sometimes brands face. Also, DMO6 states that “When it is just the designer, although we are always inspired by the opinions, it is a very personal reading of the designer or the brand, so it may not meet what the client is looking for [...]” although “When we talk about the role of the designer as a rule, I think that it is part of us that there is also a concern that the product being made is directed to what the client wants and that it is sellable.” (DMO5).

Only DMO7 gave a different opinion, although focusing on a particular circumstance related to designer items branded with the designers' name by stating that "To the consumer perhaps one developed by a designer has more value because the designer's name is associated with it."

Still, some of the interviewees also explored other possibilities regarding the brand itself, as DMO2 that said that the notion of value might "[...] depend on the dimension that you can reach. When we talk about brands, at the beginning, if it's a brand with some organization and structure, they will be brands that are defended by a database that allows us to know in advance what sells the most." meaning that some brands already on the market already have a good notion of what their core consumers usually want. It is also warned by DMO2 that "[...] there is the need to be very careful with this balance if you give an offer too wide or if you let the consumer really make the decisions that will define the success or failure of the product."

Some of the interviewees also gave direct opinions regarding value in terms of what the consumer might be able to pay for the product. Two opposed opinions were given by DMO5, "As for the product, I'm also not sure that the customer is willing to pay more for a co-created product." and DMO6, "[...] the consumer is going to have that connection to the brand and I think will be open to pay a little bit more to have his or her ideas in the brand and have a product that feels it helped create."

Regarding question 8, "Do you think that the ideas received from the consumers' and their communities are important for the creation of new products and for the creation of more assertive collections?" two nodes were created to divide the interviewed opinions. "Ideas received are important" and "Ideas received may not be important" were created to understand which of the interviewed consumers' ideas are important or not. Most of the responses are in line with ideas being important for the process of creation of new products and for the creation of more assertive collections.

"The customer's opinion is extremely important in the success of the brand." (DMO1). DMO2 says that "[...] the closer we are to the consumer, the more likely we are to get their needs right.", especially because "[...] trends are made from the behaviours of people and their communities, so the consumer will always be important in the creation of new products." (DMO3). "[...] The collections when they are co-created and are aimed at a specific type of market, they end up having a concrete objective, that is, there is not so much rambling when it comes to the product. It ends up corresponding to a need that already exists in the market." (DMO1). "The product we are putting on sale must meet

what the customer expects.” (DMO5). “[...] it will always be more useful to get the general ideas from the people who buy and use them [...]” (DMO7). As said by DMO8, “[...] the consumer is the person we want to actually sell the product to, and if they are telling us what they like and what they would do, I think it's always important for the process of creating new products.” even more when “[...] they can give ideas that we don't have at the time and this can help to improve the brand and the sale of the products.” (DMO9).

Although, there is still needed coherence when filtering the consumer's ideas so that these can actually be useful as said by DMO6 that “[...] I think that if we listen to what the consumers ask us and if there is such a filter [...]” and “If there is a consistency in what is asked for and if it is in line with the brand, the pieces will be much more assertive.” (DMO6).

Still, some of the interviewed objected that “I believe that consumers can bring ideas but they can also confuse things a bit.” (DMO4) because for example, “The consumer does not always have enough information to know how to choose a suitable material [...]” (DMO8). Finally, DMO4 added that “More assertive I'm not sure. It depends on the niche market we are working with.”

For question 9, “Can an excessive submission of ideas be a problem for the success of the co-creation process?” was created one node, “An excessive submission of ideas can be a problem” to gather the excerpts that could help give an answer to this question.

Most of the interviewees agree without a doubt that this could indeed be a problem.

DMO4 states that it can be a problem because “You may not be able to cater to all kinds of ideas. I as a designer if I had to do all this gathering of ideas and try to get a product out of it, it would probably be very difficult for me and ideas would get left behind and some consumers would be disappointed that their idea was not chosen. There also has to be a very large creative team to be able to manage all those ideas [...]” or at least a designer as said by DMO3, “[...] if there is no designer to taper these suggestions to what the brand wants to communicate, we can have a brand that is drifting and wants to communicate everything and, therefore, communicates nothing.” and DMO8 agrees giving its perspective in terms of the brand because “[...] several different ideas from several different people can lead to too much information and it can happen that the brand gets a little lost in there. You may not be able to handle the information correctly because there is so much of it, and also because you don't know the best way forward if there are completely different ideas.”. There can also be a dispersion in terms of ideas as

said by DMO5, “It can complicate a little bit the work on the side of the person who receives all that information and then does the final work, because there really can be some dispersion of ideas.”.

Also, “[...] being overloaded with so many ideas, so much information, will end up making it impossible to present such a cohesive collection, dispersed over several points not corresponding to what is supposed to be the brand and the final consumer.” (DMO9). Not being able to create a collection or products in line with the brand or the consumer is also a concern for DMO6 because “[...] if they are completely different ideas the products are then not created according to what the consumer is looking for. The ideas have to be adapted and readjusted by the designer. Only the best ideas or the ones that are mentioned most often, depending on how the collection is done, will make it into a product and there really has to be a filter for what most consumers are looking for.”. DMO1 also establishes a relationship between the idea submission and its filtering and the problem of the brand might lose itself “[...] if this submission of ideas doesn't really have a more concrete submission process with a common goal, for example, wherein a product there is a very wide number of requests, suggestions or feedbacks, and if there is not a very concrete idea of what the brand is and what the brand is aiming at, it can lose itself and can even fail, which means that this selection process is very important, so that there is really an identification, first with the brand and then with what the brand intends to implement in the market.”. DMO7 additionally states concretely that “If there are too many ideas there can be dispersion.”

So, “Of all the ideas that come up, try to channel them and not generalize.” (DMO7), depending “[...] whether they were doable or not.” (DMO2).

Although DMO2 presents somehow a different perspective indicating that “As for information, the more the better [...]” as it there has to be “[...] openness to various ideas because the more ideas, the more material we have to work with.”, still, with reservations because “[...] the more we diversify, the less control we have.”

Question 10 “If it was possible to use an AI software for the analysis and filtering of the data, namely the ideas received from the consumers, would that be an important tool for the fashion designer and for the success of the co-creation process?” was made in the wake of question 9 in order to understand if AI software’s could be a feasible solution. For that was created, the node “An artificial Intelligence software is important for analysis and filtering.”.

All the interviewees agreed that this could be an important or even essential tool for the success of the co-creation process.

DMO2 simply said that yes, “I think so, I’m all for it. I think it would help a lot.”

In terms of focus on the consumer, DMO9 thinks that “[...] in this way we are taking a more specific approach to be able to understand our consumer. We would be able to find out a lot more about people's characteristics and I think this would help and contribute to us making a product that is even more targeted to the needs and wants of the consumers.”

In terms of the brand itself, DMO8 also said that “Yes, it would definitely be very helpful so that the brand doesn't get so lost and knows more easily which way to go.” And having in mind the products DMO7 said, “Yes, it would be useful to analyse the data. Gathering it and getting the best out of it for the product to be successful.”

Also, in general, “It would help a lot if there was available an artificial intelligence system that filtered in a certain way the main ideas.” (DMO3) also agreed by DMO4, “I think that would be essential at least to be able to pull the most important things out of all the ideas.”

DMO1 also explores the perspective that AI can filter in the first phase the ideas, but more specifically the ones that are not viable, by saying, “[...] an artificial intelligence can be a great asset to select from the start those that are totally unfeasible, either for production, creation or implementation in the market and the expected time to market, but also, to select those that are really more relevant and even those that can be adapted to the type of machinery that the company has and that, of course, are as feasible as possible and can also have a better balance between a development that is an asset to the brand and also an asset to the consumer.”

Finally, DMO5 and DMO6 also focus on an important point regarding the designers' influence on the process by stating that “[...] then we would be talking about a situation where there would not be influence from the nature of the designer [...]” and so “[...] would bring a more comprehensive end product than if it would be a designer or a group of designers making this selection.” (DMO5).

Although DMO6 adds, in a different line of thought, that this kind of software could be useful because it “[...] it would be essential to have software that could filter this

information according to what we designers wanted, in terms of filters, and only this information would come to us to define the products.”.

Question 11, “Do co-created products have a lesser risk to fail in the market than products developed only by the designer as they are voted by the community?” had created two nodes to divide the interviewed opinions between the ones that think that there is less risk and the ones that think the opposite. The nodes created were “Co-created fashion products have a lower risk of failing in the market” and “Co-created fashion products may not have a lower risk of failing in the market”.

Most of the interviewees agree that there is less risk.

DM 07 says that “Yes, I think they won't have as much risk of failing. If they are co-created in the beginning we will have an audience that will want it, whereas the designer always develops something based on research, so he is not sure if it will be accepted or not.”, also supported by DMO1 that enforces that “The products that are developed by a designer are very focused which means that they may lack some specifics that may be missing and even not be fully in line with the market needs because we work far ahead of the end market. This broad vision can always guarantee that through even a small detail we can achieve an effective response to the market.”.

With a more direct ideology, DMO6 says, “It is supposed to, because what is presented is what the consumer has already indicated us that he wants to see and have.”.

DMO3 even compares the usual forecast process by saying that “[...] I think it's a little less risky and a little more surgical than just evaluating commercial statistical data because by evaluating only that you can make the mistake of creating the same products over and over again [...]”.

DMO5 also agrees that there is less risk when the ideas are properly filtered. “If it is really a well done and adequate filtering, I think yes, then the product might actually work much better than if it was just a product made or thought of only by the designer [...]”.

Additionally, DMO3 says that “[...] I think they have less risk of failure in the sense that if the consumer asks, he will buy, although it is not that linear [...] so, there must be some concerns when thinking of co-creation as risk-free. DMO4 also has some reservations when saying that “I think co-created products will help in a niche market.”.

Others like DMO8 and DMO2 state that “I think the risk is exactly the same.” and “In terms of risk I think it's the same for both.”, respectively, and, DMO4 says that “I don't know to what extent because one designer or one brand ends up dictating the trend.”

As for question 12, “What informations, related with the transparency of the process, as well as, the necessary for the co-creation process do you understand that should and could be made available from the brand to the consumer?” were created two nodes, “Information made available by the brand to the consumer” and “Information made available by the brand to the consumer can negatively impact the process”.

When answering this question, several diverse opinions were given, being referred more often to topics such as product cycle, product price, trends and materials, among others.

DMO1 focus basic but very important information to pass on to the co-creator that is what is the brand about, by saying, “There are certain points that there should never be an absence of information about, that are mainly the basis of the brand, what the brand consists of [...]”.

Trends are also seen as important by DMO1 and DMO8 by stating that it is important to give “a sense of what the trends are, as it is important for the consumer not to ramble on about a type of product considering patterns, colours, or silhouettes” and “If the brand takes trends into account, maybe on a commercial level it will be a benefit. Maybe leaving a suggestion to the consumer about a colour being the most indicated or about that material...”, respectively.

Also, for DMO8 and also for DMO5, materials should be among the information passed on to the consumer. “If the consumer has no information about raw materials or type of finishes or basic information within what is the development of a garment from the beginning, when it is created, to the final part, after it is produced, he or she may be here rambling a bit about what is possible or not.” and DMO8 even goes into the process itself, “I think that when it comes to materials, it is important to define right from the start that only those possibilities exist or, for example, when it comes to prints, to define right from the start what kind of processes can be applied, or when applying details, what can be done or not.”.

DMO2 gives relevance to the product cycle when saying that it is important to “To make known the origin of the products and the cycle of the products.” also supported by DMO3, “Anything to do with the process and the product cycle so that the consumer knows how the product was actually made apart from the creative process.” and by DMO7, “The

entire production process. It would be interesting for the consumer to know how the product is made and how it is obtained and by what means or process, and, whether it corresponds to sustainable directives.”.

The price, which is usually an important factor for the consumers, is also seen as something important by the interviewees. For example, DMO9 states that “I think we should pass on to the consumer information regarding price and the price/quality ratio [...]”. DMO7 looks into the price as something important initially as there is the need to “Knowing what the value of the product is and in which market it will fit, I think, is important. Even for us to know in which level the brand is going to fit” and DMO5 even goes further relating the price with the steps given during product development in terms of updating the consumer over different costs coming from different development choices, “Regarding the value of the garments, it could be something essential to convey to the customer. It could be something vital. The client may think that what he is doing will not weigh much in the final price, and then the result turns out to be completely different.”

Other topics are also referred such as where is the product is going to be sold, “[...] something very important to entice co-creation I think can also be communication, the client knowing where his product is going to be presented and sold, whether online or offline.” and the date when the product is going to be for sale. “It would also be good to give an estimated start of the sale date because that creates expectation, that will create more desire to have the product, and people will wait for that date because they know it is going to be released.” (DMO7).

Finally, it is referred that the acknowledgement and rewards for the co-creator are important and that “[...] there should always be the indication of the co-creator’s name and a transparent indication of the reward that the consumer will receive for the idea.” (DMO6).

In what comes to negative influences, some of the interviewees also referred that when, “If you want something different or unique, by telling the client what is going on in terms of trends or materials, I don't know to what extent you wouldn't fall into the same thing.” (DMO4). DMO5 even adds that information about more complex processes should be well thought out and if they add anything when passed on to the consumer or if it will only complicate the process. DMO5 says that “[...] I think it can both help and complicate, because there are processes that are complicated and that even for us are difficult to

overcome, so for the consumer, it can confuse him even more and can influence him in what he will try to present.”

For question 13, “Co-create simultaneously several types of products can be more or less interesting for the brand and the consumer?” were created four nodes. They are “Co-creating several types of products simultaneously is important for the brand”, “Co-creating several types of products simultaneously is important for the consumer”, “Co-creating several types of products simultaneously may not be interesting for the consumer” and “Co-creating several types of products simultaneously can create problems for the brand”.

In this question of what comes to the brand, most of the opinions tend to consider that not co-creating several products simultaneously would be better. Regarding the consumer, most of the interviewees agreed that it would be beneficial for the consumer to have several products being co-created simultaneously.

For the interviewees, co-creating more products simultaneously can indeed bring more recognition as said by DMO1, “[...] having a wider offer can also bring more recognition.” and “[...] can complement sales and bring added value to your core product range.” and for DMO7 “[...] It is important that the brand opens the range of products to show that they do not make only that.”

Although, the remaining interviewees consider that it cannot be positive as said by DMO5, “For the brand it might be less interesting because if we are talking about several products, the dispersion as a brand will be greater and in that sense it might be harmful or not so advantageous for the brand.” also supported by DMO1 “[...] it is more work and we can lose focus and specialization in a range of products.”. DMO2 has the same opinion over losing the focus, “I think that a brand always has to have a core business and a focus, and anything that deviates is a risk for the brand because we are opening a range of possibilities that can make us not specialize in anything and the client himself at some point will ask who we are.” as well as DMO7, “It can be interesting, but maybe the focus is lost. Maybe the intended goal for each product is not achieved.”.

Focusing on the core business is also highlighted by DMO3, “[...] I have seen that the more focused and specialized a product is, the better it is. So sometimes it's better for brands to focus on two, three, four products that the brand feels it has the ability to do well [...]”, DMO8 “I am more of an advocate that if you can offer a very high quality product you might as well focus on that product and be the best in the market, rather

than trying to have several to increase profit and then not succeed [...]” and DM04 “Sometimes it is better to have one successful type of product than to have several and not be able to sell much.”

DM06 also thinks that it could ease the process, “[...] for the brand the less, the easier it is to interpret consumer opinion [...]” and “In what comes to product assertiveness and being able to create a product with the consumer it will be easier if there are fewer products [...] and avoid what DM09 fears, “[...] because there could be too much pressure.”.

Still, DM02, for example, has a balanced opinion, “I’m not against product variety, but I vote for one focus and one core.” and DM03 understands that “It has to be balanced in both quantity and quality of the products.”

Regarding the consumer, “the consumer effectively needs some variety [...]” (DM03). DM06 thinks that “[...] the consumers I think would like to have more products.” and “For the consumer it brings a great added value that is to have within a brand more than one product.” (DM01).

In what comes to the co-creation itself, “The consumers might feel more comfortable if they can create multiple products.” (DM08), and DM05 agrees by saying that “For the consumer, it may be more advantageous because we are covering a larger number of consumers and proposals made by them, and for them it may be more advantageous because the offer will be much larger.”

In terms of negative opinions over this matter, DM09 thinks that “As a consumer I could get confused if there were several products [...]”. DM07 also relates this situation with the timings to market the products by saying, “For the consumer, it depends on the product and the monetary value of each product. I don't know if it will be interesting to have several products being launched at once as the consumer may not have the power to reach them all.”

Question 14, “Would it be more beneficial for the brand to co-create just details of the fashion product or the full product?” saw two nodes being created to help divide the interviewed opinions regarding the details or the full product. “Co-creating only details of fashion products is more beneficial for the brand”, and “Co-creating full fashion products is more beneficial for the brand”.

Most of the interviewees tend to support the option of co-creating only the details.

DMO4 states that “[...] it would be more beneficial to create the details because the basis of the work would already be done and it might be easier, more cost-effective and faster than creating different products.” especially when the brand wants to maintain certain core products, “It would perhaps be more beneficial to the brand the details than the full product. If the brand wants to keep that type of product indefinitely, it is good for the consumer to only co-create just the details.” (DMO8). DMO1 also agrees with this perspective by saying that “As a co-creation brand it is more beneficial if we are co-creating with product details because the core product is always the most developed. It doesn't mean that occasionally there can't be new product developments or even the need to create new products, but in terms of quantification we are talking about almost an eight to a two out of ten. Eight would be relative to details and two relative to new products to be developed. Small details are always much more important.”. DMO5 also says that “[...] leaves us on this side, while we are evaluating the information received, with a greater facility in managing the situations since whatever may appear is always on the same basis, only having details that simplify, complicate or change the image of the final garment” and “It would also possibly be a way to reduce the process in terms of timings because the basis was already made [...]”.

It is also important to understand, as stated by DMO6 and DMO2, respectively, about the production and management that “For the brand I think it would be easier to incorporate only small details because at the production level, if we give freedom to the consumer, it ends up diversifying the production much more.” and “[...] because you can manage better at the level of minimums and order management and give small details that the consumer can transform.”

Finally, DMO9 simply says that “Maybe just details of the products because it would be better for the designer.” even more because “When creating a new product there is always the risk of not achieving what the customer is looking for.” (DMO7).

On the other side, some of the interviewees expressed their view of the full product being more beneficial for the brand because as DMO3 says, “If it's to co-create it's to co-create entirely, because, I think the consumer may have a basis of what a fashion product is, that he wants, however, I feel that if the consumer feels that he can only intervene in a certain part of the product, I don't know if he will feel fully resourced in that participation. I think the consumer is more connected to the product if they can intervene in the whole of it.”. Also, “I think that if we're proposing only details, we're going to limit or impose barriers on the consumer because they're going to be limited to a basis [...]”. Additionally, “[...] if the brand wants to grow also with the consumer, I think it is also

good for the consumer to create the whole product." and also "[...] it is good to create new products to show that the brand is constantly moving and offering the consumers new products."

Regarding question 15, "Applying the concept of modularity to co-created products can increase the process efficiency and simultaneously respond to consumers' expectations?" were created three nodes. "Modular products can meet consumers' expectations", "Modular products may not meet consumers' expectations" and "Modular products are positive for the brand".

In this question, the interviewees agreed that modularity could increase the product manufacturing efficiency, although, as it comes to responding to the consumers' expectations, some concerns were raised.

DMO1 says that "I think it can greatly increase the effectiveness of the process because you end up with a much more closed product where there is much quicker response [...]". "At the brand level it is good for cost reduction because making a custom product implies new pattern making and in this case, we will already be using pre-made parts." (DMO9). DMO6 also agrees with the previous by saying "[...] for the brand would be possible to do without creating a big hassle of having a thousand different products because of the pattern making that involves a high cost and the time that involves developing a completely different garment." and "It would be advantageous because the brand would already have patterns and change only colours or details in which the customer would have a voice."

Being the products already known and accepted by the public is another of the advantages seen by the interviewed as said by DMO1, "[...] the product is already partly more accepted by consumers". "Let's say that if we already have a basis that is good, that is successful, then it's a good starting point for developing other products and speeds up the process." (DMO7). DMO8 also agrees saying, "[...] If there is already a product that sells very well because it has a very good pattern, I think it is beneficial." also supported by DMO5, "It can be a way because we are talking about a type of product or part of a product that has already had a lot of acceptance from consumers. Being able to adapt it to new ideas could be a way to have efficiency and effectiveness in the process and make the situation profitable.". Additionally, DMO2 also agrees with the previous, "[...] there has to be a modular part to achieve brand profitability."

The designers also think that it can also be beneficial in terms of orientating the brand by saying, as DMO3, that “[...] the fact that the consumer already has pre-defined elements that he or she can customize may even somewhat narrow down the choices that the brand will have to make.” and also “Perhaps it is also a way to orient the consumer more and also to organize the brand's thinking.” (DMO4).

Modularity can also respond to the consumer's expectations because “[...] if a consumer can have that jacket with some changes defined by him, I think it can be good for the consumer's expectations. If he decides all the details that are going to be put on that jacket, the most creative part of that piece was actually made by the consumer.” (DMO8), and DMO9 also thinks that modularity can be “is beneficial for both the consumer and the brand.”

Although some of the interviewees also raised some concerns because “[...] at the same time I don't know if we won't be limiting by saying that this is the trend.” (DMO7). DMO1 even points out that “For the consumer of course a modular product always ends up having less originality [...]” and so “[...] you can't modularize everything because if we talk about co-creation we are talking about creation so it is important to have a space for freedom [...]”.

On question 16, “How can the sourcing for co-created products be done to improve the fastness of the process?” just one node was created, “Sourcing to improve process speed”, as it was meant to joint useful information about the subject.

The main emphasis was given to the relationship with the suppliers and to the materials themselves as being very important for the improvement of the sourcing as well as production location.

Regarding the suppliers, DMO6 says that it “[...] is to have a good relationship with the suppliers and that they adapt.” adding that “There always has to be a great relationship between the design and the suppliers and have suppliers that can give us answers and give us what we need in the shortest time possible [...]”. DMO2 also agrees by saying, “A relationship with suppliers is also important, and if they are relationships that work they should be maintained.”. Also, it is needed to “[...] establish good relationships with suppliers so that whenever there is a need we can have a quick response.” (DMO1). Additionally, some of the interviewees also think that “Working as locally and regionally as possible [...]” is positive, and DMO3 even states that “[...] the brand should already have defined suppliers, work locally, nationally, or in Europe. And look for companies

that are not so well known, that don't work with such big brands, or recent companies, because they may be able to supply faster than others that already have many clients.”

In terms of materials, there are some different opinions in terms of what the brand should have or not available, as said by DMO3, that thinks that it is positive to “[...] have as many non-perishable products in stock as possible. If possible have rolls of raw materials that we know are normally used.” supported by DMO1 that says that “The ideal should be always have material in storage.”. Although, DMO6 states the opposite, “[...] having materials already in storage is always a risk.”

DMO2 thinks that “Materials that are delivered quickly would also be a plus, as well as, easy to work with in terms of final product options.” And maybe that is why “The brands are increasingly relying on stock services and quick services to have materials quickly.” that also were referred to by DMO1, “[...] services with quick response like stock-services or raw materials.”

Also, DMO6 identified that “The big problems we have are the large quantities that suppliers want to sell, and more and more markets are changing.”

In terms of the co-creation process, “If the brand has a number of defined materials this can help the process to be faster as it will already limit the consumer and prevent the consumer from wandering into other completely different types of materials.” (DMO8) also agreed by DMO5 that says that it is important “Having already an idea of the kind of materials that can be used and also having the production already channelled to various places before going ahead with the process [...]”.

And in terms of manufacturing, DMO7 says that “I would always think of a localized production, having the production closer to the brand because it would be easier to coordinate everything, even though, in terms of costs, it might have its cost. We can even have countries with cheaper production, but then it is not worth it because communication is very difficult. It's better to have the production nearby to be able to manage and even speed up the production of the products, because we are there and we can make sure that there is no downtime due to doubts or errors arising from poor communication.” that added to the more recent problem identified by DMO5 that says that the “transportation lately has been problematic because there is no way to get the material to us as fast as we used to.” could be a good option.

For question 17, “What informations, from the brand, do you consider to be extremely important to share with the supply chain to achieve a greater production efficiency and

assertiveness?” also, just one node was created, “Key information to share with the supply chain”.

Several informations were pointed out as important, such as dates, brand DNA, materials or suppliers’ information. The last one saw opposed opinions being expressed.

DMO3 statement somehow englobes in part most of the information that should be shared with the supply chain, also according with the other interviewed by saying that “Sharing information with suppliers could speed up the process and even solve some problems for us, such as dates or suppliers.”

One of the most pointed pieces of information was the dates. DMO1 says, “Dates are fundamental. I think the main thing is dates because they are important [...], also supported by DMO2 “Dates, of course, are also important.”, DMO4 and “The dates on which the productions will be needed must be stipulated right from the start.” and DMO9 “Dates, when we will need to have the product ready [...]”.

Giving information about the brand is also pointed out as important by DMO7 by saying, “The ideas, the brand's DNA is important for those who produce to know what the brand's ideologies are, so that they can then produce according to the brand's guidelines.” also supported by DMO1, “[...] to have a good relationship and to have an effective and assertive production I think it is also needed the supplier to know what the brand is and what it focuses on so that the supplier also knows what it can present to us.” and more specifically about the product, “I think that suppliers have to be aware of the type of product we are working with, because once they know our product, they can direct themselves.” (DMO2) by “Sharing information about the desired end product, as well as, the type of consumers the brand is working with, what the consumer is looking for.” (DMO9).

Materials are also referenced by DMO8 by saying that it is important “Suppliers know up front what materials and processes are involved.”. “[...] we have to pass the information of the garment we want in the end to where we get the raw material so that what we get is adequate, otherwise the final product, in the end, has nothing to do with what we imagined [...]” (DMO5) and also the “The care to have with the materials.” (DMO4).

Regarding suppliers’ information, which is also referred to several times, DMO2 states, “I don't see a problem on the production unit knowing who my suppliers are. If there is a shortage of material, the production unit will talk directly to the supplier and will make my job easier.” supported by DMO7, “It is also useful for those who are going to produce,

if they have a flaw in a material, to know who the supplier is [...]”. DMO3 also does not see a problem in sharing information, “I don't really see a big problem in sharing information with suppliers unless we are a super exclusive brand in a super exclusive level and want to keep it confidential. In a way this creates a relationship of complicity with the producer.”. Although, some of the interviewees have the opposite opinion as DMO1 by saying, “Among suppliers I would probably share information about just a few.” and DMO4 would not even share anything “As for information about suppliers, I would not pass that information on to the production unit” also supported by DMO9, “As for suppliers I would keep that information to myself so that there is no influence or passing on information to others. And keep the exclusivity.”

Additionally, DMO2 refers that “It is also important to clarify logistics.” and DMO4 indicates specifically that “Technical information, I would send it at the time of production launch.”

DMO5 even refers, although not regarding the information sharing directly, that “[...] anything that can be developed in advance with the supplier helps in every respect to speed up the process.”

The last question made to the fashion designers was question 18, “In your vision which should be the fashion designer roles in a co-creation brand?” for which was created the node “Roles of the fashion designer in a co-creation brand”.

The fashion designer in a co-creation brand is seen as essential because of his intellect, and he is seen as a possible intermediary or adviser for the consumer. The whole process for some of the interviewees is even seen as the actual designer for the products instead of the consumer. Besides the previous, the fashion designer is also seen as an important and knowledgeable collaborator inside the brand in what comes to follow the full process from the first idea till the final product manufacture.

For DMO4, “[...] it makes perfect sense to have a designer in the brand. The training gives us another type of ideas about the product and not only if it is beautiful or functional.” although DMO5 also indicates that “The fashion designer in a co-creation brand above all has to put aside his convictions to be able to enter the spirit of those who are passing on information or else he starts to act as a barrier to his own work.”. “The designer's role is going to be to actually get to know the consumer, establish a close relationship with the consumer and be able to satisfy the consumer.” (DMO2).

In this sense, the fashion designer acts as the intermediary between the consumer and the final product, as a filter for the ideas, which is one of the most pointed duties because “[...] the designer is essential so that there is at least one lineage and so that there is not so much dispersion and there is an interconnection.” (DM04). DM01 states that “Being the middleman will be the designer's greatest responsibility.”. “The main function of a designer in a co-creation brand is to taper the ideas of the consumers. It is to define the message that the brand wants to convey, because even though it is a co-creation brand it has to have an image and a message.” (DM03). The designer “would be the middleman of the process in terms of monitoring.” (DM05). “The designer will then unify the consumers' ideas with the brand, that is, he is the bridge from the idea to the final product.” (DM01). “[...] the designer's role is always going to be to include these opinions in the design of the product itself. It's going to be the reading of everything that has been transmitted to us by the consumer [...]” (DM06) and “Joining the ideas coming from co-creation with its wisdom as a designer and getting the best out of it, for the product and the brand.” (DM07). “I would also see the designer picking the ideas and making the material selection depending on the product being co-created.” (DM09). “[...] the designer will be responsible for connecting the consumers who give us the information of what they want with suppliers, pattern makers and production units.” (DM06).

The fashion designer is also seen as a possible advisor, as said by DM09, “[...] I think our role would be to guide the consumer. We know the business much more and we know what reaction there can be to the product. We have knowledge of the process from the creation to the completion of the product and we should be basically mentoring the consumer. We have the responsibility to explain to the consumers all the processes that are necessary to create the product.”. The designer is the “Adviser, coordinates everything.” (DM04). “The biggest function is not really to create anything, but to guide the consumer to make an easily marketable product. That guides, so that the consumer doesn't stray too far from what the brand wants to convey, its goals and ideologies.” (DM08). “I think the role will be to guide the consumer to make more appropriate choices. For example, if he is in doubt about a colour, then he can refer him to the colour that is more in trend because the designer is much more aware of this. If he is in doubt about a material, exactly the same.” (DM08) as supported by DM03, “Also choose the raw materials because people have to have a list of options to choose from because if the consumer doesn't have basic knowledge of fashion, he or she might not think of certain materials that the designer knows about.”.

Also, for DM06, “The consumer may have an opinion, but it's not going to design the actual garment. It will give ideas, or it may even make a drawing, but it will never be a

final product. It depends on how the ideas are captured.”. For DMO4, this question is even more important because, “There is the idea that the consumer is the creator, but the consumer just gives the idea. It is the designer who is going to create. The designer will put the ideas together or try to give the best vision of the consumer's idea.”

For DMO1, the fashion designer should “[...] follow the development of the products.”. For DMO7, “The roles of a fashion designer in a co-creation brand should always be present in the product development and design process.” supported by DMO4 by saying, “It is also logical that the designer follows up on the development of the product because he is the right person. It is important to have someone in the brand connected to the design area, that's for sure.”

Additionally, “It's also important for the designer to follow the creative process, the development and conception of the product from start to finish, even if there are other people more qualified to follow certain phases of the product development. But I think it's always important for the designer to be inside the whole process because we can almost reach a final process and then the product is not as it should be and then we can still readjust it.” (DMO7). DMO5 even says that “[...] it is very important to follow the process till the final product is done.”. DMO9 thinks that “[...] what should happen is that the designer should follow the whole process.” and “Depending on the size of the brand, if it is a small company, it may be the designer's responsibility to ensure that the entire process is fulfilled.” (DMO2).

Finally, DMO1 also indicates that the fashion designer “May also be involved in sourcing materials, manufacturing solutions [...]”.

#### **4.1.3. Analysis of the supply chain experts' interviews**

In a first instance there is the need to characterize the interviewed sample. Table 69 gives an overview of the data obtained from questions 1 to 5. Namely, the age, level and field of studies, professional category, years of experience and company dimension.

Table 69 - Characterization of the supply chain experts' sample. Source: Author

Code	Age	Level and field of studies	Professional category	Years of experience	Company dimension
ECA01	48	Bachelor's degree in Textile Engineering and Specialization in Garment manufacturing management	Garment production manager	25	+ / - 250 workers
ECA02	49	Bachelor's degree in manufacturing engineering and industry management	Planning Manager	23	+ / - 250 workers
ECA03	51	Bachelor's degree in Textile Engineering and Specialization in Fashion Design	Garment production manager	31	+ / - 700 workers
ECA04	47	Professional course in Pattern Making	Garment production, quality and product development manager	27	+ / - 200 workers
ECA05	51	Professional course in Pattern Making for menswear and womenswear	Senior Pattern Maker and Pattern Making Teacher	30	+ / - 400 workers
ECA06	38	Bachelor's degree in Fashion Design	Senior Pattern Maker	11	+ / - 110 workers

For question 6 of the supply chain experts' interview, "Which of the following do you consider to be the least complex for the management, manufacturing efficiency and for the supply chain? Co-creation, co-production or mass customization?" were created three nodes to separate the different opinions from the interviewed. The nodes are "Co-creation more interesting, productively", "Co-production more interesting, productively" and "Mass customization more interesting, productively".

In this question, opinions are divided mainly between co-creation and mass customization, being that production managers are more inclined to support mass customization and pattern makers are more inclined to support co-creation.

ECA03 says that "I think this is moving towards something like co-creation or piece-by-piece creation or customization."

For some of the interviewed, co-creation is seen as the best option by ECA05 when saying, "Maybe co-creation, because both, co-production and mass-customization will create more diversity of items. Co-creation is perhaps a more normal process because I already work in those terms. We already work a lot on very diverse, very special garments that are not standard garments, from brands that already have very special, very specific products." and ECA06 adds by saying, "Co-creation, because in mass customization you have to do it one by one and you end up always having different accessories or having, in the case of patterns, different pattern making, even if they are things that are already

done. The process of these kinds of patterns or styles is always much more extensive than if we have a single style. If we have to make a series of changes or program the pattern to make those changes automatically, it's a huge amount of work, to create and automate.” and “[...] with co-creation there is more interaction with the technical team and in that sense, I think it might be the most efficient and productive way for the supply chain.”. ECA03 also has a positive opinion over co-creation but in certain circumstances, as described, “If things are set up for on a large production line to work in cells, small-scale co-creation fits perfectly.” although, “If I want to produce co-creation on a small scale, on a large production chain, we are still teaching people and it's already over. We have one mistake and no matter how few pieces we have we have already made mistakes in all of them.” (ECA03).

Regarding mass customization, some see it as the best option, also pointing out some of its positive aspects as ECA01 by saying, [...] mass customization has a higher productivity since it offers customized products in high volume and with similar productivity as the standardized products of mass production. Without a doubt, mass customization has the highest productivity. If we massify and then customize only certain points of the product, we can achieve higher productivity.”. ECA02 also has the same view, “In my view it would be mass customization.” and ECA03 says that “[...] from a production director's point of view I would like to work with mass customization because it is much easier.” because “[...] if you have a production chain with 200 or 400 people you have to aim for mass customization because if you're going to put 10 garments now, 10 garments of another, and 10 garments another, later, it's going to be a real mess.”

Only one of the interviewees opted for co-production but only stated “Co-production.” (ECA04) without adding further information. Although this has been rebated by ECA06 by saying, “I have worked with co-production before, and there were always several problems because the contracts were unclear and we would have to repeat prototypes for future productions.”

Question 7, “What problems could arise from the integration of the production of co-created products in a small scale or complex, in a production line dedicated to mass production?” managed the creation of one node, “Problems in the production of co-created products”.

The main problem identified was the loss of the production chain performance. The eventual need of adapting the production chains was also highlighted.

ECA01 says that “On a production chain dedicated to mass production, if we introduce products in a small scale and a high degree of complexity, what can happen is that there are some bottlenecks at certain points of the chain, meaning that we will interrupt the normal flow of production and therefore the chain will certainly lose performance.” complemented by ECA06 when saying “We also have problems in parts of the chain, in the layout of the chain, because you may have to make changes and if you have a lot of production coming in and then only 5 garments come in and then another 5 and then 20, that causes constraints.”. “If I'm going to put a small number of products in the middle of a large production, that means a lot of losses. Right from the start when cutting, we would find it as much more time-consuming. Instead of cutting large quantities, we would cut small batches. Small batches imply, right from entering the chain, much less quantity and this implied less production, although afterwards, when it reaches a certain phase, it could be the same as having mass production.” (ECA02). Still, “[...] in an assembly line that is prepared to work more in series to be more profitable, then the problem will be to make the labour per minute profitable. Fewer garments of the same colour or material probably will complicate the line and the follow-up of the assembly. Even if they are of the same model, the seamstress must change the threads on the overlock machines, the lockstitch machines... Everyone has to change and time is lost.” (ECA05).

So, ECA03 adds that “[...] for this type of process there should be a separate structure, a smaller structure with another type of philosophy. I like cells, but it doesn't have to be in cells, but I think it is perfectly suited for products with more operations.” because “I can't go to a chain that doesn't have any structure for that and put there those garments.”. “A production chain would necessarily have to be adapted because mass production chains are usually for large quantities and for co-created products there will be fewer quantities, more specific things, and more variety. In other words, we would certainly have to divide the production chains.” (ECA04).

It is also important to have in mind, as said by ECA06, that “We always have to pay attention to the styles and how we make the styles so that in production the execution is as easy as possible. And we have to take some things into account, such as the way it is structured, for example a jacket, we always try to change as little as possible of what is usual in the production chain, because everything that is strange to the production and to the people who are on the chain is complicated because they are mechanized to make a certain type of operations. When it is a very different product, people don't have the tools to be able to produce it [...].

As for question 8, “Which of the following manufacturing philosophies would you consider to be the most adequate to work with co-creation brands, being that these can bring small batches or complex products, in a more efficient and sustainable way? Lean, agile or leagile?” two nodes were created as only leagile, and agile were considered the adequate ones. They are “Leagile is best suited for co-created products” and “Agile is best suited for co-created products”.

Although, leagile was the preferred one.

ECAO6 is very direct with its opinion, “Leagile. If you have a hybrid system with an agile and sustainable process you have the best of both worlds.”, highlighting the two main focus of the leagile philosophy. ECAO4 also supports this view by saying, “Leagile would be the best option. I have an idea that it would certainly be the one that is best suited for this type of product, meaning that there would be a lot of variety with less possibility of optimizing a production chain.”. ECAO3 also thinks that “[...] leagile will be the easiest to implement. Because it has a little bit of both. It is clear that co-creation will require some flexibility and the more flexibility the chain has the better. Before when I told you that the production chain had to be in cells it is because the cell is what most resembles and works most with leagile, because leagile is very flexible with rules.” and ECAO5 has the same opinion about the rules, “The leagile seems to be the most appropriate because it has rules, which is good to have, otherwise it ends up being a bit anarchic.”

Although ECAO1 rebates by saying that “In the case of leagile it tends to be used when market demand is volatile and unpredictable, but with a medium variety. In the co-creation model we are talking about a higher variety.”. “I think agile would work best because it works in less predictable environments with high variety and where the product life cycle is short.” (ECAO1), and ECAO2 also agrees by saying, “Agile I think will be more in line with co-creation.”. Although “[...] each organization has its own way of working, and not all of them can perform effectively using one methodology or another. We would have to do a prior study and calculate the impact index we should select.” (ECAO1).

For question 9, “For the management and efficiency of production and for the remaining supply chain is preferable to produce small bulk productions or by the unit?” were created two nodes, “Production of small quantities is better” and “Production by the unit is better”.

Regarding the answers given in this question, preference was given to small bulk productions over the production by the unit, although this can depend on the structure in place in the manufacturing company.

ECA02 says that “Whether we are working one unit or a ten-garment lot, it is much more profitable to do a ten-garment lot, no question about it.” also supported by ECA01, “Of course, it is always preferable to have small quantities rather than by the unit quantities.”. ECA02 does not like either but says that “Small quantities are not good, and so are by the unit quantities. Still small quantities are preferable to by the unit quantities. Working on a single garment takes much more time and brings much less performance” and with the same opinion, ECA05 says, “Small quantities. It's complicated enough with small quantities, let alone with by the unit quantities.”. "Unitary is like working in a studio, with bespoke.” (ECA05).

This is because “By the unit quantities are usually always different garments with different operations, often have a high variety, and are more demanding from the point of view of production organization.” (ECA01), but “Of course, it is also necessary in the beginning to calculate the cost that these garments have in the production process. These garments have a high added value when sold and, therefore, they can translate into a more effective return on investment. However, from the production point of view, they have a high degree of complexity in the organization of the process.” (ECA01). And also depends on the company structure, as defended by ECA03, “[...] it depends on the structure of each of the manufacturing units and on the way they are organized and on who is running it, which will make it work better or worse. Now of course, the books say that it is better to have 5 or 6 garments of each model coming in than by the unit garments, but this is not an absolute truth.”. ECA04 also agrees with this perspective because in “[...] smaller chains, instead of being large chains for mass production, are capable of making limited series of garments or small series. These are things that fit perfectly on these smaller chains. They either make an order with 10 garments or 10 single garments.”. For ECA06, there is even a problem when not doing garments by the unit because “It is more related to the structure of the company itself. In my company we make made to measure and everything is prepared to work by the unit and normally we make series of 3 or 4 garments at most, and even then, with different fabrics. There is a bigger constraint if we have to produce ready-to-wear and we avoid as much as possible to put those kinds of garments all in a row because the chains, the way they are structured, are not prepared for that.”

Regarding question 10, “If the production of small orders would be based on modular products, would this increase the production efficiency?” was created the node “Small quantities based on modular products increase production efficiency”.

The answers of the interviewees were unanimous about the increment of the production efficiency due to modular products.

ECA02 has the opinion that “If they are modular, I think it would be better. That is much more efficient.”. “[...] we would be able to have a greater productive efficiency and also of pattern making.” (ECA01). ECA06 also agrees by saying, “Yes, without a doubt. Because it is created and tested, and there is already the know-how on how to apply it. With tested garments it's always easier.” and “[...] we could increase production efficiency because it would allow different products to be produced by combining standard modules.”. ECA04 also supports the previous by being positive that “Surely it would increase productivity. Then we could already use some kinds of automation. We can already use, imagine, the same flap. Even though we have 5 or 6 different blazers, they would all have the same flap and they would still be unique.”. “The more modular and the more similarities there are in each model the more profitability we will surely have in a production chain. Even because the person who is manufacturing, if makes 5 patch pockets in a row, even though they are on different jackets, clearly the profitability begins to be better from the second or third one, and that gives us much more profitability than making a patch pocket, a pocket with a flap or a jetted pocket. We are talking about different types of manufacture, which means a huge drop in productivity.” (ECA04).

ECA04 evens gives the example of “[...] a patch pocket is applied in a lockstitch machine, but if we have a patch pocket with a flap, we already have to go to an automatic pocketing machine. If we have a jetted pocket, we have to go to the jetted pocket machine, and which can have different widths. In other words, the more different operations are, the less profitability there is. The more we manage to group operations, the more profitability we surely will achieve.”

ECA03 also gives another example by describing one of the brands that he works for and how they structure their products. “Tommy has jackets, that they call the deconstructed and the constructed, which are basically different jackets, but they have a number of things that are exactly the same in all the deconstructed and constructed, so the people on the production chain already know that when they read constructed or deconstructed, regardless of whether the jacket has a peak lapel or not, whether it has slant pockets or

patch pockets, the stitching, the AMF, the making of the sleeves, there are a number of parameters associated and that of course simplifies the production. The person who sees that it is model 2059 but it is deconstructed, if it is it has AMF on the back vents, sides, sleeves... You don't have to see anything else, because all the deconstructed styles have that. And that of course, answering the question, is very important for us.”

Finally, ECA05 also gives the point of view on what comes to pattern making by saying, “It is actually what we do in pattern making. We are always using basis from other products and many times we also get the details. We end up working on modular products. We don't create everything from scratch. Only in exceptional cases. We make a kind of cocktail. We go for a leg that fits well, the pockets of the other because they look better aesthetically.”.

In question 11, “The continuous production all year round, even during low seasons, would be an incentive for the industry to produce for co-creation brands even if in a small scale or with complex products?” was created one node, “Off-season production of co-created products is positive”.

In this question, the interviewees agreed that the production of co-created products during the low seasons is positive, although some particular concerns are expressed.

ECA01 gives the perspective that “In the apparel industry we see periods of lower production volume. The effect of seasonality is reflected in these periods and naturally it is a concern for the industry to seek occupation solutions to fill these periods. In this perspective of finding solutions to fill production, I think that co-creation could effectively be an incentive and a solution for these low periods in companies, even with small productions.”. ECA02 agrees but also thinking on the high seasons by saying, “From my experience it would help to a certain extent because there are off seasons when you are doing nothing and putting these products in could help. Of course, throughout the year that could be a little tricky, because then we wanted to satisfy the client and have them receive it on time and we might not be able to. We've had to find a way to not to put those products into large production chains.”. The problem related to the inclusion of co-created products in long production chains is also approached by ECA04 when saying that “I believe that yes. In the low seasons, during the changes of season, when there is always some difficulty in supplying our lines, there would only be one problem, which would be to include this type of product in long chains. Although we could take advantage of the fact that they may even be better paid, we would, however, always have some difficulty in getting this type of product into a chain of this size, large chains that are

often prepared for big productions.” ECA03 was the most supportive in this matter as in his view is preferable to have something occupying the production chain than not having production, by saying, “Yes, and I support this by using again the made to measure garments. The made-to-measure garments have clear booms, from January to August, but the graphic is always very similar. There are times when it goes up, but it never goes out of demand, which means we work all year round. If it's possible with made to measure, I think it's also possible with co-creation and that's a good bet. And this also helps with the efficiency of the company. If the company has been working very well and then has 3 or 4 months with lower numbers, everything that has gained is lost.”, also supported by ECA06, “[...] there are times when there is no production to be done and it is better to have people busy than doing nothing [...]”.

For ECA05, it is also positive, “The answer is yes, I think it is an incentive for companies.” although there are already other strategies in place to occupy these parts of the year, “Currently we work with uniforms, and we end up filling the year with those types of items. We save them more for those times of year that we don't have as many orders to deliver and samples to make, to fill in a little bit.”

The last question done to the supply chain experts’, question 12, “What informations, from the brands, do you consider to be extremely important to share with the supply chain so that a greater production efficiency and assertiveness can be achieved?” led to the creation of two nodes, “Key information shared from the brand to the industry.” and to complement “Actions to achieve greater efficiency and productive assertiveness”.

The interviewees focused on two main sets of information as essential, such as receiving technical specifications and a timeline with bookings for sample and bulk production. Besides the information, they also wanted to give feedback on important actions that could be taken into account to achieve greater production efficiency and assertiveness, such as the brand following more closely the bulk productions or doing a final sample before bulk production to assure that everything is correct, and also, the important possibility of working with 3D systems during samples development.

In terms of information, ECA06 gives a quick perspective on the needs of the industry by enumerating a series of them, such as “Target audience and main objective, all the specifics, types of garments, measurements, accessories, fabrics, values, details that they consider essential and mandatory, and techniques, unless these are at the discretion of the manufacturer.”

In this sense, the technical specifications are seen as something essential as said by ECA01, “What is needed is to have a technical booklet with all the technical specifications detailed. This is fundamental for the industry. And in this technical book, of course, to have well executed technical sheets and material information. In the material book itself, it is also necessary to have some information about the suppliers.”. ECA02 also focus on this topic when stating, “Brands have to have product specifications, and these have to be very well detailed and clarified so that the industry can develop the products correctly. Technical data sheets, for example, have to be very well specified so that everything runs smoothly and the final product is in accordance with the brand's expectations.”. ECA06 also complains about the technical information’s saying, “There is a lack of information in this sense, in the technical part. It has been lacking a lot. Over the years I think that's in that where have been many gaps from the clients. They don't inform us or sometimes they don't know very well what they want or they don't have enough information to ask us for and maybe they are waiting for a garment to appear that is exactly what they want and usually it's not. And then we go back to do another prototype and we waste a lot of time and it's this time that we'll need for the essential part, which is the final garment [...]”. It would also be “[...] very important to get the most correct, direct information, for example on the shape and structure of the garment.”

Another important point focused on is the timeline and the associated booking of bulk productions and sample development. ECA01 says that “[...] it is important to define between the parties a timeline with the different stages of the process [...]” and “[...] it is also advantageous to set dates in advance because there is a whole period to organize and plan the production. [...]”. ECA04 also agrees that “It would be fundamental a schedule to adapt the company to these small quantities [...]”, ECA02 says that “it always helps to have a schedule.” and ECA03 states that “[...] it may also be important but not relevant to schedule productions.”

The interviewed also gave other feedback related not to information but to actions, namely, the brand to follow the productions, “I am also an advocate, whether it is a product resulting from co-creation or a mass-produced product, for the follow-up of the productions by the client [...]” (ECA01) and also said by ECA02, “It's also important to have follow-up because there are sometimes a lot of details and the industry sometimes doesn't notice them all.”. ECA03 even clarifies this need by stating that “If there was much more connection between each other, both for the brands and for the factories themselves, it would be much easier to work together. Whenever you get a designer and someone who knows the product together, apparently if they're too far apart it seems like they're talking about different things, and when they're both close, they can come up with

solutions that are good for each other. It would be very important to have the possibility of being connected” also coupled with the need of “[...] There has to be a good interconnection between who is producing and who is proposing. There has to be a brand understanding of the capabilities of who is going to produce and how far they can go, what they can do and what they can't do.” (ECA04) because “Sometimes it's this lack of initial dialogue that creates a series of problems, either in production terms or in the expectations of the designer or the brand, because you think you can do it and then there are a series of problems that don't allow you to do it.” (ECA04).

Regarding an action to ease possible problems in the bulk production, it is also referred by two of the interviewees that “[...] it is always positive to do a garment ahead of production and it wouldn't delay the process too much as long as things were well oriented. It could delay about 3 days, 4 days, no more than that.” (ECA02) and ECA01 also has the opinion that this is a possibility although with different feedback over the time that it could take to be done, by saying, “In terms of the production process there is also always the chance to make garments ahead of production, but they always delay production by 2 or 3 weeks.” although, still supporting “[...] that it would be easier, more practical, and faster to have someone who at the time the production is being done could do this follow-up.”

Finally, another topic pointed out by the two interviewees that have competences in pattern making is that “I think we all have a lot to gain with 3D mainly when we talk about the sustainability of creating garments, in the expenses and costs, because you won't spend yarn, fabric, energy. I think that 3D can be beneficial for many companies, especially small companies because in a workshop that doesn't have many workers and that the production time is enormous for a prototype and that the workers are already very vocationed to be able to do only the production, by having a pattern maker to prepare the patterns, you just need to have an idea of how it will look.” (ECA06). ECA05 also gives it relevance by saying, “[...] the 3D, we can work digitally with the client, also in a more assertive way on the final garment. There are already many brands that work in sync with the producers at the 3D level. The designer is already making the garment in 3D and with the help of the pattern maker they can work online much faster, to get the final product faster and more accurate. I don't believe that it happens of course in all the garments because it is not possible, but it is possible not to make samples because a lot of time is wasted in that.”. This topic was also referred to by DM03 “[...] can even work with 3D (virtual) and only then produce the clothes.”. Effectively as said by ECA05, “It would be less material wasted, less sewing time. I'm not saying that it's for everything, because in garments that have more than one material like blazers, anything that has

interlining, canvas or linings, 3D isn't up to it yet.” and ECA06 agrees, “On the technical side, for the classic there are still many flaws because you can't simulate the volume of the shoulder pads, the stiffness of the canvas and the softener but 3D is very advantageous in the sense that we don't need to finalize a prototype to be able to simulate minimally the garment.”. But “Anything that is skirts, pants, tops, blouses, that is not too elaborate I think is already working very well. In knitwear it's working very well.” (ECA05).

## 4.2. Discussion of the results

### 4.2.1. Objectives of the discussion

The discussion of the results is intended to provide a response to the investigation questions patent in table 70 and also to the objectives. To give an answer to the questions of investigation, data from the discussion will be reviewed taking into account the appropriate contents to answer each question.

Table 70 – Research questions and objectives. Source: Author

Questions of investigation
What makes the consumer have an interest in co-creation?
How does the co-creation process affect the brand and its products?
What can be the fashion designer's roles in co-creation brands?
What methods and processes are adequate for the supply chain when working with co-creation?
General objective
Develop a co-creation model that can maximize the benefits and minimize the problems for the consumers, brands and supply chain.
Specific objectives
Know what consumers desire and expect from co-creation.
Understand how fashion designers think co-creation should work with the consumer and the supply chain.
Comprehend what can be the fashion designer's overall contribution for co-creation.
Understand what can provide stability to the supply chain to achieve greater production efficiency and assertiveness when working with co-creation.

Besides giving an answer to the research questions and the objectives, the discussion of the results will also be useful for structuring a framework, according to the general objective, that regards the development of a model of co-creation that can maximize the benefits and minimize the problems for the consumers, brands and supply chain. In this sense, there will be a discussion focused on the data retrieved that have useful information to help support and create a new model of co-creation.

#### **4.2.2. Discussion**

Regarding the results, it is understandable that most consumers still have not co-created fashion products, as found in question 9 of the consumer's survey, "Have you ever co-created fashion products?", although almost all consider that these types of products have added value, as in question 10 of the consumer's survey, "Do you consider that a fashion product has added value when it is co-created by means of cooperation between the consumer and the brand?", in line with Gentile et al. (2007), that says that brand-consumer interactions increase both consumer value and brand value. This process will result in product adjustments and more value for the product (Parment, 2013). And value derives from the interaction with consumers (Arvidsson, 2011). To generate value it is needed collaboration between consumers and producers that are based on creative, active and social processes (Frow et al., 2015).

On question 7 of the fashion designers' interview, "Does a co-created product with consumers have more added value than one created only by the designer?", it was also found that a large majority of the interviewees agreed that the product has added value when co-created with the consumer because "[...] A product that is created by consumers will always have the added value of meeting an existing market need." (DM01) and "If a consumer is creative enough to create a product that is commercial enough, or that gets a lot of recognition for its high value, it probably has much more value than a product created by the designer alone." (DM08).

Additionally, Humphreys & Grayson (2008) also refer that consumers are willing to pay more when involved in the value chain and Tu et al. (2017) refer that consumers are willing to pay more if the degree of co-creation is higher. In this topic, the fashion designers state different opinions. DM05 said, "As for the product, I'm also not sure that the customer is willing to pay more for a co-created product." and DM06 said, "[...] the consumer is going to have that connection to the brand and I think will be open to pay a little bit more to have his or her ideas in the brand and have a product that feels it helped create."

It was also found in H1, "There is a strong correlation between the perception of the added value of co-created products and the consumers that already co-created products." that consumers that already have co-created fashion products are more than twice likely to consider that co-created fashion products have added value, meaning that having knowledge about the process can increase the value perception.

So, it can be concluded that P2, “Products co-created with the consumers have added value.”, is confirmed.

Regarding the incentives to participate, in question 12 of the consumer's survey, “What incentives would make you participate more times in the co-creation of fashion products?”, being able to get the product that they envisioned to have, is in line with the most important reason obtained from the answers to question 11 of the consumer's survey, “Why do you like or would like to participate in the co-creation of fashion products?”, and also with Hoyer et al. (2010) that says that consumers can do it because they are unsatisfied with the products, revealing in this way that the product itself and what the consumer is looking for are quite important. This is also in line with some of the recommendations received on question 27 of the consumer's survey, “Is there any additional consideration, opinion or suggestion about co-creation that you would like to leave us?”, in that the consumers refer that co-creation should be useful for products that are suited for specific situations with specific consumers, as this seems to be lacking in the mainstream market, with special emphasis made on sizes and shapes and consequently for niche markets. Although, according to Chowdhury (2014), there is still not much research that can lead to the understanding of what happens, on a micro-level, in the value co-creation process.

On this question, again, rewards have a lower degree of importance as in question 11 of the consumer's survey, “Why do you like or would like to participate in the co-creation of fashion products?”, although, only for receiving vouchers to buy products from the brand and the monetary reward fully received, once that, receiving royalties (% from the sales) is seen as quite important, as well as the brand offering them the product that they co-created, meaning that the consumer might have more interest on long term rewards that can bring them a higher revenue and can also prefer rewards that can have an emotional connection. This gives detail to the stated by Humphreys & Grayson (2008) that consumers receive benefits for participating in processes of value creation and the motivation by financial rewards indicated by Nambisan & Baron (2009) and Hoyer et al. (2010).

As for being recognized for the co-creation by the community and the brand and having their name on the product, these also have a high degree of importance for the consumers, in line with Murray (2007), that referred to the need of showing himself and attract others attention and with one of the incentives enumerated by Füller (2010), having the name associated to the developed product.

Although on question 11 of the consumer survey, “Why do you like or would like to participate in the co-creation of fashion products?”, consumers indicated that the increase in the social status of the brands' community was the least important reason to participate in co-creation activities, which was referred by Nambisan & Baron (2009) and Hoyer et al. (2010) when saying that consumers might be motivated by social benefits that can increase status, meaning that it might not be an interesting reason to participate as Nambisan & Baron (2009) and Hoyer et al. (2010) indicated. But the consumer still wants to be recognized for the participation, as referred by Etgar (2008) when talking about the need for pride, so it is seen as an incentive.

Regarding the hypothesis posed on question 12 of the consumer's survey, “What incentives would make you participate more times in the co-creation of fashion products?”, for the influence of personal factors, in H2a, “There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their age.”, in all the incentives to participate in which were found differences, monetary reward fully received once, vouchers to buy products from the brand, royalties (% from the sales), having my name in the product and be recognized for the co-creation by the community and the brand, are more important for the ages between 55 and 64 years old and less for ages between 45 and 54 years old. Being recognized for the co-creation by the community and the brand and having the name in the product are also less important for the ages between 35 and 44 years old. These results indicate that the ages between 45 and 54 years old are less interested in the monetary and emotional side of co-creation and that the ages between 55 and 64 years old are the most interested.

In H2b, “There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their net monthly income.”, the vouchers to buy products from the brand are more important for the consumers with a lower income, meaning that rewards are more important among the lower caps of income. Having the name in the product and being recognized for the co-creation by the community seems to be more important for the lower (including the consumers that do not have an income) and higher levels of income, revealing a greater need for recognition than for the medium levels of income. Regarding the product itself, the incentive, being able to get the product that I envisioned to have, is more important for those who have medium incomes or no income at all, revealing that these are the more concerned about the product itself.

In H2c, “There are significant differences in the incentives that can lead consumers to participate more actively in co-creation processes of fashion products regarding their professional situation.”, having their name on the product and being recognized for the co-creation by the community and the brand was less important for the employed, meaning that this group might not give much importance to the emotional side of co-creation. As for getting the product that I envisioned to have, this is less important for the unemployed, meaning that this group might not be looking for a particular product.

In H3, “There are significant differences in the incentives that can lead consumers to participate more actively in the co-creation processes of fashion products regarding the frequency in which the consumer would like to co-create fashion products.”, it is important to notice that Royalties (% from the sales), having my name in the product and being recognized for the co-creation by the community and the brand are of great importance for some of the frequencies analysed in line with the previous results.

As for the reasons to participate in co-creation, in question 11 of the consumer's survey, “Why do you like or would like to participate in the co-creation of fashion products?”, the most important reason is that they would like to feel more satisfied with the products available in the market already referred previously on question 12 of the consumer's survey, “What incentives would make you participate more times in the co-creation of fashion products?”, and in line with Füller (2010) that states that one of the motives to co-create is the dissatisfaction with existing products.

The other reason that is also quite important for the consumers is that they want to gain new knowledge about fashion products and its co-creation process, which is also referenced by Füller (2010) as the interest in innovation activities. It is also in line with the reason for feeling curious to explore the co-creation process, which has a medium level of importance for the consumers, meaning that the consumers give the most importance to reasons related to the product and the process.

Express themselves is also important and in line with Etgar (2008) that references the need for self-expression as a possible reason to participate.

Füller (2010) also references rewards of several formats as a reason, but the participants gave it one of the least importance's followed by the increase of the social status of the brands' community, referenced by Nambisan & Baron (2009) and Hoyer et al. (2010), meaning that the rewards or status are not seen as the main reasons to participate in co-creation.

As for the preferred fashion products to be co-created, in question 13 of the consumer's survey, "What styles of fashion products would you have more interest in co-creating?", the casual style is considered the most interesting for the co-creation of fashion products. A trendy or classical style also has a good degree of importance for the consumers, and a sporty style or sleepwear gathers the least attention from the consumers, meaning that items for everyday use, whether more classical or trendier are more important than items for specific situations.

In H4a, "There are significant differences in the styles of fashion products that the consumers would like to co-create regarding their gender.", was found that the trendy and the sleepwear styles are less important for the males than for the females meaning that females give greater importance to trends and to clothes appropriated for home-usage.

In H4b, "There are significant differences in the styles of fashion products that the consumers would like to co-create regarding their age." was found that products with a sporty style are less important for the ages between 18 and 24 years old than for the other age groups. The products with a classical style are more important for the ages between 45 and 54 years old. The trendy products are more important for the ages between 18 and 24 and 55 and 64 years old than for the other age groups. Medeiros & Cruz (2006) stated that the desire to be dressed according to the trends makes the consumers buy modern garments and, in this sense, younger groups and older groups are the ones that have more interest in more modern garments.

As for the type of products, in question 14 of the consumer's survey, "Classify the types of products accordingly with your interest in co-creating them.", the most interesting are upper parts (as for example shirts, t-shirts or jackets) followed by dresses or overalls, bottoms (as for example trousers, shorts or skirts) and outerwear (as for example overcoats or raincoats) and with a lower degree of importance appears the underwear, pyjamas, accessories (as for example ties or socks) and finally leather goods (as for example wallets or backpacks in leather). This means that the consumers are mainly interested in co-creating outer garments and have less interest in underwear and home wear, in line with the lower interest found in sleepwear in the previous question. Accessories are also seen as less interesting than clothing.

In H5a, "There are significant differences in the types of fashion products that the consumers find more interesting to co-create regarding their gender." bottoms (as for

example trousers, shorts or skirts), dresses or overalls, underwear, accessories (as for example ties or socks), and pyjamas are all more interesting for females.

In H5b, “There are significant differences in the types of fashion products that the consumers find more interesting to co-create regarding their age.”, regarding some of the preferred types of fashion products to be co-created, bottoms (as for example trousers, shorts or skirts) are more interesting for the ages between 18 and 24 years old and 25 and 34 years old, meaning that these types of items are more prone to be co-created by younger ages as opposed to the dresses or overalls that are more important for the ages between 55 and 64 years and so more ideal for an older audience.

In the question 15 of the consumer's survey, “What is the frequency in that you like or would like to co-create fashion products?”, it is possible to understand that most consumers want to co-create fashion products only when they feel like to, also supported by results on H6a “There is a strong correlation between the frequency that consumers would like to co-create fashion products and their gender.”, H6b “There is a strong correlation between the frequency that consumers would like to co-create fashion products and their age.”, H6c, “There is a strong correlation between the frequency that consumers would like to co-create fashion products and their level of studies.”, H6d, “There is a strong correlation between the frequency that consumers would like to co-create fashion products and their professional situation.”, and also H7 “There is a strong correlation between the frequency in which the consumer would like to co-create fashion products and the interest in creating several types of fashion products in the same timeline.”, for both genders and all age caps, levels of studies and professional situations. Although the possibility of co-creation weekly or monthly also gathered some interest. The launch of new challenges every two weeks could make the consumers that are interested in co-create weekly not lose interest and would enable the remaining consumers to participate more regularly than if challenges were launched only on a monthly basis. In addition, as referred by some authors, more regular participation can also be stimulated by enhancing the benefits of their participation or, in alternative, simplifying the process by reducing the time spent and the effort needed (Hoyer et al., 2010) and having in attention that consumers may not engage in all co-creation activities so it is important to define the stages as some might like to create but others might only like to evaluate the ideas (Füller, 2010).

In question 16 of the consumer's survey, “Do you think that co-creating several types of fashion products simultaneously is more interesting than just co-creating one type of product?”, a large part of the respondents indicated that they would like to co-create

several types of fashion products simultaneously, so there is a need of having simultaneous or little interval between launches to have available for the consumers, several choices for possible co-creations.

On the opposite side, in question 13 of the fashion designers' interview, "Co-create simultaneously several types of products can be more or less interesting for the brand and the consumer?", these considered that not co-creating several products simultaneously would be better, although, regarding the consumer, most of the interviewed agreed that it would be beneficial for the consumer to have several products being co-created simultaneously because "The consumers might feel more comfortable if they can create multiple products." (DMO8). And additionally, it "[...] can also bring more recognition." (DMO1) and show "[...] that they do not make only that." (DMO7).

But the fashion designers also point out that "Sometimes it is better to have one successful type of product than to have several and not be able to sell much." (DMO4), and it could also ease the process, "[...] for the brand the less, the easier it is to interpret consumer opinion [...]" (DMO6) and "[...] it is more work and we can lose focus and specialization in a range of products." (DMO1). So, according to the fashion designers' testimonials, although they think it is important to give consumers diversity, they also advise to not to lose focus and carefully consider the range and number of products that it is going to be proposed to the consumers.

As for question 17 of the consumer's survey, "Would it be more interesting to co-create just details of the fashion product or the full fashion product?", most of the respondents prefer to co-create the full fashion product and not co-create just details of the fashion product. On question 14 of the fashion designers' interview, "Would it be more beneficial for the brand to co-create just details of the fashion product or the full product?", DMO3 supports the consumer's view when saying, "If it's to co-create it's to co-create entirely, because, I think the consumer may have a basis of what a fashion product is, that he wants, however, I feel that if the consumer feels that he can only intervene in a certain part of the product, I don't know if he will feel fully resourced in that participation. I think the consumer is more connected to the product if they can intervene in the whole of it."

Although most of the interviewees tend to support the option of co-creating only the details. DMO4 stated that "I think it would be more beneficial to create the details because the basis of the work would already be done and it might be easier, more cost-effective and faster than creating different products." and also "For the brand I think it

would be easier to incorporate only small details because at the production level, if we give freedom to the consumer, it ends up diversifying the production much more." (DMO6) and DMO1 also agrees with the previous opinion although giving an additional choice for the process by saying, "As a co-creation brand it is more beneficial if we are co-creating with product details because the core product is always the most developed. It doesn't mean that occasionally there can't be new product developments or even the need to create new products [...]".

So, finding the balance should be essential for this matter and also looking into the different opinions. Would be positive to have available user toolkits that can ease the process for the creation of new ideas (Hippel & Katz, 2002; Füller, 2010) and additionally, it could also be implemented the possibility of modularizing the process so that consumers can work the parts that they fell more passionate about and for which they have more expertise (Hoyer et al., 2010), being this a good solution for the consumers that desire to just co-create details of the fashion product. Additionally, taking into account what DMO1 proposed, by maintaining products from the core offer, it would be possible to propose the co-creation of details for these and let the consumers co-create the full products outside the core offer, simplifying in this way also the production that was seen by DMO6 as a concern.

On question 18 of the consumer's survey, "What type of details of the fashion product would you like to co-create?", the most important detail identified by the consumers was colours, followed closely by prints. With least importance appear the trims (as for example zippers or buttons), small applications (as for example beading or eyelets) and embroideries as the least important detail. It can be concluded that the consumers are more eager to co-create details that can make the most impact visually on the garment.

Füller (2010) states that consumers that are looking to achieve something or have power are usually goal-oriented and also interested in the end result. In this sense, question 19 of the consumer's survey, "I have interest in co-creating fashion products from the initial design till the final product.", was intended to understand if there is interest in co-create a product from the initial design till the final product. Consumers showed a good interest in doing this, and the most interested respondents in this option, regarding H8a, "There are significant differences between the interest in co-creating the product from the initial design till the final product regarding the field of work", were the ones from arts and design showing a high degree of interest, and the least interested ones were from the science and technology field, revealing indifference over this option.

Consumers also showed a good amount of interest in co-creating fashion products proposed by the brand through comments, suggestions or proposals of alterations and/or improvements to the design or materials in question 20 of the consumer's survey, "I have interest in co-creating fashion products proposed by the brand through comments, suggestions or proposals of alterations and/or improvements to the design or materials.". Although, consumers may not engage in all co-creation activities, so it is important to define the stages, as some might like to create but others might only like to evaluate the ideas (Füller, 2010). Also, for this question was proposed H9, "There is a strong correlation between the interest in co-creating products pre-proposed by the brand through comments, suggestions, or proposals for alterations and/or improvements of the design or materials and the interest in sharing photographs of his/hers wardrobe with a fashion brand, so that, the products created can better met his/hers desires and expectations.", but only a small to moderate correlation was found.

Question 21 of the consumer's survey, "I have interest in sharing photographs of the garments present in my wardrobe, so that, the products created by the brand better meet my desires and expectations.", showed a lower degree of interest in this type of connection with the brand by sharing photographs of the garments present in their wardrobe than the ones presented in the two previous questions, but still with a good average interest.

In this sense, brands should be able to present options for the co-creation of the full product but also have available stages of the co-creation process in which the consumer can leave comments, suggestions or proposals of alterations and/or improvements to the design or materials. Additionally, as the consumer also shows interest in sharing photographs, this could be a good option as an addition to written comments or others for easier communication between the consumer and the brand.

On question 22 of the consumer's survey, "What information's do you consider to be more important to receive in the beginning of the co-creation process?", the most important information's are the stages of the co-creation process and its starting dates and the theme for the co-creation process. The stages and their dates are again in focus. This might happen because, effectively, consumers might want to participate only in selected stages.

Also important is the recommendation of materials, with DMO8 also supporting the consumer's choice by saying, "I think that when it comes to materials, it is important to define right from the start that only those possibilities exist or, for example, when it

comes to prints, to define right from the start what kind of processes can be applied, or when applying details, what can be done or not.” It can be understood that the consumer might not know much about materials and feels the need for advice on this matter in the early stages for a better comprehension of what can be done in terms of product development even more when according to Costa (2021), the garment development is now even more connected to the materials.

Also important for the consumer is who keeps the legal rights over the ideas, so this should be passed onto the consumer in a transparent and accessible way.

With the least importance appear the options of parts of the fashion product for inspiration or use (as for example sleeve types) and the options of details of the fashion product for inspiration or use (as for example embroidery types) in line with the least interesting detail of the fashion product, on question 18 of the consumer’s survey, embroideries. Although, it can be understood that these parts or details are very specific and the consumer might be better served by receiving more general information about trends that are also seen as important to pass on to the consumers by the fashion designers. DMO1 and DMO8 stated that it is important to give “a sense of what the trends are, as it is important for the consumer not to ramble on about a type of product considering patterns, colours, or silhouettes” and “If the brand takes trends into account, maybe on a commercial level it will be a benefit. Maybe leaving a suggestion to the consumer about a colour being the most indicated or about that material [...]”, respectively.

Question 23 of the consumer survey, “What information’s do you consider to be more important to receive during and after the co-creation process?”, the most important information to receive during and after the co-creation process are the limit date for the submission of proposals of co-created products and the sales numbers of the products co-created by me, but all the options gathered close results with the consumers giving them a high degree of importance. Since all the options were related to dates and results, we can assume that the consumer feels the need to be well informed regarding these two cues, and so, communication is implicitly essential.

Regarding question 24 of the consumer's survey, “What are the co-creation negative factors that can lead to a loss of interest in the product?”, the co-creation negative factors that can lead to a loss of interest in the product, consumers gave the most importance to the product not corresponding to what was co-created, revealing again that the product

is of extreme importance for the consumer and that it is an integral part of the consumer's will to participate in co-creation.

Knowing that the brand does not have social ethics is also seen as important. Pal (2017) also talked about this topic, referring to the need for the company to have responsibility for environmental impacts, to encourage sufficiency and to give priority to social and environmental benefits instead of only economic profits, even more when consumers, especially the younger generation, change to a new brand often because of what the company stands for and how it looks after its employees (Alldredge et al., 2021).

A low level of communication between the brand with the consumer, as discussed in the previous question, is also seen as important. Co-creators tend to develop a negative view of the company when they believe that their ideas are not being given the attention that they deserve (Pee, 2016), so it is important to give feedback to consumers and also to create consumer engagement that Amed et al. (2021) say that should also be on top of the priorities as it should communication whether on a general or more specific way.

This is followed by the loss of the legal rights over the ideas in line, in terms of importance, with the information of who keeps the legal rights over the ideas on question 22 of the consumer's survey, "What information's do you consider to be more important to receive in the beginning of the co-creation process?". This is important as many companies keep the rights to the services or products that are created by the consumers (Bujor, Avasilcai and Alexa, 2017). Some consumers might not want to lose their rights or at least keep some, as could be understood by the answers to question 11 that referred that among the different rewards, the Royalties (% from the sales) were the most important. This is then another topic that has been rated as important by the consumers, and that should be transmitted to the consumers in a transparent way.

Not knowing where or how the product was produced also gathered a good degree of importance in line with Pamésa et al. (2021), who refers that, for consumers, traceability of all the processes will be very important. For DM02, it is also of importance when saying that it should be "[...] make known the origin of the products and the cycle of the products." and "Anything to do with the process and the product cycle so that the consumer knows how the product was actually made [...]" (DM03).

The absence of rewards also has its degree of importance in what regards negative facts, although, on question 11, the reason, the rewards for participating interest me, had one of the lowest degrees of importance. This means that the consumer might not see the

rewards as very important but still wants to receive something as consumers will also only be satisfied if they get some benefit from the process (Xie et al., 2008; Heidenreich et al., 2015). And if the benefits are too low, consumers might not want to engage in the co-creation process (Hoyer et al., 2010). DMO6 also agrees by saying, “[...] there should always be a transparent indication of the reward that the consumer will receive for the idea.”.

Knowing that the brand and its products are not sustainable is also important, and according to Granskog et al. (2017), new demands from consumers will change brands, as fully sustainable brands will be on-demand, and Granskog & Lee (2020) considers that a brand that promotes sustainability increases the purchasing factor. So, sustainability importance is also visible in co-creation and should be taken into high account side by side with social ethics and traceability in order to achieve transparency, that it is one of its four building blocks (Prahalad & Ramaswamy 2004). DMO7 also entices that “It would be interesting for the consumer to know how the product is made and how it is obtained and by what means or process, and, whether it corresponds to sustainable directives.”.

Not having my name or image associated with the co-created product already has a lower level of importance as a negative factor for the consumer, although some consumers, as referred by Murray (2007), have the need of showing themselves and attracting others' attention. So, having the name promoted does not seem decisive for the success of the co-creation process and for the consumer, but it still has its importance for the fashion designers, specifically for DMO6 that talked about this topic by saying that “[...] there should always be the indication of the co-creator's name [...]”.

The time invested in the co-creation process being too long also has a lower level of importance, so consumers already expect to have the need of being available along the process for being able to receive the product that they envisioned to have. Although if the costs of participation in the co-creation process are too high, consumers might not want to engage in the co-creation process (Hoyer et al., 2010), and among the costs, time is included. And co-creation can indeed cost time, resources and psychological or physical efforts (Etgar, 2008; Bolton & Saxena-Iyer, 2009; Hoyer et al., 2010).

Also, it is important to have in mind is that the consumers gave the least importance to not knowing the price of the product at the beginning of the process. This means that this is not a problem for the consumers and that it can be in line with the fact that the consumer also sees these types of products as products with added value, as found in

question 10 of the consumer's survey, "Do you consider that a fashion product has added value when it is co-created by means of cooperation between the consumer and the brand?". Although some of the fashion designers stated that "I think we should pass on to the consumer information regarding price and the price/quality ratio [...]" (DM09) and "Knowing what the value of the product is and in which market it will fit, I think, is important. Even for us to know in which level the brand is going to fit" (DM07).

On question 25 of the consumer's survey, "If the co-creation fashion product, when delivered, would not correspond to the expectations, what would be your action?", consumers stated that mainly, they would return the product only if it had lack of material or manufacturing quality, followed by the return if the consumer did not identify himself with the product aesthetically in terms of shape, silhouette or colour and they would return it only if the size would not fit. Regarding H10a, "There are significant differences in the consumers' action if the delivered product did not meet his/hers expectations regarding their age." and H10b, "There are significant differences in the consumers' action if the delivered product did not meet his/hers expectations regarding their net monthly income.", the action I would return it if I did not identify myself with the product aesthetically in terms of shape, silhouette or colour would be put into practice more likely by the ages between 35 and 44 years old and 45 to 54 years old than by the other age groups and by the respondents with an income between 636€ and 799€ per month and by the respondents that do not have a monthly income, than for the other income groups, revealing that these groups are more demanding about these aspects. If expectations had during the purchase are not met, the consumer will not be satisfied and so will be more likely to return the product (Bechwati & Siegal, 2005), and when returning or buying a product, this is also based on the expectation about the products' performance (Minnema et al., 2016). Respondents with an income under 635€ per month and the respondents that do not have a monthly income are less plausible to return the product only if the size would not fit than the other groups.

Complaints, no further participation in co-creation activities or not buying any more products from the brand are less plausible, meaning that the consumer, although disappointed, would still continue to cooperate with the brand.

Although, a consumer's less plausible action would be keeping the product because it was co-created by them, meaning that returns can be expected and will need to be dealt with.

On question 26 of the consumer's survey, "How much time would you be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would

still need to be manufactured)?”, the respondents indicated that they were willing to wait for the product delivery, when sold on pre-sale, for one month or wait till two months with approximate percentages. About a fourth of the respondents was willing to wait over two months.

A number of factors affect consumer purchase behaviour, including the delivery lead time (Guo et al., 2020). Füller (2010) indicates that the gap of time between the co-creation process and the delivery of the product might discourage consumer participation and, consequently, purchase intention. Füller (2010) further indicates that these products might only be available in the market 6 to 12 months later, so it is important to define well all the processes and their dates to overcome the delivery problem. When thinking about the sale on pre-sale, the ideal should be able to deliver the product in between 1 and 2 months.

For this question were also proposed H11a, “There is a strong correlation between the time the consumer would be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured) and their age.” and H11b “There is a strong correlation between the time the consumer would be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured) and their residence.”. In H11a only a moderate correlation was found and for H11b only a weak correlation was found. As for H12, “There is a strong correlation between the time the consumer would be willing to wait longer for the product delivery if it was bought on pre-sale and the consumers that already co-created fashion products.”, only a very weak correlation was found.

Question 27 of the consumers survey, “Is there any additional consideration, opinion or suggestion about co-creation that you would like to leave us?”, which gave the opportunity to the consumers to express themselves freely about the survey or leave a comment, was already approached when discussing previously question 12 of the consumer’s survey, “What incentives would make you participate more times in the co-creation of fashion products?”.

The first question of investigation, “What makes the consumer have an interest in co-creation?” is answered through the data retrieved from the consumer’s survey that has just been discussed.

In a first instance, consumers have an interest in co-creation because they recognize the added value of this kind of product. But, above all, consumers give a lot of importance to

the product itself, not only because of its added value but also on a view of being able to get the product that they envisioned to have and because they want to feel more satisfied with the products available in the market. They also want to gain new knowledge about fashion products and the co-creation process. Consumers also emphasised that co-creation is useful for niche markets and specific products with special attention to the sizes and shapes. Other points that make the consumer have interest in co-creation are the rewards and the recognition. Consumers have more interest in long term rewards and expect something that can bring them an emotional connection. Receiving royalties (% from the sales), the brand offering them the product that they co-created, being recognized for the co-creation by the community and the brand or having their name in the product is then expected. Although, rewards or recognition are not seen as the main reasons for interest in co-creation. Having available for co-creation, simultaneously, several types of full fashion products within the options of casual, trendy or classical styles, for, upper parts (as for example shirts, t-shirts or jackets), dresses or overalls, bottoms (as for example trousers, shorts or skirts) or outerwear (as for example overcoats or raincoats), also makes the consumer have an interest in co-creation, and, the co-creation of colours or prints, is also of interest. Consumers also have an interest in co-creation if they can do it for the product from the initial design till the final product, be able to make comments, suggestions or proposals of alterations and/or improvements to the design or materials and be able to share photographs of the garments present in their wardrobe. Additionally, interest in co-creation will also be dependent on its transparency and communication regarding the brands' level of sustainability and of its, social ethics and product traceability.

Regarding question 6 of the fashion designers' interview, "In which way can the DNA of a co-creation brand be influenced, as opposed to a traditional brand, having into account that the basis of a co-creation brand is to be connected directly with the consumers?", all the interviewees agreed that the brand could have its DNA influenced by the consumers. According to Hoyer et al. (2010), one of the major problems of the co-creation process is the lower control from the company over the management and planning, but brand identity cannot be imposed only by brand managers but also need to have the consumers' insights (Brown et al., 2003; Ertimur & Venkatesh, 2010) because each consumer has its own personality, and so, many variants are expected and "[...] will always influence because each person has his or her own personality." (DM09). DM08 understands that the brand, in the attempt of trying to reach the vast majority of the consumers could not be able to maintain its DNA. "It should be open to receive several ideas from several different people, with several different ways of thinking, and therefore I think this can

affect, in the sense that, the brand by trying to reach several different consumers may not be able to maintain its DNA.” and according to DMO4, “In a way if consumers are always making changes it's going to be something that is constantly changing, which may not be a bad thing because brands have to modernize themselves.”.

So, co-creation brands need to have the openness to include the consumer freely in the co-creation process and should expect changes to the brand DNA, although this will also “[...] depend on the opinion or the direction the brand wants to take, and really on the profits or results the company gets from it.” (DMO7).

So, it is concluded that P1, “The direct connection with the consumers affects the brand DNA”, is confirmed.

Question 7 of the fashion designers’ interview, “Does a co-created product with consumers have more added value than one created only by the designer?”, was already discussed previously, along with question 10 of the consumer's survey, “Do you consider that a fashion product has added value when it is co-created by means of cooperation between the consumer and the brand?”.

Regarding question 8 of the fashion designers’ interview, “Do you think that the ideas received from the consumers’ and their communities are important for the creation of new products and for the creation of more assertive collections?”, most of the responses are in line with ideas being important for the process of creation of new products and for the creation of more assertive collections. “The customer's opinion is extremely important in the success of the brand.” (DMO1). “[...] the closer we are to the consumer, the more likely we are to get their needs right.” (DMO2). And contemporary brand management needs to work around particular forms of life, looking into their core consumers (Zwick et al., 2008; Arvidsson, 2011).

“[...] it will always be more useful to get the general ideas from the people who buy and use them [...]” (DMO7) because “[...] the consumer is the person we want to actually sell the product to, and if they are telling us what they like and what they would do, I think it's always important for the process of creating new products.” (DMO8), even more, when, “[...] they can give ideas that we don't have at the time and this can help to improve the brand and the sale of the products.” (DMO9) and that can help co-create products that have a novelty factor and to be more in line with the consumer's expected benefits, adding in this way more commercial attractiveness (Magnusson et al., 2003; Franke et

al., 2006; Hoyer et al., 2010). Closer contact with the consumer can then bring more original and creative ideas that are also more in line with the market.

Still, some of the interviewed objected that “I believe that consumers can bring ideas, but they can also confuse things a bit.” (DMO4) because, for example, “The consumer does not always have enough information to know how to choose a suitable material [...]” (DMO8), enforcing what was previously found on question 22 of the consumer's survey, “What information's do you consider to be more important to receive in the beginning of the co-creation process?”, about the recommendation of materials, that was seen as one of the most important information's to be received at the beginning of the co-creation process. Many of the consumer ideas might not be feasible production-wise (Magnusson, Matthing, and Kristensson 2003), and this also includes the choice of the materials, so it is important to guide the consumers along the process, especially in the early stages even more because sometimes there might be an opposition between what the company wants and what the consumer expects as the company might want efficiency and cost reduction and the consumer might expect a higher level of customization (Hoyer et al., 2010). Consumers and companies only have partial overlapping goals (Arnould et al., 2006; Ertimur & Venkatesh, 2010), although, as stated, consumers' ideas are important, especially when the contact happens in the design stage that will define product attributes and functionalities (Parment, 2013). Brands performing better usually get consumers' insights and use them in the early stages of the product design, enabling them to have products ready in weeks instead of months (Hunter et al., 2018). And for these idea inputs to continue to happen, there is the need to set shared values that can be able to create a sense of belonging between the company and the consumers (Arvidsson, 2011). So, it can be understood that to accelerate the process, should be used consumers' ideas in the early stages of the product design, which will enable the brand to have products ready more rapidly than the 6 to 12 months previously indicated by Füller (2010).

So, it is concluded that P3, “The ideas received from the consumer are important for the creation of new fashion products”, is confirmed.

In question 9 of the fashion designers' interview, “Can an excessive submission of ideas be a problem for the success of the co-creation process?”, most of the interviewees agree without doubt that an excessive amount of idea submissions could indeed be a problem. DMO4 states that it can be a problem because “You may not be able to cater to all kinds of ideas. I, as a designer if I had to do all this gathering of ideas and try to get a product out of it, it would probably be very difficult for me, and ideas would get left behind and

some consumers would be disappointed that their idea was not chosen. There also has to be a very large creative team to be able to manage all those ideas [...]”. And “[...] if this submission of ideas doesn't really have a more concrete submission process with a common goal, for example, where in a product there is a very wide number of requests, suggestions or feedbacks, and if there is not a very concrete idea of what the brand is and what the brand is aiming at, it can lose itself and can even fail, which means that this selection process is very important, so that there is really an identification, first with the brand and then with what the brand intends to implement in the market.” (DMO1). Especially in the later stages, information overload can be challenging due to the deadlines for the end of the product development (Hoyer et al., 2010). Taking into account the previous, there is the need of having a submission process with a common goal and a very concrete idea of what the brand is and what the brand is aiming at so that it can be easier for the consumers to submit more suitable ideas and also for the brand, not to need a very large creative team to be able to manage all the ideas received from the consumers. This might help mitigate the negative impacts in the outcome of the brand receiving an excessive number of ideas.

So, it is concluded that P4, “An excessive number of submission of ideas negatively affects the co-creation process ”, is confirmed.

On question 10 of the fashion designers’ interview, “If it was possible to use an AI software for the analysis and filtering of the data, namely the ideas received from the consumers, would that be an important tool for the fashion designer and for the success of the co-creation process?”, all the interviewees agreed that having an AI software for the analysis and filtering of the data would be an important or even essential tool for the success of the co-creation process. DMO7 said, “Yes, it would be useful to analyse the data. Gathering it and getting the best out of it for the product to be successful.”. The use of big data by fashion companies is now more used to identify the consumer behaviour and its demand, choice of pricing and for the management of the supply chain (DuBreuil & Lu, 2020) but could also be used in the ideas selection. For DMO1, “[...] an artificial intelligence can be a great asset to select from the start those that are totally unfeasible, either for production, creation or implementation in the market and the expected time to market, but also, to select those that are really more relevant and even those that can be adapted to the type of machinery that the company has and that, of course, are as feasible as possible and can also have a better balance between a development that is an asset to the brand and also an asset to the consumer.”. Technologies such as artificial intelligence and others enable faster manufacturing, customization, and flexibility as well as reduction of costs and also enable the industry to rapidly adjust to market changes

(Tjahjono et al., 2017). Artificial intelligence technologies can indeed deal with complex problems and can help companies change faster and to better avoid risks for greater value creation (Dilda et al., 2021). An artificial intelligence system could then be of great use in co-creation by enabling a faster and more focused process with a selection process able to identify proposals that are not appropriate production-wise or for the current market while having into attention a balance between the brand and consumer's needs.

As for question 11 of the fashion designers' interview, "Do co-created products have a lesser risk to fail in the market than products developed only by the designer as they are voted by the community?", most of the interviewees agreed that there is less risk of co-created products failing in the market than products developed only by the designer. Ogawa & Piller (2006) share this opinion when stating that there is a reduction of the risk of product failure, being risk reduction also one of the four pillars of co-creation (Prahalad & Ramaswamy, 2004; Maltzahn, 2016). DMO7 says that "Yes, I think they won't have as much risk of failing. If they are co-created in the beginning we will have an audience that will want it, whereas the designer always develops something based on research, so he is not sure if it will be accepted or not." that is supported by Piller (2010) when saying that, new products have a high risk of failure sometimes reaching the 50's percentile being the main reason for this the lack of understanding of consumer's needs (Piller, 2010). Ogawa & Piller (2006) and Hoyer et al. (2010) also agree that the lack of adequation of the products to fulfil the consumers' needs is usually a key reason for the failure of new products, even more, when forecasts are no longer guaranteed to work along with consumer's needs (Carvalho, 2016). It is always quite hard to predict what the consumer is looking for and what should be produced, and finally, what is actually going to sell (Fernandes, 2018). It has now become far more difficult to forecast what will be in demand (Achim Berg, 2021). DMO3 compares the usual forecast process by saying that "[...] I think it's a little less risky and a little more surgical than just evaluating commercial statistical data because by evaluating only that you can make the mistake of creating the same products over and over again [...]". DMO4 also added that "I think co-created products will help in a niche market.". in line with what the consumers advised on question 27 of the consumers survey, "Is there any additional consideration, opinion or suggestion about co-creation that you would like to leave us?", about co-creation being adequate for the development of specific products for specific markets.

Co-creation can then have less risk than traditional creation processes, especially the ones based on forecasts, and at the same time enables the creation of more original products while avoiding the brands' stagnation on certain types of products.

So, it can be concluded that P5, "Co-created products have a lesser risk of market failure", is confirmed.

Question 12 of the fashion designers' interview, "What informations, related with the transparency of the process, as well as, the necessary for the co-creation process do you understand that should and could be made available from the brand to the consumer?", was already discussed while discussing questions 22 and 24 of the consumer's survey, "What information's do you consider to be more important to receive in the beginning of the co-creation process?" and "What are the co-creation negative factors that can lead to a loss of interest in the product?".

As for question 13 of the fashion designers' interview, "Co-create simultaneously several types of products can be more or less interesting for the brand and the consumer?", it was already discussed while discussing question 16 of the consumer's survey, "Do you think that co-creating several types of fashion products simultaneously is more interesting than just co-creating one type of product?".

Regarding question 14 of the fashion designers' interview "Would it be more beneficial for the brand to co-create just details of the fashion product or the full product?", this was also already discussed while discussing question 17 of the consumer's survey, "Would it be more interesting to co-create just details of the fashion product or the full fashion product?".

In question 15 of the fashion designers' interview, "Applying the concept of modularity to co-created products can increase the process efficiency and simultaneously respond to consumers' expectations?", the interviewees agreed that modularity could increase the product manufacturing efficiency, as happened in question 10 of the supply chain experts' interview, where the interviewees were unanimous about the increment of the production efficiency due to modular products even when producing small orders. Although, as it comes to responding to the consumers' expectations, some concerns were raised by the fashion designers.

DMO1 says that "I think it can greatly increase the effectiveness of the process because you end up with a much more closed product where there is a much quicker response [...]" because product modularity allows companies to have a higher flexibility and a quicker response to the changing requirements of the markets (Peng et al., 2011; Salvador, 2007; M. Zhang et al., 2017). Modularity allows the use of standard parts that can be arranged in different ways or can be used even in different products (Tu et al.,

2004) opposed to a normal process where there is “[...] a high cost and the time that involves developing a completely different garment.” (DMO6). But with modularity, “[...] we are talking about a type of product or part of a product that has already had a lot of acceptance from consumers and being able to adapt it to new ideas could be a way to have efficiency and effectiveness in the process and make the situation profitable.” (DMO5). “[...] we would be able to have a greater productive efficiency and also of pattern making.” (ECAO1). And the degree of modularity also influences the production planning, production and supply structuration and logistics (Tu et al., 2004; Peng et al., 2011) and, consequently, the lower or higher complexity of the supply chain (Zhang et al., 2017). “[...] it is created and tested, and there is already the know-how on how to apply it. With tested garments it's always easier.” and “[...] we could increase production efficiency because it would allow different products to be produced by combining standard modules.” (ECAO6). “The more modular and the more similarities there are in each model the more profitability we will surely have in a production chain.” (ECAO4). The products being co-created should be modular in order to reduce lead times and might, reduce the complexity of the process and allow consumers to cooperate on just one part of the development (Piller, 2010). “[...] if a consumer can have that jacket with some changes defined by him, I think it can be good for the consumer's expectations. If he decides all the details that are going to be put on that jacket, the most creative part of that piece was actually made by the consumer.” (DMO8). Although on question 17 of the consumer's survey, “Would it be more interesting to co-create just details of the fashion product or the full fashion product?”, most of the respondents indicated that they are more interested in co-create the full garment and not just details. Fashion designers also point out that “[...] at the same time I don't know if we won't be limiting by saying that this is the trend.” (DMO7). DMO1 even points out that “For the consumer of course a modular product always ends up having less originality [...]” and so “[...] you can't modularize everything because if we talk about co-creation, we are talking about creation, so it is important to have a space for freedom [...]”. Although, P. Li & Chen (2018) indicate that modularity helps simplify clothing to better meet consumers' requirements.

Again, letting modular products associated with the core offer and let consumers freely and fully co-create all other products could be an option because most of the respondents prefer to co-create the full fashion product and not co-create just details of the fashion product, and also because, modular products can end up having less originality. And there is also the need, at the same time, to create a space for the consumer to have freedom. Consequently, it can increase the response, profitability and efficiency because,

in part, it is already created and tested. Modularity can, in this way, also help reduce the lead-time of the co-creation process.

So, it can be concluded that P6, “The application of modularity to co-created products increases the efficiency and success of the co-creation process”, is confirmed. P7, “The application of modularity to co-created products is able to give response to consumers’ expectations”, is not confirmed. P9, “Production of small quantities of co-created products based on modularity increase the production efficiency”, is confirmed.

In question 16 of the fashion designers’ interview, “How can the sourcing for co-created products be done to improve the fastness of the process?”, the main emphasis was given to the relationship with the suppliers and to the availability of the materials as being very important for the improvement of the sourcing, as well as the production location.

DMO6 says that regarding the sourcing for co-created products, it is needed “[...] to have a good relationship with the suppliers and that they adapt.”, adding, “There always has to be a great relationship between the design and the suppliers and have suppliers that can give us answers and give us what we need in the shortest time possible [...]”, that is in line with Wiengarten et al. (2017) that says that it is of high importance to create a long-lasting connection with suppliers and integrate them in the process.

In terms of materials, DMO3 thinks that it is positive to “[...] have as many non-perishable products in stock as possible. If possible have rolls of raw materials that we know are normally used.”. Even more, because the sourcing and manufacture are usually done on a one-year timeline and the replenishment of some products is usually done in a few weeks’ (Thomassey, 2010). For this quick replenishment, “The brands are increasingly relying on stock services and quick services to have materials quickly.” (DMO2). Also, “If the brand has a number of defined materials this can help the process to be faster as it will already limit the consumer and prevent the consumer from wandering into other completely different types of materials.” (DMO8).

“[...] having the production already channelled to various places before going ahead with the process [...]”. It is also seen as important by DMO5 and DMO7, that say that “I would always think of a localized production, having the production closer to the brand because it would be easier to coordinate everything, even though, in terms of costs, it might have its cost.”. These opinions are also in line with Lawson (2001) that indicates that sourcing offshore can have hidden costs not typically anticipated such as initial investment to establish the new source of supply, high initial training costs, lower efficiency, delays or

added costs in transportation, quality problems, long lead times and human cost (Christopher et al., 2004). So, for DM03, “Working as locally and regionally as possible [...]” is better and “[...] the brand should already have defined suppliers, work locally, nationally, or in Europe. And look for companies that are not so well known, that don't work with such big brands, or recent companies, because they may be able to supply faster than others that already have many clients.” even more at a time in that the “transportation lately has been critical because there is no way to get the material to us as fast as we used to.” (DM05).

So, it is understood that the relationship with suppliers is essential for a good and stable process to be achieved, complemented by a good choice and management of the materials along with the choice of nearshore suppliers. All of these can improve both quality and faster delivery of the product.

On question 17 of the fashion designers' interview, “What informations, from the brand, do you consider to be extremely important to share with the supply chain to achieve a greater production efficiency and assertiveness?”, several information was pointed out as important, such as dates, brand DNA, materials and suppliers' information. On question 12 of the supply chain experts' interview, “What informations, from the brands, do you consider to be extremely important to be shared with the supply chain so that a greater production efficiency and assertiveness can be achieved?”, the interviewed focused two main sets of information as essential, such as receiving technical specifications and a timeline with bookings for sample and bulk production. Besides information, they also gave feedback on important actions that could be taken into account to achieve greater production efficiency and assertiveness, such as the brand following more closely the bulk productions or doing a final sample before bulk production to assure that everything is correct, and also, the important possibility of working with 3D systems during samples development.

So, cooperation in the supply chain is crucial for all the parties (Bruce et al., 2004). For Prajogo & Olhager (2012), there are significant effects on the supply chain performance in what comes to the flow of information and materials, and information flow needs to be fast because information sharing with suppliers can bring added competitive advantage (Jin et al., 2020). But the sharing of information along the supply chain can only be achieved by cooperation “[...] between buyers and suppliers, joint product development, common systems and shared information.” (Christopher & Towill, 2000, p. 209). So, “Sharing information with suppliers could speed up the process and even solve some problems for us, such as dates or suppliers.” (DM03).

The dates were one of the focal points from both groups interviewed, and DMO1 says, “Dates are fundamental. I think the main thing is dates because they are important [...], also supported by DMO4 by saying, “The dates on which the productions will be needed must be stipulated right from the start.”. The supply chain experts also support this view as for example ECAO1 that says that “[...] it is important to define between the parties a timeline with the different stages of the process [...]” and “[...] it is also advantageous to set dates in advance because there is a whole period to organize and plan the production. [...]”.

Also, “The ideas, the brand's DNA is important for those who produce to know what the brand's ideologies are, so that they can then produce according to the brand's guidelines.”. DMO1 also says that “[...] to have a good relationship and to have an effective and assertive production I think it is also needed the supplier to know what the brand is and what it focuses on so that the supplier also knows what it can present to us.”.

As for the materials, DMO8 says that it is important to “Suppliers know up front what materials and processes are involved.”. DMO2 states that “I don't see a problem on the production unit knowing who my suppliers are. If there is a shortage of material, the production unit will talk directly to the supplier and will make my job easier.”.

Technical specifications are also seen as something essential, although with emphasis on the supply chain experts' side, as said by ECAO1. “What is needed is to have a technical booklet with all the technical specifications detailed. This is fundamental for the industry. And in this technical book, of course, to have well executed technical sheets and material information. In the material book itself, it is also necessary to have some information about the suppliers.”.

Also, a good connection would be essential. “If there was much more connection between each other, both for the brands and for the factories themselves, it would be much easier to work together. Whenever you get a designer and someone who knows the product together, apparently if they're too far apart it seems like they're talking about different things, and when they're both close, they can come up with solutions that are good for each other.” (ECAO3).

Additionally, not regarding directly the information sharing, “[...] anything that can be developed in advance with the supplier helps in every respect to speed up the process.” (DMO5). And “In terms of the production process there is also always the chance to make garments ahead of production [...]” although, still supporting “[...] that it would be easier,

more practical, and faster to have someone who, at the time the production is being done, could do this follow-up.” (ECA01).

Another topic pointed out by the two interviewed that have competences in pattern making is that “I think we all have a lot to gain with 3D mainly when we talk about the sustainability of creating garments, in the expenses and costs, because you won't spend yarn, fabric, energy. I think that 3D can be beneficial for many companies [...]” (ECA06). 3D virtual designs are starting to gain notoriety and will likely let fashion design advance further in the digital world by letting brands design and present, in an easier way, their collections through digital catalogues or digital showrooms (Amed et al., 2021). ECA05 also gives it relevance by saying that with “[...] 3D, we can work digitally with the client, also in a more assertive way on the final garment. There are already many brands that work in sync with the producers at the 3D level. The designer is already making the garment in 3D and with the help of the pattern maker they can work online much faster, to get the final product faster and more accurate.” For Hedrich et al. (2021), the virtual design will enable faster, cheaper and more flexible product development. “Anything that is skirts, pants, tops, blouses, that is not too elaborate I think is already working very well. In knitwear it's working very well.” (ECA05).

So, better performance and a faster and more sustainable process can be achieved by good communication between brands and the supply chain. Booking dates for all the production stages in advance would benefit the quickness of the process. For this is needed the brand's cooperation and a well-set agenda. Information about the brand, materials, and its suppliers and the product's technical specifications should be passed on as completely as possible to enable the supply chain to act with more assertiveness. Besides information, there are methods and processes that could also benefit and improve the co-creation process, such as the adoption of a closer follow up with suppliers and also of the possible implementation of a 3D product development that would enable important gains in terms of time and also in terms of sustainability.

The second question of investigation, “How does the co-creation process affect the brand and its products?” is answered through the data retrieved from the interviews till now.

Co-creation can bring onto the process an excessive number of ideas that can overwhelm the brand and then become a problem. This can lead the brand to need to have a larger team or dedicated AI software for filtering the data and enable a faster, more focused and balance process between the brand and the consumer's needs. The simultaneous co-creation of several products can make the brand lose focus, and the co-creation of full

products might be less easy, less cost-effective and slower, bringing more diversity to the production process, although it is understood that for the consumers would be better to co-create several products. Although it can also affect positively the degree of risk of the products failing in the market, that is lower for co-created products than for products developed only by the designer, as these are created taking into account the consumers' needs and not only forecasts. It also enables the creation of more original products and pushes the brand forward so that it does not get stagnated. Co-creation will also make the brand more close, communicative, objective and transparent with the consumer and the supply chain about itself and its products. Co-creation brands, to reduce the delivery time to the consumers, will have to think well about the sourcing and production processes by opting for nearshoring solutions, easy to get materials, a good date scheduling, a closer follow up and processes like 3D design and pattern making.

On question 18 of the fashion designers' interview, "In your vision which should be the fashion designer roles in a co-creation brand?", the fashion designer in a co-creation brand is seen as essential because of his intellect, and it is seen as a possible intermediary or adviser for the consumer and the whole process and for some of the interviewees is even seen as the actual designer for the products instead of the consumer. Besides the previous, the fashion designer is also seen as an important and knowledgeable collaborator inside the brand in what comes to follow the full process from the first idea till the final product manufacture.

For DM04, "[...] it makes perfect sense to have a designer in the brand. The training gives us another type of ideas about the product and not only if it is beautiful or functional." For Sanders & Stappers (2008), professions like this will not disappear as consumers turn into co-designers because designers will still be essential as they have important skills. Designers are good at visual thinking at creative processes and have expert knowledge.

Although DM05 indicates that "The fashion designer in a co-creation brand above all has to put aside his convictions to be able to enter the spirit of those who are passing on information or else he starts to act as a barrier to his own work." And the fashion designer as the intermediary between the consumer and the final product is seen as one of his main duties. DM01 states that "Being the middleman will be the designer's greatest responsibility.". "The main function of a designer in a co-creation brand is to taper the ideas of the consumers." (DM03) and "Joining the ideas coming from co-creation with its wisdom as a designer and getting the best out of it, for the product and the brand." (DM07).

Designers keep track of new trends, and besides, they have production and business knowledge (Sanders & Stappers, 2008) which makes them the ideal middle-man. “The biggest function is not really to create anything, but to guide the consumer to make an easily marketable product. That guides, so that the consumer doesn't stray too far from what the brand wants to convey, its goals and ideologies.” (DMo8). Although in the vision of DMo4 and DMo6, it is “[...] the designer is who is going to create. The designer will put the ideas together or try to give the best vision of the consumer's idea.”.

DMo9 also agrees with DMo8 by saying, “[...] I think our role would be to guide the consumer. We know the business much more and we know what reaction there can be to the product. We have knowledge of the process from the creation to the completion of the product and we should be basically mentoring the consumer. We have the responsibility to explain to the consumers all the processes that are necessary to create the product.”. In this sense, “[...] the designer will be responsible for connecting the consumers, who give us the information of what they want, with suppliers, pattern makers and production units.” (DMo6). For DMo1, DMo4 and DMo7, the designer should “[...] be present in the product development and design process.” and DMo9 thinks that “[...] what should happen is that the designer should follow the whole process.” and “Depending on the size of the brand, if it is a small company, it may be the designer's responsibility to ensure that the entire process is fulfilled.” (DMo2) and the fashion designer “May also be involved in sourcing materials, manufacturing solutions [...]”. (DMo1).

So, even though we are talking about a co-creation brand, where the consumer has quite a lot of importance, the fashion designer is seen as essential because of its intellect, vision and know-how about the trends, the market and the full process from the first idea till the final product manufacture.

The fashion designer is also referred to as a key player, to be the intermediary and adviser in the process of co-creation with the consumer and for the following steps of product development and production, being also involved in the material sourcing and in the process of finding manufacturing solutions for the desired products.

So, the fashion designer will be advising, evaluating and helping the product creation so that the best product can be achieved, taking into account what it conveys to the consumer and the brand and can be present in the following stages of product development and manufacturing to ensure that the consumers receive what they first envisioned.

The third question of investigation, “What can be the fashion designer’s roles in co-creation brands?” is also answered through the data retrieved from the fashion designers’ interviews in the previous question.

The fashion designer in a co-creation brand is seen as essential because of his intellect, and it is seen as the intermediary or adviser for the consumer and the whole process. It is the element that will join together the ideas to get out of it the best product for the consumer and the brand. The fashion designer will be advising, evaluating and helping the product creation. Besides the previous, the fashion designer is also seen as an important and knowledgeable collaborator inside the brand because of the know-how about the trends and the market and should follow the full process from the first idea, through the product development, till the final product manufacture.

On question 6 of the supply chain experts’ interview, “Which of the following do you consider to be the least complex for the management, manufacturing efficiency and for the supply chain? Co-creation, co-production or mass customization?”, opinions are divided mainly between co-creation and mass customization, being that production managers are more inclined to support mass customization and pattern makers are more inclined to support co-creation.

For some of the interviewed, co-creation is seen as the best option as for ECA05 when saying, “Maybe co-creation, because both, co-production and mass-customization will create more diversity of items. Co-creation is perhaps a more normal process [...]” and “If we have to make a series of changes or program the pattern to make those changes automatically, it's a huge amount of work, to create and automate.” (ECA06). And “If things are set up for on a large production line to work in cells, small-scale co-creation fits perfectly.” (ECA03). Although, “If I want to produce co-creation on a small scale, on a large production chain, we are still teaching people and it's already over.” (ECA03).

On the opposite view, ECA01 says that mass customization offers [...] similar productivity as the standardized products of mass production.” and ECA03 refers that “[...] if you have a production chain with 200 or 400 people you have to aim for mass customization [...], although Chandra & Grabis (2007) state that the usual supply chain management of mass production is not doable for mass customization.

In this sense, it can be understood that even mass customized products will push the rearrangement of the supply chain, although in production terms, it will have less impact on the organization of production chains. Still, co-creation has also positive points when

it comes to the pattern making side. As for production, in small amounts, it is not very suitable for a mass production chain, being more suitable for specialized chains that can work in specialized cells. So, it can be concluded that both concepts have positive and negative points and for co-creation would be best to find specialized manufacturers that are already familiar with more complex processes and smaller quantities.

So, it can be concluded that P8, “Co-creation is more beneficial for the production management and efficiency of the supply chain than co-production or mass customization”, is not confirmed.

As for question 7 of the supply chain experts’ interview, “What problems could arise from the integration of the production of co-created products in a small scale or complex, in a production line dedicated to mass production?”, the main problem identified was the loss of the production chain performance. The eventual need of adapting the production chains was also highlighted.

Regarding the loss of the production chain performance, ECA02 says that “If I'm going to put a small number of products in the middle of a large production, that means a lot of losses. Right from the start when cutting, we would find it as much more time-consuming.” (ECA02). “Small batches imply, right from entering the chain, much less quantity and this implies less production, although afterwards, when it reaches a certain phase, it could be the same as having mass production.” (ECA02). So, “[...] for this type of process there should be a separate structure, a smaller structure [...]”, “[...] like cells, but it doesn't have to be in cells, but I think it is perfectly suited for products with more operations.” (ECA03). For example, in a demand-driven supply chain, the batch sizes are smaller, and the products are more diversified, so there is a need of using highly efficient processes (Achim; Berg et al., 2020) as it can be considered for co-creation. For ECA04, “A production chain would necessarily have to be adapted because mass production chains are usually for large quantities and for co-created products there will be fewer quantities, more specific things, and more variety.”. Piller et al. (2012) also refer to similar needs, for example, for mass customization, in that companies need to have the capability to reconfigure their resources and internal organization. With a well-thought process, efficiency can range from the one in mass production.

It can then be concluded that the problems that could arise from the integration of the production of co-created products on a small scale or complex in a production chain dedicated to mass production are mainly the loss of performance and, consequently, a

decrease in the products output and the need of reorganization of the production chain. Although with the right configuration, losses can be minimized.

In question 8 of the supply chain experts' interview, "Which of the following manufacturing philosophies would you consider to be the most adequate to work with co-creation brands, being that these can bring small batches or complex products, in a more efficient and sustainable way? Lean, agile or leagile?", leagile and agile were considered the adequate philosophies. For some of the supply chain experts, leagile seems to be the most adequate as for ECA06 when saying that "If you have a hybrid system with an agile and sustainable process, you have the best of both worlds.". Bruce et al. (2004) also supports this view because the textiles and clothing industry doesn't fit in either paradigm, but instead are a combination of the two.

"[...] co-creation will require some flexibility and the more flexibility the chain has the better." (ECA03). This need for flexibility is also supported by Wiengarten et al. (2017), that has the opinion that suppliers that are more distant from the consumers usually focus on efficiency while the ones close to consumers tend to focus on flexibility (Wiengarten et al., 2017).

Although, there are also different opinions. "I think agile would work best because it works in less predictable environments with high variety and where the product life cycle is short." (ECA01). Although a mixture of both, leagile, can be even more cost effective on the upstream chain and have higher service levels in the downstream chain. An example of that is "[...] the mass customization supply chain [...]" that "[...] is a agile supply chain based on lean basis." (Jin et al., 2020, p. 653) that in part is also what is intended in the co-creation concept, that needs agility and flexibility but at the same time wants to be lean by focusing on what the consumers really want.

It can be concluded that leagile is the adequate manufacturing philosophy to work with co-creation brands as these need agility and flexibility but at the same time want to be lean, by focusing on what consumers really want and so only producing what is expected by the consumers. A leagile philosophy can offer agile and sustainable processes simultaneously.

In question 9 of the supply chain experts' interview, "For the management and efficiency of production and for the remaining supply chain is preferable to produce small bulk productions or by the unit?", preference was given to small bulk productions over the

production by the unit, although this can depend on the structure in place in the manufacturing company.

ECA02 says that “Whether we are working one unit or a ten-garment lot, it is much more profitable to do a ten-garment lot [...]” time-wise, also supported by ECA01, that says, “Of course, it is always preferable to have small quantities rather than by the unit [...]”. “It’s complicated enough with small quantities, let alone with by the unit [...]” (ECA05). “By the unit quantities are usually always different garments with different operations, often have a high variety, and are more demanding from the point of view of production organization.” (ECA01). “[...] from the production point of view, they have a high degree of complexity in the organization of the process.” (ECA01). Although “[...] it depends on the structure of each of the manufacturing units and on the way, they are organized [...]” (ECA03). “It is more related to the structure of the company itself. In my company we make made to measure and everything is prepared to work by the unit [...]” (ECA06). Being manufacturing now more characterized by customized products leads to a more demanding production planning (Bhamu & Sangwan, 2014) and consequently to the need for specific layouts for the production chains. For example, in a demand-driven supply chain, the batch sizes are smaller, and the products are more diversified, so there is a need of using highly efficient processes (Berg et al., 2020). One way is the use of “[...] smaller chains, instead of being large chains for mass production, are capable of making limited series of garments or small series.” (ECA04). Still, many small companies find it hard to find suppliers that want to develop and produce small series as these need larger orders to sustain the influx for productions as they don’t have the capability of coping with small orders (Fernandes, 2018).

Production-wise, doing production by the unit is more complex to organize and manufacture and also more time consuming than doing small quantities. Although depending on the organization of the manufacturer, it can be more interesting to produce by the unit. Smaller chains are seen as more suitable for smaller productions. So, for the management and efficiency of production and for the remaining supply chain is preferable to produce small bulk productions.

Question 10 of the supply chain experts’ interview, “If the production of small orders would be based on modular products, would this increase the production efficiency?”, was already discussed previously, along with question 15 of the fashion designer’s interview, “What is the frequency in that you like or would like to co-create fashion products?”.

On question 11 of the supply chain experts' interview, "The continuous production all year round, even during low seasons, would be an incentive for the industry to produce for co-creation brands even if in a small scale or with complex products?", the interviewed agreed that the production of co-created products during the low seasons is positive, although some particular concerns are expressed.

Presently, the usual process is to put the first order to supply the beginning of the season needs for inventory in-store and in the warehouses, and some additional ones are put during the season mainly for the basic and best-selling items meaning that there will be times of the year where more production is expected and then times of the year with lower amounts of work. So the replenishment of some products is usually done in a few weeks' time (Thomassey, 2010), meaning that there will be uncertainty about the orders coming in at certain times of the year. So, "In the apparel industry we see periods of lower production volume. The effect of seasonality is reflected in these periods and naturally it is a concern for the industry to seek occupation solutions to fill these periods. In this perspective of finding solutions to fill production, I think that co-creation could effectively be an incentive and a solution for these low periods in companies, even with small productions." (ECA01), taking into account that co-creation is capable of working and co-creating with the consumers all year round.

"[...] there would only be one problem, which would be to include this type of product in long chains.", "[...] that are often prepared for big productions." (ECA04). But there is the need to understand that "If the company has been working very well and then has 3 or 4 months with lower numbers, everything that has gained is lost." (ECA03).

So, the difficulty in including co-created products can be overlapped by the benefits brought along the year, during the low seasons, and we can conclude that continuous production all year round, even during low seasons, would be an incentive for the industry to produce for co-creation brands, even if in a small scale or with complex products.

So, it can be concluded that P10, "Continuous production all year round is an incentive for manufacturers to produce co-created brands", is confirmed.

Question 12 of the supply chain experts' interview, "What informations, from the brands, do you consider to be extremely important to be shared with the supply chain so that a greater production efficiency and assertiveness can be achieved?", was already discussed previously while discussing question 17 of the fashion designers' interview, "What

informations, from the brand, do you consider to be extremely important to share with the supply chain to achieve a greater production efficiency and assertiveness?”.

The fourth and last question of investigation, “What methods and processes are adequate for the supply chain when working with co-creation?” is answered through the data retrieved from the supply chain experts’ interviews.

When thinking about co-creation, this will be more adequate for small scale production chains or for a setup in cells, especially in specialized manufacturers that are already familiar with more complex processes and smaller quantities. The use of a leagile manufacturing philosophy is the most suitable to work with co-creation brands by offering agility and flexibility and, at the same time, a more sustainable process, so it is advisable to find manufacturers working with a leagile manufacturing philosophy. A closer connection between the brand and the supply chain will achieve greater production efficiency and assertiveness. Processes like follow up samples before production, and even the bulk production will assure that the consumers will receive the product as expected. The inclusion of co-created products for production during the low seasons will benefit the brand and its supply chain, creating an easier acceptance to produce co-created products. Booking in advance sample and bulk production and sending in advance technical specifications is more adequate for the organization of the supply chain and will enable a faster and more assertive process. The use of modular products can increase production and pattern making efficiency and response and so, to reduce the lead-time of the co-creation process. Working with 3D systems during the product development will enable the consumer to get the final product faster and will put in place a more sustainable process.

The outcome of the propositions can be seen in table 71 and the outcome of the hypothesis is available on table 67. The propositions have already been referenced throughout the discussion and the hypotheses were previously referenced in the analysis of the survey results. Both were interconnected with the obtained results.

Table 71 – Outcome of the proposed propositions. Source: Author

P1, “The direct connection with the consumers affects the brand DNA”	Confirmed
P2, “Products co-created with the consumers have added value”	Confirmed
P3, “The ideas received from the consumer are important for the creation of new fashion products”	Confirmed
P4, “An excessive number of submission of ideas negatively affects the co-creation process”	Confirmed
P5, “Co-created products have a lesser risk of market failure”	Confirmed
P6, “The application of modularity to co-created products increases the efficiency and success of the co-creation process”	Confirmed
P7, “The application of modularity to co-created products is able to give response to consumers’ expectations”	Not confirmed
P8, “Co-creation is more beneficial for the production management and efficiency of the supply chain than co-production or mass customization”	Not confirmed
P9, “Production of small quantities of co-created products based on modularity increases the production efficiency”	Confirmed
P10, “Continuous production all year round is an incentive for manufacturers to produce co-created brands”	Confirmed

### 4.3. Proposed framework and co-creation model

For the construction of the theoretical framework that will serve as the basis for the new co-creation model, several pieces of information were taken into account. Data acquired during the consumer survey, fashion designers’ interviews, supply chain experts’ interviews and during the revision of the bibliography were very important to define the most important parts of the process and what are the adequate processes and options for each of them. Basing the framework on already established consumer theories that helped understand the consumer and its needs (from page 89 to 92) and design theories that helped with the comprehension of the design processes (from page 59 to 64). So, it was simpler to organize and do the systemization of the information on the framework.

This allowed to build a more detailed process focused not only on fashion design and co-creation but also on the design of the process itself. A process able to respond to the consumers’ needs as well as their expectations. Various processes and options will also allow a faster process implementation so that the product can reach the consumers faster. With more detail, the framework enlightens that co-creation can be very suitable for niche markets, and good communication can enhance consumer engagement and satisfaction. Compensation for the consumer’s intervention is also detailed. The products and their development are also detailed. The brand’s internal process and its connection with the supply chain are also focused on achieving a well-managed process. All of these will streamline the co-creation process that will benefit the consumers, the brand and the supply chain.

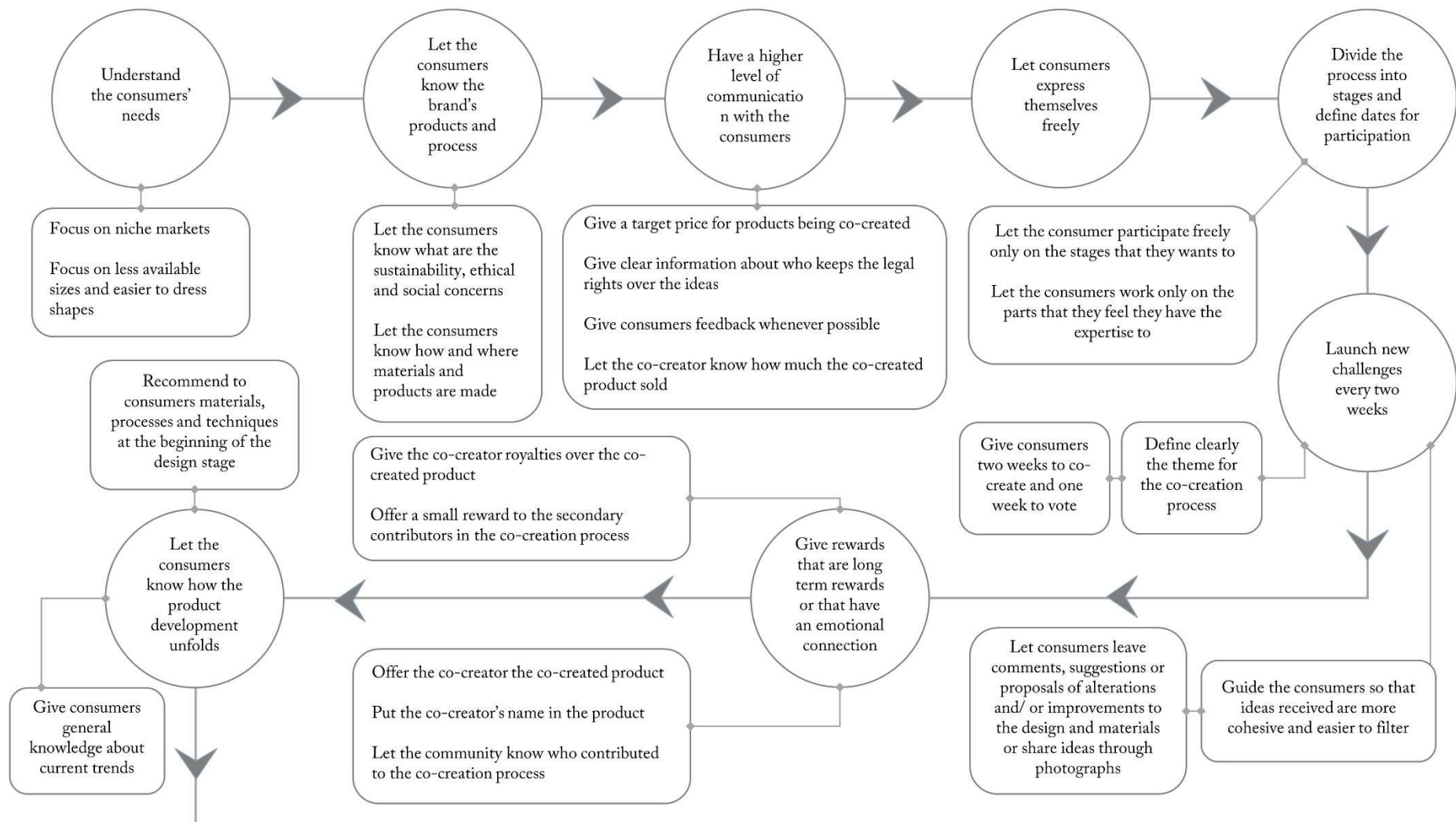
Table 72 – Framework for a new co-creation process. Source: Author

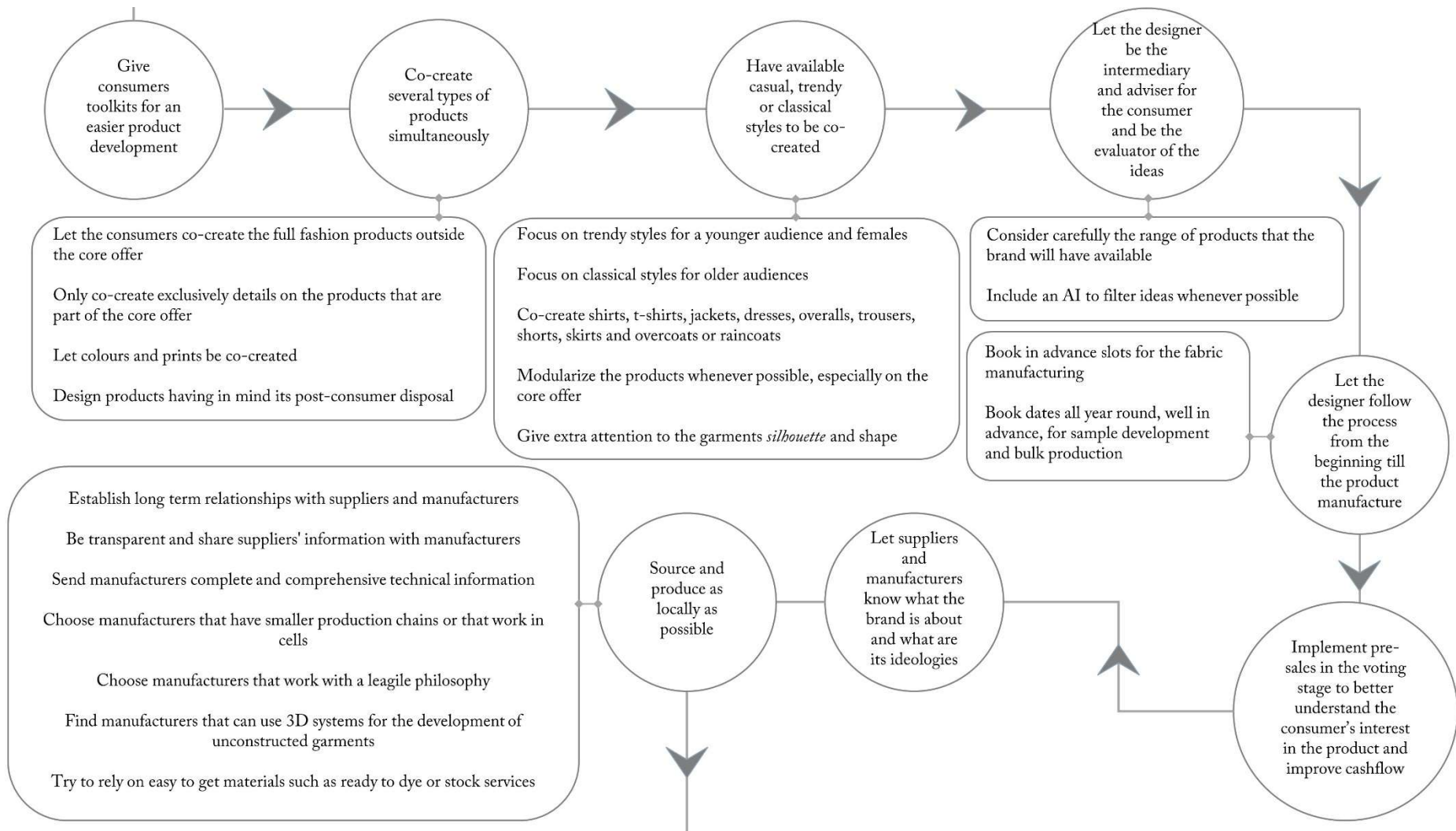
<b>Beginning of the process</b>										<b>End of the process</b>
<b>Market</b>	<b>Communication with the consumers</b>	<b>Process with the consumer</b>	<b>Rewards</b>	<b>Product development</b>	<b>Products</b>	<b>Internal process</b>	<b>Connection with suppliers and manufacturers</b>	<b>Manufacture</b>	<b>Delivery</b>	
Understand the consumers' needs (page 230 to 233)	Let the consumers know the brand's products and process (page 232)	Divide the process into stages and define dates for participation (page 238)	Give rewards that are long term rewards or that have an emotional connection (page 230)	Let the consumers know how the product development process unfolds (page 240)	Have available casual, trendy or classical styles to be co-created (page 233)	Let the designer be the intermediary and adviser for the consumer and be the evaluator of the ideas (pages 254 to 256)	Let suppliers and manufacturers know what the brand is about and what are its ideologies (page 252)	Follow up closely on the sampling development and production and be present physically whenever possible (226 and 252)	Deliver products bought on pre-sale in between one month and two months' time (page 242)	
Focus on niche markets (page 252 and 247)	Let the consumers know the sustainability, ethical and social concerns of the brand (page 239 to 240)	Let the consumers participate freely only on the stages that they want to (page 237)	Give the co-creator royalties over the co-created product (pages 232 and 239)	Recommend to consumers materials, processes and techniques at the beginning of the design stage (page 238)	Focus on trendy styles for a younger audience and females (page 233)	Consider carefully the range of products that the brand will have available (page 235)	Source and produce as locally as possible (pages 250 and 251)	Develop in advance whatever is possible (page 253)		
Focus on less available sizes and easier to	Let consumers know how and where materials and products	Let the consumers work only on the parts that they feel they have the	Offer a smaller reward to the secondary contributors in the co-creation	Give consumers general knowledge about current	Focus on classical styles for older audiences (page 233)	Include an AI to filter ideas whenever possible	Establish long term relationships with suppliers and	Make pre-production samples to check if the product is as consumers		

dress shapes (page 230)	are made (page 239)	expertise to (page 237)	process (page 100)	trends (page 238)		(pages 246 and 247)	manufacturers (page 250)	expect to (page 253)	
	Have a higher level of communication with the consumers (page 239)	Launch new challenges every two weeks (page 234)	Offer the co-creator the co-created product (page 230)	Give consumers toolkits for an easier product development (page 236)	Co-create shirts, t-shirts, jackets, dresses, overalls, trousers, shorts, skirts, overcoats or raincoats (page 233)	Let the designer follow the process from the beginning till the product manufacture (pages 254 to 255)	Be transparent and share suppliers' information with manufacturers (page 252)	Give extra attention to the garment's measurements (page 241)	
	Give consumers feedback whenever possible (page 239)	Give consumers two weeks to co-create and one week to vote (page 234)	Put the co-creator's name in the product (page 230 and 231)	Co-create several types of products simultaneously (page 235)	Modularize the products whenever possible, especially on the core offer (page 248 and 249)	Book in advance slots for the fabric manufacturing (page 252)	Send manufacturers complete and comprehensive technical information (page 252)	Give extra attention to material and manufacturing quality (page 241)	
	Give a target price for the products being co-created (page 241)	Define clearly the theme for the co-creation process (page 237)	Let the community know who contributed to the co-creation process (page 230 and 231)	Let the consumers co-create the full fashion products outside the core offer (page 236)	Give extra attention to the garment's silhouette and shape (page 230)	Book dates all year round, well in advance, for sample development and bulk production (page 252)	Choose manufacturers that have smaller production chains or that work with cells (page 252 and 257)	Make sure that colours are as expected by consumers (page 241)	
	Give clear information about who keeps the legal rights over the ideas (page 238 to 239)	Guide consumers so that the ideas received are more cohesive and easier to filter (page 255)		Only co-create exclusively details on the products that are part of the core offer (page 236)		Implement pre-sales in the voting stage to better understand the consumer's	Choose manufacturers that work within a leagile philosophy (page 258)		

						interest in the product and improve cashflow (page 96)			
	Let the co-creator know how much the co-created product has sold (page 238)	Let consumers leave comments, suggestions or proposals of alterations and or improvements to the design and materials or share ideas through photographs (page 237)		Let colours and prints be co-created (page 236)			Find manufacturers that can use 3D systems for the development of unconstructed garments (page 253)		
	Let consumers express themselves freely (page 232)			Design products having in mind its post-consumer disposal (page 38)			Try to rely on easy to get materials such as ready to dye or stock service (page 250)		

The framework finally allowed to organize the contents to structure the proposed new co-creation model as a flowchart (figure 55) composed of steps/actions, with the respective functional content shown in the rectangles with rounded corners. The stages/actions will need to be implemented in order to improve the timing of the process, the process with the consumer, the brands process and the process with the supply chain.





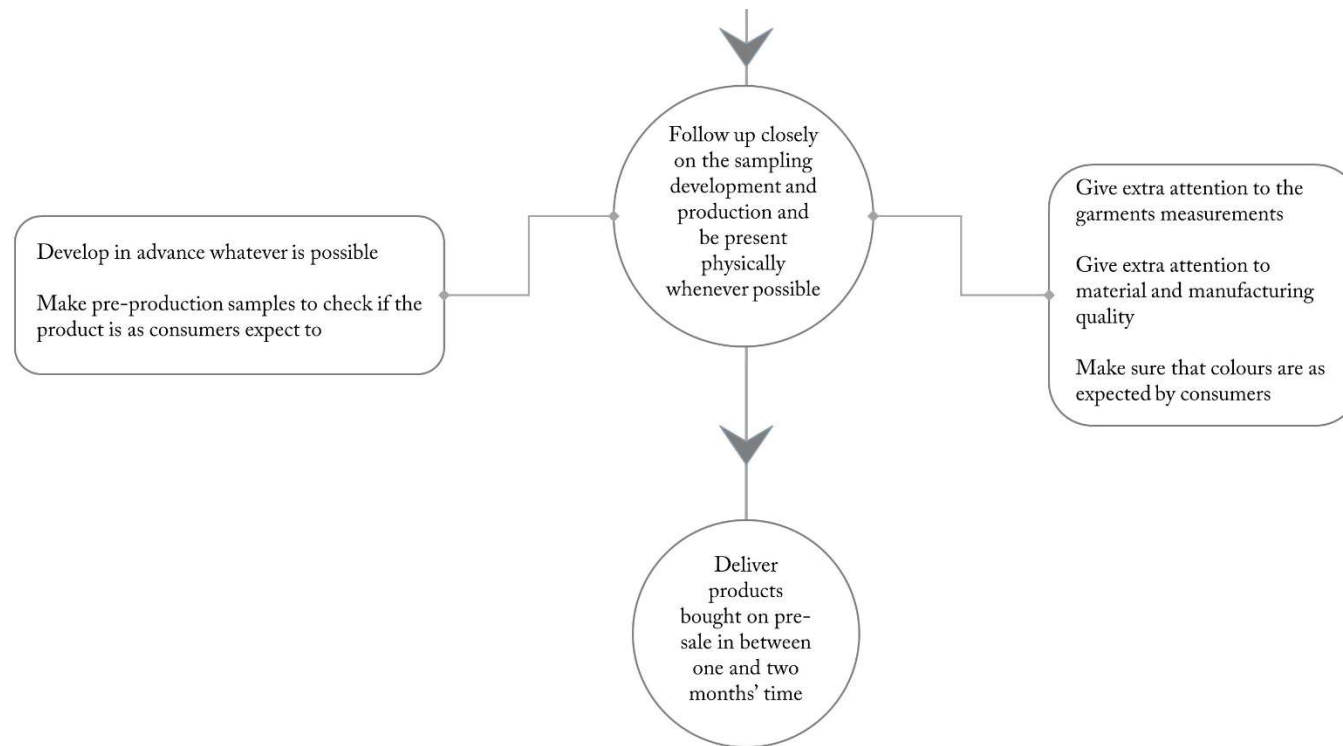


Figure 55 - Diagram of the proposed new co-creation model. Source: Author

## **5. Conclusions**

### **5.1. Conclusions of the research**

A series of conclusions that are useful for the improvement of the co-creation process were taken from the literature review, consumers survey and interviews with fashion designers and supply chain experts.

Improving the time that the process takes was one of the problems initially identified, for which a series of conclusions helped minimizing this problem. The time that the process takes is influenced by many variants especially by how the process stages are divided and how much time is given to each one. The information flow between the consumer and the brand are of special importance to get the best proposals for the brand in the shortest time. Other processes such as using technological aids such as AI or 3D software's can help improve the timing of the process. Working with a well scheduled calendar and have a close contact with suppliers and manufacturers for the follow up of the products development and production will help avoid problems and misunderstandings and consequently delays. Choosing well, partners with capabilities to work with co-created products is of utmost importance.

Maintaining a relationship with the consumers was another problem identified in the beginning of the investigation and conclusions taken about how to lead the process, what to offer the consumers, what to let the consumers know about the brand and communication improvements will help to create longer and more stable relationships.

The brand and its management and direction were other of problems identified. Conclusions were taken that lead to the understanding that the brand process needs to be as free as possible for the consumer to express its creativity but still needs some boundaries in what comes to the type of products, how the products can be co-created and what information is very important to be presented to the consumers in the beginning of the process so that consumer and brand can work with the closest objectives as possible.

These are very important topics as they are interconnected with what is the basis of the co-creation process and to are able to improve the process timing, the process with the consumer, the brands process and the process with the supply chain.

The points that were key for the development of the co-creation model were the Focus on niche markets, Focus on less available sizes and easier to dress shapes, Have a higher level of communication with the consumers, Guide consumers so that the ideas received

are more cohesive and easier to filter, Give rewards that are long term rewards or that have an emotional connection, Give consumers general knowledge about current trends, Recommend to consumers materials, processes and techniques at the beginning of the design stage, Co-create several types of products simultaneously, Modularize the products whenever possible, especially on the core offer, Let the designer follow the process from the beginning till the product manufacture, Book dates all year round, well in advance, for sample development and bulk production, Implement pre-sales in the voting stage to better understand the consumer's interest in the product and improve cashflow, Choose manufacturers that work within a leagile philosophy, Choose manufacturers that have smaller production chains or that work with cells, Find manufacturers that can use 3D systems for the development of unconstructed garments, Try to rely on easy to get materials such as ready to dye or stock services and Follow up closely on the sampling development and production and be present physically whenever possible.

With more detail other additional conclusions were taken from the investigation.

Consumers indeed see added value in co-created products, and co-created products should have a lesser risk of failing in the market. The product itself and what the consumer is looking for are quite important in a co-creation context because consumers aim to have the product that they envisioned to have. They are also interested in co-creation when they are not satisfied with the products available in the market, and additionally, they also want to gain new knowledge about fashion products and its co-creation process and, through it, express themselves.

According to the consumers, co-creation is adequate for niche markets with specific products with special emphasis on different sizes and shapes from the ones generally available.

According to the consumers, casual, trendy and classical styles are the most interesting to be co-created, and they give priority to garments over accessories with a special interest in upper parts (as for example shirts, t-shirts or jackets), followed by dresses or overalls, bottoms (as for example trousers, shorts or skirts) and outerwear (as for example overcoats or raincoats).

Most consumers want to co-create several types of full (and not just the details) fashion products simultaneously, from the initial design to the final product. Designers feel otherwise, although they understand that for the consumer would be better to have

available several types of fashion products. Although, they advise carefully considering the range and number of products that it is going to be proposed to the consumers. Offering the co-creation of details in the core offer and letting the consumers do the co-creation of the full fashion products on the remaining offer can be a balanced option. In terms of details, colours and prints need to be available for being co-created. Should also be available the possibility for consumers to co-create by leaving comments, suggestions or proposals of alterations and/or improvements to the design or materials and also to share photographs.

Still, regarding the product, modularity can increase the product manufacturing efficiency even when producing small orders. Modular products can be associated with the core offer, and consumers can freely and fully co-create all other products outside the core offer. Modularity can also help reduce the lead-time of the co-creation process.

The consumers also consider that lack of material or manufacturing quality, not identifying themselves with the product aesthetically in terms of shape, silhouette or colour or the size not fit would be the main reasons for the consumers return co-created products.

As for the participation in co-creation, most consumers express that they will only co-create when they feel like to, and most of the remaining consumers are divided between the possibility of co-creating on a weekly basis and on a monthly basis. Not to lose the consumer's interest that are available to co-create on a weekly basis, the best would be to give consumers new challenges every two weeks and let consumers co-create for over two weeks. This would give time to the brand to prepare for new challenges while dealing with the ongoing ones. Consumers also would need one week to vote for the products. Along with the voting, pre-sale of the products with higher expected sales should be implemented to incentivize purchase.

In the incentives for participation, consumers have more interest in long term rewards that can bring them a higher revenue, like royalties, and also prefer rewards that can have an emotional connection like the brand offering them the product that they co-created, as well as having recognition for the participation in the co-creation.

Regarding the process, communication with the consumer is viewed as important and defining well who keeps the legal rights, starting dates, and the theme for the co-creation process is essential, as well as a recommendation of materials, and techniques in the earlier design stage, along with a notion of the trends. Other points that are of interest to

the consumer are options related to dates and results like the limit date for the submission of proposals of co-created products or the sales numbers of the products co-created. Knowing that the brand does not have social ethics, not knowing where or how the product was produced or knowing that the brand and its products are not sustainable are also seen as important.

It is also understood that an excessive number of received ideas can be a problem and that an AI software could be a good tool to minimize this problem. There is also the need of having an idea of what the brand is and what the brand is aiming at so that it can be easier for the consumers to submit more suitable ideas.

As for the brand's internal process, the fashion designer in a co-creation brand is seen as a possible intermediary or adviser for the consumer and a knowledgeable collaborator inside the brand in what comes to follow the full process from the first idea till the final product manufacture, so a very important member, even though the consumers make the idea input to the brand.

The relationship with the suppliers and the materials themselves are very important for the improvement of the sourcing, and also important is the production location and its nearshoring. It is understood that for a better connection, it is important to send information about dates, the brands' DNA, materials and suppliers' information and technical specifications to the manufacturers. A good connection with the supply chain and the manufacturers is also understood as essential, and a closer contact for the development and production is also important, along with the use of 3D solutions for sampling development of essentially unconstructed garments like skirts, pants, tops, blouses or knitwear.

It is also understood, regarding specifically production, that a leagile philosophy is the adequate manufacturing philosophy to work with co-creation brands as these need agility and flexibility but at the same time want to be lean, by focusing on what consumers really want and so only producing what is expected by the consumers.

The problems that could arise from the integration of the production of co-created products on a small scale or with complex products in a production line dedicated to mass production are mainly the loss of performance and, consequently, a decrease in the products output and the need of reorganization of the production chains. Although with the right configuration, losses can be minimized. Smaller chains are seen as more

suitable for smaller productions, or a configuration in cells would be ideal for co-created products.

It is also concluded that the production of co-created products during the low seasons is positive. The difficulty in including co-created products can be overlapped by the benefits brought along the year, and so continuous production all year round, even during low seasons, would be an incentive for the industry to produce for co-creation brands, even if on a small scale or with complex products.

## **5.2. Contribution of the research**

Benefits and problems were identified, and according to the results, were implemented solutions that created guidelines for the brands, which can be seen in the new co-creation model in figure 55.

What makes the consumers have interest in co-creation, how does co-creation affects brands and their products and what methods and processes are also adequate for the supply chain were found. These guidelines will help brands to decrease the lead-time of the whole process and consequently deliver products faster to the consumer, maintain longer relationships with consumers and also motivate and involve them more to understand what to give the consumers in return for their contribution and to how brands should manage the process with the consumer so that what is proposed by the consumers does not make the brand lose direction.

The role of the fashion designer in the co-creation brands was also uncovered and also included in the framework.

## **5.3. Answer to the objectives and questions of investigation**

It is understood that the answers to the objectives and to the questions of investigation were achieved.

Several points were understood regarding what makes the consumer have an interest in co-creation and what is desired and expected from co-creation, such as the added value and the incentives, what are the interests in co-create, the type of styles and products, and how the consumer wants to co-create and what he wants to co-create. The question of investigation for these topics was answered on page 265.

Understanding how the co-creation process affects the brand and its products and how it should work with the consumer and the supply chain were also understood regarding the influence on the DNA, the product added value and its risk on the market, the product development, what influences have consumers' ideas and can they can be dealt with when the consumers want to co-create and in what terms, how the consumer wants to co-create and what he wants to co-create, what information's are essential to be sent to the consumers, what are the negative points on co-creation to be avoided, what can make consumers return products, for how long are consumers willing to wait for the products, the benefits of modularity and the product sourcing quickness. The question of investigation for these topics was answered on page 275 and 276.

What can be the future roles of the fashion designer and its overall contribution to co-creation brands were also understood and defined. The question of investigation for this topics was answered on page 278.

Understanding what methods and processes are adequate and can provide stability to the supply chain, for a greater production efficiency and assertiveness, when working with co-creation, was also achieved regarding processes that can improve efficiency in communication, product development, sourcing, production and management of the supply chain. The question of investigation for these topics was answered on page 283.

Finally, the development of a model of co-creation that can maximize the benefits and minimize the problems for the consumers, brands and supply chain was achieved through the structuration of the results gathered through the literature review, cases study, survey and interviews.

#### **5.4. Limitations and recommendations for future investigations**

One of the main limitations of the study was not being able to implement the new co-creation model in a real context, whether applied to a new brand or to an existing one.

Reaching consumers internationally was also a limitation. This would be important for a comparison with other markets. Meanwhile a survey in English was launched to start reaching international consumers and till now, from the 269 responses received the most responsive markets were the United States, the United Kingdom and The Netherlands. Responses from other countries were also received such as, Japan, Ireland, Australia, France, Malaysia, Trinidad and Tobago, India, Canada, Spain, Kuwait, Philippines, Vietnam, Singapore, South Africa, Israel, Romania, Italy, Norway, Hungary, Belize,

Czech Republic, Denmark, Russia, Slovenia, Poland, Brazil, Germany, Colombia, Switzerland, Antigua and Barbuda, Indonesia, Serbia, Benin, Bhutan, Argentina, China, Belgium, Belarus, Gabon, Austria, Pakistan and Ukraine. This should be continued in order to gather additional responses and achieve a large enough sample that can be representative of those markets and then be compared with the results from the sample obtained in Portugal.

Further research about clothing details for the different kinds of styles and products should be done more extensively as the details explored are generic.

Social networks integration in the co-creation process should also be analysed. Although the analysed co-creation brands rely on their websites for the process, social networks could provide additional means of communication and development.

Another topic that could be explored in the future with more detail are the emergent technologies such as AI and 3D in the context of being facilitators with the process with the co-creator, for analysis and execution of the product. This should be done by a multidisciplinary team.

Also, besides the previous, a more extensive work should be done with the supply chain to understand its viability to work with co-creation in other contexts that do not involve only manufacturers but also suppliers of raw materials.

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# Appendixes

## Survey for the consumers

### Portuguese version



Olá! O meu nome é Paulo Martins e este questionário faz parte de uma investigação no âmbito da realização da tese de doutoramento em Design de Moda (Universidade da Beira Interior e Universidade do Minho) com o título "Development of a co-creation model that streamlines the fashion process from the consumer to the manufacture" (em português, Desenvolvimento de um modelo de co-criação que simplifique o processo desde o consumidor até à produção). Com este questionário pretende-se compreender quais as preferências e opiniões dos consumidores para que as marcas de co-criação possam ir de encontro às suas reais necessidades. O preenchimento deste questionário destina-se a qualquer pessoa com idade igual ou superior a 18 anos e igual ou inferior a 64 anos, residentes em Portugal, que gostem ou gostariam de co-criar produtos de moda. No início do questionário será descrito brevemente o processo associado à co-criação de produtos de moda. Se efetuar o preenchimento do questionário num dispositivo móvel por favor faça-o com o ecrã na horizontal para aceder mais facilmente a todos os menus. Serão recolhidos alguns dados pessoais tais como género, idade, escolaridade, situação e âmbito profissional, remuneração mensal e área de residência. Não serão recolhidos dados como nome, email, ou qualquer número de identificação. A sua confidencialidade está garantida sendo que apenas o investigador tem acesso aos seus dados pessoais, os quais, em todo o caso, não serão divulgados, pois serão utilizados sob codificação. Não existem riscos psicológicos associados às questões. Os resultados do estudo serão divulgados através de publicações científicas podendo ser usados até 3 anos após a defesa da tese. Este estudo não é financiado e não existe qualquer benefício financeiro para qualquer dos envolvidos neste estudo. Ao responder a este questionário o participante não renuncia a nenhum dos seus direitos previstos pela lei. Qualquer dúvida poderá ser esclarecida através do email: [pmartins@ubi.pt](mailto:pmartins@ubi.pt). Orientador: Professor Doutor Rui Alberto Lopes Miguel.

Ao selecionar a opção "Concordo" na caixa abaixo assumo que irei colaborar livremente, que li e compreendi a informação e os esclarecimentos que me foram dados acerca da minha participação, e tive tempo suficiente para os ponderar e decidir. Aceito participar sabendo que nada me impede de mudar de posição sem que tal implique quaisquer perdas de direitos ou acarrete prejuízos pessoais. \*

Favor selecionar

A co-criação de produtos de moda tem lugar quando existe uma colaboração do consumidor (que faz parte de uma comunidade de consumidores ligados à marca) diretamente com a marca para a criação de novos produtos. Dois bons exemplos de marcas de moda que co-criam com os seus consumidores são a Threadless e a Awaytomars. Uma breve visita ao site de qualquer uma das marcas dará uma melhor perspetiva do seu funcionamento. O processo de co-criação pode ser entendido como uma customização ou personalização de um produto, podendo haver uma recompensa e/ou a associação do nome do co-criador ao produto co-criado. Atualmente o processo consiste na proposta de uma temática (pela marca) e, posteriormente, na receção de ideias dos consumidores. Após a receção das ideias estas são avaliadas pela marca e as melhores são comentadas e votadas pela comunidade. Por fim, a melhor ideia dará origem a um produto final.

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## Dados pessoais

### 1 - Género \*

- Feminino  
 Masculino

### 2 - Idade \*

- 18 - 24  
 25 - 34  
 35 - 44  
 45 - 54  
 55 - 64

- Ensino básico
- Ensino secundário
- Licenciatura
- Mestrado
- Doutoramento
- Outra

**4 - Situação profissional \***

- Empregado por conta de outrém
- Empregado por conta própria
- Desempregado
- Estudante
- Reformado
- Outra

**5- Área de profissão \***

- Administração, negócios e serviços
- Artes e design
- Ciências sociais e humanas
- Ciências e tecnologias
- Comunicação e informação
- Engenharia e produção
- Indústria têxtil e do vestuário
- Saúde e bem-estar
- Outra

**6 - Retribuição média mensal líquida \***

- de 635€
- 636€ a 799€
- 800€ a 999€
- 1000€ a 1499€
- 1500€ a 1999€
- + de 2000€
- Não tenho retribuição mensal

**7 - Residência \***

- Cidade
- Vila
- Aldeia

**8 - Distrito de residência \***

Favor seleccionar

## Produto de moda e co-criação

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**9 - Já co-criou produtos de moda? \***

- Sim
- Não

**10 - Considera que um produto de moda tem valor acrescentado quando há colaboração do consumidor com a marca para a sua co-criação? \***

- Sim
- Não

**11 - Porque gosta ou gostaria de participar na co-criação produtos de moda? (Indique a sua opinião acerca dos seguintes afirmações de 1 (não concordo) a 7 (concordo plenamente)) \***

	1	2	3	4	5	6	7
As recompensas por participar interessam-me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gostaria de me sentir mais satisfeito com os produtos de moda disponíveis no mercado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participo ou participaria para me expressar e me sentir orgulhoso(a) do que sou capaz de criar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Para ganhar novos conhecimentos sobre produtos de moda e a sua co-criação	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Por sentir curiosidade em explorar o processo de co-criação	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aumenta o meu estatuto social perante a comunidade da marca	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12 - Quais os incentivos que o fariam participar mais vezes na co-criação de produtos de moda? (Indique a sua opinião acerca dos seguintes incentivos de 1 (não me incentiva) a 7 (incentiva-me muito)) \*

	1	2	3	4	5	6	7
Recompensa monetária recebida de uma única vez	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A marca oferecer-me o produto que co-criei	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vouchers para comprar produtos da marca	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Royalties (% das vendas)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ter o meu nome no produto	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obter o reconhecimento da co-criação pela comunidade e pela marca	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conseguir obter o produto que ambicionava ter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13 - Quais os estilos de produtos de moda que mais interesse teria em co-criar? (Indique a sua opinião acerca dos estilos de produtos de moda de 1 (não tenho interesse em co-criar) a 7 (tenho muito interesse em co-criar)) \*

	1	2	3	4	5	6	7
Desportivo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clássico	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Casual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Tendência de moda	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sleepwear (roupa de dormir)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14 - Classifique as tipologias de produtos de acordo com o seu interesse em co-criá-las. (Indique a sua opinião acerca das tipologias de produtos de 1 (não tenho interesse em co-criar) a 7 (tenho muito interesse em co-criar)) \*

	1	2	3	4	5	6	7
Partes de cima (como por exemplo camisas, t-shirts ou blazers)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Partes de baixo (como por exemplo calças, calções ou saias)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peças de exterior (como por exemplo sobretudos ou gabardines)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vestidos ou macacões	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Roupa interior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calçado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Acessórios (como por exemplo gravatas ou meias)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outros acessórios (como por exemplo carteiras ou mochilas)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marroquinaria (como por exemplo carteiras ou mochilas em pele)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pijamas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fatos de banho, biquínis, calções de banho	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15 - Qual a frequência com que gosta ou gostaria de co-criar produtos de moda? \*

- Todos os dias  
 Dias interpolados  
 Semanalmente  
 Mensalmente  
 Quando sentir desejo de co-criar

16 - Considera que co-criar vários tipos de produtos de moda

- Sim  
 Não

Na secção seguinte pretende-se compreender quais das diferentes opções de co-criação são mais interessantes para os consumidores.

**17 - Seria mais interessante co-criar apenas pormenores do produto de moda ou o produto de moda completo? \***

- Apenas pormenores do produto de moda  
 O produto de moda completo

Se respondeu "O produto de moda completo" na questão anterior por favor ignore a questão seguinte.

**18 - Que tipo de pormenores do produto de moda gostaria de co-criar? (Indique a sua opinião acerca das opções seguintes de 1 (não gostaria de co-criar) a 7 (gostaria muito de co-criar))**

	1	2	3	4	5	6	7
Cores	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Estampagens / padrões	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aviamentos (como por exemplo fechos ou botões)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bordados	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pequenas aplicações (como por exemplo taxas ou ilhóses)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**19 - Tenho interesse em co-criar produtos de moda desde o design inicial até ao produto final. (Indique qual a sua opinião acerca desta afirmação de 1 (não concordo) a 7 (concordo plenamente)) \***

20 - Tenho interesse em co-criar produtos de moda pré-propostos pela marca através dos meus comentários, sugestões ou propostas de alterações e/ou melhorias do design ou materiais. (Indique qual a sua opinião acerca desta afirmação de 1 (não concordo) a 7 (concordo plenamente)) \*

1 2 3 4 5 6 7

21 - Tenho interesse em partilhar fotografias das peças presentes no meu guarda-roupa, a fim de que, os produtos criados pela marca correspondam aos meus desejos e expectativas. (Indique qual a sua opinião acerca desta afirmação de 1 (não concordo) a 7 (concordo plenamente)) \*

1 2 3 4 5 6 7

### Processo de co-criação

22 - Quais as informações que considera ser mais importante receber no início do processo de co-criação? (Indique a sua opinião acerca das opções seguintes de 1 (não considero importante) a 7 (considero muito importante)) \*

	1	2	3	4	5	6	7
Etapas do processo de co-criação e suas datas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quem fica com os direitos legais das ideias submetidas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tipo de recompensas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tema para o processo de co-criação	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recomendações de materiais	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Opções de estampagens / padrões para inspiração ou uso	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Opções de partes do produto de moda para inspiração ou uso (como por exemplo tipos de mangas)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Opções de detalhes do produto de moda para inspiração ou uso (como por exemplo tipos de bordados)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data estimada em que o produto irá estar à venda	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23 - Quais as informações que considera ser mais importante receber durante e após o processo de co-criação? Indique a sua opinião acerca das opções seguintes de 1 (não considero importante) a 7 (considero muito importante) \*

	1	2	3	4	5	6	7
Datas limites para submissão de propostas de produtos co-criados	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Estado dos processos de submissão dos produtos co-criados	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Datas dos processos de votação dos produtos co-criados	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resultados da votação da comunidade acerca dos produtos co-criados	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data de início da venda dos produtos co-criados	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Números das vendas dos produtos co-criados por si	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24 - Quais os fatores negativos da co-criação que pensa que poderão levar a uma perda de interesse no processo? (Indique a sua opinião acerca das opções seguintes de 1 (não me faria perder o interesse) a 7 (far-me-ia perder o interesse)) \*

	1	2	3	4	5	6	7
Não saber no início do processo qual vai ser o preço do produto	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Perda dos direitos legais das ideias submetidas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Saber que a marca e os seus produtos não são sustentáveis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
O tempo investido no processo de co-criação ser demasiado longo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Não saber como e onde o produto foi produzido	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Não ter o meu nome ou imagem associado ao produto co-criado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Saber que a marca não tem ética social	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

O produto final não corresponder ao que foi co-criado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ausência de recompensas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Existir pouca comunicação da marca com o consumidor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Pós-venda

25 - Se o produto de moda co-criado, quando entregue, não corresponder às suas expectativas, qual seria a sua ação? Indique a sua opinião acerca das opções seguintes de 1 (não o faria) a 7 (fá-lo-ia de certeza) \*

	1	2	3	4	5	6	7
Devolveria o produto apenas se o tamanho não for adequado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Devolveria o produto apenas se este tivesse falta de qualidade de materiais e/ou confeção	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Devolveria por não me identificar com o produto em termos estéticos como forma, silhueta ou cor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Não participaria em novos processos de co-criação da marca	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Não compraria mais produtos desta marca	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reclamararia junto da marca	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ficaria com o produto pois foi co-criado por mim	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26 - Quanto tempo estaria disposto a esperar para receber um produto co-criado se este fosse comprado em período de pré-venda (tendo em conta que este ainda teria que ser produzido)? \*

- Até um mês  
 Até dois meses  
 Mais de dois meses  
 Outros

A questão seguinte não é de resposta obrigatória, no entanto, gostaríamos que nos deixasse uma resposta.

criação que gostaria de colocar?

Digite aqui...

Enviar

## English version



Hello! My name is Paulo Martins and this survey is part of an investigation within the scope of my PhD thesis in Fashion Design (University of Beira Interior and University of Minho in Portugal) entitled "Development of a co-creation model that streamlines the fashion process from the consumer to the manufacture". This survey aims to understand the preferences and opinions of consumers so that co-creation brands can better meet their real needs. The completion of this survey is intended for anyone with ages between 18 and 64 years old, who like or would like to co-create fashion products. At the beginning of the survey, the process associated with the co-creation of fashion products will be briefly described. If you are doing the survey on a mobile device, please do so with the screen on the horizontal to enable access to all of the menus correctly. Some data will be collected like, gender, age, level of studies, professional situation, field of work, net monthly income and residence. Data like name, email or any number of identification will not be requested. Your confidentiality is guaranteed as only the researcher has access to the data collected and in any case, if used, will be under a coded system. There are no psychological risks associated with the questions. The results of the study will be reported through scientific publications and can be used till 3 years after the PhD research is ended. This study is not financed and there aren't any financial benefits for any of the involved. By answering this survey, the participant does not waive any of their rights under the law. Any doubts can be put by email to: pmartins@ubi.pt. Mentor of the study: Professor Rui Alberto Lopes Miguel

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By selecting the option "I agree" in the box below I assume that I will collaborate freely, that I read and understood the information given about the scope of my participation and that I had enough time to reflect about them. I accept participating, knowing that nothing forbids me from changing my mind and that I will not lose any of my rights. \*

Please Select

The co-creation of fashion products takes place when there is a collaboration between the consumer (who is part of a community of consumers linked to the brand) directly with the brand to create new products. Two good examples of fashion brands that co-create with their consumers are Threadless and Awavtomars. A brief visit to the website of any of the brands will

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understood as a customization or personalization of a product, and there may be a reward and/or the association of the co-creator's name to the co-created product. Currently, the process consists of proposing a theme (by the brand) and, subsequently, receiving ideas from consumers. After receiving the ideas they are evaluated by the brand and the best ones will be available for commenting and voting by the community. Ultimately, the best idea will become a real product that will be available to be bought by any consumer.

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## Personal information

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### 1 - Gender \*

- Female
- Male

### 2 - Age \*

- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64

### 3 - Level of studies \*

- Middle school
- Secondary school
- Bachelor's degree
- Master's degree
- Doctoral degree
- Other

### 4 - Professional situation \*

- Employed
- Self employed
- Unemployed
- Student
- Retired
- Other

- Administration, business and services
- Arts and design
- Communication and information
- Engineering and e production
- Health and well-being
- Science and technology
- Social and human sciences
- Textiles and garment industry
- Other

**6 - Net monthly income \***

- under 635€ or 540£ or 737\$
- 636€ or 541£ or 738\$ to 799€ or 681£ or 927\$
- 800€ or 682£ or 928\$ to 999€ or 851£ or 1159\$
- 1000€ or 852£ or 1160\$ to 1499€ or 1277£ or 1739\$
- 1500€ or 1278£ or 1740\$ to 1999€ or 1703£ or 2319\$
- more than 2000€ or 1704£ or 2320\$
- I don't have a monthly income

**7 - Residence \***

- City
- Town
- Village

**8 - Country of residence \***

Please Select

## Fashion products and co-creation

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**9 - Have you ever co-created fashion products? \***

- Yes
- No

10 - Do you consider that a fashion product has added value when it is co-created by means of cooperation between the consumer and the brand? \*

- Yes  
 No

11 - Why do you like or would like to participate in the co-creation of fashion products? (State your opinion for the following sentences from 1 (I don't agree) to 7 (I fully agree)) \*

	1	2	3	4	5	6	7
The rewards for participating interest me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would like to feel more satisfied with the products available in the market	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I participate or would participate to express myself and feel proud of what I am capable of creating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To gain new knowledge about fashion products and its co-creation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For feeling curious in explore the co-creation process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It increases my social status on the brands' community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12 - What incentives would make you participate more times in the co-creation of fashion products? (State your opinion for the following incentives from 1 (It doesn't interests me) to 7 (It interests me a lot)) \*

	1	2	3	4	5	6	7
Monetary reward fully received once	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The brand offering me the product that I co-created	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vouchers to buy products from the brand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Royalties (% from the sales)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having my name in the product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Be recognised for the co-creation by the community and the brand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being able to get the product that I envisioned to have	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13 - What styles of fashion products would you have more interest in co-creating? (State your opinion about the fashion styles from 1 (I don't have interest) to 7 (I have a lot of interest)) \*

Sporty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Classical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Casual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trending	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sleepwear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14 - Classify the types of products accordingly with your interest in co-creating them. (State your opinion about the types of products from 1 (I don't have interest) to 7 (I have a lot of interest)) \*

	1	2	3	4	5	6	7
Upper parts (as for example shirts, t-shirts or jackets)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bottoms (as for example trousers, shorts or skirts)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outerwear (as for example overcoats or raincoats)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dresses or overalls	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Underwear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Footwear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accessories (as for example ties or socks)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other accessories (as for example wallets or backpacks)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leather goods (as for example wallets or backpacks in leather)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pijamas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Swim suits, bikinis, bathing shorts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15 - What is the frequency in that you like or would like to co-create fashion products? \*

- Everyday
- Every other day
- Weekly
- Monthly
- When I feel like to

16 - Do you think that co-creating several types of fashion products simultaneously is more interesting than just co-creating one type of product? \*

- Yes  
 No

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In the following section it is intended the comprehension of which of the different co-creation options are more interesting for the consumers.

17 - Would it be more interesting to co-create just details of the fashion product or the full fashion product? \*

- Just details of the fashion product  
 The full fashion product

If you answered "The full fashion product" in the previous question please ignore the following question.

18 - What type of details of the fashion product would you like to co-create? (State your opinion about the following options from 1 (I wouldn't like to create) to 7 (I would like very much to co-create))

	1	2	3	4	5	6	7
Colours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trims (as for example zippers or buttons)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Embroideries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Small applications (as for example beading or eyelets)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19 - I have interest in co-creating fashion products from the initial design till the final product. (State your opinion about the sentence from 1 (I don't agree) to 7 (I fully agree)) \*

- 1    2    3    4    5    6    7

20 - I have interest in co-creating fashion products proposed by the brand through comments, suggestions or proposals of alterations and/or improvements to the design or materials. (State your opinion about the sentence from 1 (I don't agree) to 7 (I fully agree)) \*

1 2 3 4 5 6 7

21 - I have interest in sharing photographs of the garments present in my wardrobe, so that, the products created by the brand better meet my desires and expectations. (State your opinion about the sentence from 1 (I don't agree) to 7 (I fully agree)) \*

1 2 3 4 5 6 7

### Co-creation process

22 - What informations do you consider to be more important to receive in the beginning of the co-creation process? (State your opinion about the following options from 1 (I don't consider it important) to 7 (I consider it very important)) \*

	1	2	3	4	5	6	7
Stages of the co-creation process and its starting dates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Who keeps the legal rights over the ideas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Type of rewards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Theme for the co-creation process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recommendation of materials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Print options for use or inspiration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Options of parts of the fashion product for inspiration or use (as for example sleeve types)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Options of details of the fashion product for inspiration or use (as for example embroidery types)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Estimated sale date for the product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23 - What informations do you consider to be more important to receive during and after the co-creation process? (State your opinion about the following options from 1 (I don't consider it important) to 7 (I consider it very important)) \*

	1	2	3	4	5	6	7
Limit date for the submission of proposals of co-created products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Status of the submission process of co-created products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dates for the voting of the co-created products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Results of the community voting of the co-created products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beggining date of the sale of the co-created products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sales numbers of the products co-created by me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24 - What are the co-creation negative factors that can lead to a loss of interest in the product? (State your opinion about the following options from 1 (It wouldn't make me loose interest) to 7 (It would make me loose interest for sure)) \*

	1	2	3	4	5	6	7
Not knowing what will be the price of the product in the beggining of the process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Loss of the legal rights over the ideas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowing that the brand and its products are not sustainable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The time invested in the co-creation process being to long	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not knowing where or how the product was produced	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not having my name or image associated to the co-created product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowing that the brand doesn't have social ethics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The product not corresponding to what was co-created	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Absence of rewards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Low level of communication from the brand with the consumer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## After sale

25 - If the co-creation fashion product, when delivered, wouldn't correspond to the expectations, what would be your action? (State your opinion about the following options from 1 (I wouldn't do it) to 7 (I would do it for sure)) \*

	1	2	3	4	5	6	7
I would return it only if the size wouldn't fit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would return it only if it had lack of material or manufacturing quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I would return it if i didn't identify myself with the product aesthetically in terms of shape, silhouette or color	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would not participate in further co-creation processes from the brand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would not buy any more products from the brand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would make a complaint directly to the brand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would keep the product because it was co-created by me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26 - How much time would you be willing to wait for a co-created product if it was bought on pre-sale (having into account that it would still need to be manufactured)? \*

- Till one month
- Till two months
- Over two months
- Others

Answering the following question is not mandatory, although, we would like you to leave us an answer.

27 - Is there any additional consideration, opinion or suggestion about co-creation that you would like to leave us?

Digite aqui...

**Finish**

## **Interview for the fashion designers**

### **Script for the interview introduction**

O meu nome é Paulo Martins e esta entrevista faz parte de uma investigação no âmbito da realização da tese de doutoramento em Design de Moda (Universidade da Beira Interior e Universidade do Minho) com o título "Development of a co-creation model that streamlines the fashion process from the consumer to the manufacture" (em português, Desenvolvimento de um modelo de co-criação que simplifique o processo desde o consumidor até à produção). Com esta entrevista pretende-se compreender quais as opiniões dos designers de moda para que as marcas de co-criação possam ir de encontro às necessidades dos consumidores e da cadeia de abastecimento de uma forma mais assertiva. Esta entrevista destina-se a qualquer pessoa que esteja a trabalhar ou tenha trabalhado como designer de moda. Não serão recolhidos dados como nome, email ou qualquer número de identificação. A sua confidencialidade está garantida sendo que apenas o investigador tem acesso aos seus dados pessoais, os quais, em todo o caso não serão divulgados, pois serão utilizados sob codificação. Não existem riscos psicológicos associados às questões. Os resultados do estudo serão divulgados através de publicações científicas podendo ser usados até 3 anos após a defesa da tese. Este estudo não é financiado e não existe qualquer benefício para qualquer dos envolvidos neste estudo. Ao responder a este questionário o participante não renuncia a nenhum dos seus direitos previstos pela lei. Qualquer dúvida poderá ser esclarecida através do email: pmartins@ubi.pt. Orientador: Professor Doutor Rui Alberto Lopes Miguel. A co-criação de produtos de moda tem lugar quando existe uma colaboração do consumidor (que faz parte de uma comunidade de consumidores ligados à marca) diretamente com a marca para a criação de novos produtos. Dois bons exemplos de marcas de moda que co-criam com os seus consumidores são a Threadless e a Awaytomars. Uma breve visita ao site de qualquer uma das marcas dará uma melhor perspetiva do seu funcionamento. O processo de co-criação pode ser entendido como uma customização ou personalização de um produto, podendo haver uma recompensa e/ou a associação do nome do co-criador ao produto co-criado. Atualmente o processo consiste na proposta de uma temática (pela marca) e, posteriormente, na receção de ideias dos consumidores. Após a receção das ideias estas são avaliadas pela marca e as melhores são comentadas e votadas pela comunidade. Por fim, a melhor ideia dará origem a um produto final.

## Interview questions

1 - Idade? \*

ex.: 23

2 - Curso ou cursos que frequentou ou detém e respetivo grau académico? \*

3 - Cargo profissional? \*

4 - Número de anos de experiência profissional? \*

5 - Dimensão da empresa? \*

6 - De que modo o DNA de uma marca de co-criação poderá ser influenciado, face a uma marca tradicional, tendo em conta que a base de uma marca de co-criação é estar ligada diretamente aos consumidores? \*

7 - Um produto de moda co-criado com os consumidores tem mais valor acrescentado para a marca que um produto de moda criado apenas pelo designer? \*

8 - Pensa que as ideias recebidas dos consumidores e das suas comunidades são importantes para o processo de criação de novos produtos e para que as respetivas coleções sejam mais assertivas? \*

9 - Pode um número excessivo de submissão de ideias ser um problema para o sucesso do processo de co-criação? \*

10 - Se houvesse a possibilidade de usar um software de Inteligência Artificial para a análise e filtragem de dados (big data), nomeadamente ideias provenientes dos consumidores, isso seria uma ferramenta importante para o designer e para o sucesso do processo de co-criação?

11 - Produtos de moda co-criados terão um menor risco de falhar no mercado do que os desenvolvidos exclusivamente por um designer, pois, estes são votados pela comunidade de consumidores? \*

12 - Que informações relativas à transparência do processo, bem como, as necessárias para o processo de co-criação entende que deveriam e poderiam ser disponibilizadas pela marca para o consumidor? \*

13 - Co-criar vários tipos de produtos simultaneamente será mais ou menos interessante para a marca e para o consumidor? \*

14 - Seria mais benéfico para a marca co-criar apenas pormenores dos produtos de moda ou co-criar os produtos de moda completos? \*

15 - O conceito de produtos modulares aplicado a produtos co-criados poderá aumentar a eficiência e eficácia do processo e corresponder simultaneamente às expetativas dos consumidores? \*

16 - Como pode ser feito o sourcing de materiais e produção para produtos co-criados de forma a melhorar a rapidez do processo? \*

17 - Que informações, da parte da marca, considera ser fulcral serem partilhadas com a cadeia de abastecimento para uma maior eficiência e assertividade produtiva? \*

18 - Na sua visão quais deveriam ser as funções de um designer de moda numa marca de co-criação? \*

Enviar

## **Interview for the supply chain experts**

### **Script for the interview introduction**

O meu nome é Paulo Martins e esta entrevista faz parte de uma investigação no âmbito da realização da tese de doutoramento em Design de Moda (Universidade da Beira Interior e Universidade do Minho) com o título "Development of a co-creation model that streamlines the fashion process from the consumer to the manufacture" (em português, Desenvolvimento de um modelo de co-criação que simplifique o processo desde o consumidor até à produção). Com esta entrevista pretende-se compreender quais as opiniões dos especialistas da cadeia de abastecimento para que as marcas de co-criação possam ir de encontro às necessidades da cadeia de abastecimento de uma forma mais simplificada. Esta entrevista destina-se a qualquer pessoa que esteja a trabalhar ou tenha trabalhado como especialista da cadeia de abastecimento. Não serão recolhidos dados como nome, email ou qualquer número de identificação. A sua confidencialidade está garantida sendo que apenas o investigador tem acesso aos seus dados pessoais, os quais, em todo o caso não serão divulgados, pois serão utilizados sob codificação. Não existem riscos psicológicos associados às questões. Os resultados do estudo serão divulgados através de publicações científicas podendo ser usados até 3 anos após a defesa da tese. Este estudo não é financiado e não existe qualquer benefício para qualquer dos envolvidos neste estudo. Ao responder a este questionário o participante não renuncia a nenhum dos seus direitos previstos pela lei. Qualquer dúvida poderá ser esclarecida através do email: [pmartins@ubi.pt](mailto:pmartins@ubi.pt). Orientador: Professor Doutor Rui Alberto Lopes Miguel. A co-criação de produtos de moda tem lugar quando existe uma colaboração do consumidor (que faz parte de uma comunidade de consumidores ligados à marca) diretamente com a marca para a criação de novos produtos. Dois bons exemplos de marcas de moda que co-criam com os seus consumidores são a Threadless e a Awaytomars. Uma breve visita ao site de qualquer uma das marcas dará uma melhor perspetiva do seu funcionamento. O processo de co-criação pode ser entendido como uma customização ou personalização de um produto, podendo haver uma recompensa e/ou a associação do nome do co-criador ao produto co-criado. Atualmente o processo consiste na proposta de uma temática (pela marca) e, posteriormente, na receção de ideias dos consumidores. Após a receção das ideias estas são avaliadas pela marca e as melhores são comentadas e votadas pela comunidade. Por fim, a melhor ideia dará origem a um produto final.

## Interview questions

1 - Idade? \*

ex.: 23

2 - Curso ou cursos que frequentou ou detém e respetivo grau académico? \*

3 - Cargo profissional? \*

4 - Número de anos de experiência profissional \*

5 - Dimensão da empresa? \*

6 - Qual das seguintes considera ser menos complexa para a gestão e eficiência produtiva e para a cadeia de abastecimento? Co-criação, co-produção ou customização em massa? \*

7 - Quais os problemas que poderiam surgir da integração da produção de produtos co-criados em pequena escala ou complexos, numa linha de produção dedicada a produção em massa? \*

8 - Das seguintes filosofias de produção qual consideraria ser a mais adequada para trabalhar com marcas de co-criação, podendo estas ter pequenos lotes ou produtos complexos de uma forma mais eficiente e

9 - Para a gestão e eficiência produtiva e da cadeia de abastecimento é preferível a produção de pequenas quantidades ou quantidades unitárias? \*

10 - Se as pequenas quantidades forem baseadas em produtos modulares, isso poderia aumentar a eficiência produtiva? \*

11 - A produção contínua de produtos de moda durante todo o ano, mesmo durante as épocas baixas, poderia ser um incentivo para as empresas produzirem para marcas de co-criação mesmo que em pequena escala ou produtos complexos? \*

12 - Que informações, da parte das marcas, considera fulcral serem partilhadas com a indústria para uma maior eficiência e assertividade produtiva? \*

Enviar

## **Fashion designers' interviews transcripts**

Sistema de Codificação Individual: DMO1

Data: 13/11/21

Hora: 10:00

1. Idade: 36

2. Curso ou cursos que frequentou ou detém e respetivo grau académico: Licenciatura e Pós-Graduação em Design de Moda

3. Cargo Profissional: Designer de Moda

4. Número de anos de experiência profissional: 7

5. Dimensão da empresa: +/- 300 trabalhadores

6. De que modo o ADN de uma marca de co-criação poderá ser influenciado, face a uma marca tradicional, tendo em conta que a base de uma marca de co-criação é estar ligada diretamente aos consumidores?

Oralidade: A marca pode ser influenciada de uma forma positiva ou negativa. Depende do tipo de feedback que poderá ter mas claro que pode sempre ajudar a crescer a marca, se tivermos sempre em conta uma seleção muito concisa do tipo de produtos que se aprovam e avançam. Pode ser sempre uma influência positiva, como por exemplo, o acrescentar de uma mais-valia do novo produto ou de um detalhe a um produto que já existe para conseguir ter uma correspondência com a necessidade do mercado.

7. Um produto de moda co-criado com os consumidores tem mais valor acrescentado para a marca que um produto de moda criado apenas pelo designer?

Oralidade: Sim, porque o designer tem sempre uma ideia muito própria e poderá estar até mesmo viciado no seu próprio produto e um produto que seja criado pelos consumidores vai ter sempre a mais-valia de corresponder a uma necessidade de mercado que exista. Para o designer, mesmo tendo em conta que vai haver uma

correspondência em termos de funcionalidade do produto e uma correspondência de mercado, o criado pelo consumidor acaba por ser um produto mais incisivo.

8. Pensa que as ideias recebidas dos consumidores e das suas comunidades são importantes para o processo de criação de novos produtos e para que as respetivas coleções sejam mais assertivas?

Oralidade: Sim, sem dúvida. As coleções quando são co-criadas dirigem-se a um tipo específico de mercado, acabam por ter um objetivo em concreto, ou seja, não há tanta divagação no que concerne ao produto. Acaba por ao corresponder a uma necessidade já existente no mercado.

9. Pode um número excessivo de submissão de ideias ser um problema para o sucesso do processo de co-criação?

Oralidade: Pode, porque se realmente esta submissão de ideias não tiver um processo de submissão mais concreto com um objetivo que seja comum, por exemplo, em que num produto haja uma panóplia de pedidos, sugestões ou feedbacks muito vasto, e, se não houver uma ideia muito concreta do que é a marca e para o que a marca se dirige, esta pode-se perder e pode inclusivé falhar o que significa que este processo de seleção é muito importante para que haja realmente uma identificação, primeiro com a marca e depois com o que a marca pretende implementar no mercado.

10. Se houvesse a possibilidade de usar um software de Inteligência Artificial para a análise e filtragem de dados (big data), nomeadamente ideias provenientes dos consumidores, isso seria uma ferramenta importante para o designer e para o sucesso do processo de co-criação?

Oralidade: Seria sempre uma mais-valia porque o número de ideias que pode haver para uma co-criação terá que ter sempre um determinado e limitado número de ideias. E sim, claro que uma inteligência artificial pode ser uma grande mais-valia para selecionar logo à partida as que são totalmente inviáveis, seja por produção, seja por criação, ou implementação no mercado e o tempo previsto de duração no mercado, mas também,

para selecionar aquelas que são realmente mais relevantes e até mesmo as que se possam adaptar ao tipo de maquinaria que a empresa possui e que claro, sejam o mais realizáveis possível e que possam também ter um melhor equilíbrio entre um desenvolvimento que é uma mais-valia para a marca e uma mais-valia também para o consumidor.

11. Produtos de moda co-criados terão um menor risco de falhar no mercado do que os desenvolvidos exclusivamente por um designer, pois, estes são votados pela comunidade de consumidores?

Oralidade: Os produtos que são desenvolvidos por um designer são muito centrados o que significa que poderão não ter algumas especificidades que possam estar em falta e até mesmo não estar totalmente em linha com as necessidades de mercado pois nós trabalhamos muito à frente do mercado final. Esta visão ampla pode sempre garantir que através até de um pequeno detalhe se consiga uma resposta eficaz ao mercado.

12. Que informações relativas à transparência do processo, bem como, as necessárias para o processo de co-criação entende que deveriam e poderiam ser disponibilizadas pela marca para o consumidor?

Oralidade: Acho que de uma forma geral quem fornece o feedback deve estar por dentro da maior parte daquilo que é importante para marca. Há certos pontos que nunca deve haver ausência de informação que são principalmente a base da marca, no que é que consiste a marca, noção de quais são as tendências, pois é importante para o consumidor não divagar sobre um tipo de produto tendo em conta padrões, cores ou silhuetas e também algo muito importante para aliciar a co-criação acho que pode ser também a comunicação, o cliente saber onde o seu produto vai ser apresentado e vendido, seja online ou offline. Sendo uma co-criação tem que haver algum trabalho entre consumidor e designer.

13. Co-criar vários tipos de produtos simultaneamente será mais ou menos interessante para a marca e para o consumidor?

Oralidade: A marca tem sempre o seu core o que não significa que não se possa expandir para outro tipo de produtos, dependendo sempre do tipo de marca que é. Mas eu acho que numa marca que não seja focada apenas numa identidade acho que é mais benéfico se expandir para outro tipo de produtos pois pode complementar as vendas e trazer uma mais-valia para a sua gama de produtos core. No entanto dá mais trabalho e podemos perder o foco e a especialização numa gama de produtos. Mas ter uma oferta mais vasta também pode trazer mais reconhecimento. Talvez ter uma marca com sub-marcas fosse o ideal. Para o consumidor traz uma grande mais-valia que é ter dentro de uma marca só mais do que um produto.

14. Seria mais benéfico para a marca co-criar apenas pormenores dos produtos de moda ou co-criar os produtos de moda completos?

Oralidade: Enquanto marca de co-criação é mais benéfico se estivermos a co-criar com detalhes do produto porque o produto core é sempre aquilo que está mais desenvolvido. Não significa que pontualmente não possa haver desenvolvimento de novos produtos ou até mesmo haver necessidade de criar novos produtos, mas em termos de quantificação estamos a falar quase de um oito para um dois, em dez. Oito seria relativo aos pormenores e dois relativo a novos produtos a desenvolver. São sempre muito mais importantes os pequenos pormenores.

15. O conceito de produtos modulares aplicado a produtos co-criados poderá aumentar a eficiência e eficácia do processo e corresponder simultaneamente às expectativas dos consumidores?

Oralidade: Acho que pode aumentar imenso a eficácia do processo porque acabamos por ter um produto muito mais fechado onde há muito mais rapidez na resposta e o produto já está em parte mais aceite pelos consumidores. Para o consumidor claro que um produto modular acaba por ter sempre menos originalidade mas acho que ao termos uma parte modular será benéfico para ambas as partes.

16. Como pode ser feito o sourcing de materiais e produção para produtos co-criados de forma a melhorar a rapidez do processo?

Oralidade: O ideal seria ter sempre material em armazém. O que não temos em armazém há que nunca perder os timings de pesquisa de mercado e sobretudo estabelecer boas relações com os fornecedores para que sempre que haja necessidades poderemos ter rapidez na resposta. Além de serviços com resposta rápida como stock-services ou crús. Temos também situações como agora que temos escassez de matérias-primas e neste caso aquilo que é necessário fazer para termos rapidez de resposta é termos o contacto rápido de vários fornecedores onde podemos ter uma resposta com uma rapidez e consequentemente acelerar o processo. Traz sempre mais-valias seja qual for a matéria-prima. A relação com o fornecedor é mesmo muito importante. Pode fazer a diferença entre ter o produto ou não.

17. Que informações, da parte da marca, considera ser fulcral serem partilhadas com a cadeia de abastecimento para uma maior eficiência e assertividade produtiva?

Oralidade: Datas. Datas são fundamentais. Acho que a principal são as datas porque são importantes, mas também para termos aqui uma boa relação e termos uma eficácia e assertividade produtiva acho que é também o fornecedor saber o que é marca e no que ela se foca para que o fornecedor saiba também o que nos poderá apresentar. Alguns processos, pois, é importante para os fornecedores saberem por exemplo datas de saídas de armazéns para que este compreenda qual o tempo que tem para produzir mas acho que a partilha deve ser co-medida. Devemos sempre mostrar algumas preocupações. Acerca de fornecedores se calhar partilharia informação apenas sobre alguns.

18. Na sua visão quais deveriam ser as funções de um designer de moda numa marca de co-criação?

Oralidade: A função principal de um designer numa marca é trazer funcionalidade ao produto. Numa marca de co-criação pode ainda trazer a mais-valia de trazer uma interação, outras perspetivas, que são sempre muito mais importantes e interessantes quando debatidas, seja acerca da coleção, peças, produtos, acessórios ou aplicabilidade ao mercado. O designer pode trazer uma visão mais vanguardista ou clássica do produto dependendo da marca mas sempre com a visão da marca. O designer vai fazer então a unificação das ideias dos consumidores com a marca, ou seja, é a ponte da ideia para o produto final. Pode também estar envolvido no sourcing de materiais, soluções de cofeção e seguir o desenvolvimento dos produtos.

Sistema de Codificação Individual: DMO2

Data: 13/11/21

Hora: 19:00

1. Idade: 29

2. Curso ou cursos que frequentou ou detém e respetivo grau académico: Curso profissional em Design de Moda

3. Cargo Profissional: Designer de Moda Sénior

4. Número de anos de experiência profissional: 8

5. Dimensão da empresa: +/- 180 trabalhadores

6. De que modo o ADN de uma marca de co-criação poderá ser influenciado, face a uma marca tradicional, tendo em conta que a base de uma marca de co-criação é estar ligada diretamente aos consumidores?

Oralidade: Nós trabalhamos e temos que ver que a moda é baseada em tendências e nós temos que ter sempre em mente que por muito que uma marca de co-criação tenha por base a opinião do cliente, nós temos sempre que seguir tendências e isto claro que vai depender do tipo de produto ou do negócio de que estejamos a falar. A Threadless quase que absorve diretamente a opinião do cliente e consegue crescer nesse conceito ou com essa base. Isso é bom, isso é mau, isso é uma opinião que vai depender: a marca vai ter que definir realmente o seu ADN, se é o consumidor que dita o caminho da empresa e acho que isso depois se vai refletir em valores, portanto se a marca cresce economicamente através da opinião do consumidor isso permite que a opinião do consumidor seja fulcral para o crescimento da empresa. Acho que aí vão ter que abdicar realmente um bocado do ADN para conseguirem crescer. Há outras em que se calhar essa abertura à expansão de produtos vai prejudicá-la ou vão-se perder porque, entretanto, não se tem um foco e não se consegue crescer ou direcionar a marca. Eu aqui não vejo que tenha que haver uma regra, portanto isto vai sempre depender da opinião ou da direção que a marca queira tomar e realmente dos lucros ou resultados que a empresa tenha com isso. Quando estamos a falar em marcas de co-criação estamos a falar de algo muito abrangente pois a co-criação vai sempre depender do consumidor. A marca

de co-criação deve preocupar-se em criar barreiras na co-criação para crescer e gerir a opinião do cliente. Por exemplo há falta de fatos amarelos e um cliente que procura um fato amarelo vai pedir à marca de co-criação pois ele tem essa necessidade. Cabe à marca de co-criação definir se é vantajoso ou não introduzir no mercado esse produto.

7. Um produto de moda co-criado com os consumidores tem mais valor acrescentado para a marca que um produto de moda criado apenas pelo designer?

Oralidade: Acho que isso vai depender da dimensão que se consiga atingir. Quando se fala de marcas, à partida, se for uma marca com alguma organização e estrutura, vão ser marcas que estão defendidas por uma base de dados que permite saber de antemão o que é que mais vende. A co-criação vai dar importância à opinião do cliente. Os valores dizem que o made-to-measure e as marcas de co-criação estão a crescer, mas é difícil responder a esta pergunta porque vai sempre depender de valores. Pode haver abertura à co-criação mas se a co-criação não for contida pode matar a marca. Na indústria trabalhamos muitas vezes com mínimos e a co-criação pode não ter uma boa relação ou pode não ser benéfica neste tipo de situações. Estamos a abrir uma porta ao cliente para fazer a sua própria criação mas estamos a prejudicar-nos porque podemos depois estar a criar stocks de excedentes ou seja o sucesso ou insucesso do produto vai ditar muito o sucesso da marca. Podemos permitir ao cliente sonhar e dar-lhe vários ingredientes, mas não lhe podemos dar um supermercado inteiro e dizer-lhe, escolhe o que queres, sabendo que ele é um cliente. Vai depender da dimensão claro, mas é preciso ter muito cuidado com este balanço se damos uma oferta muita vasta ou se deixamos que o consumidor tome realmente as decisões que vão definir o sucesso ou insucesso do produto. Temos que o deixar brincar com aquilo com que consideramos que é seguro.

8. Pensa que as ideias recebidas dos consumidores e das suas comunidades são importantes para o processo de criação de novos produtos e para que as respetivas coleções sejam mais assertivas?

Oralidade: Acho que quanto maior for a proximidade ao cliente maior é a probabilidade de acertarmos nas suas necessidades. Muitas das vezes a decisão não tem que ser tomada pela empresa. É preciso recolher a opinião dos clientes para tomar decisões importantes para a empresa. A opinião do cliente é extremamente importante no sucesso da marca.

9. Pode um número excessivo de submissão de ideias ser um problema para o sucesso do processo de co-criação?

Oralidade: Isto depende se foram factíveis ou não. Quanto à informação, quanto mais melhor, mas quanto mais diversificamos menos controlo temos. Há que haver abertura a várias ideias pois quanto mais ideias mais material temos para trabalhar. Agora pôr em prática essas ideias discordo porque se não se consegue direccionar a marca pode-se perder, por isso pois as pessoas começam a perguntar o que somos porque já somos tudo, não temos uma identidade e aí vamos perder a identidade. Depende do que cada marca defende.

10. Se houvesse a possibilidade de usar um software de Inteligência Artificial para a análise e filtragem de dados (big data), nomeadamente ideias provenientes dos consumidores, isso seria uma ferramenta importante para o designer e para o sucesso do processo de co-criação?

Oralidade: Acho que sim, sou totalmente a favor. Acho que ajudaria bastante.

11. Produtos de moda co-criados terão um menor risco de falhar no mercado do que os desenvolvidos exclusivamente por um designer, pois, estes são votados pela comunidade de consumidores?

Oralidade: A nível de risco acho que é igual para os dois. Não havendo designer não há inovação e esta é precisa e bem-vinda e deve existir inovação. Logo o trabalho do designer é bastante importante. Se estamos a falar de sucesso, crescimento ou números acho que é importante existirem as duas vertentes. É preciso um trabalho de inovação e design para não saturar o mercado. Na co-criação se não se conseguir controlar a expectativa do cliente a margem de insatisfação também pode ser delicada.

12. Que informações relativas à transparência do processo, bem como, as necessárias para o processo de co-criação entende que deveriam e poderiam ser disponibilizadas pela marca para o consumidor?

Oralidade: Sou totalmente a favor da transparência. Dar a conhecer a origem dos produtos e o ciclo dos produtos. A nossa sociedade está cada vez mais informada, portanto é importante revelar o desenvolvimento do produto.

13. Co-criar vários tipos de produtos simultaneamente será mais ou menos interessante para a marca e para o consumidor?

Oralidade: Acho que tem que ser a marca a definir isso. Enquanto for vantajoso para a marca e a marca consiga crescer economicamente com a opinião do cliente acho bem, mas acho que a marca tem que ter sempre um core business e um foco e tudo o que se desvie é um risco para a marca porque estamos a abrir um leque de possibilidades que pode fazer com que não haja especialização em nada e o próprio cliente a dada altura vai perguntar quem somos nós. É importante a marca ter uma história e uma identidade e não desfocar dessa perspectiva. Não sou contra a variedade de produtos, mas voto num foco e num core.

14. Seria mais benéfico para a marca co-criar apenas pormenores dos produtos de moda ou co-criar os produtos de moda completos?

Oralidade: Votando, votaria em detalhes, porque se consegue gerir melhor a nível de mínimos e gestão de encomendas e dar pequenos detalhes que o cliente pode transformar. O consumidor ia adorar essa possibilidade, mas eu defendo que devem ser dados apenas pequenos detalhes. É muito difícil gerir uma marca nessas condições.

15. O conceito de produtos modulares aplicado a produtos co-criados poderá aumentar a eficiência e eficácia do processo e corresponder simultaneamente às expectativas dos consumidores?

Oralidade: Acho que sim. A rentabilidade de recursos, de timing.... Claro que não se pode modularizar tudo porque se falamos de co-criação estamos a falar em criação portanto é importante haver um espaço para liberdade mas tens que existir uma parte modular para se conseguir a rentabilização da marca.

16. Como pode ser feito o sourcing de materiais e produção para produtos co-criados de forma a melhorar a rapidez do processo?

Oralidade: Acho que primeiro que tudo esse controle deve ser sempre feito pela marca e se estivermos a falar de timings é importante isso ser feito. Uma relação com fornecedores também é importante e se são relações que funcionam devem ser mantidas. Materiais que sejam entregues rapidamente também seriam uma mais-valia, bem como, fáceis de trabalhar em termos de opções de produto final.

17. Que informações, da parte da marca, considera ser fulcral serem partilhadas com a cadeia de abastecimento para uma maior eficiência e assertividade produtiva?

Oralidade: Acho que os fornecedores têm que ter conhecimento de causa do tipo de produto que estamos a trabalhar até porque a partir do momento em que conhecem o nosso produto eles conseguem direcionar-se. Datas, claro que também são importantes. É também importante esclarecer a logística. A nível de materiais e fornecedores isso depende se eu não quero que a unidade produtiva saiba onde vou fornecer-me. No entanto, eu não vejo problema em a unidade produtiva saber quais são os meus fornecedores. Se faltar material a unidade produtiva vai falar diretamente com o fornecedor e vai-me facilitar o trabalho a mim.

18. Na sua visão quais deveriam ser as funções de um designer de moda numa marca de co-criação?

Oralidade: A função do designer de moda será a de conseguir perceber as necessidades do cliente. Por muito que seja uma decisão comercial ele tem que se preocupar em perceber o que é que vende e resulta e perceber o cliente para depois conseguir direcionar e aproximar o produto ao cliente. Logo a interpretação da informação vai cair muito nisso. A função do designer vai ser efetivamente conhecer o cliente, estabelecer a relação de proximidade com o cliente e conseguir satisfazer o cliente. Ser o intermediário vai ser a grande responsabilidade do designer. Dependendo da dimensão da marca, se for uma empresa pequena pode ser responsabilidade do designer garantir que todo o processo seja cumprido. No entanto, garantir a qualidade não é responsabilidade do designer, mas

é do seu interesse garantir que isso seja bem feito. Não é possível garantir que a mensagem chegue ao final do processo e que seja cumprida corretamente. Só se quem a criou se responsabilizar em controlar o processo de trabalho é que se consegue garantir que o processo vai ser bem feito e que cumpriu os requisitos iniciais.

Sistema de Codificação Individual: DMO3

Data: 15/11/21

Hora: 14:30

1. Idade: 27

2. Curso ou cursos que frequentou ou detém e respectivo grau acadêmico: Curso profissional e Mestrado em Design de Moda

3. Cargo Profissional: Designer de Moda

4. Número de anos de experiência profissional: 5

5. Dimensão da empresa: +/- 350 trabalhadores

6. De que modo o ADN de uma marca de co-criação poderá ser influenciado, face a uma marca tradicional, tendo em conta que a base de uma marca de co-criação é estar ligada diretamente aos consumidores?

Oralidade: Para mim o ADN de uma marca convencional segue um caminho em que trabalha com tendências, prospeções e não trabalha muitas das vezes com necessidades diretas do consumidor enquanto que a marca de co-criação ao trabalhar diretamente com o consumidor sabe aquilo que é necessário, ou seja, influencia o seu ADN pois pode de certa forma estar a criar apenas para o consumidor final. As marcas de co-criação podem perder muitas das vezes a sua identidade, no sentido em que as marcas de co-criação são mais abrangentes nos inputs. A marca é construída pelas pessoas e não por designers ou criadores. Mas penso que o consumidor não deveria influenciar todos os produtos da marca. A marca pode ter um setor ou uma parcela da marca que é co-criada pois esta tem inúmeras vantagens. Além de ser muito mais direcionada é quase cirúrgica para aquela necessidade, mas também acho que deve ter em parte a identidade. A marca deve criar necessidade. Tudo bem que são produtos mais arriscados, mas pode colmatar

esse risco com por exemplo o made to order ou a não acumulação de stocks. Ou pode até mesmo trabalhar com o 3D (virtuais) e só depois produzir as roupas. Deve ser um equilíbrio com o método mais tradicional. Uma marca só de co-criação corre o risco de perder a identidade ou de ser super abrangente.

7. Um produto de moda co-criado com os consumidores tem mais valor acrescentado para a marca que um produto de moda criado apenas pelo designer?

Oralidade: Eu acho que é uma mais-valia para a marca no sentido que o consumidor hoje em dia querem intervir cada vez mais no processo da obtenção do produto. Cada vez quer fazer mais parte do seu produto. Não quer só saber onde foi feito e saber onde pode intervir e dizer que fez parte do processo e do produto. Tem mais valor acrescentado para a marca no sentido em que talvez traga consumidores que querem intervir, logo pode ter mais vendas nesse sentido. Mas de certa forma vão precisar sempre dos designers. Acho que não traz assim tanto valor acrescentado como isso.

8. Pensa que as ideias recebidas dos consumidores e das suas comunidades são importantes para o processo de criação de novos produtos e para que as respetivas coleções sejam mais assertivas?

Oralidade: Sim, sem dúvida. As tendências são feitas a partir dos comportamentos das pessoas e das suas comunidades, portanto o consumidor vai ser sempre importante na criação de novos produtos.

9. Pode um número excessivo de submissão de ideias ser um problema para o sucesso do processo de co-criação?

Oralidade: Sem dúvida. Eu penso que na medida em que se não houver um designer para afunilar essas sugestões para o que a marca quer transmitir podemos ter uma marca à deriva e que quer comunicar tudo e, portanto, não comunica nada.

10. Se houvesse a possibilidade de usar um software de Inteligência Artificial para a análise e filtragem de dados (big data), nomeadamente ideias provenientes dos consumidores, isso seria uma ferramenta importante para o designer e para o sucesso do processo de co-criação?

Oralidade: Sim, claro que sim. Às vezes nem é a questão de serem ideias diferentes, mas a forma como as pessoas expressam essas ideias pode ser feita de forma diferente. Havendo um sistema de inteligência artificial que filtrasse de certa forma o principal das ideias já ajudava imenso.

11. Produtos de moda co-criados terão um menor risco de falhar no mercado do que os desenvolvidos exclusivamente por um designer, pois, estes são votados pela comunidade de consumidores?

Oralidade: Sim, eu penso que têm menos risco de falhar no sentido de que se o consumidor, à partida vai comprar, apesar não ser assim tão linear quanto isso. O consumidor pode achar que precisa daquilo e no fim não comprar, mas eu penso que é um pouco menos arriscado e um pouco mais cirúrgico do que estar só a avaliar dados estatísticos comerciais, porque ao avaliar só históricos comerciais podemos cair no erro de estar sempre a criar os mesmos produtos que é o que muitas vezes acontece nas grandes empresas com repetição de modelos que vendem a acaba por se ficar ali num ciclo porque é aquilo que vende.

12. Que informações relativas à transparência do processo, bem como, as necessárias para o processo de co-criação entende que deveriam e poderiam ser disponibilizadas pela marca para o consumidor?

Oralidade: Tudo o que tenha a ver com o processo e com o ciclo do produto para que o consumidor saiba como o produto foi realmente feito à parte do processo criativo. Como falado anteriormente o consumidor quer estar cada vez mais dentro do processo e intervir.

13. Co-criar vários tipos de produtos simultaneamente será mais ou menos interessante para a marca e para o consumidor?

Oralidade: Eu acho que o consumidor efetivamente precisa de alguma variedade, no entanto, tenho visto que quanto mais focado e especializado um produto é, melhor ele é. Portanto às vezes vale mais as marcas focarem-se em dois, três, quatro produtos que a marca sente que tem a capacidade de fazer bem porque depois aquilo vai ser um produto chave. A pessoa quando pensar numa mochila vai pensar nessa mochila e não numa mochila de outra loja que tem trinta produtos diferentes. Tem que ser equilibrado tanto na quantidade como na qualidade dos produtos. A quantidade e qualidade da informação recebida dos consumidores tem que ser muito bem afunilada, bem como, a quantidade de produtos que a marca quer co-criar porque depois há sempre o risco de dispersão.

14. Seria mais benéfico para a marca co-criar apenas pormenores dos produtos de moda ou co-criar os produtos de moda completos?

Oralidade: Se é para co-criar é para co-criar por inteiro, pois, penso que o consumidor poderá ter uma base daquilo que é um produto de moda que ele quer, no entanto, eu sinto que se o consumidor sentir que só pode intervir em certa parte do produto não sei se ele se vai sentir totalmente ressarcido nessa participação. Acho que o consumidor fica mais ligado ao produto se puder intervir no seu todo.

15. O conceito de produtos modulares aplicado a produtos co-criados poderá aumentar a eficiência e eficácia do processo e corresponder simultaneamente às expectativas dos consumidores?

Oralidade: Pode ser uma mais-valia para a marca a questão dos produtos modulares. O facto de o consumidor já ter elementos pré-definidos que pode customizar até pode de certa forma afunilar um pouco mais as escolhas que a marca vai ter de fazer. Em vez de ser uma caixa aberta de sugestões, a marca balizar logo as escolhas e materiais possíveis pode ajudar sem dúvida o processo de co-criação.

16. Como pode ser feito o sourcing de materiais e produção para produtos co-criados de forma a melhorar a rapidez do processo?

Oralidade: Trabalhar o mais local e regional possível, no entanto, isso limitaria um pouco a própria empresa. Dependeria dos recursos da empresa e do local onde a empresa trabalha. Também ter o máximo de produtos não perecíveis em stock. Se possível ter rolos de matéria-prima que sabemos que por norma é utilizada.

17. Que informações, da parte da marca, considera ser fulcral serem partilhadas com a cadeia de abastecimento para uma maior eficiência e assertividade produtiva?

Oralidade: Penso que a marca deve ser o mais transparente possível em todas as fases da cadeia de abastecimento. Partilhar informação com os fornecedores poderia agilizar o processo e até nos resolver alguns problemas, como datas ou fornecedores. Não vejo propriamente grande problema em partilhar informação com fornecedores a não ser que sejamos uma marca super exclusiva num patamar super exclusivo e queira manter sigilo. De certa forma isso cria uma relação de cumplicidade com o produtor. Haver uma nivelção de estatuto entre fornecedor e marca é importante.

18. Na sua visão quais deveriam ser as funções de um designer de moda numa marca de co-criação?

Oralidade: A principal função de um designer numa marca de co-criação é a de afunilar as ideias dos consumidores. É definir a mensagem que a marca quer passar, porque mesmo sendo uma marca de co-criação tem que ter uma imagem e uma mensagem. Escolher também as matérias-primas porque as pessoas têm que ter um rol de opções de onde escolher porque se o consumidor não tiver conhecimento básicos de moda se calhar não pensa em certos materiais sobre os quais o designer tem conhecimento. E também trabalhar diretamente com a área comercial e mesmo sendo uma marca de co-criação tem que haver uma relação com o histórico de vendas porque se os consumidores estão a pedir um produto de moda que está em voga naquele momento, mas depois se calhar não compram assim tanto, tem que se perceber o que realmente se passa e assim o designer tem que trabalhar de forma próxima com a área comercial. É necessário o designer ter um melhor conhecimento comercial. Ou o designer é mais direcionado durante a formação e isso é um grande problema, porque o designer não está habituado

a trabalhar com o business ou então o designer tem que trabalhar com a área comercial e não ter problemas com isso e focar-se no negócio.

Sistema de Codificação Individual: DMO4

Data: 15/11/21

Hora: 16:00

1. Idade: 25

2. Curso ou cursos que frequentou ou detém e respetivo grau académico: Licenciatura em Design de Moda

3. Cargo Profissional: Designer de Moda

4. Número de anos de experiência profissional: 3

5. Dimensão da empresa: +/- 170 trabalhadores

6. De que modo o ADN de uma marca de co-criação poderá ser influenciado, face a uma marca tradicional, tendo em conta que a base de uma marca de co-criação é estar ligada diretamente aos consumidores?

Oralidade: Acho que é super importante pelo facto de o consumidor final ter uma opinião sobre o produto. Quanto ao carácter da marca ela tem que estabelecer o tipo de ADN que pretende seguir e dar oportunidade aos consumidores para intervirem. De certo modo se os consumidores estiverem sempre a fazer alterações vai ser algo que está sempre em constante mudança, o que também pode não ser mau pois as marcas têm que se modernizar. Mesmo a nível de gestão e planeamento não é fácil se não houver um ADN definido. É importante o consumidor ter o poder de alteração mas não de tal modo que possa modificar tudo.

7. Um produto de moda co-criado com os consumidores tem mais valor acrescentado para a marca que um produto de moda criado apenas pelo designer?

Oralidade: Tem porque quando é feito por um designer estamos a falar de uma única pessoa, enquanto que, quando é o consumidor pode haver vários pontos onde se podem ir buscar várias ideias. O facto é que por vezes o problema de uma marca ter o mesmo designer muitos anos é o de que nada evolui. É sempre o mesmo método, as mesmas tipologias e cai-se na rotina. Enquanto que o consumidor pode dar outra visão do produto e outras ideias. Quanto ao produto se for um produto mais exclusivo justificar-se-ia uma preço mais elevado.

8. Pensa que as ideias recebidas dos consumidores e das suas comunidades são importantes para o processo de criação de novos produtos e para que as respetivas coleções sejam mais assertivas?

Oralidade: Acredito que os consumidores possam trazer ideias mas também podem confundir um pouco as coisas. Às vezes pode ser um processo um bocado complicado. Como toda a gente dá a sua ideia acaba por haver um conflito de ideias e conseqüente não se sabe em que ideia se há-de pegar e surgem dúvidas. Relativamente à marca pode ser difícil gerir todas essas ideias e criar um produto diferente. Acho que o mais difícil é organizar as ideias e transportar isso para um produto. Mais assertivas não sei se serão. Depende do nicho com que se esteja a trabalhar.

9. Pode um número excessivo de submissão de ideias ser um problema para o sucesso do processo de co-criação?

Oralidade: Sim. Pode não se conseguir dar resposta a todo o tipo de ideias. Eu enquanto designer se tivesse que fazer toda essa junção de ideias e tentar tirar de lá um produto provavelmente seria muito difícil para mim e ideias iriam ficar para trás e alguns clientes ficariam desiludidos por a ideia deles não ter sido escolhida. Tem também que haver também uma equipa muito grande na criação para conseguir gerir todas essas ideias para conseguir o melhor produto. Talvez pudesse haver requisitos para quem pudesse co-criar para não se receber tudo de todos.

10. Se houvesse a possibilidade de usar um software de Inteligência Artificial para a análise e filtragem de dados (big data), nomeadamente ideias provenientes dos

consumidores, isso seria uma ferramenta importante para o designer e para o sucesso do processo de co-criação?

Oralidade: Claro. Acho que isso era essencial pelo menos para se conseguir retirar o mais importante de entre todas as ideias.

11. Produtos de moda co-criados terão um menor risco de falhar no mercado do que os desenvolvidos exclusivamente por um designer, pois, estes são votados pela comunidade de consumidores?

Oralidade: Não sei até que ponto porque um designer ou uma marca acaba por ditar a tendência. Este ano podes não te identificar com uma peça, mas no ano que vem se todas as marcas fizerem aquela peça tu passas a amar aquela peça. As marcas e os designers conseguem ditar aquilo que vais vestir. Acho que os produtos co-criados vão ajudar num nicho de mercado.

12. Que informações relativas à transparência do processo, bem como, as necessárias para o processo de co-criação entende que deveriam e poderiam ser disponibilizadas pela marca para o consumidor?

Oralidade: Há informações que deveriam ser passadas, outras nem tanto, como tendências pois não sei até que ponto isso não iria ditar aquilo que se queria vender. Se se quer algo diferente ou exclusivo, ao passar ao cliente o que se está a passar a nível de tendências ou materiais, não sei até que ponto não se iria cair na mesma coisa. Agora a nível de custo, tempo, isso sim pois era uma maneira de a marca se conseguir coordenar a nível de tempo e financiamento.

13. Co-criar vários tipos de produtos simultaneamente será mais ou menos interessante para a marca e para o consumidor?

Oralidade: Acho que para a marca dependeria muito. Às vezes mais vale ter um tipo de produto bem-sucedido do que ter vários e não conseguir vender muito. A não ser que visse uma necessidade dos consumidores em ter outros produtos, poderia ter mais um,

mas vários não. Não sei até que ponto seria positivo para marca. Seria se todo o processo corresse bem a nível produtivo.

14. Seria mais benéfico para a marca co-criar apenas pormenores dos produtos de moda ou co-criar os produtos de moda completos?

Oralidade: Acho que era mais benéfico criar os pormenores pois a base do trabalho já estaria feita e talvez fosse mais fácil, mais rentável e rápido do que criar produtos diferentes.

15. O conceito de produtos modulares aplicado a produtos co-criados poderá aumentar a eficiência e eficácia do processo e corresponder simultaneamente às expetativas dos consumidores?

Oralidade: Não vejo porque não. Talvez seja também uma forma de orientar mais o consumidor e também para organizar o pensamento da marca.

16. Como pode ser feito o sourcing de materiais e produção para produtos co-criados de forma a melhorar a rapidez do processo?

Oralidade: As marcas apostam cada vez mais nos stock services e nos quick services para terem materiais na hora. Também utilizar fornecedores mais perto, mas isso tem um custo acrescido.

17. Que informações, da parte da marca, considera ser fulcral serem partilhadas com a cadeia de abastecimento para uma maior eficiência e assertividade produtiva?

Oralidade: As datas em que serão necessárias as produções que deverão ser estipuladas logo de início. Cuidados a ter com materiais. Havendo diversidade ou coisas diferentes deverá passar-se esse tipo de informação para haver menos desperdício. Informação técnica enviaria na altura do lançamento da produção. Quanto à informação sobre fornecedores, não repassaria essa informação ao confeccionador.

18. Na sua visão quais deveriam ser as funções de um designer de moda numa marca de co-criação?

Oralidade: Orientador, coordena tudo. Para além de criador. Há a ideia de que o consumidor é o criador mas o consumidor só dá a ideia. Quem vai criar é o designer. O designer vai fazer a junção das ideias ou tentar dar a melhor visão da ideia do consumidor. Eu acho que o designer é essencial para haver pelo menos uma linhagem e não haver tanta dispersão e haver uma interligação. Para mim faz todo o sentido existir um designer na marca. A formação dá-nos outro tipo de ideias sobre o produto e não apenas se ele é bonito ou funcional. Tem também lógica o designer fazer o acompanhamento do desenvolvimento do produto pois ele é a pessoa mais correta. É importante ter alguém na marca ligado à área do design, isso sem dúvida.

Sistema de Codificação Individual: DMO5

Data: 18/11/21

Hora: 14:00

1. Idade: 56

2. Curso ou cursos que frequentou ou detém e respetivo grau académico: Curso profissional de estilismo e modelagem

3. Cargo Profissional: Designer de Moda Sénior

4. Número de anos de experiência profissional: 29

5. Dimensão da empresa: +/- 250 trabalhadores

6. De que modo o ADN de uma marca de co-criação poderá ser influenciado, face a uma marca tradicional, tendo em conta que a base de uma marca de co-criação é estar ligada diretamente aos consumidores?

Oralidade: Depende um pouco de quem esteja a fazer a filtragem ou seleção daquilo que é proposto pelos consumidores e daquilo que será concretizado. Isto partindo do princípio que uma marca dentro da marca profissional tem um historial de marca que pode ou não abranger certos tipos de vestuário, padronagem, modelagem ou vestibilidade. Tem que haver sempre uma boa capacidade para fazer essa filtragem para não haver adulteração daquilo a que a marca se tinha proposto inicialmente. Mas noutro ponto se são os consumidores que estão ligados à marca já estão um pouco ligados ao espírito da marca. Penso que aquilo que possam propor possa ter a ver com a própria marca.

7. Um produto de moda co-criado com os consumidores tem mais valor acrescentado para a marca que um produto de moda criado apenas pelo designer?

Oralidade: Quando falamos da função do designer em regra eu acho que parte de nós haver também uma preocupação em que o produto que está a ser feito seja direcionado para aquilo que o cliente quer e que seja vendável. Se vamos falar num produto de moda criado pelo designer sem ter qualquer tipo de influência na parte mais comercial, aí claro que o produto co-criado com os consumidores vai buscar o designer para a realidade e para aquilo que possa ser vendável ou não. Se estamos a falar numa situação em que o próprio designer já tem essa preocupação, isto é, tem algumas barreiras que a filosofia de marca também lhe coloca. Quanto ao produto, não tenho também a certeza que o cliente esteja disposto a pagar mais por um produto co-criado. O cliente ao fazer esta abordagem ao que está a ser criado ele pode também ter a aspiração do contrário. Uma vez que tem a sua colaboração e ele próprio está a desenvolver algum trabalho pode não esperar que a peça no fim seja tão cara como a de um criador em que aí poderá ser uma peça mais única ou exclusiva.

8. Pensa que as ideias recebidas dos consumidores e das suas comunidades são importantes para o processo de criação de novos produtos e para que as respetivas coleções sejam mais assertivas?

Oralidade: Acho que sim, é importante para o trabalho que é desenvolvido ao nível de coleções. O produto que estamos a pôr à venda deve ir de encontro ao que o cliente espera. Serão uma mais-valia, sim.

9. Pode um número excessivo de submissão de ideias ser um problema para o sucesso do processo de co-criação?

Oralidade: Pode complicar um pouco o trabalho do lado de quem recebe toda essa informação e depois a concretizar o trabalho final, porque realmente, aí pode haver alguma dispersão de ideias. Ideias que não estejam conciliadas com as outras dando em produtos finais dispersos e estranhos que podem não ser a melhor solução.

10. Se houvesse a possibilidade de usar um software de Inteligência Artificial para a análise e filtragem de dados (big data), nomeadamente ideias provenientes dos consumidores, isso seria uma ferramenta importante para o designer e para o sucesso do processo de co-criação?

Oralidade: Penso que sim porque aí estaríamos a falar de uma situação em que não haveria a influência ou a natureza do designer também a fazer essa seleção. Nós designers ao intervir vamos intervir a partir de nós. Aqui seria algo completamente distinto a fazer a seleção e a filtragem o que traria um produto final mais abrangente do que se fosse um designer ou um grupo de designers a fazer essa seleção.

11. Produtos de moda co-criados terão um menor risco de falhar no mercado do que os desenvolvidos exclusivamente por um designer, pois, estes são votados pela comunidade de consumidores?

Oralidade: Depende de como a filtragem da informação recolhida da comunidade de consumidores está a ser feita. Se realmente for uma filtragem bem feita e adequada, penso que sim, nesse caso o produto poderá realmente resultar bem melhor do que se fosse um produto só feito ou pensado pelo designer, embora tentando ir de encontro ao que o consumidor pretende. Agora aí estamos a falar de um grupo muito maior que pode ajudar nesse sentido.

12. Que informações relativas à transparência do processo, bem como, as necessárias para o processo de co-criação entende que deveriam e poderiam ser disponibilizadas pela marca para o consumidor?

Oralidade: Penso que esta será a questão mais complicada no processo para se conseguir gerir. Se por um lado pode ser importante saber ou ter acesso a alguma informação acerca da co-criação, mas penso que tanto pode ajudar como complicar, porque há processos que são complicados e que mesmo para nós são difíceis de ultrapassar, então para o consumidor, pode ainda confundi-lo mais e pode influenciá-lo naquilo que ele vai tentar apresentar. Acho que é uma questão de difícil resposta e não consigo ter uma noção tão precisa do que se possa ou não repassar. Penso que o essencial terá que ser sempre passado. Se o consumidor não tem informação de matérias-primas ou tipo de acabamentos ou informações básicas dentro daquilo que é o desenvolvimento de uma peça desde o início em que ela é criada até à parte final, depois de produzida, pode estar aqui a divagar um pouco sobre o que é possível ou não fazer. Há coisas básicas que o consumidor deveria ter noção para não estar a apresentar algo que não é viável e esteja completamente fora do contexto. E se é para desenvolver uma peça completa aí é um bocado complicado as pessoas receberem todo o tipo de informações. Relativamente ao valor das peças, poderá ser algo essencial a transmitir ao cliente. Poderá ser algo vital. O cliente pode pensar que o que está a fazer não vai pesar muito no preço final e depois o resultado acaba por ser completamente diferente. O consumidor entra no processo de co-criação pode estar à espera de um preço mais simpático e não o contrário.

13. Co-criar vários tipos de produtos simultaneamente será mais ou menos interessante para a marca e para o consumidor?

Oralidade: Para a marca poderá ser menos interessante porque se estamos a falar em vários produtos, a dispersão enquanto marca vai ser maior e nesse sentido poderá ser prejudicial ou não ser tão vantajoso para a marca. Para o consumidor, poderá ser mais vantajoso porque estamos a abranger um maior número de consumidores ou propostas feitas por estes e para eles poderá ser mais vantajoso porque a oferta vai ser muito maior.

14. Seria mais benéfico para a marca co-criar apenas pormenores dos produtos de moda ou co-criar os produtos de moda completos?

Oralidade: Penso que estarmos a propor só pormenores vai limitar ou estaremos a impor barreiras ao consumidor pois ele vai estar limitado a uma base, que depois poderá trabalhar sobre essa base. Mas deixa-nos a nós do lado de cá, enquanto estamos a avaliar as informações recebidas, com uma facilidade maior em gerir as situações uma vez que o que possa aparecer é sempre sobre a mesma base, só havendo pormenores que simplificam, complicam ou alteram a imagem da peça final. Se for uma peça personalizada, o trabalho do lado de cá será maior pois tem que ser desenvolvido de raiz. É mais uma situação de avaliação de custos que a marca possa ou queira ter e do produto final que queira ter. Se quer manter a sua ideia final e ir fazendo algumas adaptações que a aproximem dos consumidores, é mais fácil manter o ADN da própria marca. Seria também possivelmente uma forma de reduzir o processo em questão de timings porque a base já estava feita e simplificaria um bocado o trabalho do lado de cá.

15. O conceito de produtos modulares aplicado a produtos co-criados poderá aumentar a eficiência e eficácia do processo e corresponder simultaneamente às expectativas dos consumidores?

Oralidade: Pode ser uma forma porque estamos a falar de um tipo de produto ou parte de produto que já teve bastante aceitação da parte dos consumidores. Poder adaptá-lo a novas ideias poderá ser uma forma de ter eficiência e eficácia no processo e rentabilizar a situação.

16. Como pode ser feito o sourcing de materiais e produção para produtos co-criados de forma a melhorar a rapidez do processo?

Oralidade: Ter já uma ideia do tipo de materiais que possam ser utilizados e também ter a produção já canalizada para vários sítios antes de avançar com o processo, que carece de uma calendarização antecipada. Ter uma informação dos timings desde a proposta da ideia até termos o produto final que poderá ter a ver com estampagens, produção de tecido, produção da própria peça. Temos que salvaguardar essas situações. Para aumentar a rapidez do processo é salvaguardar os materiais. Na atualidade está complicadíssimo arranjar o que quer que seja e tem que haver uma forma de ultrapassar isso e dar capacidade de resposta para que o processo não chegue a meio e haja falta de matéria-prima e depois não se consiga finalizar a tempo. E claro definir a produção. E

transportes que ultimamente têm sido críticos porque não há forma de se fazer chegar o material com a rapidez com que estávamos habituados.

17. Que informações, da parte da marca, considera ser fulcral serem partilhadas com a cadeia de abastecimento para uma maior eficiência e assertividade produtiva?

Oralidade: Acho que é o que já se faz hoje em dia. Quando estamos à procura de uma matéria-prima estamos à procura de algo que resulte como pretendemos logo temos que passar a informação da peça que pretendemos no final, aonde vamos buscar a matéria-prima para que o que vamos buscar seja o adequado senão o produto final não tem no fim nada a ver com o que imaginámos e isso é muito complicado. Perde-se muito tempo no desenvolvimento tanto de protótipos como de acabamentos para que quando avançamos para o produto, o produto final seja o que pretendemos. Por exemplo um polo pique tingido e lavado, porque os materiais sofrem, levou-nos duas ou três coleções até chegarmos mesmo ao que nós queríamos e estamos a falar de algo básico. Tudo isto leva tempo e tudo o que possa ser desenvolvido antecipadamente com o fornecedor ajuda em todos os aspetos a rapidez do processo.

Quanto a quem vai produzir os artigos há que dar a indicação com um exemplo daquilo que pretendemos e a partir daí se tiver capacidade ele procura, porque se calhar tem uma margem de manobra que nós não temos enquanto marca, porque se calhar ele ao encontrar um material vai comprar uma quantidade razoável e pode já ter parceiros que tenham esse material ou que produzam algo específico. Penso que poderá nos facilita a nós que não temos que perder tempo nessa busca e se calhar o produtor já tem uma noção de onde ir e pode ajudar-nos nesse sentido.

18. Na sua visão quais deveriam ser as funções de um designer de moda numa marca de co-criação?

Oralidade: É a questão mais complicada. O designer de moda numa marca de co-criação acima de tudo tem que deixar um pouco de lado as suas convicções para poder entrar no espírito de quem está a passar informação senão começa a funcionar como uma barreira para o seu próprio trabalho. É saber separar o seu gosto pessoal e aquilo que estaria habitualmente mais aberto a fazer ou a receber e ir um bocadinho de encontro ao que está a ser apresentado pelos consumidores para que o trabalho vá de encontro ao que

realmente é pretendido e não aquilo que ele pretende. Seria o intermediário do processo em termos de acompanhamento. Numa parte final terá que ser ele a desenvolver o trabalho, mas até lá será a fase mais complicada de gerir. E é importantíssimo acompanhar posteriormente o processo até ao produto final. Se depois não se acompanha, se a informação que transmitimos que do lado de cá pode ser a adequada, mas do lado de lá pode não ser, porque já temos uma ideia formada do que pretendemos, e nem sempre o outro lado entendeu da mesma forma, portanto deve haver um acompanhamento bem contínuo desde que entregamos a ideia do que se pretende até que a peça é concretizada.

Sistema de Codificação Individual: DMO6

Data: 20/11/21

Hora: 10:00

1. Idade: 30
2. Curso ou cursos que frequentou ou detém e respetivo grau académico: Licenciatura e Mestrado em Design de Moda
3. Cargo Profissional: Designer de Moda
4. Número de anos de experiência profissional: 6
5. Dimensão da empresa: +/- 200 trabalhadores
6. De que modo o ADN de uma marca de co-criação poderá ser influenciado, face a uma marca tradicional, tendo em conta que a base de uma marca de co-criação é estar ligada diretamente aos consumidores?

Oralidade: O ADN será sempre a identidade da marca. À partida uma marca de co-criação terá também muito daquilo que o consumidor procura. Terá sempre vantagem em relação às marcas mais tradicionais. Acho que terá sempre na sua essência o que os consumidores procuram e no fundo é a evolução dos tempos pois o consumidor está cada vez interessado em fazer parte da criação dos produtos, está cada vez mais consciente daquilo que é o design e procura cada vez mais produtos personalizados. Acho que o ADN será sempre influenciado, mas é sempre uma forma de cativar mais o consumidor. Este

ao fazer parte da marca e da construção dos produtos sentirá sempre uma ligação emocional com marca e estará mais preparado para ser fiel à marca e seguir a marca. Quanto ao público-alvo, as opiniões dos consumidores não deverão sair do contexto do público-alvo. Mas teria que ser muito bem filtrada toda a informação recebida, à partida pelo setor de design. Uma marca mais clássica à partida não vai criar um produto sportswear completamente fora e aí teria que existir sempre um filtro.

7. Um produto de moda co-criado com os consumidores tem mais valor acrescentado para a marca que um produto de moda criado apenas pelo designer?

Oralidade: Irá sempre mais de encontro aquilo que o cliente procura porque será mesmo relacionado com aquilo que nos pediram enquanto designers. Quando é só apenas o designer, apesar de nos inspirarmos sempre nas opiniões, é uma leitura muito própria do designer ou da marca logo pode não se ir tão de encontro ao que o cliente procura. Agora se o cliente nos transmitir essas informações à partida será mais assertivo e mais vantajoso para a marca logo vai vender mais. Acho também que o consumidor vai ter aquela ligação à marca e acho que vai estar aberto a pagar um pouco mais para ter as suas ideias na marca e ter um produto que sinta que ajudou a criar.

8. Pensa que as ideias recebidas dos consumidores e das suas comunidades são importantes para o processo de criação de novos produtos e para que as respetivas coleções sejam mais assertivas?

Oralidade: Sim, eu acho que se ouvirmos aquilo que os clientes nos pedem e se existir o tal filtro, sim. Não pode, no entanto, estar aberto a toda a comunidade porque existem pessoas que não compram na marca mas podem opinar logo deve existir forma de filtrar isso. Se houver uma coerência no que é pedido e se estiver de acordo com a marca, as peças irão ser muito mais assertivas. No fundo é ouvir o que nos pedem e criar os produtos que nos pedem. À partida as pessoas vão estar mais abertas a menos que o tempo entre o que é pedido e a chegada ao consumidor seja muito grande e o consumidor deixe de gostar do produto. É preciso jogar com o tempo.

9. Pode um número excessivo de submissão de ideias ser um problema para o sucesso do processo de co-criação?

Oralidade: Sim, porque se forem ideias completamente diferentes os produtos depois não são criados conforme o que o consumidor procura. As ideias têm que ser adaptadas e reajustadas pelo designer. Apenas as melhores ideias ou as que forem referidas mais vezes, dependendo de como a recolha é feita, é que poderão chegar a ser um produto e tem realmente que haver um filtro para o que a maioria dos consumidores procuram. Quanto à quantidade de ideias terá que também existir forma de filtrar essas ideias para que as pessoas não sintam que as ideias não são tidas em atenção.

10. Se houvesse a possibilidade de usar um software de Inteligência Artificial para a análise e filtragem de dados (big data), nomeadamente ideias provenientes dos consumidores, isso seria uma ferramenta importante para o designer e para o sucesso do processo de co-criação?

Oralidade: Acho que seria essencial existir um software que conseguisse filtrar essa informação de acordo com o que nós designers pretendíamos, em termos de filtros, e só apenas essas informações é que chegariam a nós para definirmos os produtos. Isso poderia ser uma opção mas poderíamos também não filtrar e depois sim filtraríamos começando do geral até estar mais de acordo com a imagem da marca assim como com o consumidor.

11. Produtos de moda co-criados terão um menor risco de falhar no mercado do que os desenvolvidos exclusivamente por um designer, pois, estes são votados pela comunidade de consumidores?

Oralidade: À partida sim pois o que é apresentado é o que o consumidor já nos indicou que pretendia ver e ter. Se não demorar claro muito tempo e se as pessoas não mudarem de ideias, entretanto, portanto, teria que ser muito bem avaliado. Sendo o que a maioria pediu à partida teria maiores vendas.

12. Que informações relativas à transparência do processo, bem como, as necessárias para o processo de co-criação entende que deveriam e poderiam ser disponibilizadas pela marca para o consumidor?

Oralidade: Acho que tem que ser o mais transparente possível, tem que haver uma relação de confiança com marca e acreditarem que as opiniões são realmente ouvidas e aparecem as ideias nos produtos finais. Relativamente aos direitos de autor deveria existir sempre a menção ao nome do co-criador e haver uma indicação transparente da recompensa que o consumidor receberá pela ideia.

13. Co-criar vários tipos de produtos simultaneamente será mais ou menos interessante para a marca e para o consumidor?

Oralidade: No fundo acessórios podem complementar vestuário, mas pode dispersar ideias. É mais assertivo se limitarmos os produtos. Aquela marca faz apenas casacos, por exemplo. É mais fácil gerir a informação que o consumidor nos dá do que se tivéssemos muitos produtos. A nível de assertividade do produto e de conseguir criar um produto com o consumidor será mais fácil caso existam menos produtos, senão acaba por ser mais abrangente e dificulta essa relação. O consumidor quando é para criar gostaria de ter mais produtos e de dar opinião e conseguir ter uma voz na seleção e design dos produtos. As coisas divergem um pouco. Olhando para a marca quanto menos mais fácil será interpretar a opinião dos consumidores, mas os consumidores acho que gostariam de ter mais produtos.

14. Seria mais benéfico para a marca co-criar apenas pormenores dos produtos de moda ou co-criar os produtos de moda completos?

Oralidade: Para a marca acho que seria mais fácil incorporar apenas pequenos pormenores porque a nível de produção, caso demos liberdade ao consumidor, acaba por diversificar muito mais a produção. Acaba por complicar um pouco. Acho que numa fase inicial teria que dar espaço para que o consumidor ajude a criar pequenos pormenores e depois se resultar, haver uma evolução.

15. O conceito de produtos modulares aplicado a produtos co-criados poderá aumentar a eficiência e eficácia do processo e corresponder simultaneamente às expectativas dos consumidores?

Oralidade: Seria vantajoso pois a marca já teria moldes e mudaria cores ou pormenores nos quais o cliente teria uma voz. Seria uma forma de unir os processos e numa fase inicial corresponder às duas partes. Existir um equilíbrio. Ouvir a opinião do consumidor e aquilo que para a marca seria possível de fazer sem criar um grande transtorno de ter mil produtos diferentes por causa da modelagem que envolve um custo elevado e o tempo que envolve desenvolver uma peça completamente diferente. Assim conseguiríamos adaptar e no fundo criar um produto diferente. Para o consumidor seria diferente logo seria o ideal.

16. Como pode ser feito o sourcing de materiais e produção para produtos co-criados de forma a melhorar a rapidez do processo?

Oralidade: O grande problema que temos são as grandes quantidades que os fornecedores querem vender e cada vez mais os mercados estão a mudar. Antes queríamos dez mil botões de uma cor e agora se calhar queremos dez mil botões de três ou quatro variedades diferentes e então passa por conseguir ter uma boa relação com os fornecedores e que estes se adaptem. Não podem ser as mesmas quantidades de antes pois os consumidores querem coisas diferentes e temos de nos adaptar todos para levar até ao consumidor algo que ele goste. Tem que existir sempre uma grande relação entre o design o os fornecedores e ter fornecedores que nos consigam dar resposta e nos darem o que precisamos no menor tempo possível isto porque ter materiais já em armazém é sempre um risco.

17. Que informações, da parte da marca, considera ser fulcral serem partilhadas com a cadeia de abastecimento para uma maior eficiência e assertividade produtiva?

Oralidade: Terá que haver um acompanhamento sempre muito próximo para que se consiga o que se pretende do produto e para que tudo corra realmente bem. Tendo experiência em trabalhar em proximidade com a confeção nós sabemos que há sempre uma tentação de trabalhar da forma mais fácil e não de forma mais objetiva. Uma marca que trabalhe com co-criação deve ter um processo o mais transparente possível apesar

de correremos o risco de outras empresas roubarem-nos ideias, mas ao mesmo tempo dá uma ideia de confiança que é importante para todas as partes pois é necessário falar abertamente pois estamos todos a criar um produto conjuntamente.

18. Na sua visão quais deveriam ser as funções de um designer de moda numa marca de co-criação?

Oralidade: Acho que o designer vai ser o responsável por ligar os consumidores que nos dão as informações daquilo que pretendem com fornecedores, modelagem, confeção. Deverá conseguir conciliar as ideias e o processo para levar ao consumidor aquilo que ele realmente pretende. O consumidor pode ter uma opinião, mas não vai desenhar a peça em si. Vai dar ideias ou até pode fazer um desenho, mas nunca vai ser um produto final. Depende da forma como são captadas as ideias. Mas depois o papel do designer vai ser sempre incluir essas opiniões no design do produto em si. Vai ser a leitura de tudo o que nos foi transmitido pelo consumidor para depois passar essas informações às restantes pessoas envolvidas no processo sendo um trabalho fundamental no processo de co-criação. Dependendo da marca em si, se for uma marca em que o designer é a marca, aí acho que não pode existir tanto espaço para as opiniões dos consumidores. Numa marca comum em que o objetivo é ter vendas a informação que é passada pelo consumidor é fulcral e a parte criativa ficará um pouco de lado. Mas já acontece um pouco isso porque o objetivo é vender. A co-criação será sempre limitada de acordo com a marca. Mas o designer vai ter sempre algum papel de criação que é no fundo unir as ideias recebidas. Será difícil que a co-criação seja a 100%. Ser designer é no fundo criar produtos funcionais e se tivermos a opinião de quem vai usar as peças será sempre uma vantagem.

Sistema de Codificação Individual: DMO7

Data: 23/11/21

Hora: 19:00

1. Idade: 38

2. Curso ou cursos que frequentou ou detém e respetivo grau académico: Licenciatura e Mestrado em Design de Moda

3. Cargo Profissional: Designer de Moda Sênior

4. Número de anos de experiência profissional: 12

5. Dimensão da empresa: +/- 200 trabalhadores

6. De que modo o ADN de uma marca de co-criação poderá ser influenciado, face a uma marca tradicional, tendo em conta que a base de uma marca de co-criação é estar ligada diretamente aos consumidores?

Oralidade: Pode ser influenciado. Se está ligado diretamente ao consumidor e se a marca der muita importância ou quiser ter mais vendas através da opinião do consumidor, para chegar aos gostos do consumidor, por vezes pode-se perder um bocado.

7. Um produto de moda co-criado com os consumidores tem mais valor acrescentado para a marca que um produto de moda criado apenas pelo designer?

Oralidade: É sempre bom ter o nome do designer associado pois em parte é por isso que a marca é conhecida e depois a questão do consumidor, estamos a tentar chegar aos interesses do consumidor, portanto acho que é uma mais-valia. Para o consumidor talvez tenha mais valor um desenvolvido por um designer devido ao nome do designer estar associado.

8. Pensa que as ideias recebidas dos consumidores e das suas comunidades são importantes para o processo de criação de novos produtos e para que as respetivas coleções sejam mais assertivas?

Oralidade: Sim, a experiência do consumidor no dia-a-dia com um determinado produto é sempre útil. O uso, o estar em constante contacto com o produto é uma mais-valia do consumidor porque quem desenvolve o produto tem que claro testá-lo, mas será sempre mais útil ter a ideia geral da parte das pessoas que compram e utilizam e também saber de que forma pode ser melhorado. Essa tal ligação entre produto e consumidor é sempre uma mais-valia.

9. Pode um número excessivo de submissão de ideias ser um problema para o sucesso do processo de co-criação?

Oralidade: Sim. Acho que nos devemos tentar concentrar numa. De todas as ideias que surgem tentar canalizá-las e não generalizá-las. Dessas tentar tirar uma e desenvolvê-la é sempre mais interessante. Ou pelo menos há foco no objetivo. Se as ideias forem em número excessivo pode haver dispersão.

10. Se houvesse a possibilidade de usar um software de Inteligência Artificial para a análise e filtragem de dados (big data), nomeadamente ideias provenientes dos consumidores, isso seria uma ferramenta importante para o designer e para o sucesso do processo de co-criação?

Oralidade: Sim, era útil para analisar os dados. Reuni-los e tirar deles o melhor para o produto ser bem-sucedido. Reuni-los e de todos esses retirar os que são úteis para atingir os objetivos. Será sempre importante a análise e conjugação dos dados para nos centrarmos.

11. Produtos de moda co-criados terão um menor risco de falhar no mercado do que os desenvolvidos exclusivamente por um designer, pois, estes são votados pela comunidade de consumidores?

Oralidade: Sim, acho que não terão tanto risco de falhar. Se são co-criados à partida teremos um público que vai querer, enquanto que o designer desenvolve sempre algo baseado em pesquisas, logo ele não tem a certeza se vai ser aceite ou não.

12. Que informações relativas à transparência do processo, bem como, as necessárias para o processo de co-criação entende que deveriam e poderiam ser disponibilizadas pela marca para o consumidor?

Oralidade: Todo o processo produtivo. Seria interessante o consumidor saber de que forma é feito o produto e como se consegue obter e através de que meios ou processos e se corresponde a diretivas sustentáveis, por exemplo. Acho que é importante para o consumidor perceber como é que o produto chega até eles. Para quem co-cria o produto

também seria importante saber quem fica com os direitos do produto. Há quem possa dar valor e quem não. Também seria bom dar uma data estimada de início de venda pois isso cria expectativa, isso vai criar mais vontade em ter e as pessoas vão aguardar por aquela data por saberem que vai ser lançado. Acho que isso é útil para a marca, para o produto e para as pessoas começarem a falar sobre o produto. Saber qual o valor do produto e em que mercado vai ser encaixado acho que é importante. Até para sabermos em que patamar a marca se vai encaixar e que consumidor queremos alcançar.

13. Co-criar vários tipos de produtos simultaneamente será mais ou menos interessante para a marca e para o consumidor?

Oralidade: Pode ser interessante, mas se calhar perde-se o foco. Se calhar o objetivo pretendido para cada produto não é alcançado. Se forem criados simultaneamente e libertados simultaneamente para o mercado se calhar vai haver dispersão. Pode ser bom para a marca para mostrar que estão a trabalhar bastante e que estão a pôr produtos no mercado, mas depois ao mesmo tempo eu acho que se perde o foco nos produtos e não vão ter o retorno do que gostariam se lançarem mais do que um de cada vez. Para o consumidor, depende do produto e do valor monetário de cada produto. Não sei se será interessante ter vários produtos a ser lançados de uma vez só pois o consumidor pode não ter o poder para alcançá-los todos. E se forem lançados gradualmente, do ponto de vista do consumidor acho que é mais fácil ir adquirindo faseadamente. Acho, no entanto, que é importante a marca abrir o leque de produtos para mostrarem que não fazem só aquilo e também para alcançar, imagina vendemos estojos e não só mochilas, mais consumidores e chamar mais a atenção. Teria o produto mãe digamos, podia criar uma ou outra ideia, mas claro o importante é centrarmo-nos no produto principal. Mas tinha que se ir sendo reinventado senão o consumidor já conhece e começa a desligar-se. Tinha que se ir reinventando e criar algo de novo para poder atrair as atenções novamente.

14. Seria mais benéfico para a marca co-criar apenas pormenores dos produtos de moda ou co-criar os produtos de moda completos?

Oralidade: Acrescentar algo de valor a um produto que já exista, depende do pormenor, mas é capaz de ser interessante. Depois também depende do ponto de vista do consumidor. Aí estou um pouco dividida. Para um cliente fiel que está habituado a um produto específico será interessante criar com updates ou novos pormenores. Ao criar

um novo produto há sempre o risco de não se chegar aquilo que o cliente procura. Mas também é bom criar novo para mostrar que marca continua em constante movimento e a oferecer aos consumidores novos produtos. Mas também acho que é importante para aqueles produtos que se sabe que têm sempre vendas fazer uns updates com pormenores.

15. O conceito de produtos modulares aplicado a produtos co-criados poderá aumentar a eficiência e eficácia do processo e corresponder simultaneamente às expectativas dos consumidores?

Oralidade: Sim, eu acho que é bom. Digamos que se já temos uma base que funciona bem, que tem sucesso, logo é um bom ponto de partida para desenvolver outros produtos e acelera o processo. Por exemplo, lembro-me de uma marca que fez um vestido, tinha um desenho base, e, pediu a quem seguia a marca para dar ideias. Davam, na questão das mangas, três opções. Limitavam as opções. Davam apenas alguns tipos de cortes. Deixaram também a cor a votação. Será interessante para o contacto com o consumidor, para o deixar curioso, atento e para como é que vai ser a peça uma vez que fez escolhas e estará de acordo com os seus gostos, mas ao mesmo tempo não sei se não vamos estar a limitar dizendo nós, que isto é que é tendência.

16. Como pode ser feito o sourcing de materiais e produção para produtos co-criados de forma a melhorar a rapidez do processo?

Oralidade: Pensaria sempre numa produção localizada, tendo mais próxima a produção da marca pois seria mais fácil coordenar tudo, se bem que, a nível de custos, poderá ter o seu custo. Até podemos ter países com produção mais barata, mas depois não compensa porque a comunicação é muito difícil. Mais vale termos a produção próxima para se conseguir gerir e até se agiliza muito mais a produção dos produtos, porque estamos ali e conseguimos fazer com que não haja paragens devido a dúvidas ou erros provenientes de má comunicação.

Em termos materiais podemos, por exemplo, fazer as peças todas em crú e depois de acordo com a cor que as pessoas escolhem mandar tingir determinadas cores. A questão de recorrer a stock service, ter peças em crú, tudo isso agiliza o processo.

17. Que informações, da parte da marca, considera ser fulcral serem partilhadas com a cadeia de abastecimento para uma maior eficiência e assertividade produtiva?

Oralidade: Os ideias, o ADN da marca é importante para quem produz saber quais são as linhas orientadoras da marca para que depois produzam de acordo com as diretrizes da marca. Também é útil para quem vai produzir, se tiverem uma falha num material, saberem quem é o fornecedor por exemplo. Criamos ali uma rede de contacto e uma forma mais fácil de agilizar. Eu é que forneço tudo mas acho que é importante quem produz saber onde estão os materiais. Eu estou a dar informação para agilizar o processo e para me facilitar também a mim o processo, como marca.

18. Na sua visão quais deveriam ser as funções de um designer de moda numa marca de co-criação?

Oralidade: As funções de um designer moda numa marca de co-criação deveriam ser estar sempre presente no processo de desenvolvimento e conceção do produto. Conciliar as ideias provenientes da co-criação com a sua sabedoria enquanto designer e obter daí o melhor para o produto e para a marca. É muito importante estar dentro de todo o processo para que tudo esteja de acordo com aquilo que se pretende transmitir. O designer iria conciliar, compilar. Ambos têm ideias válidas e são importantes. O designer tem o seu peso tal como os consumidores. Isto sem nunca desvalorizar o outro havendo valorização de ambas as partes, pois ambas são importantes para criar o produto. Se vamos tirar ideias de um lado e uma ideia do outro e vamos uni-las e criar um produto acho que tem que se considerar esse valor 50/50. Mas depois depende do produto e da co-criação. Se o nome do designer for um fator importante (por exemplo by....) aí talvez se devam valorizar mais as ideias do designer, claro tendo sempre em conta as do consumidor, mas talvez 70/30, dependendo claro do objetivo e da marca. Acho que também é importante o designer fazer a pesquisa dos materiais porque é o designer que idealiza. Obviamente poderá ter ajuda ou orientação de outros para que a partilha de soluções viáveis para o produto final possa ser a melhor. Também é importante o designer seguir desde o início ao fim o processo criativo, de desenvolvimento e conceção do produto mesmo havendo outras pessoas mais capacitadas para seguirem determinadas fases do produto. Mas eu acho que é sempre importante o designer estar dentro de todo o processo pois podemos estar quase a chegar a um processo final e afinal o produto não estar conforme e aí ainda conseguir reajustar. Isso para mim acho que é fundamental. Vamos ter sempre a qualidade e pessoas que vão acompanhar o produto e

ver se está de acordo com o que foi desenvolvido inicialmente, mas é sempre importante estarmos dentro do processo até ser enviado para o cliente.

Sistema de Codificação Individual: DMO8

Data: 27/11/21

Hora: 21:00

1. Idade: 22

2. Curso ou cursos que frequentou ou detém e respetivo grau académico: Licenciatura e Mestrado em Design de Moda

3. Cargo Profissional: Designer de Moda

4. Número de anos de experiência profissional: 1

5. Dimensão da empresa: +/- 180 trabalhadores

6. De que modo o ADN de uma marca de co-criação poderá ser influenciado, face a uma marca tradicional, tendo em conta que a base de uma marca de co-criação é estar ligada diretamente aos consumidores?

Oralidade: Uma marca ao receber várias propostas de um consumidor tem que ter obrigatoriamente uma mente aberta. À partida a marca está aberta a receber várias ideias de várias pessoas diferentes, com variadas formas de pensar e, portanto, acho que isto pode afetar, no sentido de a marca para tentar chegar a vários consumidores diferentes poderá não conseguir manter o seu ADN. Se eu chegar e transmitir uma ideia e a marca a aceitar e se a seguir outro consumidor transmitir uma ideia completamente diferente, à partida será difícil a marca manter o seu ADN. Logo aí o ADN poderá ficar afetado. Acho que isto ainda é o que poderá vir a afetar mais a diversidade de consumidores que a marca poderá vir a ter. Mas, se a marca à partida já der um ponto de partida já não haverá tanto espaço para que a resposta do consumidor seja tão em direções opostas ao que a marca quer transmitir.

7. Um produto de moda co-criado com os consumidores tem mais valor acrescentado para a marca que um produto de moda criado apenas pelo designer?

Oralidade: Poderá se calhar ter mais valor. Se um consumidor for suficientemente criativo a ponto de criar um produto bastante comercial ou que fique muito reconhecido pelo seu alto valor, se calhar, tem muito mais valor que um produto criado apenas pelo designer. Se o consumidor conseguir ser muito mais criativo, acho que se calhar sim, tem mais valor acrescentado. Porque não é uma pessoa qualificada, à partida, para tal e também pelo nível de criatividade colocada no produto.

8. Pensa que as ideias recebidas dos consumidores e das suas comunidades são importantes para o processo de criação de novos produtos e para que as respetivas coleções sejam mais assertivas?

Oralidade: Acho que sim porque o consumidor é a pessoa a que queremos vender efetivamente o produto e se eles nos estão a dizer do que gostam e o que fariam, acho que é sempre importante para o processo de criação de novos produtos.

9. Pode um número excessivo de submissão de ideias ser um problema para o sucesso do processo de co-criação?

Oralidade: Pode. Acho que várias ideias diferentes de várias pessoas podem dar origem a demasiada informação e pode acontecer que a marca se perca por ali um pouco. Pode não se conseguir tratar a informação de forma correta por ser tanta e também por não saberem qual o melhor caminho no caso de haver ideias completamente diferentes. Como é que a marca vai tomar uma posição?

10. Se houvesse a possibilidade de usar um software de Inteligência Artificial para a análise e filtragem de dados (big data), nomeadamente ideias provenientes dos consumidores, isso seria uma ferramenta importante para o designer e para o sucesso do processo de co-criação?

Oralidade: Sim, sem dúvida seria muito útil para que a marca não se perca tanto e saiba mais facilmente que caminho tomar.

11. Produtos de moda co-criados terão um menor risco de falhar no mercado do que os desenvolvidos exclusivamente por um designer, pois, estes são votados pela comunidade de consumidores?

Oralidade: Acho que o risco é exatamente o mesmo. É certo que são criados pelos consumidores e à partida se houver duzentos consumidores a terem quase a mesma ideia é porque de facto aquele é um bom produto mas não sei até que ponto o risco é menor.

12. Que informações relativas à transparência do processo, bem como, as necessárias para o processo de co-criação entende que deveriam e poderiam ser disponibilizadas pela marca para o consumidor?

Oralidade: Acho que deveria ter intervenções logo ao início e também durante o processo. Por exemplo se nós colocássemos limitações / sugestões inicialmente podíamos fazer com que o consumidor se sentisse logo à partida retraído e não desenvolvesse a sua ideia a 100% como tinha idealizado, mas por outro lado poderíamos fazer imposições que no futuro poderiam ajudar a marca a vender mais. Se a marca tiver as tendências em conta se calhar a nível comercial vai ser um benefício. Se calhar deixar uma sugestão ao consumidor sobre uma cor ser a mais indicada ou aquele material. Se calhar consciencializá-lo um pouco para o que está em tendência seria uma mais-valia para a marca. Acho que a nível dos materiais é um fator importante deixar logo à partida definido que só existem aquelas hipóteses ou por exemplo a nível de estampagens deixar logo à partida definido que tipo de processo podem ser aplicados, ou na aplicação de detalhes, o que pode ser feito ou não.

13. Co-criar vários tipos de produtos simultaneamente será mais ou menos interessante para a marca e para o consumidor?

Oralidade: Diria que é menos benéfico. Sou mais apologista que se se consegue oferecer com muita qualidade um produto mais vale focarmo-nos nesse produto e ser o melhor no mercado, do que estar a tentar ter vários para aumentar o lucro e depois não conseguir pois não é tão fácil ter sucesso em 4 ou 5 produtos. É muito mais fácil ter sucesso em um se a pessoa se focar naquele e se o desenvolver de várias formas diferentes com a melhor

qualidade possível. Acho que é muito mais benéfico se houver apenas um produto a ser co-criado. O consumidor talvez se sinta mais à vontade se puder criar vários produtos. Agora para a marca acho que é mais benéfico só um produto.

14. Seria mais benéfico para a marca co-criar apenas pormenores dos produtos de moda ou co-criar os produtos de moda completos?

Oralidade: Seria talvez mais benéfico para a marca os detalhes do que o produto completo. Se a marca quiser manter sempre aquele tipo de produto é bom o cliente só co-criar mesmo os detalhes. Mas se a marca quiser crescer também com o consumidor acho que também é bom o consumidor criar o produto completo.

15. O conceito de produtos modulares aplicado a produtos co-criados poderá aumentar a eficiência e eficácia do processo e corresponder simultaneamente às expectativas dos consumidores?

Oralidade: Acho que sim porque se à partida há um produto que é muito vendido por ter uma modelagem muito boa, acho que é benéfico. É quase juntar o útil ao agradável porque se um consumidor poder ter aquele casaco com algumas alterações definidas por ele acho que pode ser bom para as expectativas do consumidor. Se ele decidir todos os detalhes que vão ser colocados nesse casaco, a parte mais criativa dessa peça foi efetivamente feita pelo consumidor.

16. Como pode ser feito o sourcing de materiais e produção para produtos co-criados de forma a melhorar a rapidez do processo?

Oralidade: Se a marca tiver um número de materiais definidos isso pode ajudar a que o processo seja mais rápido pois já vai limitar o consumidor e evitar que o consumidor fique a divagar em outro tipo de materiais completamente diferentes. O cliente à partida já sabe que tem aquele número de opções e não há muito por onde divagar. Acho que não é um entrave, pode ser bom para a marca. O consumidor nem sempre tem informação suficiente para saber se quer escolher um material adequado para um sobretudo ou uma

t-shirt. Até se está a ajudar a que o processo seja mais rápido e ao mesmo tempo é bom para a marca porque pode sempre sugerir produtos que lhe convenha.

17. Que informações, da parte da marca, considera ser fulcral serem partilhadas com a cadeia de abastecimento para uma maior eficiência e assertividade produtiva?

Oralidade: Os fornecedores saberem à partida quais os materiais e processos envolvidos.

18. Na sua visão quais deveriam ser as funções de um designer de moda numa marca de co-criação?

Oralidade: Acho que a função será a de orientar o consumidor para que ele faça escolhas mais adequadas, por exemplo se ele estiver na dúvida sobre uma cor, nesse caso pode encaminhá-lo para a cor que é mais tendência pois o designer está muito mais a par disso. Se ele estiver na dúvida sobre um material exatamente o mesmo. A maior função que o designer tem é a de orientar e aconselhar. A maior função não é realmente criar nada, mas de orientar um consumidor para que ele faça um produto facilmente comercializável. Que oriente para que o consumidor não se desvie muito daquilo que a marca quer transmitir, dos seus objetivos e ideologias.

Sistema de Codificação Individual: DMO9

Data: 07/12/21

Hora: 9:30

1. Idade: 25

2. Curso ou cursos que frequentou ou detém e respetivo grau académico: Licenciatura e Mestrado em Design de Moda

3. Cargo Profissional: Designer de Moda

4. Número de anos de experiência profissional: 2

5. Dimensão da empresa: +/- 25 trabalhadores

6. De que modo o ADN de uma marca de co-criação poderá ser influenciado, face a uma marca tradicional, tendo em conta que a base de uma marca de co-criação é estar ligada diretamente aos consumidores?

Oralidade: Se tiver vários clientes vai sempre influenciar porque cada pessoa tem a sua personalidade. Para mim eu acho que se calhar estamos a criar personas e não um perfil de consumidor. Como estamos a trabalhar diretamente com o indivíduo sabemos aquilo que ele quer. O indivíduo vai sempre fazer aquilo que ele gosta e quer. Influência sempre o ADN da marca porque se torna muito minucioso.

7. Um produto de moda co-criado com os consumidores tem mais valor acrescentado para a marca que um produto de moda criado apenas pelo designer?

Oralidade: O consumidor poderá se calhar sentir-se mais ligado com a marca porque está a ter um produto mais personalizado, e está a ter outro tipo de atenção que o designer não dará, pois, o designer cria mais a pensar num grupo. Logo vai-se sentir mais acolhido. Para a marca até poderá haver. Dou o exemplo das influencers porque hoje em dia há muitas marcas que se relacionam com as influencers. Se for alguém com um grande número de seguidores vai trazer valor acrescentado para a marca, vai dar a conhecer a marca a outras pessoas e isso pode fazer com que a marca cresça.

8. Pensa que as ideias recebidas dos consumidores e das suas comunidades são importantes para o processo de criação de novos produtos e para que as respetivas coleções sejam mais assertivas?

Oralidade: Acho que é importante. Por exemplo, eu gosto de trabalhar com opiniões externas. Se estou em dúvida sobre um design eu gosto de ouvir a opinião de pessoas externas, mas, vou pedir opinião a pessoas que se enquadrem dentro do público-alvo que eu quero atingir. Eu acho que receber as ideias do consumidor é um processo importante até porque eles podem dar ideias que na altura não temos e isso pode ajudar a melhorar a marca e a venda dos produtos.

9. Pode um número excessivo de submissão de ideias ser um problema para o sucesso do processo de co-criação?

Oralidade: Eu acho que sermos sobrecarregados com tantas ideias, tanta informação, vai acabar por fazer com que não se consiga apresentar uma coleção tão coesa, dispersa por vários pontos não correspondendo ao que é suposto ser a marca e o consumidor final.

10. Se houvesse a possibilidade de usar um software de Inteligência Artificial para a análise e filtragem de dados (big data), nomeadamente ideias provenientes dos consumidores, isso seria uma ferramenta importante para o designer e para o sucesso do processo de co-criação?

Oralidade: Acho que sim, porque assim estamos a ter uma abordagem mais específica para podermos perceber o nosso consumidor. Estaríamos a conseguir descobrir muito mais sobre as características das pessoas e acho que isso ia ajudar e contribuir para que fizéssemos um produto ainda mais direcionado, para as necessidades e desejos dos consumidores. E isso ia fazer com que o produto fosse mais comprado e muito possivelmente a pessoa gostaria tanto do produto que o iria recomendar. Esse é o objetivo. É o de angariar sempre mais clientes para a marca crescer.

11. Produtos de moda co-criados terão um menor risco de falhar no mercado do que os desenvolvidos exclusivamente por um designer, pois, estes são votados pela comunidade de consumidores?

Oralidade: Pode ter duas vertentes. Pode correr muito bem ou pode correr mal. Ou seja, se fosse para uma pessoa com determinadas características similares à pessoa que está a co-criar poderia correr muito bem. Mas também poderia correr um pouco mal porque poderia não abranger outras pessoas.

12. Que informações relativas à transparência do processo, bem como, as necessárias para o processo de co-criação entende que deveriam e poderiam ser disponibilizadas pela marca para o consumidor?

Oralidade: Acho que deveríamos passar para o consumidor informações relativas ao preço e a relação preço/qualidade, porque é que o processo demora um determinado tempo. Ao transmitirmos isto eles poderiam ser mais compreensivos acerca das dificuldades que temos.

13. Co-criar vários tipos de produtos simultaneamente será mais ou menos interessante para a marca e para o consumidor?

Oralidade: Eu pondo-me no lugar do consumidor gostava que o produto co-criado tivesse várias gamas, mas que as gamas fossem diferenciadas. Deveria também haver um espaçamento no lançamento dos produtos. Enquanto consumidora poderia ficar confundida se existissem vários produtos e enquanto marca também porque poderia haver muita pressão, dependendo claro dos timings para produção.

14. Seria mais benéfico para a marca co-criar apenas pormenores dos produtos de moda ou co-criar os produtos de moda completos?

Oralidade: Se calhar só pormenores dos produtos porque seria melhor para o designer porque acho que seria mais fácil. Mas para a marca em si, se calhar o produto completo, pois, boa parte do trabalho já estaria feito.

15. O conceito de produtos modulares aplicado a produtos co-criados poderá aumentar a eficiência e eficácia do processo e corresponder simultaneamente às expectativas dos consumidores?

Oralidade: Eu acho que tanto é benéfico para o consumidor como para a marca. A nível de marca é bom para redução de custos pois estar a fazer um produto personalizado implica nova modelagem e neste caso já vamos estar a utilizar partes pré-feitas.

16. Como pode ser feito o sourcing de materiais e produção para produtos co-criados de forma a melhorar a rapidez do processo?

Oralidade: Acho que a marca deveria já ter fornecedores definidos, trabalhar a nível local, a nível nacional ou Europa. E procurar empresas não tão conhecidas, que não trabalhem com marcas tão grandes, ou empresas recentes pois poderão conseguir fornecer de forma mais rápida ao contrário de outras que já tenham muitos clientes.

17. Que informações, da parte da marca, considera ser fulcral serem partilhadas com a cadeia de abastecimento para uma maior eficiência e assertividade produtiva?

Oralidade: Datas, quando precisamos de ter o produto pronto, informação sobre pormenorizações. Partilhar informação sobre o produto final pretendido, bem como, o tipo de consumidores com que a marca está trabalhar, aquilo que o consumidor procura. Quanto a fornecedores manteria essa informação para mim de forma a não haver influências ou o passar informação para outros. E manter a exclusividade.

18. Na sua visão quais deveriam ser as funções de um designer de moda numa marca de co-criação?

Oralidade: O designer numa marca de co-criação perde um bocado a sua veia criativa pois passamos a fazer um serviço. O consumidor é que nos vai dar a ideia e nós estamos a fornecer um serviço. Dentro disso penso que a nossa função seria orientar o consumidor. Nós conhecemos muito mais a área e sabemos que reação pode haver ao produto. Temos conhecimento do processo desde a criação até à finalização do produto e nós deveríamos ser mentores basicamente do consumidor. Temos a responsabilidade de explicar aos consumidores todos os processos necessários à criação do produto. Também veria o designer a escolher as ideias e fazer a seleção de materiais consoante o produto que está a ser co-criado. E acho ainda que o que devia acontecer era o designer acompanhar todo o processo.

## Supply chain experts' interviews transcripts

Sistema de Codificação Individual: ECA01

Data: 22/11/21

Hora: 10:00

1. Idade: 48

2. Curso ou cursos que frequentou ou detém e respetivo grau académico: Licenciatura em Engenharia Têxtil e Pós-graduação em Gestão da produção têxtil

3. Cargo Profissional: Diretor de Produção

4. Número de anos de experiência profissional: 25

5. Dimensão da empresa: +/- 250 trabalhadores

6. Qual das seguintes considera ser menos complexa para a gestão e eficiência produtiva e para a cadeia de abastecimento? Co-criação, co-produção ou customização em massa?

Oralidade: Naturalmente que a customização em massa apresenta uma maior produtividade uma vez que oferece produtos customizados em grande volume e com produtividades similares aos produtos padronizados da produção em massa. Sem dúvida que a customização em massa apresenta a maior produtividade. Se massificarmos e depois fizermos apenas a personalização de determinados pontos do produto, conseguimos obter maior produtividade.

7. Quais os problemas que poderiam surgir da integração da produção de produtos co-criados em pequena escala ou complexos, numa linha de produção dedicada a produção em massa?

Oralidade: Na linha de produção dedicada à produção em massa se introduzirmos produtos com pequena escala e elevado grau de complexidade, aquilo que pode originar são alguns estrangulamentos em determinados pontos da linha, significando que vamos interromper o fluxo normal da produção e por conseguinte vai originar de certeza uma

perda de rendimento da linha. Portanto, neste caso eu penso que poderia ser feito no caso de pretendermos incluir esses produtos, era ser feito um estudo em termos de métodos e tempos e tentar adotar o layout flexível que poderia facilitar essas produções.

8. Das seguintes filosofias de produção qual consideraria ser a mais adequada para trabalhar com marcas de co-criação, podendo estas ter pequenos lotes ou produtos complexos, de uma forma mais eficiente e sustentável? Lean, agile ou leagile?

Oralidade: Penso que funcionaria melhor a agile porque funciona em ambientes menos previsíveis e com variedade elevada e em que o ciclo de vida do produto é curto. No caso da leagile é tendencialmente usada quando a procura do mercado é volátil e imprevisível, mas com uma variedade média. No modelo de co-criação nós estamos a falar de uma variedade mais elevada. No entanto, aquilo que é feito habitualmente na indústria e que eu penso que é prudente, é calcular o índice de impacto da modalidade escolhida no desempenho da organização, uma vez que cada organização tem uma forma muito própria de trabalhar e nem todas podem ter um desempenho eficaz utilizando uma metodologia ou outra. Teria que ser feito um estudo prévio e calcular o impacto desse índice que iríamos seleccionar.

9. Para a gestão e eficiência produtiva e da cadeia de abastecimento é preferível a produção de pequenas quantidades ou quantidades unitárias?

Oralidade: Naturalmente que é sempre preferível ter pequenas quantidades do que quantidades unitárias. As quantidades unitárias são habitualmente peças sempre diferentes com diferentes operações, muitas vezes, têm uma elevada variedade e são mais exigentes no ponto de vista da organização da produção. Naturalmente que também é necessário à partida calcular o custo que essas peças têm no processo produtivo. Essas peças têm um elevado valor acrescentado na venda e, portanto, podem traduzir-se num retorno de investimento mais eficaz. No entanto, do ponto de vista produtivo têm um elevado grau de complexidade na organização do processo.

10. Se as pequenas quantidades forem baseadas em produtos modulares, isso poderia aumentar a eficiência produtiva?

Oralidade: Penso que sim, que ainda assim podíamos aumentar a eficiência produtiva porque permitiria a produção de diferentes produtos pela combinação de módulos padrão. Ou seja, conseguiríamos ter diferentes variantes do produto mas ainda assim utilizando essa combinação de módulos padrão, conseguiríamos ter uma maior eficiência produtiva e também da modelagem.

11. A produção contínua de produtos de moda durante todo o ano, mesmo durante as épocas baixas, poderia ser um incentivo para as empresas produzirem para marcas de co-criação, mesmo que em pequena escala ou produtos complexos?

Oralidade: Na indústria de confecção assistimos a períodos de menos volume de produção. O efeito da sazonalidade reflete-se nesses períodos baixos e naturalmente que é uma preocupação para a indústria procurar soluções de ocupação para preencher esses períodos. Nessa perspectiva de encontrar soluções para preenchimento de produtos eu penso que a co-criação poderia ser efetivamente um incentivo e uma solução para esses períodos baixos nas empresas, ainda que com pequenas produções.

12. Que informações, da parte das marcas, considera fulcral serem partilhadas com a indústria para uma maior eficiência e assertividade produtiva?

Oralidade: Aquilo que é necessário é ter um caderno técnico com todas as especificações técnicas bem detalhadas. Isso é fundamental para a indústria. E nesse caderno técnico, claro, ter as fichas técnicas bem executadas e fichas de materiais. No próprio caderno de materiais ter também alguma informação sobre os fornecedores. Por outro lado, penso que também é importante definir entre as partes um cronograma com as diferentes etapas do processo e onde fiquem definidos e também tendo em conta naturalmente, a capacidade de resposta da indústria, onde fiquem definidas todas as atividades e os prazos de entrega a fim de ficar tudo detalhado nesse cronograma. Penso que é vantajoso também marcar datas com antecedência pois existe todo um período para fazer a organização e planeamento da produção. Relativamente ao fornecimento de materiais, a vantagem da marca fornecer os materiais é de que tira trabalho de campo á indústria, nomeadamente ao departamento de compras que não tem que fazer a pesquisa de materiais e também, não descurando o facto de que o ónus da responsabilidade da seleção dos materiais estando com o cliente acaba por ser mais vantajoso para a indústria que não tem que assumir todas as responsabilidades que podem existir numa entrega

fora de prazo, num produto que não apresente garantias de qualidade mínimas, portanto todo esse processo ficaria do lado do cliente. Por outro lado, dar a liberdade à indústria de selecionar os fornecedores naturalmente também tem as suas vantagens. Habitualmente na indústria já existem fornecedores com quem existem relações profissionais mais estreitas e nessa perspectiva também existe outra relação de confiança onde podem ser negociados preços, prazos e também se podem selecionar produtos dentro daquilo que é o padrão da empresa. Na perspectiva da co-criação poderia haver vantagem em ser o cliente a escolher em termos de prazo de entrega e responsabilidade das matérias-primas, sendo que da indústria, o compromisso seria o de confeccionar e entregar de acordo com o cronograma que tivesse sido definido. Sou ainda apologista, que quer seja um produto resultante de co-criação quer seja um produto de produção em massa, do acompanhamento das produções por parte do cliente, pois, até há bem pouco tempo este tema fosse muito controverso na indústria, porque habitualmente as nossas indústrias não têm muita vontade de abrir as portas a pessoas externas. É muito melhor existir acompanhamento e serem feitos alguns ajustes e alguns esclarecimentos sobre o processo no período da produção do que a indústria estar a fazer um entendimento dos cadernos de especificações técnicas, e, ainda que se faça o protótipo e ainda que existam comentários, existem sempre pequenas correções a fazer, portanto é preferível ter o cliente a fazer o acompanhamento, até porque temos maiores garantias de que a entrega final corre bem, do que o cliente estar desligado deste processo e depois chegarmos ao final e ainda que a produção tenha a qualidade expectável possa existir este ou aquele aspeto que podiam ter sido feitos de outra maneira ou que fossem mais de encontro à expectativa do cliente. Portanto eu defendo sempre esse acompanhamento por parte do cliente. Em termos do processo da produção há também sempre a hipótese de fazer peças à frente da produção, mas atrasam sempre a produção 2 a 3 semanas. Penso que seria mais fácil, prático e rápido ter alguém que no momento em que está a ser feita a produção pudesse fazer esse acompanhamento.

Sistema de Codificação Individual: ECA02

Data: 24/11/21

Hora: 10:00

1. Idade: 49

2. Curso ou cursos que frequentou ou detém e respetivo grau académico: Licenciatura em Engenharia de produção e gestão industrial

3. Cargo Profissional: Diretor de Planeamento

4. Número de anos de experiência profissional: 23

5. Dimensão da empresa: +/- 250 trabalhadores

6. Qual das seguintes considera ser menos complexa para a gestão e eficiência produtiva e para a cadeia de abastecimento? Co-criação, co-produção ou customização em massa?

Oralidade: A meu ver seria a customização em massa. No entanto, a co-produção pode ser menos complexa.

7. Quais os problemas que poderiam surgir da integração da produção de produtos co-criados em pequena escala ou complexos, numa linha de produção dedicada a produção em massa?

Oralidade: Se vou colocar pequenos produtos no meio de uma produção grande, isso implica muitas perdas. Logo à partida no corte, encontrávamos logo ali muito mais morosidade. Em vez de cortarmos em massa grandes quantidades cortávamos pequenos lotes. Pequenos lotes implicam logo a nível de entrada em linha, muito menos quantidade e isso implicava menos produção embora depois a partir do momento em que entra numa determinada fase poderá ser igual a ter em massa. Depende da fase do produto, mas no início quando é em lote faz muita diferença. Ser um lote grande ou um lote pequeno faz muita diferença. Estarmos a trabalhar um lote unitário ou um lote de dez peças, é muito mais rentável ser um lote de dez peças, sem dúvida.

8. Das seguintes filosofias de produção qual consideraria ser a mais adequada para trabalhar com marcas de co-criação, podendo estas ter pequenos lotes ou produtos complexos, de uma forma mais eficiente e sustentável? Lean, agile ou leagile?

Oralidade: A agile penso que estará mais de acordo com a co-criação.

9. Para a gestão e eficiência produtiva e da cadeia de abastecimento é preferível a produção de pequenas quantidades ou quantidades unitárias?

Oralidade: Pequenas quantidades não é bom e quantidades unitárias também. Ainda assim é preferível pequenas quantidades a quantidades unitárias. Estar a trabalhar uma peça só implica muito mais tempo e traz muito menos rendimento. Mas tudo se faz desde que haja gestão para isso.

10. Se as pequenas quantidades forem baseadas em produtos modulares, isso poderia aumentar a eficiência produtiva?

Oralidade: Se fossem modulares penso que seria melhor. Isso é muito mais eficiente. Nesse caso normalmente tentam-se juntar esses modelos de forma a irem todos juntos. Mesmo em termos de produção conjunta ajuda.

11. A produção contínua de produtos de moda durante todo o ano, mesmo durante as épocas baixas, poderia ser um incentivo para as empresas produzirem para marcas de co-criação mesmo que em pequena escala ou produtos complexos?

Oralidade: Pela experiência que tenho ajudava até certo ponto porque há épocas baixas em que se está sem fazer nada e colocar esses produtos poderia ajudar. Claro que ao longo de todo o ano isso poderia ser um pouco complicado, pois depois queríamos satisfazer o cliente e que ele recebesse a tempo e horas e podemos não conseguir. Tinha que se arranjar uma forma de não entrar na linha de produção contínua. Quer se queira quer não há ali muitas quebras.

12. Que informações, da parte das marcas, considera fulcral serem partilhadas com a indústria para uma maior eficiência e assertividade produtiva?

Oralidade: As marcas têm que ter as especificações dos produtos e estas têm que ser muito bem pormenorizadas e esclarecidas para que a indústria possa desenvolver os produtos de forma correta. As fichas técnicas por exemplo têm que ser muito bem especificadas para que tudo corra pelo melhor e o produto final esteja de acordo com a expectativa da marca. A marca também pode disponibilizar informações acerca dos

fornecedores. E sempre ajuda haver um cronograma. É importante também haver acompanhamento pois há por vezes muitos pormenores e a indústria por vezes não se apercebe. E é sempre positivo fazer uma peça à frente da produção e não atrasava muito o processo desde que as coisas fossem bem orientadas. Podia atrasar uns 3 dias, 4 dias, mais que isso não. Essas peças à frente têm que ser acompanhadas e não podem ir com a produção. Tem que se garantir também que cheguem rápido. E tem que se contabilizar com isso, a peça à frente, a data de entrega.

Sistema de Codificação Individual: ECA03

Data: 02/12/21

Hora: 14:30

1. Idade: 51

2. Curso ou cursos que frequentou ou detém e respetivo grau académico: Licenciatura em Engenharia Têxtil e Pós-Graduação em Design de Moda

3. Cargo Profissional: Diretor de Produção

4. Número de anos de experiência profissional: 31

5. Dimensão da empresa: +/- 700 trabalhadores

6. Qual das seguintes considera ser menos complexa para a gestão e eficiência produtiva e para a cadeia de abastecimento? Co-criação, co-produção ou customização em massa?

Oralidade: A nível produtivo todos nós sabemos que quanto mais idêntico o produto for mais fácil é fazê-lo. Mas todos nós sabemos que no mercado de hoje o caminho não é esse. Comecei há 30 anos atrás e lembro-me de ter feito encomendas com 30000 casacos todos da mesma cor e do mesmo modelo. Hoje isso não existe e sabemos que não é possível. O que todos dentro da indústria deveríamos tentar era arranjar processos uniformizados e conversados com o cliente e todas as pessoas que utilizam a cadeia de abastecimento, seria mais fácil para toda a gente. Por exemplo, a montagem de uma manga, muitas vezes vem um com uma ideia para montar a manga desta ou daquela maneira, mas às vezes nem sabe exatamente bem o que aquele tipo de montagem quer dizer. Às vezes o que ele quer é o que o outro quer também. Só que um está a ver a coisa

de uma maneira e outro está a ver de outra maneira. Para as empresas é uma confusão. É uma confusão as pessoas aprenderem. E muitas vezes o designer idealiza de uma certa forma porque não tem grande conhecimento de como aquilo é montado. A meu ver em termos de eficiência de produção, também depende do tipo de cadeia instaurada. Claro que se tivermos uma linha com 200 ou 400 pessoas tens que apontar para a customização em massa porque se vais meter 10 peças agora de uma maneira, 10 peças de outra e 10 peças de outra, vai ser uma autêntica confusão. Se as coisas estiverem preparadas para numa linha de produção grande se trabalhar em células, a co-criação em pequena escala encaixa perfeitamente. Se eu numa célula tentar meter uma encomenda com 200, 300 ou 400 casacos com o mesmo molde, se essa célula tiver 3 ou 4 pessoas não vou conseguir retirar rentabilidade da célula. Se eu quiser produzir co-criação em pequena escala, numa linha de produção grande, ainda estamos a ensinar as pessoas e já acabou. Se temos um erro e por poucas peças que tenhamos já errámos nelas todas. Por exemplo, para a medida temos o corte separado, uma linha separada com acabamento separado. A resposta vai ser sempre em função daquilo que se tenha montado. Eu ainda sou daqueles que penso que todas podem funcionar. Agora do ponto de vista de um diretor de produção gostava de trabalhar com customização em massa porque é muito mais fácil. Mas acho que isto caminha para algo tipo co-criação ou criação peça a peça ou personalização. O cliente hoje gosta mais daquilo.

7. Quais os problemas que poderiam surgir da integração da produção de produtos co-criados em pequena escala ou complexos, numa linha de produção dedicada a produção em massa?

Oralidade: Acho que para esse tipo de processo deveria existir uma estrutura montada à parte, uma estrutura mais pequena com outro tipo de filosofia. Eu gosto das células, mas não tem que ser em células, mas acho que se adapta perfeitamente a produtos com mais operações. Normalmente quando se dá asas às pessoas também aumenta o número de operações. E é preciso uma organização muito grande para que não falhe nada. Não posso ir para uma linha que não tem estrutura nenhuma para isso meter essas peças.

8. Das seguintes filosofias de produção qual consideraria ser a mais adequada para trabalhar com marcas de co-criação, podendo estas ter pequenos lotes ou produtos complexos, de uma forma mais eficiente e sustentável? Lean, agile ou leagile?

Oralidade: Penso que a leagile será a mais fácil de implantar. Porque tem um pouco das duas. É evidente que a co-criação obrigará a que haja alguma flexibilidade e quanto mais flexibilidade a linha tiver melhor. Antes quando eu te disse que a linha de produção tinha que ser em células é porque a célula é o que mais se assemelha e trabalha mais com leagile, porque a leagile é muito flexível com regras. Não que a agile não tenha regras porque tem, mas às vezes, já são muito desorganizadas. Já a leagile impõe um bocado da flexibilidade perante aquelas regras.

9. Para a gestão e eficiência produtiva e da cadeia de abastecimento é preferível a produção de pequenas quantidades ou quantidades unitárias?

Oralidade: Durante muito tempo eu dizia que à unidade, peça por peça, era muito mais improdutivo do que produtivo. Se conseguíssemos meter na linha duas ou três peças iguais e mais quatro iguais e mais quatro iguais seria sempre mais produtivo do que meter uma peça de cada vez. Mas conheci um caso em que fossem 200 peças, 300 peças, 400 peças, a linha dele funcionava sempre peça a peça. Isso permitia que quando tinha ordens mais pequenas, dez, doze quinze, não houvesse quebras. Conseguia perfeitamente manter os níveis de produção sempre iguais. Fazia uma preparação anterior que não era assim tão longa, nem de perto nem de longe, estava era muito bem organizada e depois conseguia ter níveis de produção muito altos. Se eu para mim queria responder que era mais fácil serem médias séries, volto a responder que depende da estrutura de cada uma das unidades fabris e da maneira como estão organizadas e de quem está a fazer rodar aquilo, que vai fazer com que aquilo funcione melhor ou pior. Agora claro, nos livros está que é preferível entrarem 5 ou 6 peças de cada modelo do que peças unidade a unidade, mas essa não é uma verdade absoluta.

10. Se as pequenas quantidades forem baseadas em produtos modulares, isso poderia aumentar a eficiência produtiva?

Oralidade: A Tommy tem casacos, o que eles chamam desconstruído e o construído, que basicamente são casacos diferentes, mas têm uma série de coisas que são exatamente iguais em todos os desconstruídos e construídos, então as pessoas na linha de produção já sabem que basta lerem construído ou desconstruído, independentemente de o casaco ser de bico ou não, se tem bolsos inclinados ou de chapa, os pespontos, os picados a confeção das mangas, há uma série de parâmetros associados e isso claro que simplifica

a produção. A pessoa ao ver que é o modelo 2059 mas é desconstruído. Se é leva picados nas aberturas, ilhargas, mangas... Já não tem que ver mais nada porque todos os desconstruídos levam. E isso claro que respondendo à pergunta é muito importante para nós. E eles conseguiram unificar isso tudo.

11. A produção contínua de produtos de moda durante todo o ano, mesmo durante as épocas baixas, poderia ser um incentivo para as empresas produzirem para marcas de co-criação mesmo que em pequena escala ou produtos complexos?

Oralidade: Sim, e socorro-me outra vez das peças por medida. As peças por medida têm claro booms, de Janeiro a Agosto mas o gráfico é sempre muito igual. Tem alturas que sobe mas nunca deixa de ter procura ou seja trabalhamos todo o ano. Se é possível com a medida acho que também é possível com a co-criação e isso é uma boa aposta. E isso também ajuda com a eficiência da empresa. Se a empresa tiver a laborar muito bem e depois tiver 3 ou 4 meses de quebra, tudo o que ganhou é perdido.

12. Que informações, da parte das marcas, considera fulcral serem partilhadas com a indústria para uma maior eficiência e assertividade produtiva?

Oralidade: Sei que é uma utopia achar que devia haver muito mais ligação entre uns e outros. Se houvesse muito mais ligação entre uns e outros, tanto para as marcas como para as próprias fábricas seria muito mais fácil de trabalharem em conjunto. Sempre que se junta um designer e alguém que sabe do produto, aparentemente se tiverem muito longe parece que estão a falar de coisas distintas e quando estão os dois muito próximos conseguem chegar a soluções boas para um e para o outro. Era importantíssimo haver a possibilidade de ligação. Acho que pode também ser importante mas não relevante calendarizar produções.

Sistema de Codificação Individual: ECA04

Data: 28/12/21

Hora: 19:30

1. Idade: 47

2. Curso ou cursos que frequentou ou detém e respetivo grau académico: Curso profissional de Modelagem do Civec e Frequência de Licenciatura de Design de Moda

3. Cargo Profissional: Responsável de produção, qualidade e desenvolvimento de produto

4. Número de anos de experiência profissional: 27

5. Dimensão da empresa: + / - 200 trabalhadores

6. Qual das seguintes considera ser menos complexa para a gestão e eficiência produtiva e para a cadeia de abastecimento? Co-criação, co-produção ou customização em massa?

Oralidade: Co-produção. Ainda hoje existe uma barreira grande entre a parte criativa e a parte produtiva que eu acho que às vezes o ideal seria haver uma percepção das dificuldades de cada uma das partes para se chegar a um consenso. De acordo com a minha experiência nunca há muito respeito da parte criativa com a parte produtiva porque não se entendem uns com os outros. Sei que existe aqui uma barreira que é uma das que mais entaves põe à co-criação. O designer mete mais um pormenor e a produção está sempre a criar problemas em relação a isso. Na produção queremos aligeirar mais, mas o designer quer uma coisa mais específica e existe aqui sempre uma guerra, quer dizer, no bom sentido e às vezes no mau sentido, por coisas que não se conseguem mesmo fazer. E sendo o co-criador o consumidor, e se, junto do designer às vezes já existe alguma dificuldade em perceber as dificuldades produtivas, sendo um consumidor final muito menos experiência terá para perceber quais os condicionalismos para fazer uma peça em específico e o que pode acarretar à parte da produção. Isso ainda será mais complicado, isto é, fazer essa passagem.

7. Quais os problemas que poderiam surgir da integração da produção de produtos co-criados em pequena escala ou complexos, numa linha de produção dedicada a produção em massa?

Oralidade: Obrigatoriamente teria que se adaptar uma linha de produção por que as linhas em massa normalmente têm dimensões grandes, servem para quantidades e para produtos co-criados serão menos quantidades, coisas mais específicas e mais variedade.

Ou seja, teríamos seguramente que dividir as linhas de produção. Hoje temos uma linha com 90 pessoas a fazer casacos e provavelmente era mais rentável dividir em 3 ou 4 linhas cada uma com o seu segmento para se distribuírem os produtos por que tenho ideia de que seguramente a variação há-de ser maior.

8. Das seguintes filosofias de produção qual consideraria ser a mais adequada para trabalhar com marcas de co-criação, podendo estas ter pequenos lotes ou produtos complexos, de uma forma mais eficiente e sustentável? Lean, agile ou leagile?

Oralidade: Leagile seria a melhor opção. Tenho ideia que será seguramente aquela que se adapta mais a este tipo de produtos, ou seja, haveria muita variedade com menos possibilidade de otimização de uma cadeia de produção.

9. Para a gestão e eficiência produtiva e da cadeia de abastecimento é preferível a produção de pequenas quantidades ou quantidades unitárias?

Oralidade: São coisas um pouco diferentes. Essas linhas mais reduzidas, em vez de serem linhas grandes para produção em massa, têm capacidade para fazer peças limitadas ou pequenas séries. São coisas que se encaixam perfeitamente nestas linhas mais pequenas. Tanto fazem uma encomenda com 10 peças como 10 peças unitárias. É mais difícil entrarem 10 peças unitárias no meio de uma produção de 1000 unidades. Assim sendo quer as pequenas quantidades, quer essas peças unitárias são coisas que se enquadram bem. Na nossa fábrica é isso que acontece. Fazemos casacos por medida, um a um, e no meio podemos meter perfeitamente encomendas de 10 ou 15 peças que não deixam quase de ser unitárias. Todo o processo anterior claro, envolve sempre muito mais gente. Dou um exemplo de um cliente que nos manda uma encomenda de 5 fatos. 5 fatos em corte, 5 fatos um de cada tamanho. Não deixa de ser quase uma encomenda unitária. Trabalhamos com máquinas de corte peça a peça. Tanto cortamos medida como cortamos essas pequenas encomendas.

10. Se as pequenas quantidades forem baseadas em produtos modulares, isso poderia aumentar a eficiência produtiva?

Oralidade: Seguramente que sim que aumentariam a produtividade. Aí conseguíamos utilizar já alguns tipos de automatismos. Já podemos utilizar, imagina, a mesma paleta. Embora tenhamos 5 ou 6 blazers diferentes teriam todos a mesma paleta e não deixam de ser únicos. Estamos a falar de 5000 ou 6000 blazers diferentes, mas na parte da paleta podíamos modelar isso e ter a mesma paleta e teríamos seguramente uma rentabilidade muito superior porque na mesma máquina, a mesma pessoa faria aqueles 5 ou 6 casacos diferentes. Embora cada um único, mas a paleta seriam exatamente as mesmas ou por exemplo bolsos de chapa, seriam os mesmos para os 5 ou 6 casacos. Quanto mais modular e mais as semelhanças forem em cada modelo mais rentabilidade teremos seguramente numa linha de produção. Até porque a própria pessoa que está a fabricar, se fabricar 5 bolsos de chapa seguidos, embora sejam em casacos diferentes, claramente que a rentabilidade começa a ser melhor a partir do segundo ou terceiro e isso dá-nos muito mais rentabilidade do que fazermos um bolso de chapa, um de paleta outro de vivos. Estamos a falar de fabricações diferentes que dá logo uma quebra gigante de produtividade. Enquanto que por exemplo, um bolso de chapa é aplicado numa máquina de coser a direito, se temos um bolso de chapa com uma paleta já temos que ir para uma máquina automática de meter bolsos. Se temos um de vivos temos que ir para a máquina de meter vivos que pode ser com larguras diferentes. Ou seja, quanto mais operações diferentes há menos rentabilidade há. Quanto mais conseguimos modelar ou agrupar operações mais rentabilidade conseguimos seguramente.

11. A produção contínua de produtos de moda durante todo o ano, mesmo durante as épocas baixas, poderia ser um incentivo para as empresas produzirem para marcas de co-criação, mesmo que em pequena escala ou produtos complexos?

Oralidade: Acredito que sim. Nas épocas baixas, nas mudanças de estação, em que há sempre alguma dificuldade em abastecermos as nossas linhas, só haveria um problema que seria o de incluir esse tipo de produtos em linhas longas. Embora podendo-se aproveitar que talvez até sejam mais bem pagas teríamos, no entanto, sempre alguma dificuldade em meter esse tipo de produto numa linha dessa dimensão, linhas de dimensões grandes que estão muitas vezes preparadas para grandes produções. E é lógico que toda uma parte produtiva tem que estar aberta com a mente bem aberta a este tipo de trabalho. Será uma das grandes dificuldades da indústria em geral, não estando a falar só da indústria portuguesa. Talvez a indústria portuguesa seja até a que tenha mais capacidade de entrar neste tipo de coisas porque se formos para outros países é para esquecer e nem vale a pena pensarmos nisso. Países de leste ou norte de África não

estão preparados para isso. Embora as nossas empresas não estejam ainda preparadas para isso. No entanto, vejo que as grandes quantidades não serão o futuro. Não acredito nisso. Agora as pequenas produções, coisas específicas, coisas diferentes, as pessoas já procuram isso um bocadinho.

12. Que informações, da parte das marcas, considera fulcral serem partilhadas com a indústria para uma maior eficiência e assertividade produtiva?

Oralidade: A primeira coisa a saber são o tipo de materiais com que estamos a trabalhar. Tanto estamos a criar produtos de flanela como o criador mete tecidos de napa e tecidos com membranas plásticas. Às vezes há uma dificuldade terrível de perceberem que na mesma unidade de fabricação, no mesmo tipo de produto, imaginando dois sobretudos, o designer mete um sobretudo numa flanela grossa normal e mete um sobretudo com uma flanela com membrana plástica e depois muitas das vezes não nos chega essa informação, porque para o designer e para quem tem a marca não deixa de ser um sobretudo igual, mas são coisas que se trabalham de formas completamente diferentes, com uma produção completamente diferente. Tem que haver uma boa interligação entre quem produz e quem está a propor. Tem que haver um conhecimento da marca sobre as capacidades de quem vai produzir e até onde pode ir, o que pode fazer e o que não pode fazer. Muitas das vezes também há essa falta de diálogo. Tudo é possível de se fazer, mas é preciso ver os timings e os custos. E também temos a parte da indústria que muitas vezes não cumpre os prazos. É preciso haver uma conversa antes de começarem a aparecer coisas ditas estranhas que não são fáceis de fazer. Às vezes é essa falta de diálogo inicial que cria uma série de problemas quer em termos produtivos quer nas expectativas do designer ou da marca pois acha-se que é possível fazer aquilo e depois há uma série de problemas que não permitem fazer. A parte produtiva ouvindo o que se pretende consegue logo mais ou menos perceber as dificuldades que poderá ter e por vezes quando um account manager faz a passagem da informação para a produção pode haver muita informação que não chega como devia chegar. A proximidade dessas duas partes seria muito benéfica e importante para o resultado final ser mais assertivo. Seria também fundamental um cronograma para se adaptar a empresa a essas pequenas quantidades, que teria também a ver com o abastecimento, se era um abastecimento contínuo ou se seria semana a semana. Uma calendarização muito clara é fundamental e ajuda bastante as duas partes.

Sistema de Codificação Individual: ECA05

Data: 29/12/21

Hora: 10:00

1. Idade: 51

2. Curso ou cursos que frequentou ou detém e respetivo grau académico: Curso profissional de modelagem de homem e senhora e de confeção e corte

3. Cargo Profissional: Modelista Sénior e responsável de departamento. Formadora de Modelagem

4. Número de anos de experiência profissional: 30 anos

5. Dimensão da empresa: + / - 400 trabalhadores

6. Qual das seguintes considera ser menos complexa para a gestão e eficiência produtiva e para a cadeia de abastecimento? Co-criação, co-produção ou customização em massa?

Oralidade: Se calhar a co-criação, porque tanto a co-produção como a customização em massa vai criar mais diversidade de artigos. A co-criação talvez seja um processo mais normal pois já trabalho nesses termos. Nós já trabalhamos muito em peças muito diversas, muito especiais que não são peças standard, a partir de marcas já com coisas muito especiais, muito específicas.

7. Quais os problemas que poderiam surgir da integração da produção de produtos co-criados em pequena escala ou complexos, numa linha de produção dedicada a produção em massa?

Oralidade: Isso já é mais ou menos aquilo que nos acontece. Cada vez mais as produções são mais reduzidas, com quantidades muito pequenas e com cores muito diferentes e numa linha de montagem que está preparada para trabalhar mais peças em série para ser mais rentável, aí o problema será mesmo o conseguir rentabilizar o minuto da peça. Menos quantidade de peças iguais, da mesma cor ou do mesmo material, provavelmente isso vai complicar a linha e o seguimento da montagem. Mesmo sendo do mesmo modelo já obriga a costureira a mudar de linha, as máquinas de chuleio, ponto preso, pespontos,

toda a gente tem que mudar e perde-se tempo. A rentabilidade da peça talvez seja menor do que se for em série, com quantidades superiores.

8. Das seguintes filosofias de produção qual consideraria ser a mais adequada para trabalhar com marcas de co-criação, podendo estas ter pequenos lotes ou produtos complexos, de uma forma mais eficiente e sustentável? Lean, agile ou leagile?

Oralidade: A leagile parece ser a mais adequada pois tem regras, que convém haver, porque senão acaba por ser um pouco anárquico. Fazem-se peças complexas e pequenos lotes mas se não houver uma regra... Por causa da sustentabilidade hoje em dia é cada vez mais necessário menos desperdício. Isso é importante mesmo para o consumidor final que saiba que um artigo está virado para a sustentabilidade, são pontos a favor para a marca. Um misto das duas coisas é o ideal.

9. Para a gestão e eficiência produtiva e da cadeia de abastecimento é preferível a produção de pequenas quantidades ou quantidades unitárias?

Oralidade: Pequenas quantidades. Já é complicado com pequenas quantidades, quanto mais com quantidades unitárias. Complica muito mais o sistema produtivo. Já não se consegue se calhar criar ali uma regra, uma pequena linha de montagem. Unitariamente é como se estivéssemos a trabalhar num atelier, por medida.

10. Se as pequenas quantidades forem baseadas em produtos modulares, isso poderia aumentar a eficiência produtiva?

Oralidade: Na verdade é aquilo que nós fazemos na modelagem. Vamos usando sempre bases de outros produtos e muitas vezes também vamos buscar detalhes de modelagem. Acabamos por trabalhar em produtos modulares. Não criamos tudo de raiz. Só em casos excepcionais. Nós fazemos uma espécie de cocktail. Vamos a buscar uma perna que assenta bem, os bolsos do outro porque ficam melhor esteticamente. Trabalhamos um pouco nesse sentido. Não vamos criar tudo de raiz.

11. A produção contínua de produtos de moda durante todo o ano, mesmo durante as épocas baixas, poderia ser um incentivo para as empresas produzirem para marcas de co-criação, mesmo que em pequena escala ou produtos complexos?

Oralidade: Atualmente trabalhamos com fardamentos, uniformes e acabamos por preencher o ano com esse tipo de artigos. Guardamo-los mais para as épocas baixas do ano que não temos tantas encomendas para entregar e amostras para fazer para preencher um pouco. A resposta é sim, acho que é um incentivo para as empresas.

12. Que informações, da parte das marcas, considera fulcral serem partilhadas com a indústria para uma maior eficiência e assertividade produtiva?

Oralidade: Primeiro, às vezes há aqui uma falta de informação assertiva do lado de lá, mas era muito importante vir logo a informação mais correta, mais direta, a nível por exemplo de forma e estrutura da peça. Muitas vezes vemos um croqui e falta-nos ali depois o que é que realmente eles pretendem. Vamos entregar uma peça que nos parece semelhante ao croqui e quando chega ao cliente não era aquela a estrutura que eles queriam e queriam uma peça mais estruturada ou menos estruturada. Falta informação nesse sentido, na parte técnica. Aí falta. Tem faltado muito. Ao longo dos anos acho que é nisso que tem havido muitas lacunas da parte dos clientes. Não nos informam ou às vezes eles também não sabem muito bem o que querem ou não têm informação suficiente para nos pedir e se calhar estão à espera que apareça uma peça que é mesmo o que querem e geralmente não é. E depois volta-se a fazer mais um ensaio e perde-se muito tempo e é esse tempo que depois nos vai fazer falta para o essencial que é a peça final para poder estudá-la. E se calhar há também outra coisa, o 3D, poderemos trabalhar digitalmente com o cliente, também de uma maneira mais assertiva na peça final. Já começa a haver muitas marcas que trabalham em sintonia com os produtores a nível de 3D. O designer já está a fazer a peça em 3D e com a ajuda do modelista já conseguem um trabalho online muito mais rápido para conseguir o produto final mais rápido e mais certo. Não acredito que aconteça claro em todas as peças porque não dá, mas é possível não fazer amostras porque se perde muito tempo. Há muita dificuldade atualmente a nível de execução de protótipos havia de haver ali uma fase nos protos, não digo que eliminássemos a peça em si, mas nós até chegarmos à amostra final para venda às vezes é um vai e vem de informação e peças e a peça inicial já não tem nada a ver com aquela que nos pediram. No início era uma coisa e no fim é completamente diferente. Era menos material que se gastava, menos tempo de costura. Não digo que seja em tudo, porque em

peças que tenham mais que um material como os blazers, tudo o que tenha entretelas, crinas ou forros, o 3D ainda não está apto a isso. Mas se conseguíssemos reduzir já amostras e mock ups em que às vezes se demora um mês ou dois e que afinal o cliente diz que não é nada daquilo que ele quer. Se conseguíssemos eliminar essa fase era o ideal a nível produtivo. Tudo o que seja saias, calças, tops, blusas, que não seja muito elaborado acho que já está a funcionar. Em malhas está a funcionar muito bem.

Sistema de Codificação Individual: ECA06

Data: 12/01/22

Hora: 18:30

1. Idade: 38

2. Curso ou cursos que frequentou ou detém e respetivo grau académico: Licenciatura em Design de Moda

3. Cargo Profissional: Modelista Sénior

4. Número de anos de experiência profissional: 11

5. Dimensão da empresa: +/- 110 trabalhadores

6. Qual das seguintes considera ser menos complexa para a gestão e eficiência produtiva e para a cadeia de abastecimento? Co-criação, co-produção ou customização em massa?

Oralidade: Co-criação, porque na customização em massa tens que fazer um a um e acaba por ter sempre acessórios diferentes ou ter, no caso da modelagem, modelagem diferente, mesmo que sejam coisas que já estão feitas. O processo deste tipo de moldes ou modelos é sempre muito mais extensivo do que se tivermos um modelo único. Se tivermos que fazer uma série de alterações ou programar o molde para fazer essas alterações automaticamente, é um trabalho enorme de criação e automatização. Customização em massa eu retirava porque sendo um produto novo tem que se rever sempre tudo. Co-produção poderá ter as suas vantagens, mas vou continuar com a co-criação porque acaba por não ser um tiro no escuro. Eu já trabalhei com co-produção e

aconteciam sempre vários problemas pois os contratos eram pouco claros e acontecia termos que repetir protótipos para produções posteriores. O problema era, depois já termos tudo preparado para produzir porque era preciso avançar e quando chegava o ok para a produção era ok mas tinha que se mudar isto, isto e isto e às vezes já havia peças cortadas porque era preciso avançar. A co-produção a meu ver tem este pequeno problema porque há sempre coisas para mudar que não são mudadas na hora. Enquanto que com a co-criação há uma interação maior com a equipa técnica e nesse sentido acho que poderá ser a maneira mais eficiente e produtiva para a cadeia de abastecimento, porque não há a falha de comunicação com quem recebe a informação. Nesse sentido acho que a co-criação é mais vantajosa.

7. Quais os problemas que poderiam surgir da integração da produção de produtos co-criados em pequena escala ou complexos, numa linha de produção dedicada a produção em massa?

Oralidade: Isto vai acontecer mais cedo ou mais tarde à maioria das empresas em Portugal porque eu acho que a produção em massa cada vez mais vai ter que ser reduzida por vários motivos. Falando na linha de produção vai sempre haver resistência à mudança e na minha experiência profissional foi sempre isto que mais vi nas linhas de produção. Isto sempre foi assim, a produção não está preparada para ter 4, 5, 6 modelos diferentes a entrar ao mesmo tempo. Isto depois pode provocar outro tipo de problemas. Nós como modelistas temos que ter sempre em atenção os modelos e como fazemos os modelos para que na produção seja o mais fácil possível a execução dos modelos e nós temos que ter algumas coisas em conta que são a maneira como é estruturado, por exemplo um casaco, tentamos sempre mudar o mínimo possível do que é o habitual da linha de produção, porque tudo aquilo que seja estranho à produção e às pessoas que estão na linha é complicado porque elas estão mecanizadas para fazer um certo tipo de operações. Quando é um produto muito diferente as pessoas não têm ferramentas para conseguir produzir o casaco à primeira tentativa e mesmo nos protótipos tens que se ter uma pessoa com muita experiência e que perceba muito de confeção para conseguir resolver metade dos problemas. Nós modelistas tentamos logo resolver a maioria dos problemas e tentamos logo antecipá-los antes deles existirem na produção, mas depois quando os produtos chegam à produção é óbvio que surgem outro tipo de problemas. E depois depende da pessoa que tenhas à frente da linha. Temos também problemas na parte da linha, no layout da linha, porque pode ter que se fazer mudanças e se se tem

muita produção a entrar e depois entram só 5 peças e depois outras 5 e depois 20, isso causa constrangimentos.

8. Das seguintes filosofias de produção qual consideraria ser a mais adequada para trabalhar com marcas de co-criação, podendo estas ter pequenos lotes ou produtos complexos, de uma forma mais eficiente e sustentável? Lean, agile ou leagile?

Oralidade: Leagile. Se tiveres um sistema híbrido com um processo ágil e sustentável tens o melhor dos dois mundos.

9. Para a gestão e eficiência produtiva e da cadeia de abastecimento é preferível a produção de pequenas quantidades ou quantidades unitárias?

Oralidade: Aqui depende. Está mais relacionado com a estrutura da própria empresa. Na minha empresa fazemos Made to Measure e está tudo preparado para trabalhar 1 a 1 e normalmente no máximo fazemos séries de 3 ou 4 e mesmo assim com tecidos diferentes. Há um constrangimento maior se tivermos que produzir ready-to-wear e evita-se ao máximo meter esse tipo de peças todas seguidas porque as linhas da maneira como estão estruturadas não estão preparadas para isso. Espera-se por quebras de produção para encaixar essas para não quebrar o ritmo das pessoas.

10. Se as pequenas quantidades forem baseadas em produtos modulares, isso poderia aumentar a eficiência produtiva?

Oralidade: Sim, sem dúvida. Porque está criado e testado e já há o know-how de como aplicar. Com coisas testadas é sempre mais fácil.

11. A produção contínua de produtos de moda durante todo o ano, mesmo durante as épocas baixas, poderia ser um incentivo para as empresas produzirem para marcas de co-criação, mesmo que em pequena escala ou produtos complexos?

Oralidade: Por um lado sim, porque aumenta a interação e dinâmica das equipas mas por outro pode ocupar demasiado tempo aos departamentos técnicos acabando por dar prejuízo sendo preciso avaliar muito bem se é compensatório para todas as partes. Mas há alturas em que não há produção para fazer e é preferível ter as pessoas ocupadas do que realmente estarem paradas e até perder dinheiro a fazer este tipo de produções, mas realmente as pessoas estão a trabalhar. Não tendo lucro não quer dizer que não se ganhe algum que ajude a compensar de alguma forma o trabalho das pessoas. Mas sim, ajuda, claro que sim.

12. Que informações, da parte das marcas, considera fulcral serem partilhadas com a indústria para uma maior eficiência e assertividade produtiva?

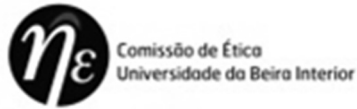
Oralidade: Público-alvo e objetivo principal, todas as especificidades, tipos de peças, medidas, acessórios, tecidos, valores, pormenores que sejam essenciais e obrigatórios, técnicas, a menos que essas sejam ao critério dos técnicos da empresa. E já trabalhei com muitos clientes e acho que há sempre aqui uma quebra no que é o trabalhar, entre o cliente e a parte técnica. Quando o cliente apresenta aquilo que quer para o produto devia estar sempre presente alguém relacionado com o produto e com a parte técnica e até com a parte da produção. Para que tudo funcione bem todos os setores têm que funcionar bem. Falar com o cliente ou um representante do cliente acho que iria facilitar muito o processo todo de criação e o processo todo da parte de protótipo e de resultado final e assim conseguir uma maior eficiência e assertividade produtiva. Na parte técnica, no 3D para o clássico ainda há muitas falhas porque não se consegue simular o volume das ombreiras, a rigidez das crinas, o amaciador, mas o 3D é muito vantajoso no sentido de que não precisamos de finalizar um protótipo para conseguirmos simular minimamente o cair de uma peça. No meio do processo consegue-se simular-se a vestibilidade está parecida com aquilo que se quer. Numa empresa que conheço simulavam vestidos de gala porque eles usavam tecidos muito caros e eles usavam muitas vezes o 3D para mostrarem aos clientes, não o produto final, mas uma ideia de como estava a ficar mais ou menos a peça. Eu acho que temos todos muito a ganhar com o 3D principalmente quando se fala na sustentabilidade de criação de peças, nos gastos e nos custos, porque não se vai gastar linha, tecido, energia. Eu acho que o 3D pode ser benéfico para muitas empresas, principalmente para empresas pequenas porque num atelier que não tenha muitas operárias e que o tempo de produção é enorme para um protótipo e que as operárias já estão muito vocacionadas para conseguir fazer só a produção, havendo um modelista a preparar os modelos, só é preciso ter ideia de como vai ficar.

## Coding matrix from Nvivo analysis

Códigos	Casos														
	DM01	DM02	DM03	DM04	DM05	DM06	DM07	DM08	DM09	ECA01	ECA02	ECA03	ECA04	ECA05	ECA06
O ADN da marca pode ser influenciado pela co-criação	1	3	3	2	1	1	1	1	2	0	0	0	0	0	0
Valor acrescentado do produto de moda co-criado apenas pelo designer	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0
Valor acrescentado do produto de moda co-criado com os consumidores	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0
Valor acrescentado para a marca	0	2	2	0	1	1	0	0	1	0	0	0	0	0	0
Ideias recebidas podem não ser importantes	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0
Ideias recebidas são importantes	1	2	1	0	1	2	1	1	1	0	0	0	0	0	0
Excesso de submissão de ideias pode ser um problema	1	1	1	1	1	1	2	1	1	0	0	0	0	0	0
Software de Inteligência Artificial é importante para análise e filtragem	1	1	1	1	2	1	1	1	1	0	0	0	0	0	0
Produtos de moda co-criados podem não ter um menor risco de falhar no mercado	0	1	0	1	0	0	0	1	1	0	0	0	0	0	0
Produtos de moda co-criados têm um menor risco de falhar no mercado	1	0	2	1	1	1	1	0	0	0	0	0	0	0	0
Informações disponibilizadas pela marca para o consumidor	1	1	1	0	2	1	3	2	1	0	0	0	0	0	0
Informações disponibilizadas pela marca para o consumidor podem impactar negativamente o processo	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Co-criar vários tipos de produtos simultaneamente é importante para a marca	2	1	0	0	1	1	1	0	0	0	0	0	0	0	0
Co-criar vários tipos de produtos simultaneamente é importante para o consumidor	1	0	1	0	1	1	0	1	0	0	0	0	0	0	0
Co-criar vários tipos de produtos simultaneamente pode criar problemas à marca	1	1	2	1	0	1	2	1	1	0	0	0	0	0	0
Co-criar vários tipos de produtos simultaneamente pode não ser interessante para o consumidor	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
Co-criar apenas pormenores dos produtos de moda é mais benéfico para a marca	1	1	0	1	2	1	1	1	1	0	0	0	0	0	0
Co-criar produtos de moda completos é mais benéfico para a marca	0	0	1	0	1	0	1	1	0	0	0	0	0	0	0
Produtos modulares podem corresponder às expetativas dos consumidores	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Produtos modulares podem não corresponder às expetativas dos consumidores	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0
Produtos modulares são positivos para a marca	1	1	1	1	1	2	1	1	1	0	0	1	0	0	0
Sourcing para melhorar a rapidez do processo	1	1	3	1	2	3	1	1	1	0	0	0	0	0	0
Informações fulcrais a partilhar com a cadeia de abastecimento	2	1	1	3	2	0	1	1	1	0	0	0	1	0	0
Funções do designer de moda numa marca de co-criação	2	1	1	1	3	2	2	2	1	0	0	0	0	0	0
Co-criação mais interessante produtivamente	0	0	0	0	0	0	0	0	0	0	0	3	0	1	2
Co-produção mais interessante produtivamente	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Customização em massa mais interessante produtivamente	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0
Problemas na produção de produtos co-criados	0	0	0	0	0	0	0	0	0	1	2	2	1	1	3
Agile é mais adequada para produtos co-criados	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0
Leagile é mais adequada para produtos co-criados	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1
Produção de pequenas quantidades é melhor	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0
Produção de quantidades unitárias é melhor	0	0	0	0	0	0	0	0	0	1	0	0	2	1	1
Pequenas quantidades baseadas em produtos modulares aumentam a eficiência produtiva	0	0	0	0	0	0	0	0	0	2	1	1	3	1	1
Produção de produtos co-criados em época baixa é positiva	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2
Ações para alcançar uma maior eficiência e assertividade produtiva	0	0	1	0	0	0	0	0	0	2	1	1	2	3	3
Informações fulcrais partilhadas da marca para a indústria	0	0	0	0	0	0	0	0	0	2	1	1	1	2	1

# Attachments

## Ethics Committee approval letter



comissaoeetica@ubi.pt  
Convento de Santo António  
6201-001 Covilhã | Portugal

### Parecer relativo ao processo n.º CE-UBI-Pj-2021-054:ID1063

Na sua reunião de 19 de outubro de 2021, a Comissão de Ética apreciou a documentação científica submetida referente ao pedido de parecer do projeto **“Development of a co-creation model that streamlines the fashion process from the consumer to the manufacture”**, do proponente **Paulo Gabriel Correia Martins**, a que atribuiu o código n.º CE-UBI-Pj-2021-054.

Na sua análise não identificou matéria que ofenda os princípios éticos e morais, sendo de parecer que o estudo em causa pode ser aprovado.

Covilhã e UBI

A Presidente da Comissão de Ética

Assinado por: ANA LEONOR SERRA MORAIS DOS SANTOS  
Num. de identificação: BI 12741975  
Data: 2021.10.25 23:02:02+01'00'



(Professora Doutora Ana Leonor Serra Morais dos Santos)

(Professora Auxiliar)