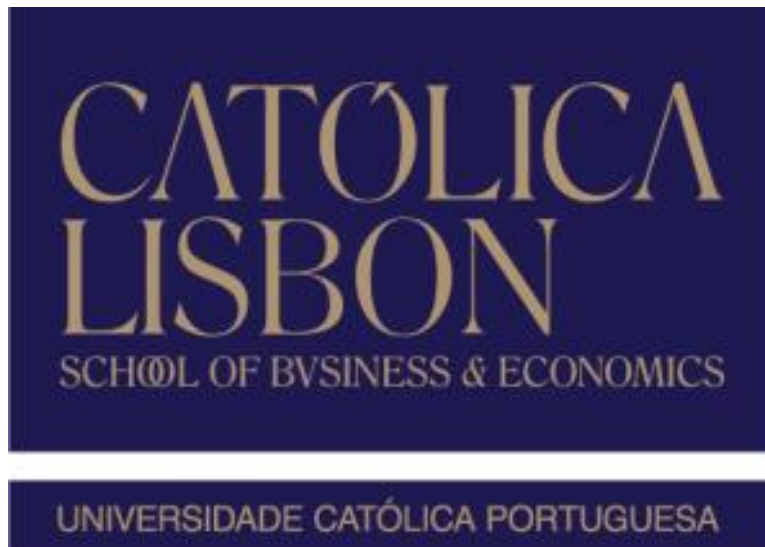




Reputation for innovation impact on consumer perceptions of co-created products

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Abstract

The purpose of this study is to understand how a firm's reputation for innovation influences the perceptions of co-created products. We investigated the impact of the co-creation claim (collaboration between customer and producer in the new product development process) against developed internally by firm professionals in the sportswear industry in terms of innovation ability, quality perceptions, attitude towards the product and willingness to pay. We investigated whether the level of firm's reputation for innovation influences product assessments of co-created products. In order to do so we test two different new product development processes (by firm professionals and Co-creation) of a pair of running shoes in two firms with different levels of reputation for innovation.

Results show that for companies with a high reputation for innovation the co-creation claim has a negative impact on product quality perceptions. Co-creation design mode did not affect significantly willingness to pay, overall product evaluations and innovation ability perceptions in these companies. Companies with low reputation for innovation are more likely to capitalize on co-creation initiatives. Our findings suggest that these companies benefit by informing consumers that a product was co-created, because it enhances substantially quality and firm ability perceptions. Furthermore consumers' willingness to pay is higher for co-created products. Our findings indicate that, professionally developed products from companies with a high reputation for innovation have better perceive quality than professionally developed products from companies with a low reputation for innovation, suggesting that companies with high reputation for innovation are associated to higher manufacturing expertise.

Keywords: Co-creation, Reputation for innovation, User Innovation, Reputation, Innovation

Sumário

O objetivo deste estudo é entender como a reputação por inovação de uma empresa influencia as percepções dos produtos co-criados. Investigou-se o impacto da co-criação (colaboração entre o consumidor e produtor no desenvolvimento de novos produtos) versus o método de desenvolvimento tradicional (com recurso apenas aos profissionais internos) na indústria de produtos desportivos em termos de: capacidade de inovação, percepções de qualidade, a atitude em relação ao produto e a disposição a pagar. Testámos dois processos diferentes de desenvolvimento de novos produtos (profissionais internos versus co-criação) de um par de ténis em duas empresas com diferentes níveis de reputação por inovação. Os resultados mostram que para empresas com uma reputação por inovação alta, a comunicação da co-criação tem um impacto negativo na percepção da qualidade do produto. A co-criação não afectou significativamente a disposição a pagar, avaliações de produtos e percepções de capacidade de inovação nestas empresas. Empresas com baixa reputação por inovação são mais propensas a beneficiar da comunicação da co-criação. Os nossos resultados sugerem que estas empresas beneficiam, ao informar os consumidores de que um produto foi co-criado, dado que tal comunicação tem um efeito positivo nas percepções de qualidade do produto e capacidade de inovação da empresa. Além disso os consumidores mostraram-se dispostos a pagar mais por produtos co-criados versus produtos desenvolvidos internamente por profissionais.

Os nossos resultados indicam também que, produtos desenvolvidos por profissionais de empresas com alta reputação por inovação beneficiam de melhores percepções a nível da qualidade do que produtos desenvolvidos por profissionais de empresas com baixa reputação por inovação, sugerindo que as empresas com alta reputação de inovação estão associadas a uma maior capacidade de desenvolvimento interno.

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Introduction

According to the Authenticity gap report (2014), the nine drivers of corporate reputation are: “Doing Right”, “Consistent Performance”, “Credible Communication”, “Better Value”, “Customer Care”, “Innovation”, “Employee Care”, “Community Impact” and “Care of Environment”. This study analysis the gap between people expectations and experiences in more than 700 companies in the United States, China, Germany, Canada, UK, Indonesia and Netherlands, the study considers innovation the most important driver of corporate reputation. The report also identifies of great importance consumers’ expectations on: “Greater Personalization of products and services”. Companies spend billions of dollars every year in R&D and advertising how innovative they are, yet, despite the importance of reputation for innovation there are few academic researches about it.

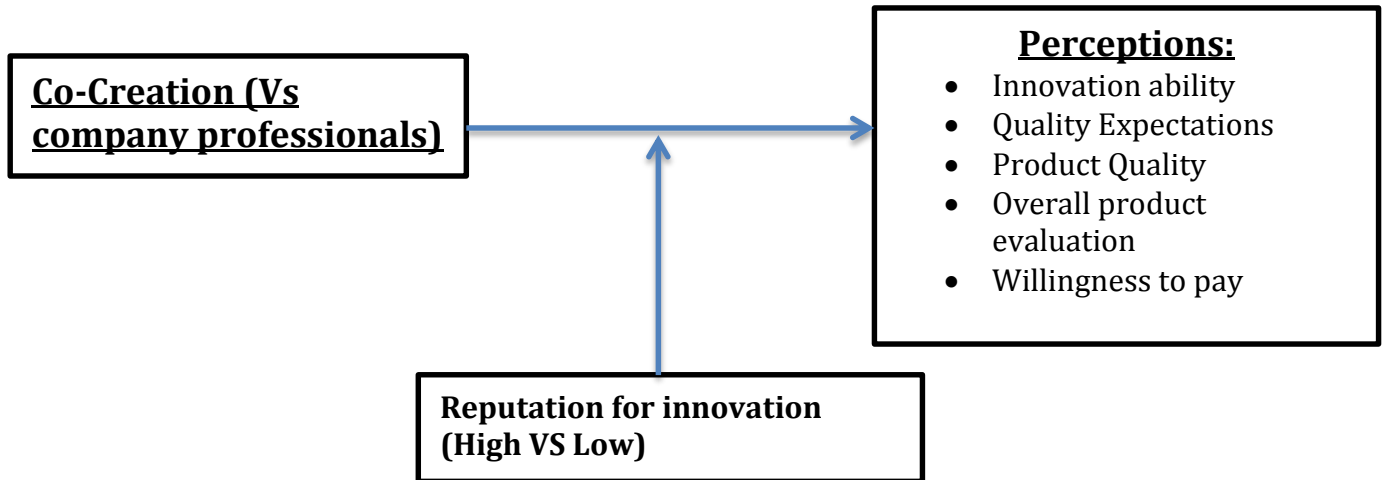
Consumers are more demanding than ever before and want products that are better fitted to their needs, so companies are adopting new ways of innovating and creating value. The traditional method of product development in close environment in which the products were completely developed by internal professionals is being questioned. Not only do customers have unique knowledge about their preferences (Poetz and Schreier 2012), but also democratizing the innovation process, by inviting consumers and empowering them brings many benefits to the companies: increased success in terms of product–customer need fit (Alam 2002), profit (Lau et al 2010), or market share (Joshi and Sharma, 2004), lower costs and lower risks (Ogawa and Piller 2006).

Compared with products that are fully developed by companies, products that are developed with users are better perceived resulting in higher willingness to purchase, willingness to pay and willingness to recommend. Also labeling products as co-created enhances consumer perceptions about a company’s innovation capability (Schreier et al 2012). However, to our knowledge there are no academic studies that evaluate how company’s perceived innovation capability (Reputation for innovation) affects evaluation of co-created products.

The goal of this study is to understand how reputation for innovation influences the perceptions of co-created products, from a managerial standpoint this topic is very important given the growing importance of co-creation and because of the impact of reputation on product evaluations. According to the reputation institute willingness to buy and recommend is driven 60% by company reputation and only 40% by the perceptions of the products. The perceptions that consumers have about a company's reputation for innovation influence product evaluations, consumers associate companies that have a reputation for innovation with higher expertise and manufacturing capability (Keller 2012), they transfer this believes to the products (Brown and Dacin 1997), therefore the products are considered to be more reliable (Canli and Batra 2004). Since in the minds of consumers products from companies high in reputation for innovation are the ideal reference point these companies experience higher levels of involvement, loyalty and excitement of their consumers (Henard and Dacin 2010).

Knowing that co-creation and reputation for innovation affect product evaluations we want to empirically study the relationship between both and address the following question: Will the effect of co-creation on product perceptions and evaluations be the same in companies with different reputations for innovation? We will investigate the impact of the co-creation claim against developed internally by firm professionals in the sportswear industry in terms of innovation ability, quality perceptions, attitude towards the product and willingness to pay. We want to understand if reputation for innovation will lead to different product assessments of co-created products, by testing two different development modes (developed by firm professionals VS Co-creation) of a pair of running shoes in two firms with different reputation for innovation.

Conceptual Framework



Co-Creation

In a globalized world consumer's preferences are heterogenic and always changing. Companies struggle to give customer's products and services that fit their needs, at the right time, this makes forecasting in terms of innovation a very challenging task. In fact, the failure rates of new products often reach 50 % and the main reason is the failure to understand what costumers really want and need (Ogawa and Piller 2006).

Traditionally when developing new products companies worked on close environment. Professionals made all the process from idea generation to production. Prahalad and Ramaswamy (2004) compared this product and firm centric view to a traditional theater where the customers and the actors had different tasks. The actor's main goal was to represent and entertain the audience, the customers only had to stay in their seats and enjoy the show "passively". Customers were passive recipients and targets of firms' offerings. Companies created special market research departments, employing research tools as surveys, interviews, focus groups to gather information on customers' needs, to feed innovation process and modify their products. Techniques such as quality function deployment support firms in translating need-related information into product requirements (Griffin and Hauser 1993). Nevertheless, only in some cases they were able to do it effectively (Von Hippel 2005). By excluding consumers from the development of new products companies were risking to incur in failure and extra costs.

Nowadays consumers are more active, informed and connected than ever before. They want to participate in the creation process because they can extract value from the relationship with the company and are empowered to develop solutions themselves addressing their needs (Franke et al 2010; Fuchs and Schreier 2011; Prahalad and Ramaswamy 2004; Sawhney et al 2005.). Research in marketing and innovation argues two key reasons for this paradigm shift from value creation for, to value creation with customers. First, new technological opportunities enable customers to be highly informed (Prahalad and

Ramaswamy 2004) and offer wider opportunities for firms to integrate customers' expertise, for example, through firm-hosted communities (Nambisan 2008). Second companies understood that they could extract value of the relationship with their customers by collaborating with them. The pressure for continuous innovation requires companies to place higher emphasis on the correct allocation of the need- and solution information. Co-creation enables customers to contribute unique knowledge and experiences that most often are outside the reach of the firm or become forbiddingly expensive to access to (Von Hippel 2005).

Lovelock and Young (1979) introduced the concept of customer participation showing when customers assume a more active role productivity gains increase, in 1970 almost 50 % of long distance calls were made with the help of an operator, so in 1971 AT&T decided to launch a marketing campaign and price discounts in order to "encourage" customers to make direct calls, in 1973 direct dialed calls represented 75 % of all long distance calls. By changing this labor task from the company to the customers AT&T reduced its costs (about \$37 million per year). After 1980 a lot of research was made in customer participation in production it is concluded that customer participation increase satisfaction, productivity gains, firm growth and profitability (Bendapudi and Leone 2003; Mahr et al 2014).

Much has been written about co-creation in the last decade. The concept of co-creation was popularized in 2000 by Prahalad and Ramaswamy seminal work where the authors referred frequently, defining Co-Creation as the "joint creation of value by the company and the customer" (Prahalad and Ramaswamy 2004., P.9). In the Marketing literature this concept is described in many different forms but they all include "customer collaboration/customer involvement" or "collaborative or joint activity between customer and producer" (Nysveen and Pedersen 2013).

The words joint and collaboration are very important to describe this concept because the term co-creation has been used indiscriminately in the marketing literature with different meanings, co-creation its not just customer involvement, it must include collaboration between both parties (companies and customers) (Humphreys et al 2009). Figure 1 illustrates co-creation highlighting

two important dimensions: the role of the firm and the type of value created. As shown co-creation is not the complete outsourcing of processes to consumers. In this instance joint collaboration is not present because the consumer is doing all the work (user generated content or mass collaboration). Co-creation is also different from customization of products, because customizing activities do not involve joint collaboration either, the consumer is just selecting some desired attributes (ex: color, graphics) in a standardized product offered by the company.

Co-creation is when consumers collaborate with a company and both contribute with significant input (Humphreys et al 2009) to develop a new product: consumers with their unique knowledge about their needs and preferences (Poetz and Schreier 2012) and company professionals with the technical skills and experience necessary to manufacture the products. Table 1 identifies companies that implemented co-creation initiatives.

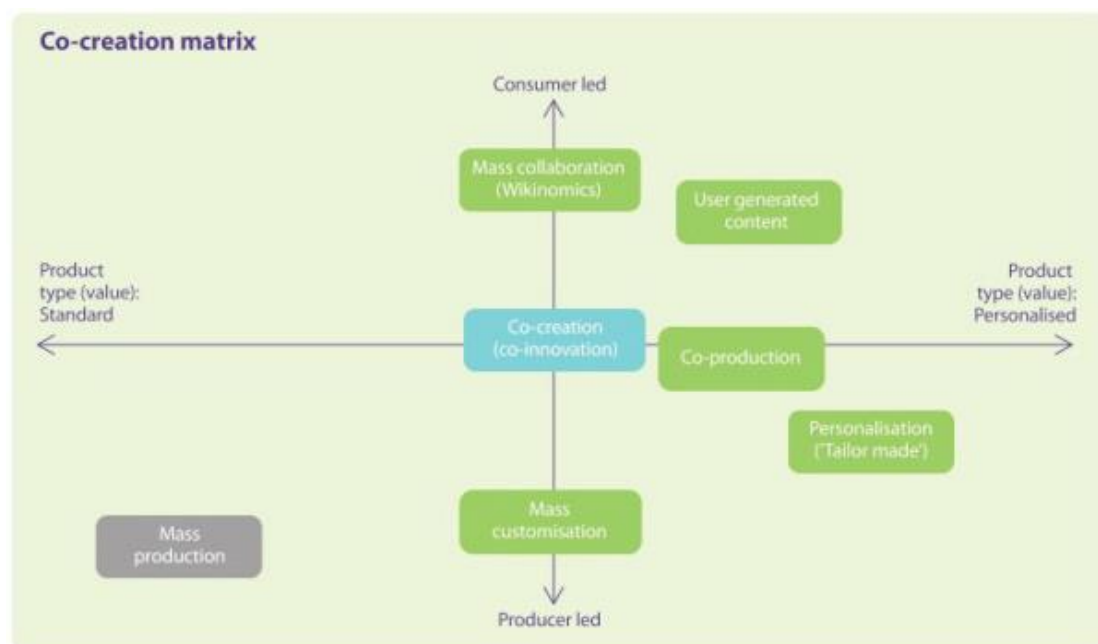


Figure 1 (Humphreys et al 2009)

Co-Creation Examples	
Company	Example
Threadless	Users design, vote and inspect t-shirts, the Threadless team then select the t-shirts that are going to be printed among the top scoring ones. On average there are 1000 design submissions/week and 10 are selected. Designers receive 20% royalties based on profits.
Unilever	In order to develop a new fragrance for its AXE brand unilever selected a group of passionate costumers and invited them to New York to a co-creation workshop where the customers alongside with Unilever professionals developed ideas and concepts. Then it used its online community to optimize the concept. The result was the Twist a fragrance that changes throughout the day.
Procter & Gamble	Pgconnectdevelop is a platform where the company share their innovation needs, users can submit their ideas about products, packages or other innovations and partnership with P&G in order to develop and integrate these ideas in the company.
Volvo	In the development of the SUV model XC90, Volvo involved a small group of female consumers (that belong to the target group) in all stages of the development process. Volvo organized frequent meetings with the women in order to collect ideas, opinions, feedback.
IKEA	IKEA Home Tour was a campaign in the United States where a team of 5 IKEA employees traveled throughout the country in order to help consumers doing home makeovers using the products from the company, the employees went to consumers houses and helped them decorating, planning and assembling the furniture. Consumers shared their needs/desires, this campaign was great for IKEA because it increased brand awareness and the company was able to collect valuable inputs for new product ideas and improvements
BMW	<i>"The BMW Group Co-Creation Lab is a virtual meeting place for individuals interested in cars and all related topics, who want to share their ideas and opinions on tomorrow's automotive world with one of the leading car manufacturers. It invites people from all over the world to contribute their suggestions for specific topics and to connect with like-minded others. Participants not only evaluate concepts which are developed by the BMW Group but also actively contribute their ideas and suggestions – they become active “co-creators” of innovative products and services."</i> (www.bmwgroup-cocreationlab.com/about)

Co-Creation effects on the companies

Many companies are embracing the concept of co-creation and customer empowerment, research shows that companies who can successfully make customers their partners have higher profit margins, higher revenues and enterprise value (Libert et al 2015). By collaborating with consumers companies reduce the risk of product failure because they have a better understanding of the needs of the consumers and thus when the product goes to market the likelihood that it will succeed is higher (Ogawa and Piller 2006).

Von Hippel (2005) coined the concept of lead users, these users are the ones that are ahead of the market because they feel the need to develop new products for their own use before other users or companies. Lead users are very important for co-creation because they are motivated to develop new products, are willing to collaborate and share their thoughts with the firms and have the ability to do so. Von Hippel concluded that in collaboration with 3M lead users developed product ideas that generated 8 times more sales than the ideas developed in the traditional manner (by professionals only), furthermore by collaborating with lead users 3M was able to develop new ideas for new products instead of just incremental innovations. Collaboration with customers allowed Cordis Corporation (a medical device manufacturer based in Florida), to develop the Sent an angioplastic balloon (device used to open blocked arteries) that generated nearly 1 billion \$ in revenues in the first year of commercialization and allowed the company to become a market leader (Ulwick 2002).

In sum, companies are adopting co-creation in order to innovate due to its positive impact, but one thing is being innovative another is being perceived as innovative (Fuchs and Schreier 2011), companies may develop truly innovative products but when communicating to consumers that the product were co-created they might not perceive it that way. Co-creation affects not only the companies' processes, outcomes and relationship with consumers but also the perceptions that consumers have about the company and its products.

Co-creation effects on consumer perceptions

Co-creation initiatives affect participating and non-participating consumers in different ways (Moreau and Herd 2010). Most of the existent research focus on the effects of consumer who participate in the development of new products (Fuchs and Schreier 2011), (Dijk, et al 2014), however the largest share of the market are the observing consumers, those who do not participate in co-creation (Fuchs et al 2013).

Fuchs and Schreier (2011) called the non-participating consumers the ones from the “periphery” and studied how they perceive products that have been developed with consumer empowerment strategies in two different dimensions (idea creation and design selection). They concluded that customer empowerment lead periphery consumers to perceive companies as customer oriented, they also developed favorable corporate attitudes and stronger behavioral intentions. The authors also conclude that this happened because even though these consumers decided not to engage in the development of the products they had the option to participate and influence, the consumers also felt that companies value and care about them because their opinions and needs were taken into account. Claiming that a product is co-created has a positive effect on non-participants consumer’s brand perceptions, it enhances brand associations, sincerity perceptions and behavioral intentions, since these products are considered to have a better fit in fulfilling the needs of the consumers (Dijk, et al 2014). Schreier and colleagues (2012) concluded that user-designed products are perceived as being more innovative, consumers purchase intend is also higher in this products alongside with their willingness to pay (that can be up to 50% higher) comparing with products that are fully created by companies.

However, there is another line of marketing literature which argues that the perceptions of co-created products are not always positive and are influenced by different factors. The number and diversity of users that co-created the product is one explanation why the products are viewed as more innovative, the familiarity of the consumers with user-innovation also plays an important role, users that are familiar with this concept are more likely to develop positive attitudes towards the products. The complexity of the product

is a mediator of consumer perceptions, on low complexity products (ex: t-shirts, household products), innovation perceptions are higher alongside with purchase intent in products that are designed with consumers, on high complexity products (ex: consumer electronics, robotic toys) this effect wasn't verified because consumers attributed more expertise to firm professionals (Schreier et al 2012). This happens because in the category of complex products consumers think that users are not able to provide positive inputs because they lack the adequate skills (Schreier et al., 2012). Consumers believe that professionals have better training, skill and experience and therefore are more capable of developing better products than their peers (Dahl and Moreau 2007). This effect is particularly salient in the fashion industry. For mainstream brands (e.g.: H&M or Diesel) claiming that the users have designed a product increases demand, but for luxury fashion brands (e.g.: Louis Vuitton or Prada) the effect reverses with negative effect on quality perceptions of the consumers. The motives that allowed for superior innovation capabilities, user-designed products and consumer involvement, failed to provide the exclusivity, distance and social status a strong component of the high luxury industry (Fuchs et al 2013). In their research about advertising co-creation Thompson and Malaviya (2013) reached similar conclusions and discover that claiming that an advertisement is co-created can affect persuasion negatively and hurt brand evaluations.

As we have seen there are two lines of research regarding the way consumers perceive co-created products, on one hand it is argued that co-creation enhances product perceptions because consumers feel that products have a better fit with their needs, they feel empowered and meaningful to the companies, on the other hand, co-creation negatively affects product perceptions as consumers are skeptical about the skill/ability of other consumers. We want to understand where reputation for innovation stands for in this discussion, consumers of a company with a reputation for innovation might think that the source of innovation and new product development is the pool of competent trained professionals that work within the firms and also be skeptical about their co-creator peers, but first we have to understand how this concept works so that it impacts the way consumers make product assessments.

Corporate Reputation

Fombrun (1996) defined corporate reputation as: “A perceptual representation of a company’s past actions and future prospects that describes the firm’s overall appeal to all of its key constituents when compared with other leading rivals” (Fombrun 1996, p 72). Corporate Reputation is an intangible asset difficult for competitors to develop or acquire (Callen and Fernandez 2014), as it takes time to develop reflecting companies’ movements and actions over time (Yoon et al 1993). The two main constituents of corporate reputation are experience and information. Stakeholders’ perceptions about a reputation of a company are influenced by the available information (this information can be advertising, word of mouth, media, internet) and by the past experiences of product usage (Yoon et al., 1993).

According to the signaling theory, corporate reputation is build upon signals that companies send to the marketplace in order to highlight the key qualities of their products/services, business model and business activities (Saphiro 1983; Fombrun and Shanley 1990). This theory analyzes the signals sent by the companies and how these strategic signals are interpreted by all the stakeholders (Walker 2010). Spence defines signals as *“the activities or attributes of individuals in a market which by design or accident, alter the beliefs of, or convey information to, other individuals in the market”* (Spence, 1974, p.1). Signals are observable and changeable attributes that are derived from past observations and help the consumers to make rational purchase decisions (Rao, 1994), they are a form of communication that companies use to indicate their strategic moves, performance, their compliance with social norms (e.g. corporate social responsibility) (Fombrun and Shanley 1990). An example of a signal is a warranty, a company may develop a reputation for quality by signaling consumers with a good warranty, it would not make sense for a company that is selling a product with poor quality to offer a good warranty because the failure rates of that product would be very high, resulting in high warranty fulfillment costs for the company (Rao and Ruekert 1999).

Reputation is signal or group of signals that help consumers to compare a company’s product/services, performance and strategies to those of the other

competing companies in the market (Fombrun and Shanley 1990), thus becoming a source of competitive differentiation. Companies use signals in order to communicate unobservable qualities (Rao and Ruekert 1999), they are an important resource that consumers rely on to deal with the complexity of the marketplace by simplifying the process of making investment/purchase decisions and to form perceptions about products (Frombrun and Riel 2004).

Reputation for Innovation

Corporate Reputation entails several dimensions (Walker 2010). Castro and colleagues (2006) for example, highlighted the following: financial strength; innovation; product and service quality; capability to gather, develop, and retain talented people; social responsibility among the community; use of corporate assets/efficiency; value of long term investments; and managerial quality. Reputation for innovation is a specific concept that belongs to the “family” of corporate reputation, so if corporate reputation reflects companies’ movements and actions over time (Yoon et al 1993), reputation for innovation reflects the innovation past actions of a company, it is the perception and expectation that consumers have about the capacity/ ability of a given firm to innovate. Reputation for innovation is an intangible asset and is build upon the perceptions of consumers of a firm history of successful product innovations, so when trying to measure it one cannot simply rely on quantitative measures like amount of R&D expense (Henard and Dacin 2010). A company cannot simply create a reputation for innovation by signaling to the public its investments in R&D. In order to create positive innovation perceptions the R&D investment has to produce customer and social benefits, companies should identify R&D projects that can create social value in order to capture the long run of a positive reputation for innovation (Padgett and Leite 2012).

While the need to manage positive signals companies must pay special attention to negative unintentional signals. Benjamin Franklin once said that: “It takes many good deeds to build a good reputation, and only a bad one to lose it”, this statement remains actual and applies to the business context also if we consider a deed as a signal. It is very important for managers to predict the

possible effects of their intentional and unintentional actions and signaling activities, because when a company signals claims that are not true and fails to deliver what its stakeholders are expecting it is risking its reputation, if this results in a break of trust between the two parties the company is damaging its reputation and can result in negative economic consequences (Rao and Ruekert 1999).

Companies innovate through many different strategies, by choosing co-creation they are signaling to consumers that, other individuals besides their professionals were involved in the new product development process, consumers trust in companies with high reputation for innovation (Henard and Dacin 2010) and believe that they are associated with higher expertise and manufacturing capability (Keller 2012), introducing consumers in the process may result in a break of trust, damaged reputation and lead to negative product perceptions or even negative economic consequences.

Reputation for innovation and co-creation

Consumers possess unique knowledge about their needs (Poetz and Schreier 2012), therefore, they develop more favorable attitudes towards co-created products because these products are considered to fit better with their preferences (Hoyer et al 2010). Other researchers have shown that claiming that a product has been developed in collaboration with consumers leads to more positive product evaluations (Dijk, et al 2014) and impacts positively the product perceptions in terms of aesthetics and functionality (Schreier et al., 2012).

Hence our First hypothesis is:

H1a: Co-created products will have a higher product evaluation than products developed by professionals

According to the signaling theory, reputations are built on signals that companies send to the marketplace. Consumers often rely on reputations to deal with the complexity of the markets and allow for a more efficient decision making process. Brown and Dacin (1997) studied the effects of corporate associations with innovation on product evaluations. The authors showed that corporate associations had an effect on product evaluations: In their study, they argued that companies that are associated with technological innovation benefit from it, because consumers will “transfer” these associations to the new products launched by the company. They concluded that this happen because when a consumer is presented with a new product s/he immediately makes inferences about it due to lack of full information so they rely on the past information (e.g. reputation for innovation) about the company and their product offerings.

Claiming that a product was co-created, in a company with high-perceived reputation for innovation, may interfere with the process of inference making and result in consumer confusion. Confusion may be sparked due to claims that are “*inconsistent with the consumer’s prior beliefs and knowledge, which can cause ambiguity*” (Walsh et al. 2007,p.9). Research shows that consumers demonstrate higher levels of involvement and excitement towards innovative firms and their

products (Henard and Dacin 2010). Consumers might become confused with the co-creation claim because they were used to and satisfied with the existing products of the innovative company that were developed by their trusted professionals. Under co-creation, consumers might not know what to expect about the collaboration of skillful professionals with less skillful consumers and become confused. Consumer confusion leads to dissatisfaction and decreased trust (Walsh and Mitchell 2010).

In companies with low-perceived reputation for innovation we argue that consumers might develop positive attitudes towards co-created products because the evaluations about previous products commercialized by these companies are not very high, therefore, knowing that companies value and care about them and are interested in considering their inputs in the development of new products, should make them to develop favorable attitudes towards the company and the product (Fuchs and Schreier 2011).

H1b: The effect of products co-created (professionally developed) on product evaluation is stronger in firms with low (high) reputation for innovation

Consumers tend to attribute more expertise to professionals than to consumers due to training skill and experience (Dahl and Moreau 2007). This explains why when the product category is considered to be complex the perceived innovative ability (of companies) and purchase intend is higher in products that are fully designed by the companies. For the same reason consumers demonstrate unfavorable attitudes towards products that have been created with users in the high luxury market segment and to user developed advertisements (Dahl and Moreau 2007; Thompson and Malaviya 2013). So consumers believe that products that are developed by company's professionals have better perceived quality than co-created products. Hence we argue that co-creation products will be perceived as having worse quality than the products developed by firm professionals.

H2a: Co-created products will be perceived as having lower quality than the products developed by firm professionals.

Consumers associate companies that have an innovative reputation with manufacturing expertise and product reliability (Canli and Batra, 2004) because for them *“Being innovative is seen in part as being modern and up-to-date, investing in research and development, employing the most advanced manufacturing capabilities, and introducing the newest product features.”*(Keller 2012, p. 512). So we expect that the negative effect of the co-creation claim in quality perceptions to be more accentuated in companies with high-perceived reputation for innovation, because of their higher perceived expertise in relation to companies that don't have this reputation

H2b: The effect of products co-created (professionally developed) on quality perceptions is stronger in firms with low (high) reputation for innovation.

Previous empirical studies in several product categories concluded that user involvement increases innovation perceptions of firms because co-creation brings together more people, more ideas, different backgrounds and different competences (Shreier et al 2012). Hence we argue that co-creation will lead to positive innovation capability perceptions:

H3a: Co-creation will have a positive effect on innovation capability perceptions.

Companies with a low-perceived reputation for innovation failed to launch new successful products in the market that create social benefit for consumers (Padgett and Leite 2012), so they are not associated with expertise and investment in innovation. These firms did not convince consumers of their internal capabilities to develop new innovative products, the co-creation claim signals consumers that a new source or innovation is brought to the “table” (other consumers), therefore in these companies co-creation should enhance innovation perceptions. On the other hand, companies that have a high reputation for innovation have been able to successfully deliver relevant, visible benefits to consumers and are associated with credibility (Aaker 2004), they are

already associated with superior internal manufacturing capabilities (Canli and Batra 2004), so the effect positive of bringing an external unknown source to the new product development process may have a negative effect on innovation ability.

H3b: The effect of products co-created (professionally developed) on innovation ability perceptions is stronger in firms with low (high) reputation for innovation.

When consumers know that a product was developed in collaboration with users (comparing with products that are fully created by companies) they willing to pay up to fifty percent more for this products (Shreier et al 2012). Recent studies reached the same conclusions and indicate that consumers are willing to pay up to thirty three percent more for a product if they realize that the product was co-created, the main reason is that consumers value the diversity of stakeholders and competences involved in the process (Kazadi et al 2015).

H4a: Co-creation will lead to higher willingness to pay than the products developed by firm professionals.

Consumers rely on a company's reputation for innovation in order to reduce purchase risk¹. When the risk of product failure or when evaluating certain products like new medical products (perceived risk) is higher consumers develop more favorable evaluations towards products of companies that have high reputation for innovation (Canli and Batra 2004). Consumers are loyal and trust in companies associated with innovation (Hernard and Dacin 2010) because they believe that their products are more reliable (Canli and Batra 2004). The perceived purchase risk of a trusted company is lower than a non-trusted one (Siegrist et al 2008). So the perceived purchase risk should be lower in companies with high reputation for innovation due to the higher levels of trust

¹ Perceived risk represents consumer uncertainty about loss or gain in a particular transaction (Sunitha et al 2012)

demonstrated by their consumers. Inviting consumers to collaborate includes “the possibility of an almost unlimited integration of a broad mass of unknown actors into the process” (Hammon and Hippner 2012, p1). These unknown actors may increase the perceived purchase risk in companies high in reputation for innovation with the inclusion of non-trusted individuals to the product development.

People in general are risk averse, in order to incur in additional risk they demand additional compensation (Halvolrson 2013). A classic example of this relationship is when a price of a stock goes down because the perceived risk for investors is higher. In companies high on-perceived reputation for innovation maintaining the same risk-return relationship, means that consumers will be willing to pay less for co-created products.

Above we argued that in companies with low-perceived reputation for innovation the inclusion of new actors (consumers) would translate into improved innovation, quality perceptions and attitudes towards the product. Previous academic studies proved that co-creation can increase willingness to pay, we argue that this is so in companies with low reputation as consumers in this context expect other consumers to be capable of providing meaningful input, because they believe that professionals of these companies lack the adequate skills to develop products that can deliver value to them. Therefore, consumers from companies with low reputation for innovation should be willing to pay more for the products because of the additional expected return.

H4b: The effect of products co-created (professionally developed) on willingness to pay is stronger in firms with low (high) reputation for innovation.

Methodology

In order to test product evaluations of co-created products (vs professionals) across companies with different reputations for innovation we have designed a survey divided in four different survey booklets that were randomly distributed to participants: two sportswear companies (RFI: High, low) X two product development methods for each company (co-creation VS internally developed)

The choice of the product category and companies was very important because the sample was a convenient sample (A convenient sample is a type of non-probability sampling technique where the researcher chooses the individuals to be included in the sample based on their proximity and convenience, it is not a true random sample (O'Gordman and MacIntosh 2014). The product selected to test our hypotheses was a pair of running shoes because it belongs to a product category well known by the great majority of the individuals in the study, therefore a product that participants could reason well

Two sportswear companies were selected for the study with the purpose of comparing the effects of the co-creation claim (regarding the pair of running shoes) in companies with different reputation for product innovation. The two companies were categorized accordingly with their reputation for innovation, one with high reputation for innovation and the other with low reputation for innovation.

Pilot study

A pilot study was conducted (N=27) in order to choose and classify the two companies that would be present in the main study. The pilot study was developed using Qualtrics and distributed online. This small survey consisted in a seven-point likert scale with seven items (see table 2). Subjects were asked to classify nine sportswear companies according with their perceptions: Nike, Umbro, Reebok, Puma, Adidas, Asics, Columbia and Domyos.

The two companies were chosen to be included in final survey accordingly with the average score of the scale items, the one that had the

highest average was chosen to be included in the final survey and was classified as having high reputation for innovation (Nike), the company that had the lowest average item score was also chosen to be included in the final survey and was classified as having low reputation for innovation (Domyos)

Results – Pilot study

Variable	Item
Reputation for Product Innovation (Alpha = 0,92)	Please classify the following statements according to your perceptions: Anchors [1]strongly disagree ... [7]strongly agree/ 1. [Company name] has a track record of successful new sportswear articles. 2. [Company name] is a cutting-edge sportswear company. 3. [Company name] is a new product leader in its industry. 4. [Company name] is an innovative company when it comes to sportswear. 5. [Company name] is a progressive company when it comes to sportswear. 6. With regard to sportswear, [company name] is a creative company. 7. I expect [company name] to introduce innovative sportswear products in the future. (Henard and Dacin 2010).

In total 27 (59% males) participants responded to the pilot study, the average age of the participants was 29. Nike had the highest average item score of $M=6,27$, therefore it was labeled as a company with high reputation for innovation and selected to be included in the main study, on the opposite side is Domyos, it had the lowest average item score $M=3,4$ and was classified as having low reputation for innovation, it was also selected to be included in the final study. The differences between the two scores were statistically distinct ($P<0,01$). The global average item score was $M=4,70$.

Company	Reputation for innovation(M)
Nike	6,27
Umbro	3,59
Reebok	5,09
Puma	4,57
Adidas	5,79
Asics	4,51
Columbia	4,41
Domyos	3,40
Global average	4,70

Design and procedure

The study was a 2(Reputation for innovation: high, low) x 2 (design mode: co-creation, professionals) between subject designs. Participants were randomly assigned to one of four groups, the survey was developed using Qualtrics and distributed online and in paper format. The survey had two available languages and could be answered in English or in Portuguese. For this study 151 participants initiated the survey but only 108 finish it. From the 108 participants that finished the survey, fifty percent were female, the average age was 34. One hundred respondents were Portuguese (90%), three respondents were Spanish, two French, one Indian, one Ukrainian and one Georgian.

First, all participants received information about the purpose of the study (*“The Focus of this research is to study the innovation in the sportswear industry”*).

All participants then read standardized information about one of the two companies (that was randomly assigned to them) Nike or Domyos alongside with their logos:

“[Company Name] is a multinational sportswear company that is engaged in the design, development, worldwide marketing and sales of footwear, apparel, equipment and accessories. [Company Name] offers a wide variety of products in different sports.”

After the company description participants were asked to complete a manipulation check regarding innovation and to answer a series of questions related to the companies, these statements evaluated the following dimensions: brand loyalty and brand awareness. The purpose of this manipulation check was to assess if the participant perception was consistent with the results from the first survey (that classified the companies reputation for product innovation) and to guarantee that the reputation effect is being studied.

Thus, before treatment participants in all groups were subject to identical stimuli. The group-specific treatment was then applied, participants received

information about one of the two methods used by the company in development of a new pair of running shoes that was going to be launched in the market. For each company there were two possible development methods (only one was assigned to each respondent), internal development by professionals or co-creation. The word co-creation was not used in the communication of the development method because this term is not well known by the great majority of the population.

Co-Creation scenario

"In order to develop and produce a new running shoe [Company Name] launched an online platform in which consumers contributed actively by submitting designs, voting, giving feedback and sharing experiences. The goal was to connect [Company Name] professionals with consumers in a highly collaborative environment with the purpose of producing a shoe lighter, more comfortable and more resistant in order to perfectly fulfill the consumers' needs. The environment was highly collaborative, [Company Name] exclusively relied on its consumers for actively testing and designing the shoe. [Company Name:] professionals were responsible for producing the shoe according with the design developed by the consumers and the data they collected from the voting's and feedbacks."

Internal Development Scenario

"[Company Name] is going to launch a new running shoe developed by its internal professionals. The shoe was designed to be lighter, more comfortable and more resistant in order to perfectly fulfill the consumers' needs."

After reading the message about the development process of the running shoes, participants were asked to complete another manipulation check, now related to the development mode, this manipulation check was very important to understand if the respondents interpreted correctly the development process. Co-creation communication is not an easy task and often is misunderstood by the target audience (Dijk et al 2014).

After, collecting information about the respondent's perceptions about the quality and innovation expectation of the running shoes, some pictures of a

pair of running shoes were provided (see appendix) alongside with a description emphasizing again the development process used:

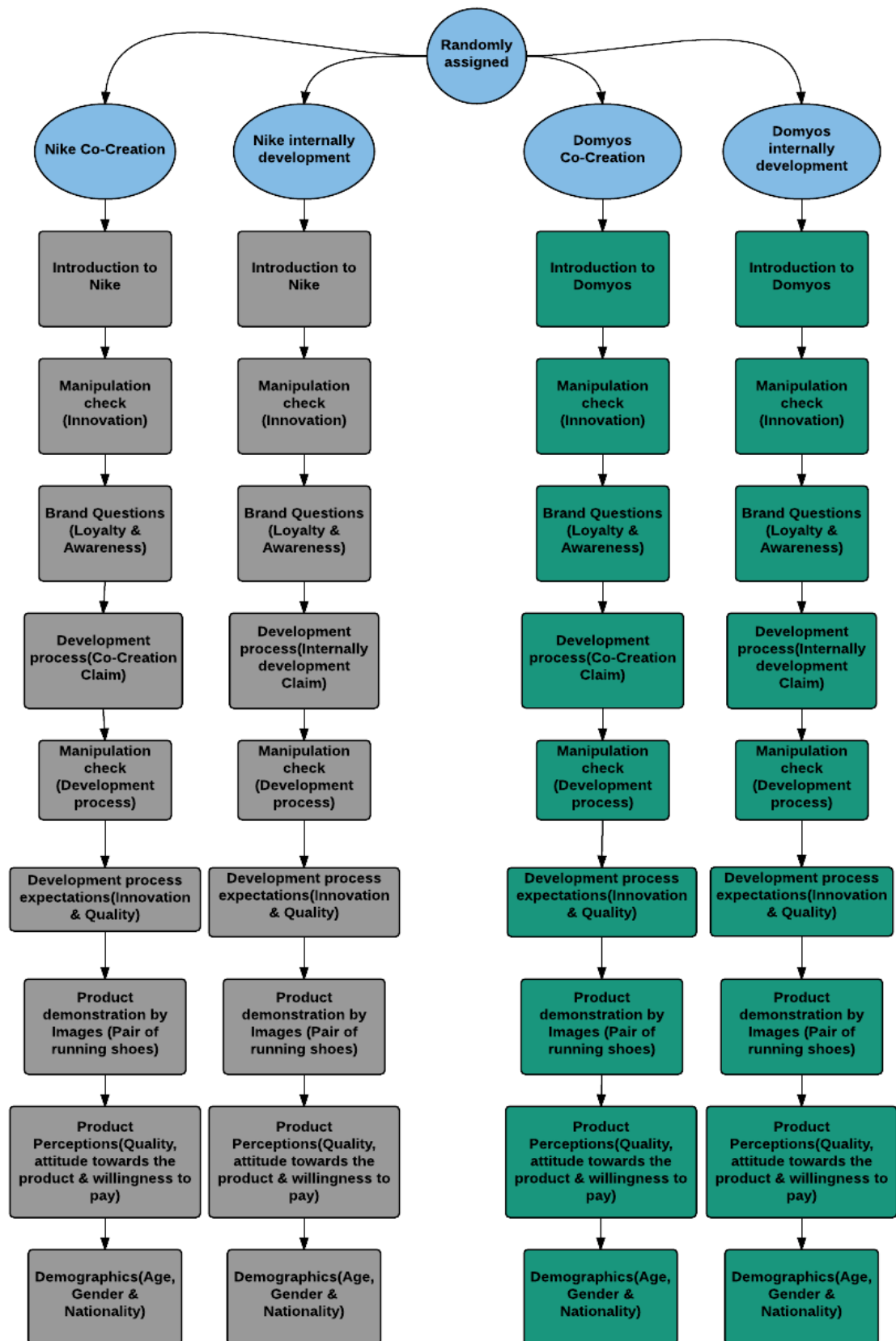
Internal Development Scenario

"This shoe was designed and produced by [Company Name] internal experts:"

Co-Creation scenario

"This shoe was designed and produced by [Company Name] and some of its enthusiastic consumers in a highly collaborative environment."

Finally after seeing the images about the running shoes, participants evaluated the product in terms of quality, overall product evaluation and willingness to pay. In the end of the survey some demographic questions were asked (age, gender and nationality). Table 2 lists all measures and item sources.



Surveys Diagram

Measures

Table 2

Variables	Items
Innovation Perceptions Company Manipulation check	Please classify [Brand] in relation to innovation: [1]Very Conservative... [7] Very Innovative
Brand Awareness (Alpha = 0,87)	Please classify the following statements about [Brand] brand according to your perceptions: 1. [1]This brand is very unfamiliar to me...[7]This brand is very familiar to me / 2. [1] I'm not at all knowledgeable of this brand...[7]I'm very knowledgeable of this brand / 3. [1]I've never seen advertisements about this brand in the mass media...[7]I've seen many advertisements about this brand in the mass media (Zhou, Yang, and Hui 2010)
Loyalty to the Brand (Alpha =0,84)	1. How much would you say you like or dislike brand product? [1]Dislike very much...[7] Like very much / 2. When you buy product, to what extent do you buy brand? [1]Never buy...[7]Always buy / 3. When you buy product, to what extent are you 'loyal' to brand? [1]Never buy... [7]Always buy (Sen, Gürhan-Canli, and Morwitz 2001)
Co-creation Manipulation check	In your opinion who developed the product? [1] Company [2] Joint collaboration between the company and consumers [3] Consumers
Innovation ability (Alpha =0,92)	Please Classify the following statements according with your perceptions: 1. I think that this type of product development increases the ability of the firm to develop really innovative new products [1]Totally disagree...[7] Totally agree / 2. This method of product development puts the firm in the position to derive very original product ideas [1]Totally disagree...[7] Totally agree / 3. This initiative has a large potential to foster creativity [1]Totally disagree...[7] Totally agree / 4. I think the firm can create very interesting new products [1]Totally disagree...[7] Totally agree (Schreier, Fuchs, and Dahl 2012)

Quality expectations of the production method (Alpha =0,90)	Please Classify the following statements according with your perceptions: 1. The likelihood that the product would be reliable is: [1]Very low...[7] Very High / 2. The workmanship of the product would be:[1]Very low...[7] Very High / 3. The likelihood that this product is dependable is: [1]Very low...[7] Very High / 4.This product quality should be: [1]Very low...[7] Very High / 5. The durability of this product would be: [1]Very low...[7] Very High (Dodds, Monroe, and Grewal 1991)
Overall Product Evaluation (Alpha =0,96)	Please describe you feelings toward the presented running shoes using the following scale: 1. [1]bad ... good / 2. [1]unpleasant ... [7]pleasant/ 3. [1]unfavorable ... [7]favorable / 4. [1]dislike ... [7]like/ 5. [1]useless ... [7]useful / 6. [1]undesirable ... [7]desirable / 7. [1]negative ... [7]positive / 8. [1]uninteresting ... [7]interesting / 9. [1]irritating ... [7]not irritating (Bruner 2013)
Quality perceptions of the product (Alpha =0,93)	Please classify the following statements about the quality of the presented running shoes according to your perceptions: 1. [1]Poor Quality... [7]Excellent quality / 2. [1] Inferior Product ... [7] Superior Product / 3. [1] Worse than Average Product ... [7] Better than Average Product / 4. [1] Filmsy Construction ... [7] Durable Construction / 5. [1] Very little attention to details... [7] A lot of attention to details (Buchanan, Simmons, and Bickart 1999)
Willingness to pay	Assuming that you wished to purchase this product, what do you think would be the most you would pay for this product? (1) 0-29 € (2) 30-59 € (3) 60-89 € (4) 90-119 € (5) Above 120

Results

Main Study

Manipulation checks

Analysis of our manipulation checks supported adequacy of the conditions used. Participants correctly identified whether design mode was consumers' responsibility or firm's professionals oriented (Mco-creation = 1.98, Mprofessionals = 1.4, $p < 0.01$) as also those on the Nike condition reported significantly higher firm reputation for innovation than those in the no name condition (MDomyos = 4.15, MNike = 5.83; $p < 0.01$).

Control Variables

In terms of brand awareness (MDomyos = 3., MNike = 5.83; $p < 0.01$) and brand loyalty (MDomyos = 3.32, MNike = 4.24; $p < 0.01$) Nike and Domyos yielded different levels with Nike demonstrating significant higher levels in both characteristics.

	Low RPI(Domyos)	High RPI(NIKE)	Statistics
Brand			
Brand Awareness	3.05	5.82	$t = -10.445$, $P < 0.01$
Brand Loyalty	3.32	4.24	$t = -5.6847$, $P < 0.01$
Manipulation Checks			
Innovation	4.15	5.83	$t = -7.4813$, $P < 0.01$

	Co-creation	Professionals	Statistics
Development mode	1.98	1.4	$t = 4.8378$, $P < 0.01$

Co-creation Main effect

A univariate analysis of variance (ANOVA) performed on variable revealed that the main effect of design mode is not statistically significant. Results support that co-creation alone does not enhances firms product evaluation (H1), quality perceptions (H2), innovation ability (H3) and willingness to pay (H4) we found no evidence that co-creation alone influences change consumer perceptions so we rejected this hypothesis $p > 0,05$.

Results show that the interaction effect between co-creation and reputation for innovation is statistically significant in terms of innovation ability, quality expectations, product quality and willingness to pay $p < 0,05$. These effects remain significant even after we introduce brand loyalty and brand awareness as control variables $p < 0,05$ (see appendix). Co-creation alone is not able to change the perceptions of participants in terms of innovation ability quality perceptions, product evaluation and willingness to pay but in interaction with reputation for innovation it is able to change the perceptions in all measures expect overall product evaluation.

Main Effect			Interaction effect
Development mode		Reputation for innovation	Development mode X Reputation for innovation
Innovation Ability	F=3.824, P=0.053	F=1.995, P=0.161	F=4.154, P=0.044
Quality Expectations	F=0.409, P=0.524	F=15.536, P<0.01	F=12.700, P<0.01
Product evaluation	F=0.112, P=0.738	F=0.696, P=0.406	F=0.566, P=0.454
Product Quality	F=0,377, P=0.541	F=10.996, P<0.01	F=13.427, P<0.01
WTP	F=0.251, P=0.617	F=18.544, P<0.01	F=4.561, P=0.035

Co-creation X Reputation for innovation

At the product level, and to test for H1b (Product Evaluation) we argued that the co-creation (professional) development mode would be more (less) beneficial to firms with low (high) reputation for innovation. Results show no statistically significant perceived differences between co-creation and professionally developed mode in the two companies in terms of product evaluations $p > 0,05$, thus H1b is not supported.

Regarding H2b (Quality perceptions), we argued that that the co-creation (professional) development mode would be more (less) beneficial to firms with low (high) reputation for innovation. Our findings demonstrated that for firms with a high reputation for innovation participants perceived both the co-creation development mode (MCo-creation = 5.53, MProfessionals = 5.95; $p = 0.026$) and the co-created product (MCo-creation = 4.9, MProfessionals = 5.78; $p = 0.03$) to have less quality than the developed by professionals mode. In contrast, for companies with low reputation for innovation individuals perceived the co-created running shoes to have better quality than the developed by professionals (MCo-creation = 4.97, MProfessionals = 4.34; $p < 0.036$), the same conclusion was found regarding the quality perceptions of the development mode (MCo-creation = 5.48, MProfessionals = 4.87; $p < 0.01$), thus we confirm H2b.

In order to test for H3 (innovation ability perceptions), where we suggested that firms with low (high) reputation for innovation would extract more benefits from co-creation (professional) design mode. Differences in perceptions of ability to innovate were found in companies with low reputation for innovation (MCo-creation = 6.05, MProfessionals = 5.2; $p = 0.029$), with these firms showing higher perceptions of ability to innovate when products are co-created. On the other hand, firms high in reputation for innovation showed no significant difference between the design modes used by the firm (MCo-creation = 5.92, MProfessionals = 5.94; $p < 0.05$). Although, a significant effect of a professional design was found for firms low on reputation for innovation, our results did not find support for an effect of a user design mode on perceptions of

the ability to innovate in firms high on reputation for innovation. Thus, H3 was just partially supported.

Lastly, regarding willingness to pay (H4b) we suggested that firms with low (high) reputation for innovation would extract more benefits from co-creation (professional) design mode. In firms with high reputation for innovation results show no differences between the two development methods $P > 0.05$. On the other hand, in firms with low reputation for innovation, our findings revealed that participants were willing to pay more for co-created products ($M_{\text{Co-creation}} = 2.24$, $M_{\text{Professionals}} = 1.77$; $p < 0.0257$), this results also contrast with the ones from the previous scenario (high reputation for innovation), where no statistically significant difference was found in terms of willingness to pay, thus H4b is partially supported.

	Co-creation	Professionals	Statistics
High Reputation for Innovation (NIKE)	N=27	N=26	
Innovation Ability	5.92	5.94	$t = -0.1037$, $P = 0.92$
Quality Expectations	5.53	5.95	$t = -2.2863$, $P = 0.026$
Product evaluation	4.59	4.7	$t = -0.2835$, $P = 0.778$
Product Quality	4.9	5.78	$t = -3.0777$, $P = 0.03$
WTP	2.63	2.92	$t = -0.09655$, $P = 0.339$
Low Reputation for Innovation (DOMYOS)	N=25	N=30	
Innovation Ability	6.05	5.26	$t = 2.2368$, $P = 0.029$
Quality Expectations	5.48	4.87	$t = 2.77373$, $P = 0.007$
Product evaluation	5	4.72	$t = -0.7915$, $P = 0.432$
Product Quality	4.97	4.34	$t = 2.1462$, $P = 0.036$
WTP	2.24	1.77	$t = 2.3179$, $P = 0.0257$

Conclusion

Contributions and Implications

Our research provides valuable insights about the relationship between reputation for innovation and co-creation on consumer perceptions in the sportswear industry. The results show that co-creation changes consumer perceptions and that its effect is moderated by reputation for innovation. We concluded that there is a significant relationship between co-creation and reputation for innovation, even after controlling for brand awareness and brand loyalty. The positive effect of co-creation demonstrated by other scholars is verified only in companies with a low reputation for innovation.

Our findings show that professionally developed products from companies with a high reputation for innovation have better perceived quality than products from companies with a low reputation for innovation (see appendix), in line with previous academic research about this topic (Canli and Batra 2004)(Keller 2012) we confirmed that companies with a high reputation for innovation are considered to have higher expertise and manufacturing capabilities because their products are perceived to have better quality. This might be one possible explanation for the different reactions to co-creation in the two companies, Schreier and colleagues (2012) demonstrated that when evaluating complex products consumers attributed more expertise to professionals therefore the positive effect of co-creation didn't hold.

Against our expectations co-creation did not affect significantly innovation ability, willingness to pay and product evaluation in the firm with a high reputation for innovation, we were expecting that by bringing consumers to the development process it might generate confusion and higher risk perceptions therefore causing negative perceptions, however that only happened in terms of quality perceptions, this indicates that co-creation might be the most important factor to have in consideration when communicating co-creation to consumers, stating in the co-creation message that quality is assured by firm professionals might be a way of attenuating this effect.

Our study have important managerial implications, we suggest that managers should take their firm's reputation for innovation into consideration when making decisions about advertising that a product was co-created.

Results show that for companies with a high reputation for innovation the co-creation claim has a negative impact on quality perceptions, so for these companies, managers should not stress that a product was co-created. Co-creation did not affect significantly willingness to pay, overall product evaluations and innovation ability perceptions in these companies.

Companies with low reputation for innovation are more likely to capitalize on co-creation initiatives, our findings suggest that these companies benefit by informing consumers that a product was co-created because it enhances substantially quality and innovation ability perceptions, furthermore consumers willingness to pay is higher for co-created products. Professionals of these companies are not popular among consumers because they do not have a record of successful innovations, these negative associations pass to the products exclusively developed by them, co-creation means that these unpopular professionals are working together with more people with different competences than can help them to develop new better ideas, therefore positive associations are created to the products.

Limitations and Further research

This study has some limitations, the first one has to do with the size of the sample, even though the total number of participants is significant (N=108), the number of participants in each group is only about 25, which could be improved. Our completion rate was 70%, which might indicate the survey was too long.

The second limitation has to do with the product, we choose a product that could be easily evaluated by many people, a pair of unisex running shoes, however some answers might be given by participants that do not practice sports and do not have a strong knowledge of this products. Product observation was based on the observation of images only, this stimulus might not be enough to successfully evaluate products, and so measures of product perceptions might not be completely reliable. It might be worthwhile to test these effects in a more practical way with physical products rather than a survey.

There are no theoretical indications that this findings will not extend to other industries or products, however the conclusions of this study might be limited to the sportswear industry only. Further research is required in order to test if this conclusions apply other products, it might be interesting to explore products that require less expertise to develop, or in products where the purchase risk is higher to test if the effect of reputation for innovation on consumer perceptions of co-created products still withholds.

Finally, this research focused the relationship between reputation for innovation and co-creation, it would be very interesting to study the impact of other dimensions for reputation (ex: Quality, financial strength, social responsibility) on co-creation.

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Appendix

Main Effect - RFI			
	Nike-Professionals	Domyos-Professionals	Statistics
	N=26	N=30	
Innovation			
Ability	5.94	5.26	t=2.4064, P=0.0207
Quality			
Expectations	5.95	4.87	t=5.3546, P<0.01
Overall product			
evaluation	4.7	4.72	t=-0.0603, P=0.9522
Product Quality	5.78	4.34	t=5.3659, P<0.01
WTP	2.92	1.77	t=5.3659, P<0.01

Main Effect - Cocreation			
	Co-creation	Professionals	Statistics
	N=52	N=56	
Innovation			
Ability	5.99	5.56	t=-2.0446, P=0.043
Quality			
Expectations	5.50	5.38	t=0.825, P=0.4113
Overall product			
evaluation	4.79	4.71	t=0.3025, P=0.7629
Product Quality	4.93	5.0	t=-0.3378, P=0.7362
WTP	2.44	2.30	t=0.07072, P=0.0481

		Rótulo de valor	N
Cocreation	0	Professionals	56
	1	co-creation	52
RFI	0	Não	55
	1	Sim	53

Innovation ability

Testes de efeitos entre assuntos

Variável dependente: Innovationability

Fonte	Tipo III Soma dos Quadrados	df	Quadrado Médio	F	Sig.
Modelo corrigido	11,241 ^a	3	3,747	3,548	,017
Ordenada na origem	3609,127	1	3609,127	3417,680	,000
Cocreation	4,039	1	4,039	3,824	,053
RFI	2,106	1	2,106	1,995	,161
Cocreation * RFI	4,387	1	4,387	4,154	,044
Erro	109,826	104	1,056		
Total	3720,625	108			
Total corrigido	121,067	107			

a. R ao quadrado = ,093 (R ao quadrado ajustado = ,067)

Innovationability

Interacção		N	Subconjunto para alfa = 0.05	
			1	2
Tukey HSD ^{a,b}	Domyos Professionals	30	5,26	
	Nike Co-creation	27	5,93	5,93
	Nike Professionals	26	5,94	5,94
	Domyos Co-creation	25		6,05
	Sig.		,076	,971

Testes de efeitos entre assuntos

Variável dependente: Innovationability

Fonte	Tipo III Soma dos Quadrados	df	Quadrado Médio	F	Sig.
Modelo corrigido	15,699 ^a	5	3,140	3,040	,013
Ordenada na origem	140,143	1	140,143	135,664	,000
BrandLoyalty	2,011	1	2,011	1,947	,166
Brandawareness	,270	1	,270	,261	,610
Cocreation	6,508	1	6,508	6,300	,014
RFI	,024	1	,024	,023	,880
Cocreation * RFI	4,338	1	4,338	4,199	,043
Erro	105,368	102	1,033		
Total	3720,625	108			
Total corrigido	121,067	107			

a. R ao quadrado = ,130 (R ao quadrado ajustado = ,087)

Quality Expectations

Testes de efeitos entre assuntos

Variável dependente: Qualityexpectation

Fonte	Tipo III Soma dos Quadrados	df	Quadrado Médio	F	Sig.
Modelo corrigido	16,121 ^a	3	5,374	10,034	,000
Ordenada na origem	3206,667	1	3206,667	5987,392	,000
Cocreation	,219	1	,219	,409	,524
RFI	8,321	1	8,321	15,536	,000
Cocreation * RFI	6,802	1	6,802	12,700	,001
Erro	55,699	104	,536		
Total	3268,800	108			
Total corrigido	71,821	107			

a. R ao quadrado = ,224 (R ao quadrado ajustado = ,202)

Testes de efeitos entre assuntos

Variável dependente: Qualityexpectation

Fonte	Tipo III Soma dos Quadrados	df	Quadrado Médio	F	Sig.
Modelo corrigido	19,289 ^a	5	3,858	7,491	,000
Ordenada na origem	129,907	1	129,907	252,239	,000
Brandawareness	,053	1	,053	,102	,750
BrandLoyalty	1,807	1	1,807	3,508	,064
Cocreation	,999	1	,999	1,939	,167
RFI	1,230	1	1,230	2,388	,125
Cocreation * RFI	6,596	1	6,596	12,807	,001
Erro	52,531	102	,515		
Total	3268,800	108			
Total corrigido	71,821	107			

a. R ao quadrado = ,269 (R ao quadrado ajustado = ,233)

Qualityexpectation

		N	Subconjunto para alfa = 0.05	
Interacção			1	2
Tukey HSD ^{a,b}	Domyos Professionals	30	4,89	
	Domyos Co-creation	25		5,48
	Nike Co-creation	27		5,53
	Nike Professionals	26		5,95
	Sig.		1,000	,097

Overall product evaluation

Testes de efeitos entre assuntos

Variável dependente: Overallproductevaluation

Fonte	Tipo III Soma dos Quadrados	df	Quadrado Médio	F	Sig.
Modelo corrigido	2,373 ^a	3	,791	,437	,727
Ordenada na origem	2430,693	1	2430,693	1341,819	,000
Cocreation	,203	1	,203	,112	,738
RFI	1,261	1	1,261	,696	,406
Cocreation * RFI	1,024	1	1,024	,566	,454
Erro	188,395	104	1,811		
Total	2627,519	108			
Total corrigido	190,769	107			

a. R ao quadrado = ,012 (R ao quadrado ajustado = -,016)

Testes de efeitos entre assuntos

Variável dependente: Overallproductevaluation

Fonte	Tipo III Soma dos Quadrados	df	Quadrado Médio	F	Sig.
Modelo corrigido	7,481 ^a	5	1,496	,833	,529
Ordenada na origem	85,290	1	85,290	47,464	,000
Brandawareness	,133	1	,133	,074	,786
BrandLoyalty	2,746	1	2,746	1,528	,219
Cocreation	1,276	1	1,276	,710	,401
RFI	3,514	1	3,514	1,955	,165
Cocreation * RFI	,971	1	,971	,540	,464
Erro	183,288	102	1,797		
Total	2627,519	108			
Total corrigido	190,769	107			

a. R ao quadrado = ,039 (R ao quadrado ajustado = -,008)

Product Quality Assessment

Testes de efeitos entre assuntos

Variável dependente: ProductQuality

Fonte	Tipo III Soma dos Quadrados	df	Quadrado Médio	F	Sig.
Modelo corrigido	28,983 ^a	3	9,661	8,483	,000
Ordenada na origem	2682,551	1	2682,551	2355,455	,000
Cocreation	,429	1	,429	,377	,541
RFI	12,523	1	12,523	10,996	,001
Cocreation * RFI	15,292	1	15,292	13,427	,000
Erro	118,442	104	1,139		
Total	2815,520	108			
Total corrigido	147,425	107			

a. R ao quadrado = ,197 (R ao quadrado ajustado = ,173)

ProductQuality

Interacção		N	Subconjunto para alfa = 0.05	
			1	2
Tukey HSD ^{a,b}	Domyos Professionals	30	4,34	
	Nike Co-creation	27	4,90	
	Domyos Co-creation	25	4,97	
	Nike Professionals	26		5,78
	Sig.		,142	1,000

São exibidas as médias para os grupos em subconjuntos homogêneos.

Testes de efeitos entre assuntos

Variável dependente: ProductQuality

Fonte	Tipo III Soma dos Quadrados	df	Quadrado Médio	F	Sig.
Modelo corrigido	30,158 ^a	5	6,032	5,246	,000
Ordenada na origem	120,530	1	120,530	104,838	,000
Brandawareness	,513	1	,513	,446	,506
BrandLoyalty	,080	1	,080	,069	,793
Cocreation	,134	1	,134	,116	,734
RFI	2,656	1	2,656	2,310	,132
Cocreation * RFI	15,542	1	15,542	13,519	,000
Erro	117,267	102	1,150		
Total	2815,520	108			
Total corrigido	147,425	107			

a. R ao quadrado = ,205 (R ao quadrado ajustado = ,166)

Willingness to Pay

Testes de efeitos entre assuntos

Variável dependente: WTP

Fonte	Tipo III Soma dos Quadrados	df	Quadrado Médio	F	Sig.
Modelo corrigido	21,116 ^a	3	7,039	8,127	,000
Ordenada na origem	613,992	1	613,992	708,958	,000
Cocreation	,217	1	,217	,251	,617
RFI	16,060	1	16,060	18,544	,000
Cocreation * RFI	3,950	1	3,950	4,561	,035
Erro	90,069	104	,866		
Total	718,000	108			
Total corrigido	111,185	107			

a. R ao quadrado = ,190 (R ao quadrado ajustado = ,167)

WTP

Interacção		N	Subconjunto para alfa = 0.05		
			1	2	3
Tukey HSD ^{a, b}	Domyos Professionals	30	1,77		
	Domyos Co-creation	25	2,24	2,24	
	Nike Co-creation	27		2,63	2,63
	Nike Professionals	26			2,92
	Sig.		,250	,421	,656

São exibidas as médias para os grupos em subconjuntos homogêneos.

Testes de efeitos entre assuntos

Variável dependente: WTP

Fonte	Tipo III Soma dos Quadrados	df	Quadrado Médio	F	Sig.
Modelo corrigido	21,289 ^a	5	4,258	4,831	,001
Ordenada na origem	30,401	1	30,401	34,495	,000
Brandawareness	,065	1	,065	,074	,786
BrandLoyalty	,172	1	,172	,196	,659
Cocreation	,298	1	,298	,338	,562
RFI	7,516	1	7,516	8,528	,004
Cocreation * RFI	3,752	1	3,752	4,257	,042
Erro	89,896	102	,881		
Total	718,000	108			
Total corrigido	111,185	107			

a. R ao quadrado = ,191 (R ao quadrado ajustado = ,152)

Survey Example

English ▾

This survey is part of a study for a Master Thesis in business administration at Catolica Lisbon School of Business and Economics. The focus of this research is the innovation in the sportswear industry.

This survey is confidential and anonymous.

Thank you very much for time and availability to participate in this survey, your opinion is extremely important.

>>

English ▾

In the next section a sportswear company is going to be presented and you will be asked to share your perceptions about it.

Please read carefully all the questions and answer openly and truthfully.

>>

Company description Nike or Domyos



Nike is a multinational sportswear company that is engaged in the design, development, worldwide marketing and sales of footwear, apparel, equipment and accessories. Nike offers a wide variety of products in different sports.



Domyos is a multinational sportswear brand. Domyos is engaged in the design, development, worldwide marketing and sales of footwear, apparel, equipment and accessories. Domyos offers a wide variety of products in different sports.

Manipulation check and brand awareness and loyalty

Please classify Nike in relation to innovation:

Very Conservative	Conservative	Somehow Conservative	Hard to Decide	Somehow Innovative	Innovative	Very Innovative
☐	☐	☐	☐	☐	☐	☐

Please classify the following statements about Nike brand according to your perceptions:

	1		7		
This brand is very unfamiliar to me	☐	☐	☐	☐	This brand is very familiar to me
I'm not at all knowledgeable about this brand	☐	☐	☐	☐	I'm very knowledgeable about this brand
I have never seen advertisements about this brand in the mass media	☐	☐	☐	☐	I have seen many advertisements about this brand in the mass media

Please classify the following statements about Nike brand according to your perceptions:

	Totally Disagree	Disagree	Somehow Disagree	Hard to Decide	Somehow Agree	Agree	Totally Agree
I intend to buy this brand in the near future	☐	☐	☐	☐	☐	☐	☐
I would actively search for this brand in order to buy it	☐	☐	☐	☐	☐	☐	☐

Please classify the following statements about Nike brand according to your perceptions:

	Dislike Extremely	Dislike Very Much	Dislike Slightly	Neither Like nor Dislike	Like Slightly	Like Very Much	Like Extremely
How much would you say you like or dislike Nike products?	☐	☐	☐	☐	☐	☐	☐

Please classify the following statements about Nike brand according to your perceptions:

	Never	Rarely	Sometimes	Most of the Time	Always
When you buy sportswear, to what extent do you buy Nike?	☐	☐	☐	☐	☐
When you buy sportswear, to what extent are you 'loyal' to Nike?	☐	☐	☐	☐	☐

Professionally Developed message example

Nike is going to launch a new running shoe developed by its internal professionals. The shoe was designed to be lighter, more comfortable and more resistant in order to perfectly fulfill the consumers needs.

In your opinion who developed the product?

Nike

Joint collaboration between Nike and consumers

Consumers

Co-creation Message example

In order to develop and produce a new running shoe Domyos launched an online platform in which consumers contributed actively by submitting designs, voting, giving feedback and sharing experiences.

The goal was to connect Domyos professionals with consumers in a highly collaborative environment with the purpose of producing a shoe lighter, more comfortable and more resistant in order to perfectly fulfill the consumers needs.

The environment was highly collaborative, Domyos exclusively relied on its consumers for actively testing and designing the shoe. Domyos professionals were responsible for producing the shoe according with the design developed by the consumers and the data they collected from the voting's and feedbacks.

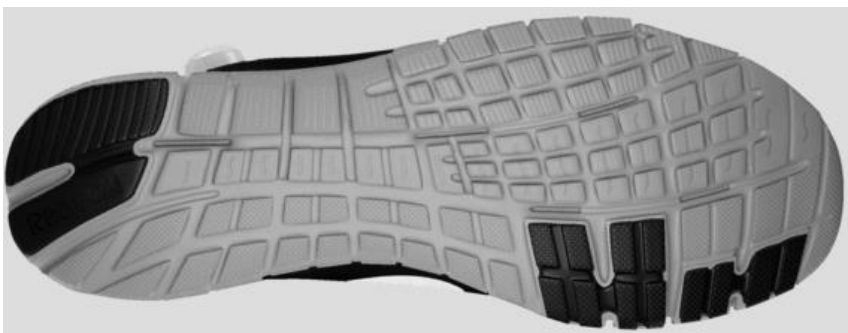
Please classify the following statements according to your opinion:

	Totally Disagree	Disagree	Somehow Disagree	Hard to Decide	Somehow Agree	Agree	Totally Agree
I think that this type of product development increases the ability of the firm to develop really innovative new products	☐	☐	☐	☐	☐	☐	☐
This method of product development puts the firm in the position to derive very original product ideas	☐	☐	☐	☐	☐	☐	☐
This initiative has a large potential to foster creativity	☐	☐	☐	☐	☐	☐	☐
I think that this initiative helps the firm to create very interesting new products	☐	☐	☐	☐	☐	☐	☐

Please classify the following statements according to your expectations:

	Very Low	Low	Medium Low	Hard to Decide	Medium High	High	Very High
The likelihood that the product would be reliable is:	☐	☐	☐	☐	☐	☐	☐
The workmanship of the product would be:	☐	☐	☐	☐	☐	☐	☐
The likelihood that this product is dependable is:	☐	☐	☐	☐	☐	☐	☐
This product quality should be:	☐	☐	☐	☐	☐	☐	☐
The durability of this product would be:	☐	☐	☐	☐	☐	☐	☐

Presented Product



Please describe your feelings toward the presented running shoes using the following scale:

	1						7	
Unpleasant	☐	☐	☐	☐	☐	☐	☐	Pleasant
Unfavorable	☐	☐	☐	☐	☐	☐	☐	Favorable
Dislike	☐	☐	☐	☐	☐	☐	☐	Like
Useless	☐	☐	☐	☐	☐	☐	☐	Useful
Undesirable	☐	☐	☐	☐	☐	☐	☐	Desirable
Negative	☐	☐	☐	☐	☐	☐	☐	Positive
Uninteresting	☐	☐	☐	☐	☐	☐	☐	Interesting
Irritating	☐	☐	☐	☐	☐	☐	☐	Not irritating
Bad	☐	☐	☐	☐	☐	☐	☐	Good

Please classify the following statements about the quality of the presented running shoes according to your perceptions:

	1						7	
Poor Quality	☐	☐	☐	☐	☐	☐	☐	Excellent quality
Inferior Product	☐	☐	☐	☐	☐	☐	☐	Superior Product
Worse than Average Product	☐	☐	☐	☐	☐	☐	☐	Better than Average Product
Filmsy Construction	☐	☐	☐	☐	☐	☐	☐	Durable Construction
Very little attention to details	☐	☐	☐	☐	☐	☐	☐	A lot of attention to details

☒
0-29€
☐
30-59€
☐
60-89€
☐
90-119€
☐
Above 120 €

If you wished to purchase this product, what do you think would be the most you would pay for it?

Please indicate your gender:

☐ Male

☐ Female

Please indicate your age:

Please indicate your nationality: