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# Co-Creation vs. Mass Customization in Fashion Industry

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Understanding New Shoppers' Differential  
Perceived Value and Preferences

Author | Alexander Daamen

Supervisor | Cláudia Costa

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## TITLE PAGE

<b>Title</b>	<b>Co-Creation vs. Mass Customization in Fashion Industry:</b> Understanding New Shoppers' Differential Perceived Value and Preferences
<b>Student name</b>	Alexander Daamen
<b>Student No.</b>	152113186
<b>Supervisor</b>	Cláudia Costa
<b>Institute</b>	Universidade Católica Portuguesa
<b>Faculty</b>	Católica-Lisbon School of Business and Economics
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## ABSTRACT

Emerging literature highlights the importance of implementing user innovation in existing new product development as the offline fashion industry is stagnating. *Co-creation* and *mass customization*, denoted as an active collaboration process between fashion retailers and consumers, are user innovative concepts. There is little known how different shopper types embrace the final product outcomes of both concepts. Therefore, this research study aims to examine the differential effects on perceptions and preferences different shopper groups have towards user innovative fashion concepts. Shoppers' perceptions were measured by *quality innovativeness*, and *social status*, whereas preferences were assessed by *attractiveness* and *purchase intentions*.

Factor and Cluster analysis was conducted to identify a new shopper typology of *six heterogeneous shopper types* coupled with their shopping behaviour. In this between-subject research, each shopper's perceptions and preferences on mass customized and co-created products have been assessed by using the two-way ANOVA technique. In general, it revealed that the personalized and risk-averse shopper tends towards co-creation in fashion, whereas the price-conscious one tends towards mass customization. The convenience and conventional as well as the individual shopper might not be appropriate target segments for fashion retailers. By understanding the outcomes of this study, fashion retailers can extend their product portfolio and adapt their positioning strategies to accelerate business with the help of user innovation concepts. Limitations and opportunities for further research are also discussed.

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# 1 INTRODUCTION

## 1.1 Attention to Research

Nowadays, consumer shopping behaviour in the apparel industry is changing towards e-commerce. The traditional offline purchase channel for fashion items suffers tremendously under this transformation. Consequently, offline retailers invest heavily in cross-channel strategies. Hereby, one opportunity was neglected in recent years by only transforming the purchase channel: A change in the new product development through consumer-driven innovations in order to create a fashion product satisfying the needs and wants. Through the rise of e-commerce, consumers can shop conveniently and interactively. Therefore, a solution to this topic could be of social, economic and cultural significance.

As some consumers know mass customization because of a successful implementation by global fashion retailers, another phenomenon has been arisen in recent years, namely “co-creation”. Basically, co-creation, frequently discussed in a theoretical context and implemented by only a few retailers, is a form of consumer empowerment throughout the entire or partial new product development (NPD) together with other consumers and company professionals within online communities. Already in 1986, von Hippel identified both concepts with consumer involvement as an opportunity for future consumer value creation. Therefore, it is worthwhile to look closer into both concepts and to investigate their differences in preferential and perceptual effects on consumers, which could help retailers to accelerate sales and adapt marketing strategies.

Is it also worthwhile to look into segments rather than focusing on all consumers in this context? By identifying research gaps from existing literature, preliminary studies have assessed segments who co-create, whereas mass customization segments have been barely explored. Hence, more research is needed on typologies that are specifically tailored to co-creation and mass customization. An understanding for consumer segments, comprising the highest potential for retailers trying to implement consumer involvement in NPD, has to be created. This is to target the most profitable segments and to implement effective marketing communication strategies. Specifically, consumers valuing co-creation often differ in

characteristics from the majority of consumers. Therefore, an understanding of the preferences and perceptions of different segments is needed.

To put all pieces together, we need a better understanding of preferences and perceptions of different segments for co-creating consumers and for those valuing mass customization. This study could stimulate the thinking of fashion retailers to adapt their products and their marketing according to specific fashion shopper types by using innovative methods to accomplish opportunities for a new fashion world.

## **1.2 Problem Statement**

Previous academic studies highlighted the importance of implementing user co-creation in the new product development in many industries. The following study focuses on similar dynamics in the fashion apparel industry. The main problem within the fashion apparel industry is a lack of understanding different consumer groups' preferences and perceptions towards co-created products in comparison to mass customization.

## **1.3 Research Aim**

Despite the fact that mass customization has been a hot topic in the mainstream fashion industry for a long time in specific apparel categories, a widespread integration of the final consumer in the new product development process of major fashion retailers barely exists due to a lack of perceived value of the end customer. Therefore, the overall aim of this project is to show the differential effects of user co-creation and mass customization on people's perceptions of quality, innovativeness, and social status as well as purchase intentions and attractiveness in the apparel fashion industry from viewpoint of different consumer segments determined by their shopping behaviours. The clear focus lies on the final product perception and the demand for the end customer.

## **1.4 Research Questions**

The main question provides the overall research framework of the project. The following main question has to be answered in order to reach the project aim: *What preferences and perceptions towards user co-created and mass customized fashion products do different*



*shopper types have?* The following research questions function as the filling of the framework given by the main question:

1. Which psychographic segments towards shopping behaviours can be developed?
2. What are the general quality, innovation and social status perceptions of mass customized and user-co-created fashion items from the segments' point of view?
3. How high is the degree of attractiveness and purchase intention of co-created products in comparison to mass customized products among segments?

## 2 LITERATURE REVIEW

This chapter contains a comprehensive investigation of existing literature related to open innovation archetypes in the fashion industry. Outlining and discussing existing literature in this field will show the need for further analysis.

### **2.1 Shift from Traditional to Consumer Integration in New Product Development**

Traditionally, companies have been in charge for the creation of new product designs and concepts as well as for choosing the final products that will be sold on the market. Most of the time, especially in the fast-changing consumer good industry, companies identify the needs of the consumers by applying active listening and extensive market research measures in order to deliver products, which are highly consumer-oriented and demanded (Bowen et al., 1989; Lengnick-Hall, 1996; Cooper, 1999; Dahan and Hauser, 2002; Griffin and Hauser, 1993). As this market research is mostly constrained to the consumer's experience, von Hippel (1986) introduced the idea and strategy of integrating the consumer into the front end of the innovation (creation of ideas, concepts and selection; see Piller et al., 2011), which is followed by the formal and well-structured new product development (NPD) process. The aim is to understand the consumer's requirements and to source from their potentially applicable knowledge. Von Hippel revealed that the downstream innovation process has to start with "lead users", meaning that consumers with strong needs and strong urge to fill these needs can shape the future innovation process (von Hippel, 1988). These are either at the leading edge of trends or have a strong net benefit from solutions to their needs (von Hippel, 1986). The traditional NPD model with the exclusive designing process of new products has been further challenged by new impulses (e.g. open source, customization, and consumer experience) from various practitioners and academics (Chesbrough, 2003; von Hippel and Katz 2002; Pitt et al., 2006; Ulrich and Eppinger, 2008).

The creation of value through consumer involvement is the emerging strategy in open innovation as opposed to closed innovation (= traditional innovation). Especially, Chesbrough (2006), who coined the term "open innovation", pursued the idea of exploring external and internal knowledge in order to accelerate internal innovation and commercialize a technology for external use as expansion of business opportunities. Open innovation became popular during the time of increasing mobility, Internet usage and the application of user-friendly

“toolkits” or design interfaces. These significantly reduce time and costs for creating a product with consumer involvement, either for the company in manufacturing or for the consumer in filling the needs (Chesbrough, 2003; von Hippel and Katz, 2002). These prior studies enabled the application of Internet-based toolkits designed to create a competition between consumers’ ideas (Piller and Walcher, 2006). Ultimately, using the Internet as a medium and open source, a development methodology to produce “a software using virtual collaboration tools”, represents the final phase to implement a fully open company regarding product innovation (West and O’Mahony, 2005; Pitt et al., 2006). Although West and Gallagher (2006) indicate a risk of disclosing information to rivals by using open source, a transformation from closed to open innovation is crucial for implementing consumer value creation processes (Ogawa and Piller, 2006). In conclusion, the transformation from closed to open innovation goes tightly along with the establishment of toolkits.

After pointing out the notion of the importance of consumer innovation, Gassmann and Chesbrough (2010) determined that there is a clear shift from a pioneer to mainstream application of consumer-driven innovation as well as increasing innovation intensity in low-tech industries, e.g. fast-changing consumer goods and food.

By applying the idea of consumer innovation and the usage of open source, two contrary concepts, namely “co-creation” and “mass customization” (MC), both integrating the consumer in the product development have been evolved nowadays.

## **2.2 Consumer Innovation Concepts**

### *2.2.1 Consumer Co-Creation*

According to definition, co-creation is a joint creation of value by the company and the consumers primarily allowing the consumers to co-construct the experience to suit their context. This could incorporate a joint problem definition and solving as well as an active dialogue and co-construct personalized experiences (Prahalad and Ramaswamy, 2004). Based on the idea of value creation through consumers’ involvement in the development of the new product, companies started to embrace the market as an active forum by encouraging dialogues, managing consumer communities and diversity and by providing consumer creation experience (Prahalad and Ramaswamy, 2000).

Prahalad and Ramaswamy (2004) elaborated this concept and introduced the term “Co-Creation”, meaning joint value creation of consumers and company through interactions. This concept is considered to be the new source of competitive advantage for strategic and marketing management. Precisely, it seeds for a company’s future profitable growth in the strategic capital (accumulated knowledge and skills) enabled through continuously interacting with consumers. In addition, these interactions foster the company’s capacity to make use of global network resources in order to generate value creation opportunities (Ramaswamy, 2008). Interactions in co-creation are defined as a genuine dialog with consumers, a degree of access to the product, and transparency, which may also carry an element of risk, implying the fear of leaking proprietary information, managerial power, and losing control of brand identity (Prahalad and Ramaswamy, 2004; Pitt et al., 2006; von Hippel, 2005). However, this highly interactive concept enhances the loyalty and satisfaction towards a specific brand through the generation of an emotional connection between consumers and companies (Brodie et.al, 2013; Bendapudi and Leone, 2003).

The internalization of external knowledge as a mechanism of open innovation (Chesbrough, 2003; Lakhani et al., 2006; Laursen and Salter, 2006a) is mainly conducted through the interaction of a community, which is “a voluntary association of actors, typically lacking in a priori common organizational affiliation (i.e. not working for the same firm) but united by a shared instrumental goal”. This interaction includes creation, adaptation, adoption or dissemination of innovation (West and Lakhani, 2008). Communities can be either of homogenous (interactions between individuals) or heterogeneous (interaction between an individual and a company and more entities) nature (West and Lakhani, 2008). In open innovation, heterogeneous communities are an important inbound source for innovation to be utilized by companies (von Hippel, 2005).

Many companies were able to build up online communities as a successful pillar in the emerging Web 2.0 era, in which companies interact with consumers from around the world (Dahan and Hauser, 2002; Füller et al., 2007; Nambisan, 2002; Sawhney and Prandelli, 2000; Sawhney et al., 2005). Across industries, Adidas, BMW, Ducati, Procter & Gamble, 3M are pioneers in the creation of online communities and active listening to consumers’ ideas for new products (Ogawa and Piller, 2006; Pitt et al., 2006; Sawhney et al., 2005). Redefined by Fuchs and Schreier (2011), there are basically two consumer empowerment dimensions, i.e. shifting decision power in product creation to consumers: (1) the ideation and creation of new

product designs (“empowerment to create”); (2) the selection through a voting of preselected product ideas, which will then be realized (“empowerment to select”). This idea was fundamentally introduced by von Hippel (2005) to democratize the innovation process and was further discussed by O’Hern and Rindfleisch (2009). A full empowerment holds place when both dimensions are applied (Fuchs and Schreier, 2011).

As a frequently cited example of full integration of both dimensions, Threadless, a successful fashion start-up, provides consumer guidance but ultimately the full control of submitting T-Shirt design ideas as well as the selection decision through a voting of the top five designs, which will then be marketed by Threadless (Ogawa and Piller, 2006; see Threadless.com). Although the apparel industry is predestinated for complete consumer integration, industries with a more complex production and supply chain process such as the automotive industry, also reach higher R&D productivity when implementing open innovation (Ili, Albers, and Miller, 2010). The BMW Group for instance offers participants, reaching almost 5000 members of its “Co-creation Lab”, to contribute their ideas and suggestions to new products and services. However, internal engineers make the final decision (see [www.bmwgroup-cocreationlab.com/cocreation](http://www.bmwgroup-cocreationlab.com/cocreation)).

The research by Fuchs and Schreier (2011) provides first evidence that companies need to implement a consumer empowerment strategy in their NPD. Their research does not only indicate an enhanced perception of consumer orientation but also a favourable corporate attitude (the information a person holds about a company beyond specific product associations, Brown and Dacin, 1997) for companies implementing consumer empowerment in their product development. Most importantly, consumer empowered products are preferred to products with no consumer involvement even for consumers that were not involved in a designing process. Besides the enhanced preference and high level of commercial attractiveness for consumer co-created products (Franke and Shah, 2003; Franke, von Hippel, and Schreier, 2006), the success of new product innovations is positively related to the extent companies explore external knowledge (Katila and Ahuja, 2002). Notably, the segment, which is just aware and not actively integrated in co-creation processes, will always represent the majority in comparison to actively empowered consumers. Therefore, it is very important to study the “just aware” segment’s perception and preference.

Although the benefits outweigh critical aspects of consumer involvement, there are still concerns about the quality and efficiency of new product development as well as the expansive costs for the consumers. To be able to start, co-creation requires either investment of monetary or non-monetary nature from consumers (e.g. costs of time, resources, physical, and cognitive efforts to learn) and might imply possible risks for the consumer (e.g. the risk of experiencing a failure despite the investment made, which can result in a lack of freedom of choice for consumers; Bolton and Saxena-Iyer, 2009; Etgar, 2008). In the context of risks in quality and efficiency, Ulrich (2007) and Ulrich and Eppinger (2008) underlined the importance of consumer involvement in ideation, but professionals should still be in charge of the technical, procedural, and intellectual design due to acquired skills and capabilities and increasing consumer knowledge. In general, Piller and Walcher (2006) determined that product innovations based on professional-screened ideas are likely to be more sophisticated, but may not serve consumer needs better than concepts based on consumer-screened ideas. Further, Kristensson et al. (2004) argued that professionals stress the feasibility of product ideas and focus on convergent design thinking leading to a lack of novel products. As discussions about the innovativeness from a company's professionals and consumers were inconclusive, Poetz and Schreier (2012) confirmed that products from professionals are both less novel, less qualitative and less consumer beneficial than consumer co-created innovations, but bear higher feasibility, which is not relevant for the final consumer in terms of attractiveness. This study clearly constitutes an advantage of innovations with consumer integration over products solely designed by professionals.

### *2.2.2 Mass Customization*

The term "Mass Customization" was first coined by Davis (1987) and further popularized by Pine (1993b). By definition, this concept is split in mass production and marketing (applying economies of scale) and the targeting of a single consumer through customization to meet individual needs. This hybrid organization system became possible due to the increasing use of IT, organizational structures and flexible production processes (Silveria et al., 2001; Radder and Louw, 1999). Through the increased emphasis of the Internet and the online commerce, mass customization was initially a broader element of customer-relationship management in the context of cost-efficient gathering of consumer preference data and facilitating interaction of consumers in product design (Romano and Fjermestad, 2001; Dewan et al., 2000; Lee et al., 2000).

Although both concepts have convergent characteristics, e.g. consumer involvement, toolkits, preference collection, Prahalad and Ramaswamy (2004) clearly distinguish the concept of mass customization, being company-centric, from co-creation, being consumer-centric. In addition, this concept bears fewer risks than co-creation since the new product development suits the supply chain of companies rather than the consumers' unique preferences (Prahalad and Ramaswamy, 2004). Nevertheless, academics (see Payne et al., 2009; Franke et al., 2009; Merle, 2010; Lee et al., 2012) still describe the concept of mass customization as a part of consumer co-creation if there is a dialogue between consumer and company or propose an integration of peer input (user communities) in the MC process.

The mass customization process is mainly done through the application of a specific toolkit, mostly an online configurator with a range of options for each module referring to the number of choices available per module. The actual customizing modules of the individual consumer is supposed to consist in selecting the style of the model, the fitting, the fabrics, the accessories, the colours and the general design (Liu et al., 2010). For simplicity reason, this paper concentrates on these features despite the fact that the number of creation modules has been extended (Franke et al., 2008; Hu et al., 2008). Dellaert and Dabholkar (2009) confirmed the study of Franke and Piller (2004) that the availability of more choice and control increases the consumers' enjoyment. Further, MC toolkits are defined as a set of user-friendly design tools allowing "trial-and-error" experimentation with immediate simulated visual feedback of the possible outcome. Thus, the information of customized design will be transferred to the company through IT systems and ultimately produced and delivered to the individual consumer (Von Hippel and Katz, 2002; Dellaert and Stremersch, 2005). As an example, Nike offers an advanced and frequently cited mass customization tool (NikeID) in a Business-to-Consumer setting. Visitors of the online shop can customize a basic product chosen from the shoe category (11 subcategories e.g. Training, Running, Football, Basketball etc.) and are able to alter the sole, upper and/or laces. Further, a personalization feature such as a private message, name, logo etc. on the tongue tops has been included as well (see [www.nike.com/us/en\\_us/c/nikeid](http://www.nike.com/us/en_us/c/nikeid)). Even though many apparel brands like Adidas, Levis and Reebok rather than high-tech brands are predestined for this concept due to relatively low complexity, the concept of MC is applied in companies like MINI, Hewlett-Packard, General Motors or Motorola and thus in different industries. These companies primarily use MC tools in order to generate value for the consumer, which also lead to monetary and non-monetary benefits for the companies.

Additional perceived value derives from building a product according to explained mass customization tools. Firstly, a final customized product increases the probability that consumer preferences of functional and aesthetical nature and expectations are met (Randall et al., 2007; Franke and Schreier, 2008). Secondly, mass customized products increase the uniqueness through possession for individuals (Franke and Schreier, 2008). Merle (2010) confirms that uniqueness and preference fit (self-designed products that meet the preferences of the consumer more effectively) brings out additional perceived value. She further found out that the experience factor (the fun and creative activity plays) results in a hedonic and pride value as identified value of mass customized products for the consumer.

Especially the hedonic value mediated by the feeling of accomplishment reflects in a higher consumer preference for customized products. The extant literature indicates a higher willingness to pay (WTP) in comparison with company-made versions of low-priced consumer goods (Franke and Schreier, 2006; Franke et al., 2009; Franke et al. 2010). Furthermore, the higher the extent of design freedom (with minimized design effort) and preference fit of mass customized products, the higher the WTP (Franke et al., 2010).

Due to the fact that, similar to co-created products, mass customization is preferred over standard versions, the autonomy and complexity in creating bear some challenges. As the preference fit is an important criterion in favour of this concept, consumer preferences are often poorly determined. Several research studies (see, Bettman et al., 1998; Fischhoff, 1991; Slovic, 1995; Yoon and Simonson, 2008) assume that a consumer often generates preferences when applying a framework of alteration options when making a decision. Huffman and Kahn (1998) use the term “mass confusion”, given by infinite possibilities of solution spaces, almost leading to random choice. Indeed, it is not easy for a company to detect the “real” preferences of a consumer (Morrison, Roberts, and Von Hippel 2000; Von Hippel 1994). Further downsides of customized products: (1) Cost of cognitive effort (cost of time of delivery and process), (2) social costs (fear of making a bad choice, which can impact the social image of the individual) (Dellaert and Stremersch, 2005; Merle 2010).

As a matured concept, mass customization has - like the consumer co-creation - clear advantages for consumers and companies over a standard product merely produced by company’s professionals according to experts in the field of consumer involvement in NPD.



## 2.3 Adaption of Consumer Innovation in Fashion

The broad term “fashion” has its origin in the Latin word *factio* (the act of making or forming something), but is understood as “a popular way of dressing during a particular time or among a particular group of people” (see [www.merriam-webster.com/dictionary/fashion](http://www.merriam-webster.com/dictionary/fashion)). Fashion items are mainly consumer goods, which are dominated by style and design in clothing, accessories (jewellery, handbags, sun shades), and footwear rather than being adherent with pricing of these goods (see [www.businessdictionary.com/definition/fashion-goods.html](http://www.businessdictionary.com/definition/fashion-goods.html)). Note that this paper does not regard brands but only the generalization of the fashion sector in products, trends, and design sourcing, mainly investigated in Western Europe.

As a reminder, there is a clear future shift from high-tech to low-tech industries according to Gassmann and Chesbrough (2010). Existing literature defines fashion as a low-tech industry since it is much more related to communication and aesthetics than to functional features (Ravasi and Lojacono, 2005). The apparel and footwear industry is technically and logistically suitable to accelerate the sales of open innovative products with the help of the raising attractiveness of Internet retailing (Fuchs et al., 2013).

### 2.3.1 *The Need for Innovation*

The clear need for the shift from traditional to open innovation is depicted in a recent industry outlook analysis: According to the database of Euromonitor International (2015), the retail volume in the category of apparel and footwear will stagnate in Western Europe until 2019, whereas the Internet retailing (also E-Commerce) will accelerate slightly in the same time period. More precisely, the actual retail volume in 2014 was 315k € mn and will likely amount to 310k € mn. Without major fluctuations from 2014 to 2019, a strong stagnation can be seen, specifically in Western Europe and in the USA. For future growth innovation is needed.

Despite the stagnating retail industry, Internet retailing is on the rise and forces the traditional bricks and mortar retailers to rethink in the future. The digital age, characterized by a rapid growth of mobile Internet (increased by a CAGR of 102% in Western Europe from 2011 to 2014), entailed consumers to change their shopping habits. However, Internet retailing only accounts for 12% in relation to the overall retail volume (Euromonitor International, 2015). The Internet retailing, where apparel and footwear accounts for one-fifth of the overall Internet retail volume, rose from 165k € mn in 2014 to 186k€ mn in 2015. This positive

development is likely to continue as the forecast indicates a growth up to 268k € mn in 2019 (see Appendix 1). Generally speaking, the strong growth of Internet retailing will not overtake the traditional retailing in physical stores in terms of sales volume in the foreseeable future, but it will continuously diminish the market share of traditional retailing. As noticed by more than 76% of the surveyed retailers, cross-channel strategies have been implemented or planned, according to the study of Retail Touch Points (2012), to find the best balance of brick-and-mortar, online, mobile and social retailing.

### *2.3.2 Consumer Involvement in the Fashion Industry*

Open innovation, especially consumer co-creation, has been proven as a successful strategy in seeking for “better”, satisfying consumer products. In fact, first mass customization attempts in the fashion industry, firstly introduced by Levi Strauß in 1994, turned out to be failures due to immature technical support and unmet economic order quantity (Lee and Chen, 1999; Franke and Piller, 2004). However, in recent years fashion apparel customizers were established as a beneficial concept to pursue. Presented as best practices in several studies, examples applying MC for fashion items are NIKE with “NikeID”, launched in 1999, as well as the premium retailer Burberry with “Bespoke” (see [www.nike.com/us/en\\_us/c/nikeid](http://www.nike.com/us/en_us/c/nikeid); [www.us.burberry.com/bespoke/](http://www.us.burberry.com/bespoke/)).

Alongside the concept of MC and advancing technology, consumer co-creation in the fashion industry has been evolved tremendously in recent years: Shifted from initially limited (“empowerment to create”; ideation of new products) to full consumer empowerment (creation and selection), fashion retailers like Couch, Fendi, Oscar de la Renta and even Nike in partnership with Google followed this trend as a new source of consumer value creation (Fuchs et al., 2013; Ramaswamy, 2008). See Appendix 2 for best practices.

However, open innovation has not been accepted and applied by all retailers: Maddy Evans, fashion director at Topshop, identifies innovation as important part for Topshop’s DNA, but she relies on internal professional teams and hired experts in creative thinking and in NPD (see [www.businessoffashion.com/articles/careers/topshop-topman-creative-innovator](http://www.businessoffashion.com/articles/careers/topshop-topman-creative-innovator)).

## 2.4 Perceptual Product Attributes

### 2.4.1 Perceived Product Qualities

According to the theory of reasoned action and planned behaviour by Fishbein and Ajzen (1975, 1980), a consumer's behaviour is determined by his or her intentions and is described as a personal attitudinal determinant, which is directly related to the new product outcome. As linkage with this study, the product outcomes of each presented fashion concept (co-creation and mass customization) are evaluated by their *perceived quality*, and *innovativeness* from different shopper types consolidating consumer's shopping behaviours. Quality is a complex and controversial concept, since there are various definitions of quality in existing literature (Garvin, 1984; Zeithaml, 1988; Hassenzahl, 2001; Keller, 2003). Due to the fact that this paper identifies the product perceptions of the shopper segments, in this case, the most suitable approach to examine the perceived quality of possible product outcomes is the subjective user-based method. More precisely, individual consumers are assumed to have different needs and the best preference fit (meeting one's preferences most effectively) would lead to highest quality (Garvin, 1984). However, this highly subjective and idiosyncratic view of quality ignores the individual and different weights that consumers attach to quality, leading to an eventual biased, abstracted statistical assessment of aggregated preferences (Garvin, 1984; Zeithaml, 1988). Because of that, a general description of quality is not possible. This empirical study delivers two different product concepts, which may evoke abstractions in perception (capturing diverse specific product attributes) and comparison to substitute products (relative, individual assessment of contradistinctive products) among participants (Keller, 2003; Zeithaml, 1988). Despite many controversies on this measurement, perceived quality has a positive effect on the intention to purchase (Carman, 1990; Boulding et al., 1993; Parasuraman et al., 1996; Tsiotsou, 2006).

As the second product quality dimension defined by Hassenzahl et al. (2000), innovativeness is a hedonic or non-task-oriented quality aspect expressing the consumer's need for novelty (Steenkamp et al., 1999). Especially fashion innovativeness is addressed by the degree of innovative disposition of single consumers adopting and accepting new and atypical fashion products (Kim and Rhee, 2001; Jun and Rhee, 2009). Besides this general definition of innovativeness as quality, the degree to which a new product is regarded as unique in attributes and features in comparison to products belonging to a similar or related category particularly describes the perceived product innovativeness (Fu et al., 2008). Similar to the perceived quality definition, academics did not yet find a full conformity in explaining

(perceived) innovativeness. When comparing the majority of definitions, “new” or “novel” are found to be frequently used and therefore, one can argue that perceived “novelty” refers to innovativeness in coherence with Weiss et al., (2014). According to Argo et al., (2010), the degree of novelty can be measured by the product attributes being unusual, striking, noticeable, unique and obviously novel. Finally as mediator of innovativeness, Poetz and Schreier (2012) argue that consumer ideas (in the new product development) lead to an enhanced product novelty perception.

#### *2.4.2 Agentic Feelings*

Based on definitions, fashion items signal “social standing” (see e.g. [www.merriam-webster.com/dictionary/fashion](http://www.merriam-webster.com/dictionary/fashion)). Therefore, among other research objectives, this research paper investigates the social status perception that different shopper segments have in relationship with both innovation concepts in fashion. Social status can be defined by “the process of thinking about information about one or more other people in relation to the self” (Wood, 1996, p.521). Locke (2003) characterize social status as a vertical social distance and comparison (downward and upward), at which high status feelings (“agentic feelings”) are considered as being superior, more worthy and advantaged in comparison to others standing below the self (downward comparison). Typically, consumers carry through vertical comparisons, usually in wealth, academic and physical comparisons (Locke, 2003). Thus, the fashion industry is adequate to deliver agentic feelings due to the clichéd strive of people for good looks. According to the argumentation of Fuchs et al. (2013), the “close” interaction with consumers in the creation process of fashion and in particular luxury fashion items impede consumers from the feeling of high status because of the lack in social comparison.

Consumers often purchase things in order to express their individuality (“perceived uniqueness” as stated by Schreier, 2006) through the feeling of being different and socially distant (Tian et al., 2001). It has to be noted that not all consumers give importance to status signalling through distance (Rucker and Galinsky, 2009). Therefore, mass customization might be preferred for consumers, valuing social distance through uniqueness rather than closeness to other consumers. To conclude, it is necessary to understand that those consumers with perceived uniqueness and need for uniqueness prefer mass customization, whereas consumers (general low correlation with unique and novel product shopping behaviours) and low need for uniqueness prefer consumer co-creation.

## **2.5 Measuring Consumers' Product Preferences**

Both *attractiveness* and *purchase intention* of mass customized and co-created fashion items are feasible measurements for the determination of consumer preferences toward the two innovative fashion concepts. Sweldens et al. (2010) define product attractiveness as a consumer's attitudinal and behavioural propensity toward the underlying product, assessing attitude toward the product and exploring the attractiveness of the product for purchase. On the other hand, a purchase intention is rather a common effective measure used to indicate the likelihood or readiness of consumers to buy a certain product or service (Bearden et al., 1984; Ajzen I and Fishbein, 1980).

Basically, the product outcomes of the fashion concepts with the higher preference (higher attractiveness and purchase intention) are assumed to have a closer consumer preference fit.

This can be explained by the perceived product quality dimensions (general quality and innovativeness related to a product) and agentic feelings of the product (high social status). According to many academics, these attributes have a positive effect on "commercial attractiveness" (Franke et al., 2006; Magnusson et al., 2003; Hassenzahl, 2001). Even though, the direct relationship between perceived general quality and purchase intention is currently a matter of discussion. Tsiotsou's study (2006) confirms that perceived quality is an antecedent of purchase intentions (Carman, 1990; Boulding et al., 1993; Parasuraman et al., 1996).

## **2.6 Shopper Segmentation**

### *2.6.1 Traditional Shoppers*

Consumers can be categorized into different segments according to their shopping behaviour. Previous research identified three different shopping behaviours as foundation for shopper segmentation: (1) *Price-conscious shopping behaviour*, explaining the carefully, systematically planned shopping activity in terms of gaining the best economic and utilitarian value as a necessity with little or no derived satisfaction or enjoyment (Sproles and Kendall, 1986; Arnold and Reynolds, 2003; Kaltcheva and Weitz, 2006); (2) *Recreational shopping behaviour*, implying inherent satisfaction derived by the outcome of an engaged, hedonic, and task-oriented shopping activity with a minimum expense of energy (Kaltcheva and Weitz, 2006); (3) *Impulsive-careless shopping behaviour*, an attitude in immediate purchasing through stimulations (in-store environment) and loss of self-control. This is characterized by

compulsive buying without prior intentions and product evaluations and later assessment of appropriateness (DeSarbo and Edwards, 1996; Bayley and Nancarrow, 1998; Beatty and Ferrell, 1998; Baumeister, 2002; Mattila and Wirtz, 2008).

These three shopping behaviours are gender related (Otnes and McGrath, 2001). Females with a recreational behaviour value social interactions and browsing through assortment, whereas male consumers appreciate convenience shopping and “information attainment” (Noble et al., 2006). Furthermore, women tend to impulsive, leisure shopping of self-expressive products. In contrast, men simplify purchasing strategies with low cognitive effort (Dittmar et al., 1995; Dittmar and Drury, 2000; Cleveland, and Browne, 2000). The study by Goldsmith et al. (1991) demonstrated that (young) women are more likely to be fashion innovator and more involved in fashion-related behaviours, meaning higher shopping frequency and large expenditures.

Along with these shopping behaviours, various academic studies reflect on examining shopper typologies (or segmentations) (see, Bellenger et al. 1977; Williams et al., 1978; Westbrook and Black, 1985; Donthu and Garcia, 1999; Ganesh et al., 2007). For instance, Bellenger et al. (1977) determined two dominant shopper profiles, namely recreational and economic/ convenience shoppers, whereas Karande and Ganesh (2000) translated Bellenger et. al’s study into three profiles: The *recreational, serious economic, and time-conscious/ deal prone shopper* type. By excluding this example and considering the enormous number of formerly existing shopper typology studies, there is little coherence among their findings due to different research approaches and sampling (Westbrook and Black, 1985). Therefore, Westbrook and Black (1985) defined shopping motivations, which are often used as foundations or orientation for further profiling of shoppers: (1) Anticipated utility (expectation of benefits and hedonic state of acquired products), (2) economic role enactment (search for optimum price-value ratio), (3) choice optimizing (careful search for the right product to fit individual demand), (4) negotiation (search for economic advantage through bargaining), (5) affiliation (direct, social and indirect, impersonal involvement in marketplace and process), (6) power and authority (attainment of elevated social position), (7) sensory stimulation (search for novel and interesting stimuli of sensory, emotive or cognitive nature) (Westbrook and Black, 1985).

In order to streamline this research field, the shopper typology study by Ganesh, Reynolds, and Lockett (2007) applied the research approaches (e.g. attribute and shopping motivation scales and naming) introduced by Westbrook and Black (1985) and Bellenger et al. (1977). By assessing retail shopping behaviours, among various offline retail formats, five shopper types were identified: *Basic*, *Destination*, *Apathetic*, *Bargain Seekers* and *Enthusiasts* shoppers. In detail, the *apathetic shopper* generally does not have the motivation for shopping unless having informed prior buying in order to have the best fit with one's demand, whereas the *enthusiastic shopper* is characterized by being highly motivated for shopping, especially through sensory, cognitive stimuli and the presence of shopping possibilities. Further, *destination shoppers* clearly seek for new products and are self-determined by their need to obtain brand name, image and fashion items. *Basic shoppers* want to keep the shopping activity as simple and efficient as possible and see it, in congruence with the price-conscious behaviour, as necessity. Finally, the *bargain seekers* mainly strive for the best economic deal with low interest in prior product research.

#### 2.6.2 Online Shopper Typology

As suggested by Rohm and Swaminathan (2004) and Ganesh et al. (2007), the raise of non-traditional retail formats (like Internet shopping; e-commerce) changed prominent shopping behaviours and thus, a redefinition of new shopper types is necessary. Some academics, inter alia Williams et al. (1978) have examined that convenience is another salient motivation for the choice of offline stores. It is considered to be a distinct factor in the online shopping settings, since location is redundant as Swaminathan et al. (1999) found out through the easy-accessible placement of orders from home or other places. Known as the pioneer study for online shopper typology, Donthu and Garcia (1999) separated its sample into *convenience seekers*, *innovative*, *impulsive*, *variety seekers*, and *less risk averse shoppers*. Notably, in comparison to the behaviour of offline shoppers, online shoppers have a higher acceptance of innovative items and the willingness to take risks as well as conducting more impulsive purchases with heavier (pre-)information seeking (Donthu and Garcia, 1999). On the contrary, other studies reject the common believe of systematic differences between offline and online shoppers. In particular, based on the "Big Middle Theory" (defined as "marketplace" where the majority of potential customer resides) by Levy et al. (2005), Ganesh et al. (2010) identified more behavioural similarities than discrepancies between both segments. This convergence may arise through the steady increase in online purchase channel usage leading to differentiation issues between segments (Kukar-Kinney et al., 2009).

## **2.7 Hypotheses and Conceptual Framework**

As a short wrap-up, the literature review identified the strong need for user innovation in the fashion industry. Two user innovation concepts co-creation and mass customization were presented. Further, three important perception and two preference dimensions were identified towards each concept. In order to solve the research problem, existing shopper segments, but inconsistent across studies, have been identified.

By gathering all information, five hypotheses can be constructed. As this study is of exploratory nature (further explained in chapter 3), hypothesis testing for shopper segments is not required. Only the following research questions serve as proper guideline for the creation of hypotheses.

**What are the general quality, innovation and social status perceptions of mass customized and user-co-created fashion items from the segments' point of view?**

*H1: Mass customized products do not differ from co-created ones in quality among shoppers.*

*H2: Mass customized products do not differ from co-created ones in innovativeness among shoppers.*

*H3: Mass customized products do not differ from co-created ones in social status among shoppers.*

**What is the degree of attractiveness and purchase intention of co-created products in comparison to mass customized products among segments?**

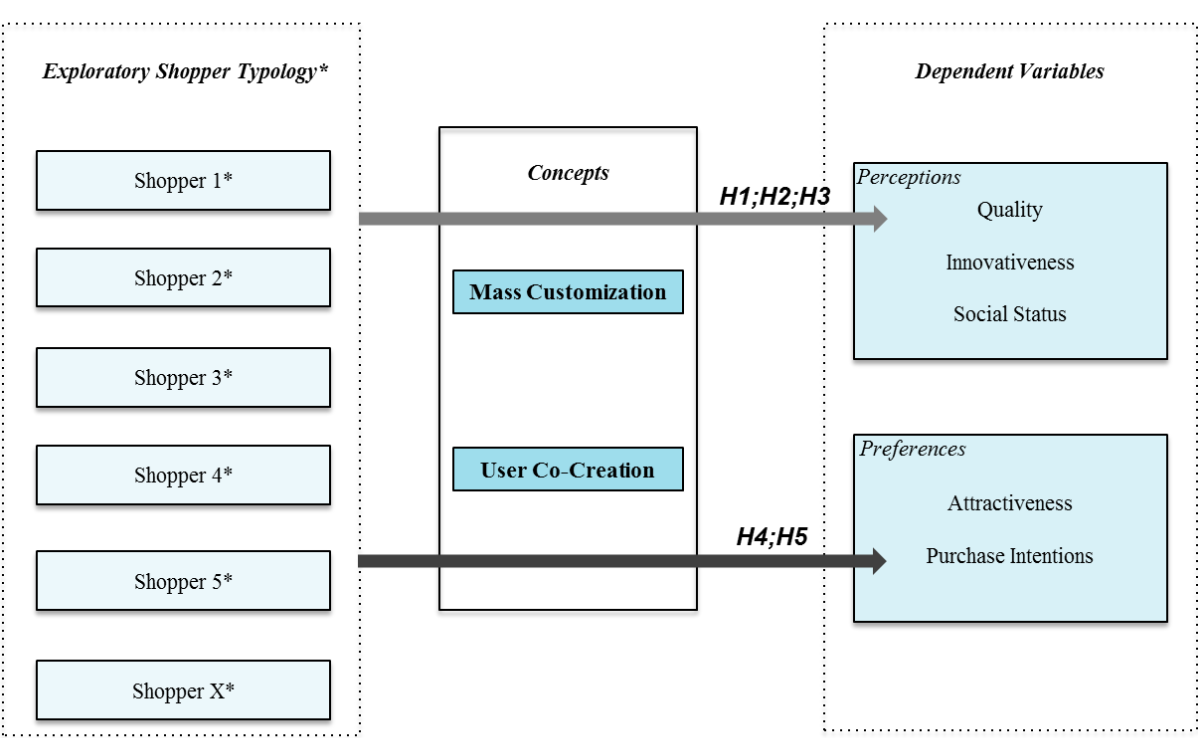
*H4: Mass customized products do not differ from co-created ones in attractiveness among shoppers.*

*H5: Mass customized products do not differ from co-created ones in purchase intention among shoppers.*



The following figure shows the conceptual framework of this research. For simplicity reasons, it shows how different shoppers would finally score on perceptions and preferences by knowing the concept in ahead.

Figure 1: Conceptual Framework



Source: Own Illustration

\* Specific number and information of segments to be explored

## 3 RESEARCH METHODOLOGY

### 3.1 Research Design

The aim of this thesis is to identify shoppers' preferences and perceptions toward a specific open innovative fashion concept. As it supports the argumentation that both concepts have a different NPD process and different consumer participation level; therefore treated independently from each other. On that basis, participants were randomly exposed to two different fashion concepts co-creation and mass customization. Thus the study was a 2 (innovation concepts: co-creation and mass customization) between-subject experiment. The conditions for the concepts were treated exactly the same except for the information disclosed. The information given was held in a short, easy-to-read, and neutral manner (see Appendix 3 for scenario description). As in the literature review indicated, this study focuses on segments with less or no empowerment in the NPD and on the final product. The scenarios, namely mass Customization and co-creation, were exposed to participants in a low and no involvement manner, respectively.

In order to enhance the clarity and to ensure acceptance of the participants, two pre-tests have been conducted. Testing the scaling and the functionality by applying the "Test Response" mode in Qualtrics, 300 test responses indicated the adequateness of the preliminary questionnaire. Moreover, three experienced professionals read the survey, completed it and provided valid feedback. Overall, none of the pre-tests did disclose any problems of conduction.

Furthermore, this program made it possible to conduct this complex questionnaire with 53 single questions and the randomizer option, which automatically expose participants equally to one of the two fashion concepts.

### 3.2 Sampling

In fact, this research is constrained by time and budget. According to Evans and Marthur (2005), web surveys minimize time and cost and offer various technical features and design options, which make questionnaires more attractive. Therefore, the only feasible sampling process was the non-probability sampling through web surveys (or often referred to as Computer-Assisted Web Interviews), given by the limitations of this study and additional

beneficial features in comparison to other sampling modes. The online-based program Qualtrics (see [www.qualtrics.com](http://www.qualtrics.com)) was used and a large international sample size of 211 valid participants between the 23<sup>rd</sup> of April and 10<sup>th</sup> of May 2015 obtained. Besides time and cost efficient advantages, evidence of existing literature supports the assumption that web survey can provide better results than personal interviews due to the lack of interviewing abilities and interviewer bias. Since the intention of this questionnaire is to determine individual shopping behaviours, online participants are less inclined to answer in a socially desirable behavioural manner and are less afraid of evaluation, which lead to an unbiased and more reliable data collection (Bronner and Ton, 2007; Deutskens et al., 2006). Of course, there are downsides by using a computer-aided or web-aided program. Predominantly, the response rate (conversion rate from receiving and actually finishing the survey) is lower than in personal interviews and in other modes (Manfreda, 2008; Grandolas et al., 2003). Further, existing selection bias in relation to the entire Internet population and participants' lack of Internet experience could be possible disadvantages. According to Grandolas et al. (2003), this non-probability sampling method is unlikely to be fully representative. This is due to the fact that non-Internet users are left out and that self-selected participants act in an atypical behaviour, e.g. due to an elaborate answer scheme, rather than persons who are selected by a probability sampling method.

The population for this study is only defined by geographical limits. In detail, this study seeks for western European persons of every age and with any psychographic characteristic due to the generalisation of the managerial significance for fashion retailers appealing to broad and diverse target customers. The survey was made available on Facebook and by email. In particular, Facebook was suitable to obtain a large sample size out of the population with tight control of the environment. Since this study's primary intention is not based on demographic segmentation, which often requires a probability (stratified or cluster) sampling method, but rather on psychographics (e.g. shopping behaviour) the data collection through Facebook seemed adequate to attain the sample required. Gregori and Baltar (2013) figured out that Facebook enhances the snowballing effect and confidence due accessible researcher's data and that Facebook lowers the access barriers significantly, like time spent, intermediation, etc., which improves the willingness to dedicate time. Moreover, some participants were asked by email to conduct the survey and to forward the link to at least five other persons. This method was non-probable and also affected the snowballing effect. Finally, the sample consisted of people with different demographical and psychographic characteristics while

nearly 90% (211 out of 238 participants) were from Western Europe or lived in a country in Western Europe for the longest period of their lives.

As a stimuli, all participants received the chance to participate in a lottery for one of the two vouchers (each 50€ worth) for their favourite fashion shop. At the end of the questionnaire the participants could provide a private email address as well as the name of the shop. Despite many concerns about the privacy during web surveys (Gregori and Baltar, 2013), 173 out of 238 initial respondents (73%; before data cleaning) submitted this information.

### **3.3 Measures**

The table 1 depicts the variables used as questions in the survey to obtain specific measures for further analysis. Likert-type scaling was applied. Numeric values (1 to 7-points scale) were assigned to each question for the use of parametric statistical techniques and multivariate analysis.

In terms of reliability of the measures, all data concerning Cronbach's alpha and the related corrected item-total correlations simply provides an overall reliability coefficient for a set of variables. As seen in the table, all scales with an alpha greater than 0.70 are generally accepted by researchers (Nunnally and Bernstein, 1994). Even though the threshold for corrected item-total correlations is highly discussed and depends on the sample size, Field (2005) refers to correlations above 0.30 as encouraging, referencing Nunnally and Bernstein (1994) accordingly. Due to the fact that all corrected item-total correlations are clearly above 0.5, there is no reliability issue seen in this study.

The use of single-item measures (e.g. quality) is discussed in research due to possible reliability issues. But firstly, existing papers assess single-item measures as highly reliable (Bergkvist and Rossiter, 2007; Diamantopoulos et al., 2012; Homburg et al., 2015). Secondly, the applied measures were mostly used in previous researches, as shown in table 2.

**Table 1. Construct of Measures and Scale Reliabilities**

Measure	Variables/ Items used	Cronbach's Alpha	Corrected Item-Total Correlation
<i>Familiarity</i>	Familiarity test of concepts	*	*
<i>Quality</i>	Overall quality rating	*	*
<i>Social Status</i>	I would have high status I feel better off	0.85	0.74
<i>Innovativeness</i>	Novel Unique Unusual Striking Noticeable	0.77	0.50 – 0.61
<i>Purchase Intention</i>	Purchase interest	*	*
<i>Attractiveness</i>	Appealing Desirable Attractive	0.9	0.77 – 0.83
<i>Willingness to Pay</i>	Willingness to pay for T-shirt	*	*
<i>Creativity</i>	I am a good designer I have the skills necessary to design a fashion item Creativity is an important part of who I am Friends would pick me to design their T-shirt	0.87	0.59 – 0.8
<i>E-Commerce Attitude</i>	I love using the internet to shop.	*	*
<i>Degree of Individuality</i>	Someone with same product threatens my distinctiveness Someone with same product threatens my individuality	0.86	0.75
<i>Shopper Segments</i>	I like to buy clothes I buy only well accepted fashion I value modest prices and wear-ability I am confident of my own good taste in clothing I'm not afraid to be the first to wear something different I always try items on before purchasing I buy clothes I like, regardless of fashion I like clothes that make the most of my figure People regard me as a fashion pacesetter Spending excessive money on clothes is ridiculous I plan my shopping trips carefully It is important to save shopping time Wearing good clothes is part of leading the good life. When I shop I enjoy finding new and different styles I am offended by being told what to wear by experts Fashion is just a way to get more money I shop for matching outfits I usually find myself looking for unique products I am just better than someone else if I dress better I prefer to buy well-known designer labels What I am is reflected by what I wear	*	*
<i>Demographics</i>	Gender Birth year Country (longest duration) Level of education Occupation Personal income before taxes	*	*

Source: Own illustration and data, SPSS output

\*not applicable

**Table 2. Sources of Measures**

Measure	Source
<i>Familiarity</i>	Own construct
<i>Quality</i>	Fuchs and Diamantopoulos (2012); Rossiter 2002)
<i>Social Status</i>	Locke (2003)
<i>Innovativeness</i>	Argo, Popa, and Smith (2010)
<i>Purchase Intention</i>	Adapted from Juster (1966)
<i>Attractiveness</i>	Amos and Spears (2010)
<i>Willingness to Pay</i>	Jones (1975)
<i>Creativity</i>	Moreau, Nonney, and Herd (2011)
<i>E-Commerce Interaction</i>	Ganesh et al. (2010)
<i>Degree of Individuality</i>	White and Argo (2011)
<i>Shopper Segments</i>	Own construct Various sources (adaptations): Kau, Tang, and Ghose (2003) Johnson and Raveendran (2009) Ganesh, Reynolds, and Lockett (2007) Rohm and Swaminathan (2004) Jack and Powers (2013)
<i>Demographics</i>	Adapted from Rohm and Swaminathan (2004) Own construct

Source: Own illustration

All measures will be tested and analysed using the two-way ANOVA statistical test. This will determine whether there is an interaction effect between two independent variables or between subject factors (shopper segments, concepts) on the five main dependent measure (H1: quality, H2: innovativeness, H3: social status, H4: attractiveness, and H5: purchase intention). Its appropriateness is assessed by the presence of categorical independent and dependent interval variables in this research. It is assumed that - independently of whether the interaction effect is significant or not - the primary consideration should be the simple main effect. Here, the interaction effect is broken down among the segments. In other words, although a non-statistically interaction is found, it is common to interpret and report the main effects. In addition, a follow up with a post hoc analysis is important for this study (e.g. all pairwise comparison) in case of a significant main effect in order to detect significant differences (simple main effects) in the sample (Howell, 2010; Keppel and Wickens, 2004).

## 4 FINDINGS

This chapter will answer all research questions and will identify additional findings.

### 4.1 Identification and Description of Shopper Segments

#### 4.1.1 Development of shopper segments

The overall aim of this study is the detection of preferences and perceptions of fashion concepts by the shopper types. The first research question can be answered eventually (“Which psychographic segments towards shopping behaviours can be developed?”). In order to conduct an exploratory cluster analysis, eventually leading to various segments, a principal component analysis (PCA) of the shopping behaviours is needed to reduce the variables. This technique allows for reducing many correlated variables into a single artificial variable called principal component.

A principal components analysis was run on 21 variables that measured desired shopping behaviours on 211 participants. The suitability of PCA was assessed prior to analysis. Inspection of the correlation matrix showed that all variables had some correlation coefficient slightly less than 0.3. The overall Kaiser-Meyer-Olkin (KMO) measure was 0.76, classifications of “middling” to “meritorious” according to Kaiser (1974). Bartlett's test of sphericity was statistically significant ( $p = 0.0000$ ), indicating that the data was likely factorisable. But, through testing and looking at the communalities, variables with a value < 0.5 were considered for removal. Ultimately, three variables referring to self-esteem variables “I prefer to buy well-known designer labels”, “What I am is reflected by what I wear”, and “I am better than someone else if I dress better” were ultimately removed and 18 variables retained.

The adjusted PCA delivered an overall KMO measure of 0.73, which is “middling” to “meritorious” and adequate for the conduction of a PCA. Bartlett's test of sphericity was statistically significant ( $p = 0.0000$ ), indicating that the data was likely factorisable. The communalities highly improved and were above 0.5 at least.

PCA revealed six components that had eigenvalues greater than 1 and which explained 20%, 11.4%, 10.1%, 8.0%, 6.7%, and 5.8% of the total variance, respectively. Visual inspection of the scree plot indicated that seven components should be retained (Cattell, 1966).

The six-component solution explained 62% of the total variance. A Varimax orthogonal rotation was used to aid interpretability. The Rotated Component Matrix revealed that six components have appropriate loadings on certain variables (coefficients>0.3). The interpretation of the data was consistent with the shopper behaviours the questionnaire was designed to measure, with strong loadings of *confident, innovative items* on Component 1, *price-conscious, essential items* on Component 2, *planned, time-saving items* on Component 3, *conventional items* on Component 4, *form-fitting items* on Component 5, and *individualistic items* on Component 6. Component loadings and communalities of the rotated solution are presented in Table 3. For further details please refer to Appendix 4.

**Table 3. Rotated Structure Matrix for PCA with Varimax Rotation**

Items	Rotated Component Coefficients						Communalities
	Component 1	Component 2	Component 3	Component 4	Component 5	Component 6	
I like to buy clothes.		<b>-.470</b>	-.391	.314			.673
I buy fashion only when they are well accepted.				<b>.736</b>			.644
I value modest prices and wearability.		<b>.579</b>			.373		.560
I am confident of my own good taste in clothing.	<b>.728</b>						.636
I'm not afraid to be the first to wear something different.	<b>.818</b>						.732
I always try items on before purchasing.					<b>.681</b>		.607
I buy clothes I like, regardless of fashion.				-.332	.372	<b>.508</b>	.586
I like clothes that make the most of my figure.					<b>.710</b>		.624
People regard me as a fashion pacesetter.	<b>.706</b>						.651
Spending excessive money on clothes is ridiculous		<b>.729</b>					.614
I plan my shopping trips carefully.			<b>.778</b>				.715
It is important to save shopping time.			<b>.751</b>				.628
Wearing good clothes is part of leading the good life.		<b>-.633</b>					.522
When I shop I enjoy finding new and different styles.	.419					<b>.501</b>	.636
I am offended by being told what to wear by experts.						<b>.721</b>	.602
Fashion is just a way to get more money.		<b>.680</b>					.578
I shop for matching outfits.				<b>.681</b>			.553
I usually find myself looking for unique products to purchase.	<b>.615</b>						.587

Source: Own illustration and data, SPSS output

Note: Major loadings for each item are bolded



By reducing the variables to six, exploratory cluster analysis can be applied to form segments to identify the shopper types. Six clusters, each cluster containing 45, 43, 42, 27, 27, and 27 members, were obtained by the K-Means clustering method. The number of clusters was determined according to the primary interpretability of the unique clusters and previous application of the hierarchical clustering method and its visual inspection of the clustering dendrogram (Aldenderfer and Blashfield, 1984). For further details on related data outputs please refer to Appendix 5.

Table 4 illustrates the final cluster centers computed as the mean for each variable within each final cluster.

**Table 4. Final Cluster Centers**

Components	Cluster					
	1	2	3	4	5	6
Confident/ Innovative	<b>.48840</b>	.29578	-.60829	<b>-1.31361</b>	<b>.57982</b>	.39496
Price-conscious/ Essential	-.18952	<b>.67367</b>	-.58807	.40747	<b>1.00946</b>	<b>-1.25917</b>
Planned/ Time-saving	<b>-.74485</b>	<b>1.04430</b>	.25848	-.43302	-.34191	-.04887
Conventional	-.26413	.10701	<b>.59898</b>	<b>.45679</b>	-.56782	-.55091
Form-fitting	<b>.83790</b>	.18617	<b>.35948</b>	-.67103	-.52278	<b>-1.05835</b>
Individualistic	.34257	.42834	-.72035	<b>.41383</b>	<b>-1.06541</b>	<b>.51900</b>

Source: Own illustration and data, SPSS output

Note: bolded used for interpretation

Based on this table, characteristics of each cluster can be described and thus segments on specific shopping behaviours defined. The first research question will be answered in the following:

- (1) *Personalized Shopper*: Personalized shoppers are primarily aware and confident with their body. Therefore, form-fitting fashion items are highly preferable. Besides, this shopper type is an impulse shopper if the condition of his or her right fit is given.
- (2) *Convenience Shopper*: Convenience shoppers are those who have shopping lists for essential clothes or know way ahead what is needed. Besides time savings, cost savings also play a major role. This shopper is not a fashion shopper per se.

- (3) *Conventional Shopper*: This shopper type only buys conventional or well-accepted clothes and well-fitted in order to avoid any risk of being dressed inappropriately. This shopper is a fashion shopper per se.
- (4) *Risk-averse Shopper*: As the name implies, this shopper only follows fashion trends and avoids being the first who buys new fashion that might risk losing face. Therefore, risk-averse types are highly offended if someone criticizes their style. This shopper is a fashion follower.
- (5) *Price-conscious Shopper*: This shopper highly values modest and appropriate prices. Even though the costs of clothes are most important, price-conscious shoppers are very confident wearing essentials rather than fashion items. Therefore, these shoppers are not offended if people judge them accordingly.
- (6) *Individual Shopper*: The individual shopper embraces new and distinctive styles. They do not care about good fit, prices, fashion trends or conventionally accepted clothes but do care about their freedom of choice.

#### 4.1.2 Additional Findings: Segment Descriptions

After having characterized the different shopper types according their shopping behaviour, measures like the degree of creativity and individuality as well as the general attitude towards e-commerce of each shopper type, as suggested by literature, can be analysed. The demographics of each segment will be assessed as well.

One-way ANOVA was conducted to determine the degree of creativity and individuality as well as the general attitude towards e-commerce against shopper segments. The data showed normal distribution in each measure and homogeneity was given ( $p > 0.05$ ). Concerning the degree of creativity and individuality, there were statistically significant different scores between the segments ( $p < 0.05$ ). The tukey post hoc analysis revealed that the individual shopper with the highest creativity (mean=4.3) is significantly different from the conventional shopper (mean=3.3) and non-statistically different from the other segments. Meaning the degree of creativity is statistically equal to the other segments, except the conventional shopper. In terms of individuality, the individual shopper has the highest score (mean=4.0) and is statistically different from the risk-averse shopper (mean=2.7) whereas the other segments have equal scores. Simply said, all segments except the risk-averse shoppers have a

higher degree of individuality. There is no statistical difference in e-commerce attitude between segments. For a detailed overview please refer to Appendix 6.

Through simple crosstabs the demographic characteristics of each shopper segment can be described (Table 5).

**Table 5. Demographics of Shopper Segments**

Measure	Gender		Year of Birth		Occupation			Yearly Net Income	
	Male	Female	After 1985	Until 1984	Employed	Student	Unemployed	Until 50,000	Over 50,000
<i>Personalized Shopper</i>	7	38	41	4	6	37	2	44	1
% within segment	15.6%	84.4%	91.1%	8.9%	13.3%	82.2%	4.4%	97.8%	2.2%
<i>Convenience Shopper</i>	16	27	39	4	11	25	6	39	4
% within segment	37.2%	62.8%	90.7%	9.3%	25.6%	58.1%	14.0%	90.7%	9.3%
<i>Conventional shopper</i>	14	28	41	1	6	33	3	37	5
% within segment	33.3%	66.7%	97.6%	2.4%	14.3%	78.6%	7.1%	88.1%	11.9%
<i>Risk-averse shopper</i>	8	19	23	4	7	19	1	24	3
% within segment	29.6%	70.4%	85.2%	14.8%	25.9%	70.4%	3.7%	88.9%	11.1%
<i>Price-conscious shopper</i>	16	11	27	0	6	20	1	27	0
% within segment	59.3%	40.7%	100.0%	0.0%	22.2%	74.1%	3.7%	100.0%	0.0%
<i>Individual shopper</i>	15	12	26	1	7	18	2	21	6
% within segment	55.6%	44.4%	96.3%	3.7%	25.9%	66.7%	7.4%	77.8%	22.2%

Source: Own illustration and data, SPSS output

Please note that these figures, stated for further discussions in chapter 5, do not influence the research questions neither the key findings. Due to the fact that an elimination procedure for non-western European was already conducted, a further breakdown by countries would not influence the aim of this research, and thus is out of scope. In terms of gender, personalised, convenience, conventional, and risk-averse shopper segments are dominated by females (84.4%, 62.8%, 66.7%, and 70.4%, respectively), whereas price-conscious and individual shoppers are mainly in the hands of males (59.3% and 55.6%). Concerning age, 93.4% of the sample is born after 1985 (approx. max. 30 years old). This distribution can be seen in all segments. Throughout all shopper segments, students are the biggest demographic segment in this sample. The personalized shopper and conventional shopper segment are mainly represented by students (82.2% and 78.6%, respectively), while there is a slight tendency towards employed participants within the convenience shopper segment. Furthermore, it is noticeable that 14% of convenience shoppers are unemployed. Due to the fact that 91% of the sample have less than 50k€ net income yearly, alike age dimension, the distribution is equal among all segments where price-conscious shopper hit the 100% for participants with less earnings than 50k€.

## 4.2 Perceptions of concepts among segments

This chapter intends to answer the second research question, supported by three hypotheses testing the interaction between shoppers and concepts on perception measures “quality, innovativeness, and social status” (see chapter 3.3. Two independent manipulation checks (t-test, test value=3; CI=0.95) provided evidence for participants’ understanding of concepts and the research construct validity. Both concepts were not significant ( $p>0.05$ ) from the desired test value (mean=3). All following results are listed in Appendix 7 in detail.

*H1: Mass customized products do not differ from co-created ones in quality among shoppers.*

A two-way ANOVA was conducted to examine the effects of shopper segments and concepts on quality. The assumption of normality for quality scores was not satisfied for all group combinations of segments and concepts, as assessed by Shapiro-Wilk's test ( $p>0.05$ ). Regardless of these violations, the ANOVA was conducted in any case because it is considered to be fairly “robust” to deviations from normality (Maxwell and Delaney, 2004). However, there was homogeneity of variances, as assessed by Levene's test for equality of variances,  $p=0.16$ .

There was no statistically significant interaction between concepts and shopper segments on quality,  $F(5,199)=0.36$ ,  $p=0.875$ . To look deeper into eventual effects among different segments, all pairwise comparisons were run for each simple main effect with reported 90% confidence intervals and p-values Bonferroni-adjusted within each simple main effect. There was a statistically significant difference in mean “quality” scores for risk-averse shopper being exposed to the concepts  $F(1,199)=3.134$ ,  $p=0.078$ . Mean “quality” scores for risk-averse shopper were  $4.3 \pm 1.4$  and  $5.1 \pm 1.1$  on mass customization and co-creation concept, respectively. Thus, risk-averse shopper had a significantly higher mean “quality” score in co-creation than mass customization, 0.750 (90% CI, 0.05 to 1.45),  $p = 0.078$ .

Based on this data, H1 can be neglected because risk-averse shoppers have a higher quality perception towards co-created products than mass customized.

*H2: Mass customized products do not differ from co-created ones in innovativeness among shoppers.*

In this part the segments' perception towards innovativeness of each concept has been investigated. The assumption of normality for "innovativeness" scores was satisfied for all group combinations of segments and concepts, as assessed by Shapiro-Wilk's test ( $p > 0.05$ ), except for the combinations 'MC/Conventional, MC/ Convenience shopper with  $p < 0.05$ . The assumption of homogeneity of variance is assessed by Levene's Test and is satisfied as well ( $p = 0.72$ ).

There were no significant interactions between concepts and shopper segments on innovativeness,  $F(5,199) = 0.847$ ,  $p = 0.518$ . To look deeper into eventual effects among different segments, all pairwise comparisons were run for each simple main effect with reported 90% confidence intervals and p-values Bonferroni-adjusted within each simple main effect. There were statistically significant differences in mean "innovativeness" scores for personalized shopper being exposed to the concepts  $F(1,199) = 7.788$ ,  $p = 0.003$ , as for convenience shopper  $F(1,199) = 8.788$ ,  $p = 0.004$ . Mean "innovativeness" scores for personalized shoppers were  $4.4 \pm 0.21$ ,  $5.3 \pm 0.20$ , and convenience shopper  $4.5 \pm 0.21$ ,  $5.0 \pm 0.21$  on mass customization and co-creation concept, respectively. Consequently, personalized shopper had a significant higher mean "innovativeness" score in co-creation than mass customization, 0.855 (90% CI, 0.39 to 1.3),  $p = 0.003$ . Convenience shopper also had a statistically significantly higher mean "innovativeness" score for co-creation, 0.51 (90% CI, 0.025 to 1.0),  $p = 0.84$ .

Even though the interaction effect is not significant, we can reject H3, because two segments (personalized and convenience shopper) have higher perception of innovativeness towards co-created than mass customized products.

*H3: Mass customized products do not differ from co-created ones in social status among shoppers.*

The effects of shopper segments and concepts on social status were examined. The assumption of normality for "social status" scores was satisfied for many group combinations of segments and concepts, as assessed by Shapiro-Wilk's test ( $p > 0.05$ ). In detail, normality in 4 out of 12 possible combinations was not given. Further, the assumption of homogeneity of variance, assessed by Levene's Test, was violated ( $p = 0.001$ ). Strictly speaking, the Bonferroni

procedure therefore cannot be used, as it assumes equal variances. However, according to Jaccard 1998, ANOVA is somewhat robust to heterogeneity of variance. Thus, the Bonferroni test can be used and interpreted with care.

There were no statistically significant interactions between concepts and shopper segments on social status,  $F(5,199)=0.508$ ,  $p=0.77$ . As assumed on basis of the previous results, a pairwise comparison analysis might bury some significant interactions among the segments. The pairwise comparisons were run for each simple main effect with reported 90% confidence intervals and p-values Bonferroni-adjusted within each simple main effect and disclosed a statistical difference in mean “social status” scores for price-conscious shopper towards concepts  $F(1,199)=5.330$ ,  $p=0.022$ . Mean “social status” scores for this shopper type were  $4.4 \pm 0.4$  and  $3.0 \pm 0.48$  on mass customization and co-creation concept, respectively. In conclusion, price-conscious shopper had a statistically significantly higher mean “social status” score in mass customization than co-creation, 1.420 (90% CI, 0.4 to 2.43),  $p = 0.77$ .

This conclusion leads to a rejection of H3, since price-conscious shoppers have agentic feelings towards mass customized fashion products rather than co-created ones.

#### **4.3 Preference testing of concepts among segments**

As argued in the literature review, attractiveness and purchase intention are relevant measures for preferences. Hence in this chapter, all shopper segments were tested against their preferences towards the two fashion concepts. Two hypotheses were created in order to answer research question 3.

*H4: Mass customized products do not differ from co-created ones in attractiveness among shoppers.*

As the dependent variable attractiveness was tested against the two concepts among the different segments. The assumption of normality for “attractiveness” scores was satisfied for group combinations of segments and concepts, as assessed by Shapiro-Wilk's test ( $p>0.05$ ), except of 3 out of 12 combinations. Nonetheless, the assumption of homogeneity of variance is assessed by Levene's Test and is satisfied ( $p=0.83$ ).

There was no statistically significant interaction between concepts and shopper segments on quality,  $F(5,199)=1.351$ ,  $p=0.245$ . A deeper look in the simple main effects reveals

statistically significant difference in mean “attractiveness” scores for personalized shopper being exposed to the concepts  $F(1,199) = 3.478$ ,  $p = 0.064$ , given a 90% confidence interval and Bonferroni-adjusted p-values within each simple main effect. Mean “attractiveness” scores for personalized shopper were  $5.3 \pm 0.225$  and  $5.9 \pm 0.210$ , respectively on mass customization and co-creation concept. So, personalized shopper had a statistically significantly higher mean “attractiveness” score in co-creation than mass customization, 0.573 (90% CI, 0.65 to 1.081),  $p = 0.064$ .

As a result, H4 can be rejected because personalized shopper has a higher attractiveness towards co-created fashion products.

*H5: Mass customized products do not differ from co-created ones in purchase intention among shoppers.*

The effects of shopper segments and concepts on purchase intention were examined. The assumption of normality for “purchase intention” scores was not satisfied for many group combinations of segments and concepts, as assessed by Shapiro-Wilk's test ( $p > 0.05$ ). Therefore the normality and the assumption of homogeneity of variance were violated (Levene's Test,  $p = 0.028$ ). As indicated earlier, the ANOVA technique needs to be conducted with care in this specific case.

There was no statistically significant interaction between concepts and shopper segments on quality,  $F(5,199) = 1.411$ ,  $p = 0.222$ . Therefore, an analysis of the simple main effects for concepts of the segments is needed to identify specify differences in mean among segments. The pairwise comparisons (CI 90%, p-values Bonferroni-adjusted) exposed a statistical difference in mean “purchase intention” scores for price-conscious shopper towards concepts  $F(1,199) = 3.237$ ,  $p = 0.073$ . Mean “purchase intention” scores for price-conscious shopper were  $5.2 \pm 0.26$  and  $4.6 \pm 0.31$ , respectively on mass customization and co-creation concept. In conclusion, price-conscious shopper had a statistically significantly higher mean “purchase intention” score in mass customization than co-creation, 0.733 (90% CI, 0.6 to 1.4),  $p = 0.073$ .

This result leads ultimately to a rejection of H5. Mass customized does differ significantly from co-created products in purchase intention from price-conscious shopper.

#### 4.4 Additional Findings

The optional additional findings section provides an opportunity for future research of quantitative data and relationships between segments, concepts and perception, preference measures that goes beyond the research questions or hypotheses.

In the scope of this research, the concepts' perceptions (incl. familiarity) and preferences were only tested against specific shopper types. Therefore, the main effects of each concept from the entire sample could provide evidence about the general degree of perceptions and preferences. These results are displayed in the following table.

**Table 6. Main effects on concepts**

Measure	Means				Sig.
	MC*	Std. Error	CC**	Std. Error	p-value
<i>Familiarity</i>	4.1	0.19	3.4	0.19	<b>0.023</b>
<i>Quality</i>	4.8	0.11	5.1	0.11	<b>0.022</b>
<i>Innovativeness</i>	4.5	0.1	4.9	0.1	<b>0.002</b>
<i>Social Status</i>	3.9	0.16	3.3	0.16	<b>0.009</b>
<i>Attractiveness</i>	5.2	0.1	5.2	0.1	0.70
<i>Purchase Intention</i>	5.4	0.10	5.4	0.10	0.87
<i>Willingness to Pay</i>	27.4	1.6	26.2	1.6	0.6

Source: Own data, SPSS output

\*MC= Mass Customization

\*CC= Co-Creation

To conclude, concepts were significantly different on measures only related to perceptions (CI 90%, p-values<0.1). In particular, the familiarity and social status were significantly higher for Mass Customization in fashion, whereas co-created fashion products scored significantly higher in quality and innovativeness.

As not regarded so far and seen as further measure of preference, willingness to pay could also provide a hint concerning purchase intention of the two fashion concepts for each shopper segment. Because of the lack of the “look and feel” character in the described scenarios in the experimental design, this measure is not included in the research design. As there were no significant scores in any statically test, the descriptive statistic revealed the extremes that the individual shoppers would pay the highest amount not only on mass customized but also on co-created fashionable T-shirts (32.8€, 32.3€ in average, respectively), whereas the risk-averse shopper was intending to pay the least amount (23€ and 19.8€ in average, respectively). In general, there was a slight tendency towards mass customized rather than co-created T-shirts in means (27.4 and 26.2, respectively).



## 5 DISCUSSIONS

This critical part of this study will first discuss thoroughly each finding of the research question or hypothesis and will bring this into context with existing literature. Next, each interpretation presents information relevant to managerial decision-making.

### 5.1 Interpretation of Findings

As this study is reasoned on the identification of shopper types, the findings on new shopper segments have to be interpreted. At first, various literatures on shopper typologies have shown that there is little coherence among their findings due to sampling and research design. The characteristics of each shopper segment in this study have more or less coherence with existing studies such as Ganesh et al. (2007). Moreover, this study fully supports the argumentation of some researchers (e.g. Levy et al., 2005; Ganesh et al., 2010): there are no systematic differences of online and offline shoppers. Therefore, conclusions on online shoppers in comparison to traditional, offline shoppers cannot be drawn from this sample. Hence, it can be assumed that both might be convergent because of the steady increase of e-commerce. Consequently, this study came up with a new segmentation by identifying six different shopper types: Personalized, convenience, conventional, risk-averse, price-conscious, and individual shopper. Interestingly, there is no segment specifically determining an innovative, enthusiastic nor impulse shopper per se, unlike many other studies (e.g. Donthu and Garcia, 1999; Ganesh et al., 2007).

Firstly, the personalized shoppers represent the most complex shopper segment. They combine the previously stated shopper characteristics (innovative, enthusiastic, and impulsive) with a high value on confidence, which stands in close relationship with their search for form-fitted fashion items. Various literatures assumed that women tend to impulsive, leisure shopping of self-expressive products and to be fashion innovators rather than males. This statement can be fully confirmed in this study since 84% of personalized shoppers were females. Surprisingly, against the common belief, this segment shows significantly higher innovativeness and attractiveness for final co-created fashion items in comparison to mass customized ones. This could indicate that personalized shoppers feel belongingness to certain communities with similar characteristics (e.g. same body physics) and trust in communities' power to generate more innovative, well-fitted products. On the

other hand, this segment is not specifically creative although mass customized products imply little creative involvement. So, there is in conflict with their impulsive shopping behaviour.

Secondly, the convenience shopper appreciates low time effort and costs in shopping. Thus, shopping for essentials comes along with a structured planning prior shopping as this segment does not like to browse for clothes and is not attracted by fashion items either. This characterisation is in line with literature on shopper typologies (see e.g. “basic shoppers” stated by Ganesh et al., 2007; “Convenience shopper” Rohm and Swaminathan, 2004). In context with both fashion concepts, innovativeness was rated significantly higher for co-created fashion products than mass customized ones, which is in coherence with Poetz and Schreier (2012). Within this segment there was no further significant differential effect of the dependent variable on fashion concepts. Hence, based on literature and results, convenience shoppers might be neutral towards both fashion concepts. Furthermore, they are not an appropriate segment for mass customized nor co-created fashion products as they usually include higher cognitive and physical costs in product selection (see Merle, 2010) besides the fact that user-innovated products are not categorised as “essential” or “basic”.

Thirdly, on the contrary, the conventional shoppers were identified as a trend shopper. They follow fashion trends only when being well accepted and well fitted because these shoppers do not like trying out innovative, individualistic styles due to a lack of personal confidence. This is supported by the finding that this segment is the least creative one. There were no significant differences in this study. However, the mean values show a tendency towards co-creation (e.g. in purchase intention), assuming that co-created products are well-accepted through the rating system and the community involvement, whereas mass customization is preferred by people with a more unique, individualistic characteristic (Merle, 2010). Although further research is needed, it can be concluded that conventional shoppers were more attracted by mass customized products leaving the question if there is an inner conflict between a desire and ties to conventional rules.

Fourthly, the risk-averse shopper is the more extreme version of the conventional shopper and can be classified as fashion follower. Face-losing might be a major issue here. Besides the desire to be accepted through clothing, this segment cannot effort highly priced fashion items, unlike conventional shoppers. Simply summarized, the risk-averse shopper is a fashion follower with monetary restrictions trying to hide the real identity through clothing. As the

results indicated, risk-averse shopper had a very low degree of individuality assumed by literature that this type values high community interaction. In support of this assumption, risk-averse shoppers had a significantly higher quality perception of co-created fashion in comparison to mass customized one. As social costs are high on mass customization according to Dellaert and Stremersch (2005), a general tendency towards co-created products between measures, except of social status, can be drawn by comparing means.

Fifthly, price-conscious shopper types have been identified as stand-alone, highly distinctive segment in many studies about typology (e.g. Bellenger et al., 1977; Kaltcheva and Weitz, 2006). Ganesh et al. (2007) analysed that “bargain seekers” which strive for the best economic deal with low interest in prior product research is in line with the identified price-conscious shopper in this study. In addition to existing literature this study demonstrates that this segment is innovative in clothing and highly confident in their taste. Due to the fact that this segment seeks for unique, innovative products for a fair and modest price, the purchase intention of mass customized products was significantly higher which is in alignment with the literature (see Franke and Schreier, 2008; Merle, 2010). Not surprisingly, the seeking for uniqueness of the price-conscious shoppers led to agentic feelings for mass customization, which confirms previous studies by Tian et al. (2001) and Schreier (2006), who concluded that uniqueness is a strong driver for mass customization.

Finally, the individual shopper wants to be different from the other segments at any costs. As an added value of this study, none of the recent studies besides the outdated study by Brown and Reid (1955) identified this segment in the first place. Non-surprisingly, the individual shopper has the highest score on individuality and creativity and is significantly different from the risk-averse and conventional shopper segment. In relation of being unique and a distinctive segment, literature suggests that mass customized products increase the uniqueness through possession for individuals rather than an interaction with a community (Franke and Schreier, 2008). Notably, there is no significant difference between exposed fashion concepts on dependent measures proving that mass customization is preferred over co-creation. This provides room for interpretation: It is possible that this shopper has no clear preference or contrasting perceived values as it normally appreciates other concepts without an impact from others, users or company professionals.

## **5.2 Managerial Implication**

The discussed findings provide several managerial implications, which are important for the development and implementation of marketing strategies aiming at building and maintaining market share and competitive advantages for fashion retailers. As indicated in chapter 2.3.1, e-commerce accelerated in recent years, despite a stagnating apparel industry, and opened up room for open innovation. Traditional offline stores might not be a long-term concept anymore. This study encourages traditional offline retailers to rethink the importance of user generated content.

In detail, this study provides the newest theoretical segmentation on fashion shoppers. Practically, they could use this knowledge in a general context within their internal consumer targeting strategies, as segments' assessment was independently from open innovation concepts. But more importantly, retailers willing to implement consumer involvement in NPD gained information concerning an appropriate open innovation concept towards a specific predefined target group, based on the shopper segmentation in this study. The other way round, retailers can identify possible target segments by being conclusive on open innovation concepts to be implemented. Ultimately, the findings on different scores of perception (e.g. in innovativeness and social status) provide valuable information for retailers to adapt e.g. marketing or communication strategies being appropriate for target shoppers to increase commercial attractiveness.

## 6 LIMITATIONS & FUTURE RESEARCH

This study was designed with some limitations. Firstly, the fashion concept scenarios developed for this research only used descriptive stimuli. There was a lack of “look & feel” due to the absence of final fashion products related to either co-creation or mass customization. By only revealing participants to the end product, the co-creation scenario focused on perceptions and preferences from the “periphery” or rear end of NPD. This means that there was no exposure of an active involvement scenario to the participants, even though the attractiveness of co-created products increases with higher extent of consumer involvement. Mass customization was exposed with little active involvement in the final designing stage. Thus, future research should make use of the possibility to integrate the entire value creation process of both concepts additionally to this research design.

Secondly, the between-subject research design dismisses the possibility to directly compare both concepts with each other for each participant. Further, the measures (dependent variables) on perceptions and preference did not stand in relationship as literature suggested (e.g. Tsotsou, 2006) and were treated individually. In addition, each shopper segment tested single measures on fashion concepts (horizontal research). Hence, there was no relationship between shopper segments (vertical research), which findings could be added in future research. In conclusion, this research design should be redefined to find a more appropriate way to test concepts, segment and measures in relationship to each other and within each other.

A further limitation of the present research pertains to the nature of the sample used to test the hypotheses. In particular, the sample size of 211 valid responses is not sufficient for meaningful shopper segmentation (independent variable), as homogeneity is not always guaranteed for each segment in a between-subject study design. Furthermore, this sample was comprised of dominantly female participants and students and is thus not representative of a general consumer population. Lastly, the sampling was restricted to Western Europe and related cultural background. Therefore, the findings should be confirmed in future studies using a larger sample size and a more carefully sampling technique in terms of demographics. The model could be tested for investigating differences between men and women considering also the wider situational, relational, and cultural contexts in which heterogeneous shopping behaviours and different perceptions especially on social comparisons occur.

Additionally, collecting a single sample resulted in the necessity of using the same sample for exploratory analysis of the shopping segments as well as for hypotheses testing. As one of the research questions was to identify new shopper types and existing literature were inconsistent, this exploratory segmentation study could not predefine concrete hypotheses. Therefore, further research could be performed in a confirmatory testing manner, where outcome predictions or hypotheses can be made with more concrete formulations even before the measurement phase begins, based on the new definition of fashion shopper types suggested in this study.

Finally, as main effects of concepts on measures were included in the scope of this study but not further discussed, future research could take these findings into consideration to obtain a better understanding of the general view on the user involved fashion concepts without having solely a view from the shopper segments.

Essentially, the generalizability of the research findings requires additional research and the present research findings should also be replicated in other contexts rather than in fashion and consumer goods.

## 7 CONCLUSION

Primarily, this study solved the main problem by providing a comprehensive understanding of heterogeneous shopper types' perceptions and preferences towards co-created products in comparison to mass customization in the fashion context. A new segmentation of shoppers has been identified complementary to existing segmentation and adapted to recent changes in shopping behaviour. Therefore, there was partial coherence with existing literature but also some new segments as the personalized or individual shopper were identified. Further, each segment has been tested for perceptions and preferences of fashion concepts with consumer involvement in NPD. This study revealed that the personalized and risk-averse shopper tends towards co-creation in fashion, whereas the price-conscious one tends towards mass customization. Furthermore, the convenience and conventional shopper might not be appropriate target segments for open innovative concepts in fashion as both do not show a clear preference nor have opinions on perceptions. Lastly, the most mysterious segment, individual shopper, values its freedom of choice and thus consumer generated fashion items might not be appropriate concepts either.

Managerially, fashion retailers can use this information for an effective implementation of target marketing and new innovative sales concepts. As this study shows some limitations, future research can improve the research design to receive findings for an increased feasibility in practice. Additionally, the entire value creation process can be considered, in particular for co-creation in comparison to mass customization, which would eventually lead to alteration of perceptions and preferences among segments. In total, opportunities and a guideline for retailers were presented to accelerate business by integrating consumers in NPD, although future research could enhance the practicability of this study.

The main problem has been solved and the aim to create a better understanding of different shoppers' perception and preferences on co-creation and mass customization of fashion products has been accomplished.

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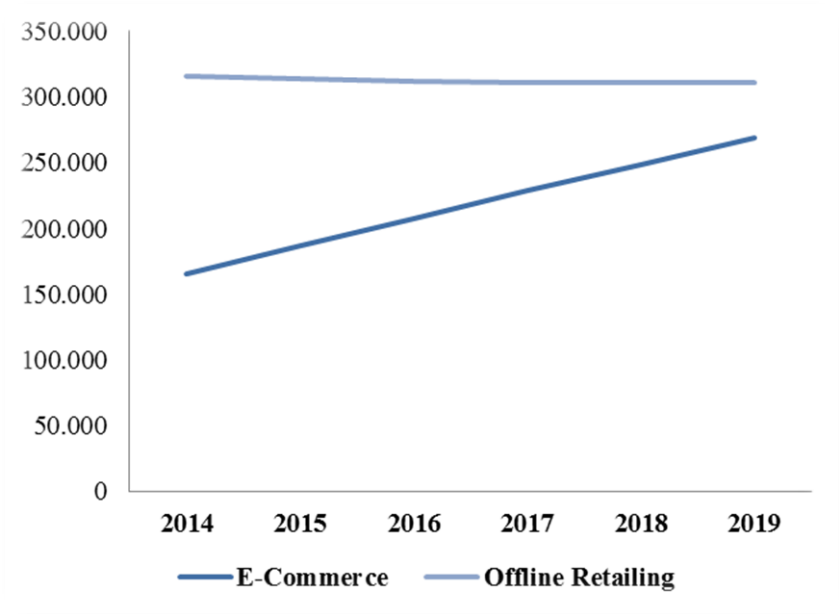
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APPENDICES

**Appendix 1: E-Commerce vs. Offline Retailing Forecast in Western Europe**

Figure: Market Sizes | Historic/Forecast | Retail and E-Commerce Value excl. Sales Tax | € mn | Constant 2014 Prices | Fixed 2014 Exchange Rates



Source: Own Illustration; Euromonitor International, 2014

## Appendix 2: Best Practices of MC and Co-Creation in Fashion

### 1. Co-Creation Best Practice – Threadless

The screenshot shows a Threadless design page for a white t-shirt with a graphic design. The design features a woman in a bikini and a skull, with the text "GRIM" above and "DEEPER" below. The background is purple with a large skull wearing sunglasses. The page includes a navigation bar with "SHOP", "PARTICIPATE", and "BLOG". A banner at the top reads "30% OFF SUBLIMATED TEES & TANKS". Below the navigation bar are tabs for "TOP DESIGNS", "MOST FUNDED", "RISING", "NEW", and "ARCHIVE". A list of challenges is shown: "Kung Fu Panda", "X-Files", "Rep Your City!", "BTTF", "Threadless". The design is by "poopooclub" and has a "FOLLOW" button. The t-shirt is priced at "\$20 + Free Shipping" and has a "BUY IT" button. A "SCORE IT" section shows a rating of 5 stars and 230 votes. A "3 Days Left" and "50% Funded" badge is also present.

The screenshot shows the Threadless "DESIGN CHALLENGES" page. The navigation bar is the same as in the previous screenshot. A banner at the top reads "30% OFF SUBLIMATED TEES & TANKS". The main heading is "DESIGN CHALLENGES". Below this is a paragraph: "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](#)". To the right is a "HOW IT WORKS!" badge. Below the paragraph is a section titled "Our never-ending, no-themes, no-holds-barred, open-ended design challenge". It features a "SUBMIT A DESIGN" button and statistics: "359,358 designs submitted" and "7,093 designs printed". Below this is a section titled "NEED INSPIRATION? CHECK OUT OUR THEMED CHALLENGES". It lists two challenges: "Kung Fu Panda" (104 designs, \$2,000 prize, 8 days left) and "The X-Files" (134 designs, \$8K + Loot Crate prize, 4 days left). Below this is a section titled "COMPLETED CHALLENGES". It lists four completed challenges: "Dream DESTINATIONS", "The 70s", "SHORT AND NOT SO SWEET", and "SHADOWS". Each challenge has a "See the winners" link.

## 2. Mass Customization Best Practice – NikeiD Toolkit

The image displays two screenshots of the NikeiD website. The top screenshot shows the main landing page for NikeiD, featuring a large banner for the Nike Air Zoom Pegasus 32 iD running shoe. The banner text reads "BACK IN BLOOM: CREATE YOUR EVERYDAY FAST." and includes a "CUSTOMIZE AND BUY" button. Below the banner, there is a section titled "PERSONALIZE NIKEiD'S TOP STYLES" with five small thumbnail images of different shoe styles. The bottom screenshot shows the customization interface for the Nike Roshe One iD shoe. The main area displays a 3D model of a red and pink shoe. To the right, there is a customization panel with the following options:

- TOE**
- CHOOSE A TOE MATERIAL:
  - ORIGINAL MESH
  - PRIME FLEECE
  - POLY FLEECE
  - SNAKE GRAPHIC FLEECE
  - WOODLAND CAMO GRAPHIC FLEECE
- CHOOSE A TOE COLOR: **PINK FOL**

At the bottom of the customization panel, there are "PREV" and "NEXT" buttons, and an "ADD TO CART" button. The price of the shoe is listed as \$115.

Sources: Threadless.com; Nike.com

## Appendix 3: MC & Co-Creation Concept Scenarios

### 1. Co-Creation Scenario

Nowadays, as a trend in fashion, many clothing retailers emphasize high involvement of consumers in ideation and/or designing of new fashion apparel and footwear.

Consumers can be *actively involved in the designing process* of fashion items in close collaboration with the company's professional designers through technical platforms.

An *interactive online community* brings *together consumers and professionals* that *work together* to achieve the best product outcome.

In the final stage, *consumers vote for the most preferred fashion item*. Ultimately, these items are *sold online and in stores*.

This concept is called "**Consumer Co-Creation with Company's professionals**". Both entities create the final fashion product.

>>

### 2. Mass Customization Scenario

Nowadays, as a trend in fashion, many clothing retailers emphasize involvement of consumers in designing of new fashion apparel and footwear.

Often, the consumers are able to *modify a mass product* in terms of *color, fabrics, size and/or print-ons etc.* according to their *own preferences*. The company determines the number of possible design alterations on the product.

Ultimately, at the end the consumer receives a product that has all the *customized elements applied on a basic product*.

This concept is called "**Mass Customization**". A system of mass production with the flexibility of customization of predetermined design elements.

>>

Sources: Own Data, Qualtrics.com

## Appendix 4: Principal Component Analysis – Additional Data

### KMO and Bartlett's Test

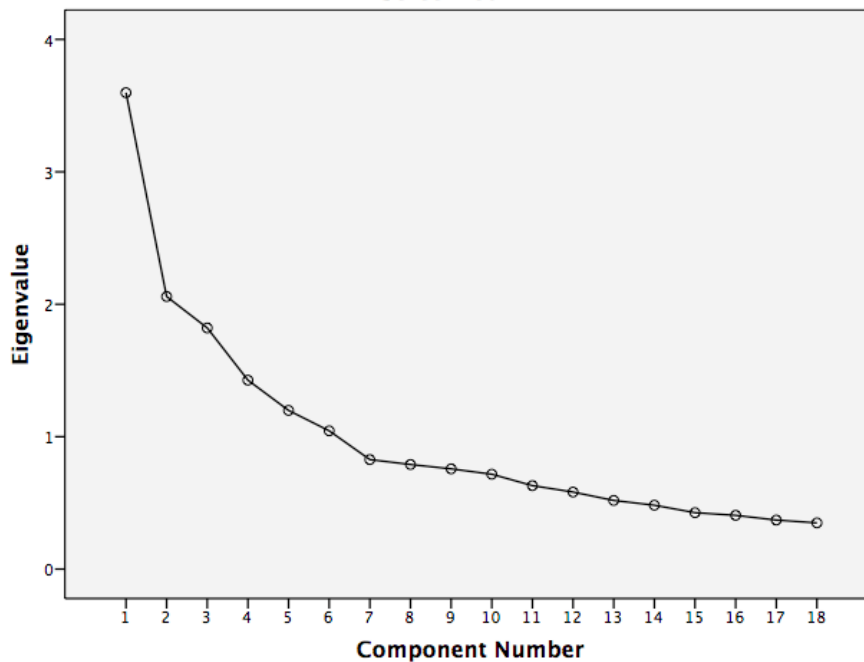
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.733
Bartlett's Test of Sphericity	Approx. Chi-Square	822.403
	df	153
	Sig.	.000

### Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.598	19.987	19.987	3.598	19.987	19.987	2.602	14.455	14.455
2	2.058	11.435	31.422	2.058	11.435	31.422	2.327	12.928	27.383
3	1.821	10.116	41.538	1.821	10.116	41.538	1.633	9.070	36.453
4	1.427	7.926	49.465	1.427	7.926	49.465	1.604	8.908	45.362
5	1.198	6.657	56.122	1.198	6.657	56.122	1.594	8.857	54.219
6	1.044	5.801	61.923	1.044	5.801	61.923	1.387	7.704	61.923
7	.827	4.595	66.518						
8	.790	4.387	70.905						
9	.757	4.205	75.110						
10	.716	3.980	79.090						
11	.630	3.501	82.591						
12	.582	3.232	85.823						
13	.518	2.880	88.703						
14	.482	2.680	91.383						
15	.426	2.366	93.750						
16	.406	2.255	96.005						
17	.370	2.057	98.062						
18	.349	1.938	100.000						

Extraction Method: Principal Component Analysis.

### Scree Plot



## Appendix 5: Cluster Analysis

Number of Cases in each Cluster

Cluster	1	45.000
	2	43.000
	3	42.000
	4	27.000
	5	27.000
	6	27.000
Valid		211.000
Missing		.000

Final Cluster Centers

	Cluster					
	1	2	3	4	5	6
Confident/ Innovative	.48840	.29578	-.60829	-1.31361	.57982	.39496
Price-conscious/ Essential	-.18952	.67367	-.58807	.40747	1.00946	-1.25917
Planned/ Time-saving	-.74485	1.04430	.25848	-.43302	-.34191	-.04887
Conventional	-.26413	.10701	.59898	.45679	-.56782	-.55091
Form-fitting	.83790	.18617	.35948	-.67103	-.52278	-1.05835
Individualistic	.34257	.42834	-.72035	.41383	-1.06541	.51900

Distances between Final Cluster Centers

Cluster	1	2	3	4	5	6
1		2.134	2.115	2.550	2.353	2.312
2	2.134		2.149	2.388	2.303	2.633
3	2.115	2.149		2.082	2.566	2.534
4	2.550	2.388	2.082		2.686	2.650
5	2.353	2.303	2.566	2.686		2.840
6	2.312	2.633	2.534	2.650	2.840	

ANOVA

	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
Confident/ Innovative	17.983	5	.586	205	30.700	.000
Price-conscious/ Essential	22.092	5	.486	205	45.499	.000
Planned/ Time-saving	16.590	5	.620	205	26.768	.000
Conventional	8.247	5	.823	205	10.018	.000
Form-fitting	17.658	5	.594	205	29.742	.000
Individualistic	15.502	5	.646	205	23.985	.000

The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

## Appendix 6: Additional Findings of Segments – Creativity, Individuality, E-Commerce Attitude

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Degree_Individuality	Personalized shopper	45	3.7667	1.84822	.27552	3.2114	4.3219	1.00	7.00
	Convenience shopper	43	3.8140	1.63308	.24904	3.3114	4.3165	1.00	7.00
	Conventional shopper	42	3.8095	1.42689	.22017	3.3649	4.2542	1.00	7.00
	Risk-averse shopper	27	2.7222	1.31071	.25225	2.2037	3.2407	1.00	5.00
	Price-conscious shopper	27	3.7963	1.59482	.30692	3.1654	4.4272	1.00	6.00
	Individual shopper	27	4.0556	1.46978	.28286	3.4741	4.6370	1.50	6.00
	Total	211	3.6919	1.60872	.11075	3.4736	3.9103	1.00	7.00
Creativity	Personalized shopper	45	4.2389	1.23163	.18360	3.8689	4.6089	1.50	6.50
	Convenience shopper	43	4.2558	1.58817	.24219	3.7670	4.7446	1.25	7.00
	Conventional shopper	42	3.3333	1.14720	.17702	2.9758	3.6908	1.25	6.00
	Risk-averse shopper	27	3.2500	1.41251	.27184	2.6912	3.8088	1.00	6.25
	Price-conscious shopper	27	3.7037	1.40061	.26955	3.1496	4.2578	1.00	6.25
	Individual shopper	27	4.3241	1.51882	.29230	3.7233	4.9249	1.00	6.50
	Total	211	3.8780	1.43227	.09860	3.6836	4.0723	1.00	7.00
Shopping is not only done in physical retail stores. The so-called E-Commerce has become importan...-I love using the Internet to shop. It's fun and easy.	Personalized shopper	45	4.20	2.018	.301	3.59	4.81	1	7
	Convenience shopper	43	4.19	1.991	.304	3.57	4.80	1	7
	Conventional shopper	42	3.98	1.600	.247	3.48	4.47	1	7
	Risk-averse shopper	27	4.33	1.710	.329	3.66	5.01	1	7
	Price-conscious shopper	27	3.89	1.783	.343	3.18	4.59	1	7
	Individual shopper	27	4.85	1.854	.357	4.12	5.59	1	7
	Total	211	4.21	1.846	.127	3.96	4.46	1	7

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Degree_Individuality	2.143	5	205	.062
Creativity	1.354	5	205	.243
Shopping is not only done in physical retail stores. The so-called E-Commerce has become importan...-I love using the Internet to shop. It's fun and easy.	1.335	5	205	.251

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Degree_Individuality	Between Groups	30.726	5	6.145	2.457	.035
	Within Groups	512.751	205	2.501		
	Total	543.476	210			
Creativity	Between Groups	41.300	5	8.260	4.347	.001
	Within Groups	389.495	205	1.900		
	Total	430.795	210			
Shopping is not only done in physical retail stores. The so-called E-Commerce has become importan...-I love using the Internet to shop. It's fun and easy.	Between Groups	16.641	5	3.328	.976	.433
	Within Groups	698.762	205	3.409		
	Total	715.403	210			

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Cluster Number of Case	(J) Cluster Number of Case	Mean Difference (I-J)	Std. Error	Sig.	90% Confidence Interval		
						Lower Bound	Upper Bound	
Degree_Individuality	Personalized shopper	Convenience shopper	-.04729	.33727	1.000	-.9268	.8322	
		Conventional shopper	-.04286	.33932	1.000	-.9277	.8420	
		Risk-averse shopper	1.04444*	.38499	.077	.0405	2.0484	
		Price-conscious shopper	-.02963	.38499	1.000	-1.0336	.9744	
		Individual shopper	-.28889	.38499	.975	-1.2929	.7151	
	Convenience shopper	Personalized shopper	.04729	.33727	1.000	-.8322	.9268	
		Conventional shopper	.00443	.34310	1.000	-.8903	.8992	
		Risk-averse shopper	1.09173*	.38834	.060	.0790	2.1044	
		Price-conscious shopper	.01766	.38834	1.000	-.9950	1.0304	
	Conventional shopper	Individual shopper	-.24160	.38834	.989	-1.2543	.7711	
		Personalized shopper	.04286	.33932	1.000	-.8420	.9277	
		Convenience shopper	-.00443	.34310	1.000	-.8992	.8903	
		Risk-averse shopper	1.08730*	.39012	.064	.0700	2.1046	
	Risk-averse shopper	Price-conscious shopper	.01323	.39012	1.000	-1.0041	1.0306	
		Individual shopper	-.24603	.39012	.989	-1.2634	.7713	
		Personalized shopper	-1.04444*	.38499	.077	-2.0484	-.0405	
		Convenience shopper	-1.09173*	.38834	.060	-2.1044	-.0790	
	Price-conscious shopper	Conventional shopper	-1.08730*	.39012	.064	-2.1046	-.0700	
		Price-conscious shopper	-1.07407	.43044	.130	-2.1966	.0484	
		Individual shopper	-1.33333*	.43044	.027	-2.4558	-.2108	
		Personalized shopper	.02963	.38499	1.000	-.9744	1.0336	
	Individual shopper	Convenience shopper	-.01766	.38834	1.000	-1.0304	.9950	
		Conventional shopper	-.01323	.39012	1.000	-1.0306	1.0041	
		Risk-averse shopper	1.07407	.43044	.130	-.0484	2.1966	
		Price-conscious shopper	-.25926	.43044	.991	-1.3817	.8632	
	Creativity	Personalized shopper	Convenience shopper	-.01693	.29395	1.000	-.7835	.7496
			Conventional shopper	.90556*	.29574	.030	.1343	1.6768
			Risk-averse shopper	.98889*	.33555	.041	.1139	1.8639
			Price-conscious shopper	.53519	.33555	.603	-.3398	1.4102
			Individual shopper	-.08519	.33555	1.000	-.9602	.7898
		Convenience shopper	Personalized shopper	.01693	.29395	1.000	-.7496	.7835
			Conventional shopper	.92248*	.29904	.028	.1427	1.7023
			Risk-averse shopper	1.00581*	.33846	.038	.1232	1.8884
			Price-conscious shopper	.55211	.33846	.579	-.3305	1.4347
		Conventional shopper	Individual shopper	-.06826	.33846	1.000	-.9509	.8144
			Personalized shopper	-.90556*	.29574	.030	-1.6768	-.1343
			Convenience shopper	-.92248*	.29904	.028	-1.7023	-.1427
			Risk-averse shopper	.08333	.34001	1.000	-.8033	.9700
		Risk-averse shopper	Price-conscious shopper	-.37037	.34001	.885	-1.2570	.5163
			Individual shopper	-.99074*	.34001	.045	-1.8774	-.1041
Personalized shopper			-.98889*	.33555	.041	-1.8639	-.1139	
Convenience shopper			-1.00581*	.33846	.038	-1.8884	-.1232	
Price-conscious shopper		Conventional shopper	-.08333	.34001	1.000	-.9700	.8033	
		Price-conscious shopper	-.45370	.37515	.832	-1.4320	.5246	
		Individual shopper	-1.07407*	.37515	.052	-2.0524	-.0958	
		Personalized shopper	-.53519	.33555	.603	-1.4102	.3398	
Individual shopper		Convenience shopper	-.55211	.33846	.579	-1.4347	.3305	
		Conventional shopper	.37037	.34001	.885	-.5163	1.2570	
		Risk-averse shopper	.45370	.37515	.832	-.5246	1.4320	
		Price-conscious shopper	-.62037	.37515	.564	-1.5987	.3579	
Personalized shopper		Convenience shopper	.08519	.33555	1.000	-.7898	.9602	
		Conventional shopper	.06826	.33846	1.000	-.8144	.9509	
		Conventional shopper	.99074*	.34001	.045	.1041	1.8774	
		Risk-averse shopper	1.07407*	.37515	.052	.0958	2.0524	
Convenience shopper		Price-conscious shopper	.62037	.37515	.564	-.3579	1.5987	



Shopping is not only done in physical retail stores. The so-called E-Commerce has become important...I love using the Internet to shop. It's fun and easy.	Personalized shopper	Convenience shopper	.014	.394	1.000	-1.01	1.04
		Conventional shopper	.224	.396	.993	-.81	1.26
		Risk-averse shopper	-.133	.449	1.000	-1.31	1.04
		Price-conscious shopper	.311	.449	.983	-.86	1.48
		Individual shopper	-.652	.449	.696	-1.82	.52
	Convenience shopper	Personalized shopper	-.014	.394	1.000	-1.04	1.01
		Conventional shopper	.210	.401	.995	-.83	1.25
		Risk-averse shopper	-.147	.453	1.000	-1.33	1.03
		Price-conscious shopper	.297	.453	.986	-.89	1.48
		Individual shopper	-.666	.453	.685	-1.85	.52
	Conventional shopper	Personalized shopper	-.224	.396	.993	-1.26	.81
		Convenience shopper	-.210	.401	.995	-1.25	.83
		Risk-averse shopper	-.357	.455	.970	-1.54	.83
		Price-conscious shopper	.087	.455	1.000	-1.10	1.27
		Individual shopper	-.876	.455	.391	-2.06	.31
	Risk-averse shopper	Personalized shopper	.133	.449	1.000	-1.04	1.31
		Convenience shopper	.147	.453	1.000	-1.03	1.33
		Conventional shopper	.357	.455	.970	-.83	1.54
		Price-conscious shopper	.444	.502	.950	-.87	1.75
		Individual shopper	-.519	.502	.907	-1.83	.79
Price-conscious shopper	Personalized shopper	-.311	.449	.983	-1.48	.86	
	Convenience shopper	-.297	.453	.986	-1.48	.89	
	Conventional shopper	-.087	.455	1.000	-1.27	1.10	
	Risk-averse shopper	-.444	.502	.950	-1.75	.87	
	Individual shopper	-.963	.502	.395	-2.27	.35	
Individual shopper	Personalized shopper	.652	.449	.696	-.52	1.82	
	Convenience shopper	.666	.453	.685	-.52	1.85	
	Conventional shopper	.876	.455	.391	-.31	2.06	
	Risk-averse shopper	.519	.502	.907	-.79	1.83	
	Price-conscious shopper	.963	.502	.395	-.35	2.27	

\*. The mean difference is significant at the 0.1 level.

## Appendix 7: Pairwise Comparison of Simple Main Effects

### Familiarity

#### Descriptive Statistics

Dependent Variable: Familiarity

Concepts	Cluster Number of Case	Mean	Std. Deviation	N
Mass Customization	Personalized shopper	4.00	1.871	21
	Convenience shopper	4.29	2.101	21
	Conventional shopper	4.40	1.847	20
	Risk-averse shopper	3.27	1.438	15
	Price-conscious shopper	3.94	2.235	16
	Individual shopper	4.42	1.975	12
	Total	4.07	1.923	105
Co-Creation	Personalized shopper	4.00	2.167	24
	Convenience shopper	3.18	1.893	22
	Conventional shopper	3.55	1.819	22
	Risk-averse shopper	3.00	1.758	12
	Price-conscious shopper	2.18	1.722	11
	Individual shopper	4.67	1.543	15
	Total	3.53	1.953	106
Total	Personalized shopper	4.00	2.011	45
	Convenience shopper	3.72	2.051	43
	Conventional shopper	3.95	1.860	42
	Risk-averse shopper	3.15	1.562	27
	Price-conscious shopper	3.22	2.190	27
	Individual shopper	4.56	1.717	27
	Total	3.80	1.952	211

#### Levene's Test of Equality of Error Variances<sup>a</sup>

Dependent Variable: Familiarity

F	df1	df2	Sig.
.939	11	199	.504

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Concepts + QCL\_1 + Concepts \* QCL\_1

#### Tests of Between-Subjects Effects

Dependent Variable: Familiarity

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	80.667 <sup>a</sup>	11	7.333	2.028	.028	.101
Intercept	2754.866	1	2754.866	761.869	.000	.793
Concepts	19.035	1	19.035	5.264	.023	.026
QCL_1	43.968	5	8.794	2.432	.036	.058
Concepts * QCL_1	21.683	5	4.337	1.199	.311	.029
Error	719.570	199	3.616			
Total	3841.000	211				
Corrected Total	800.237	210				

a. R Squared = .101 (Adjusted R Squared = .051)

### Estimates

Dependent Variable: Familiarity

Concepts	Cluster Number of Case	Mean	Std. Error	90% Confidence Interval	
				Lower Bound	Upper Bound
Mass Customization	Personalized shopper	4.000	.415	3.314	4.686
	Convenience shopper	4.286	.415	3.600	4.971
	Conventional shopper	4.400	.425	3.697	5.103
	Risk-averse shopper	3.267	.491	2.455	4.078
	Price-conscious shopper	3.938	.475	3.152	4.723
	Individual shopper	4.417	.549	3.510	5.324
Co-Creation	Personalized shopper	4.000	.388	3.359	4.641
	Convenience shopper	3.182	.405	2.512	3.852
	Conventional shopper	3.545	.405	2.875	4.215
	Risk-averse shopper	3.000	.549	2.093	3.907
	Price-conscious shopper	2.182	.573	1.234	3.129
	Individual shopper	4.667	.491	3.855	5.478

### Pairwise Comparisons

Dependent Variable: Familiarity

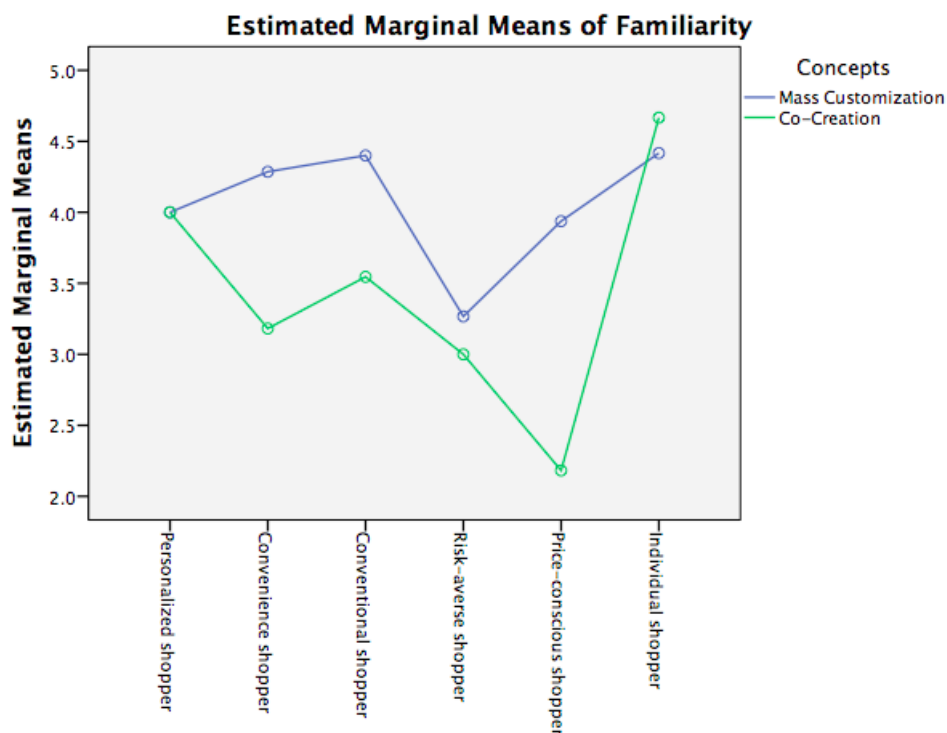
Cluster Number of Case	(I) Concepts	(J) Concepts	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	90% Confidence Interval for Difference <sup>b</sup>	
						Lower Bound	Upper Bound
Personalized shopper	Mass Customization	Co-Creation	1.003E-013	.568	1.000	-.939	.939
	Co-Creation	Mass Customization	.000	.568	1.000	-.939	.939
Convenience shopper	Mass Customization	Co-Creation	1.104 <sup>*</sup>	.580	.059	.145	2.063
	Co-Creation	Mass Customization	-1.104 <sup>*</sup>	.580	.059	-2.063	-.145
Conventional shopper	Mass Customization	Co-Creation	.855	.588	.147	-.116	1.825
	Co-Creation	Mass Customization	-.855	.588	.147	-1.825	.116
Risk-averse shopper	Mass Customization	Co-Creation	.267	.736	.718	-.950	1.484
	Co-Creation	Mass Customization	-.267	.736	.718	-1.484	.950
Price-conscious shopper	Mass Customization	Co-Creation	1.756 <sup>*</sup>	.745	.019	.525	2.986
	Co-Creation	Mass Customization	-1.756 <sup>*</sup>	.745	.019	-2.986	-.525
Individual shopper	Mass Customization	Co-Creation	-.250	.736	.735	-1.467	.967
	Co-Creation	Mass Customization	.250	.736	.735	-.967	1.467

Based on estimated marginal means

\*. The mean difference is significant at the

b. Adjustment for multiple comparisons: Bonferroni.

### Profile Plots



## Purchase Intention

### Descriptive Statistics

Dependent Variable: Interest of buying if priced within budget

Concepts	Cluster Number of Case	Mean	Std. Deviation	N
Mass Customization	Personalized shopper	5.43	.926	21
	Convenience shopper	5.33	1.238	21
	Conventional shopper	5.50	1.100	20
	Risk-averse shopper	5.13	1.457	15
	Price-conscious shopper	5.19	.981	16
	Individual shopper	5.83	.835	12
	Total	5.39	1.105	105
Co-Creation	Personalized shopper	5.92	.881	24
	Convenience shopper	5.36	.902	22
	Conventional shopper	5.73	.767	22
	Risk-averse shopper	5.50	1.000	12
	Price-conscious shopper	4.45	1.635	11
	Individual shopper	5.60	.737	15
	Total	5.52	1.026	106
Total	Personalized shopper	5.69	.925	45
	Convenience shopper	5.35	1.066	43
	Conventional shopper	5.62	.936	42
	Risk-averse shopper	5.30	1.265	27
	Price-conscious shopper	4.89	1.311	27
	Individual shopper	5.70	.775	27
	Total	5.45	1.065	211

### Levene's Test of Equality of Error Variances<sup>a</sup>

Dependent Variable: Interest of buying if pri

F	df1	df2	Sig.
2.026	11	199	.028

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Concepts + QCL\_1 + Concepts \* QCL\_1

### Tests of Between-Subjects Effects

Dependent Variable: Interest of buying if priced within budget

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	23.060 <sup>a</sup>	11	2.096	1.938	.037	.097
Intercept	5774.115	1	5774.115	5337.904	.000	.964
Concepts	.029	1	.029	.027	.870	.000
QCL_1	16.470	5	3.294	3.045	.011	.071
Concepts * QCL_1	7.629	5	1.526	1.411	.222	.034
Error	215.262	199	1.082			
Total	6517.000	211				
Corrected Total	238.322	210				

a. R Squared = ,097 (Adjusted R Squared = ,047)

### Estimates

Dependent Variable: Interest of buying if priced within budget

Concepts	Cluster Number of Case	Mean	Std. Error	90% Confidence Interval	
				Lower Bound	Upper Bound
Mass Customization	Personalized shopper	5.429	.227	5.054	5.804
	Convenience shopper	5.333	.227	4.958	5.708
	Conventional shopper	5.500	.233	5.116	5.884
	Risk-averse shopper	5.133	.269	4.690	5.577
	Price-conscious shopper	5.188	.260	4.758	5.617
	Individual shopper	5.833	.300	5.337	6.329
Co-Creation	Personalized shopper	5.917	.212	5.566	6.268
	Convenience shopper	5.364	.222	4.997	5.730
	Conventional shopper	5.727	.222	5.361	6.094
	Risk-averse shopper	5.500	.300	5.004	5.996
	Price-conscious shopper	4.455	.314	3.936	4.973
	Individual shopper	5.600	.269	5.156	6.044

### Pairwise Comparisons

Dependent Variable: Interest of buying if priced within budget

Cluster Number of Case	(I) Concepts	(J) Concepts	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	90% Confidence Interval for Difference <sup>b</sup>	
						Lower Bound	Upper Bound
Personalized shopper	Mass Customization	Co-Creation	-.488	.311	.118	-1.002	.025
	Co-Creation	Mass Customization	.488	.311	.118	-.025	1.002
Convenience shopper	Mass Customization	Co-Creation	-.030	.317	.924	-.555	.494
	Co-Creation	Mass Customization	.030	.317	.924	-.494	.555
Conventional shopper	Mass Customization	Co-Creation	-.227	.321	.480	-.758	.304
	Co-Creation	Mass Customization	.227	.321	.480	-.304	.758
Risk-averse shopper	Mass Customization	Co-Creation	-.367	.403	.364	-1.032	.299
	Co-Creation	Mass Customization	.367	.403	.364	-.299	1.032
Price-conscious shopper	Mass Customization	Co-Creation	.733 <sup>*</sup>	.407	.073	.060	1.406
	Co-Creation	Mass Customization	-.733 <sup>*</sup>	.407	.073	-1.406	-.060
Individual shopper	Mass Customization	Co-Creation	.233	.403	.563	-.432	.899
	Co-Creation	Mass Customization	-.233	.403	.563	-.899	.432

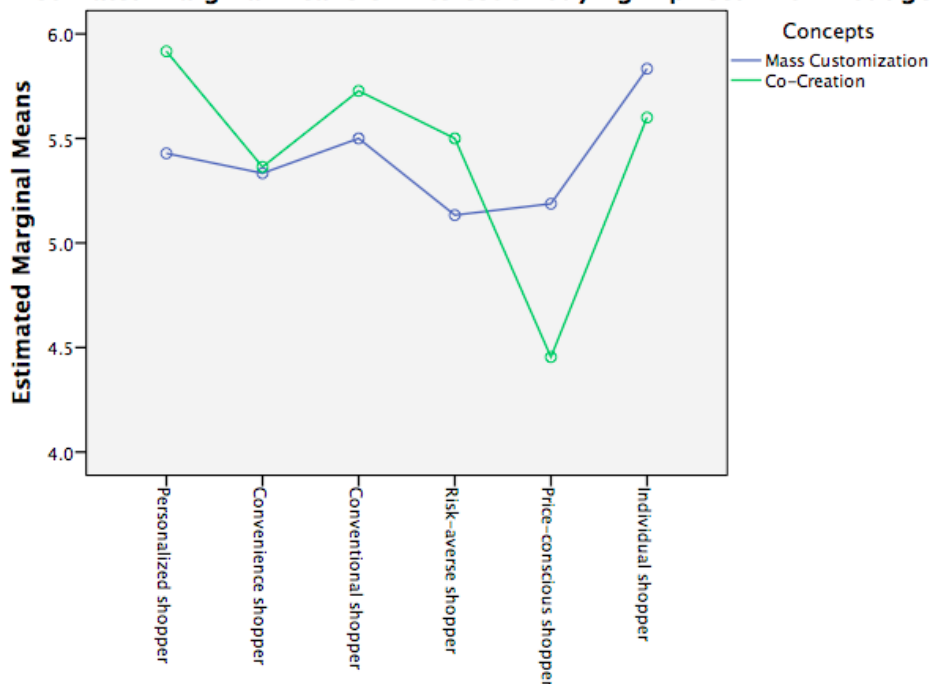
Based on estimated marginal means

\*. The mean difference is significant at the

b. Adjustment for multiple comparisons: Bonferroni.

### Profile Plots

Estimated Marginal Means of Interest of buying if priced within budget



## Quality

### Descriptive Statistics

Dependent Variable: Overall quality rating

Concepts	Cluster Number of Case	Mean	Std. Deviation	N
Mass Customization	Personalized shopper	4.95	.865	21
	Convenience shopper	5.05	.921	21
	Conventional shopper	5.05	1.395	20
	Risk-averse shopper	4.33	1.397	15
	Price-conscious shopper	4.50	.966	16
	Individual shopper	4.75	1.288	12
	Total	4.81	1.144	105
Co-Creation	Personalized shopper	5.46	1.062	24
	Convenience shopper	5.45	.963	22
	Conventional shopper	5.23	1.066	22
	Risk-averse shopper	5.08	1.084	12
	Price-conscious shopper	4.64	1.286	11
	Individual shopper	4.93	.884	15
	Total	5.21	1.058	106
Total	Personalized shopper	5.22	.997	45
	Convenience shopper	5.26	.954	43
	Conventional shopper	5.14	1.221	42
	Risk-averse shopper	4.67	1.301	27
	Price-conscious shopper	4.56	1.086	27
	Individual shopper	4.85	1.064	27
	Total	5.01	1.117	211

### Levene's Test of Equality of Error Variances<sup>a</sup>

Dependent Variable: Overall quality rating

F	df1	df2	Sig.
1.440	11	199	.157

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Concepts + QCL\_1 + Concepts \* QCL\_1

### Tests of Between-Subjects Effects

Dependent Variable: Overall quality rating

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	23.871 <sup>a</sup>	11	2.170	1.814	.054	.091
Intercept	4829.595	1	4829.595	4036.324	.000	.953
Concepts	6.380	1	6.380	5.332	.022	.026
QCL_1	13.172	5	2.634	2.202	.056	.052
Concepts * QCL_1	2.159	5	.432	.361	.875	.009
Error	238.110	199	1.197			
Total	5557.000	211				
Corrected Total	261.981	210				

a. R Squared = .091 (Adjusted R Squared = .041)

### Estimates

Dependent Variable: Overall quality rating

Concepts	Cluster Number of Case	Mean	Std. Error	90% Confidence Interval	
				Lower Bound	Upper Bound
Mass Customization	Personalized shopper	4.952	.239	4.558	5.347
	Convenience shopper	5.048	.239	4.653	5.442
	Conventional shopper	5.050	.245	4.646	5.454
	Risk-averse shopper	4.333	.282	3.867	4.800
	Price-conscious shopper	4.500	.273	4.048	4.952
	Individual shopper	4.750	.316	4.228	5.272
Co-Creation	Personalized shopper	5.458	.223	5.089	5.827
	Convenience shopper	5.455	.233	5.069	5.840
	Conventional shopper	5.227	.233	4.842	5.613
	Risk-averse shopper	5.083	.316	4.562	5.605
	Price-conscious shopper	4.636	.330	4.091	5.181
	Individual shopper	4.933	.282	4.467	5.400

### Pairwise Comparisons

Dependent Variable: Overall quality rating

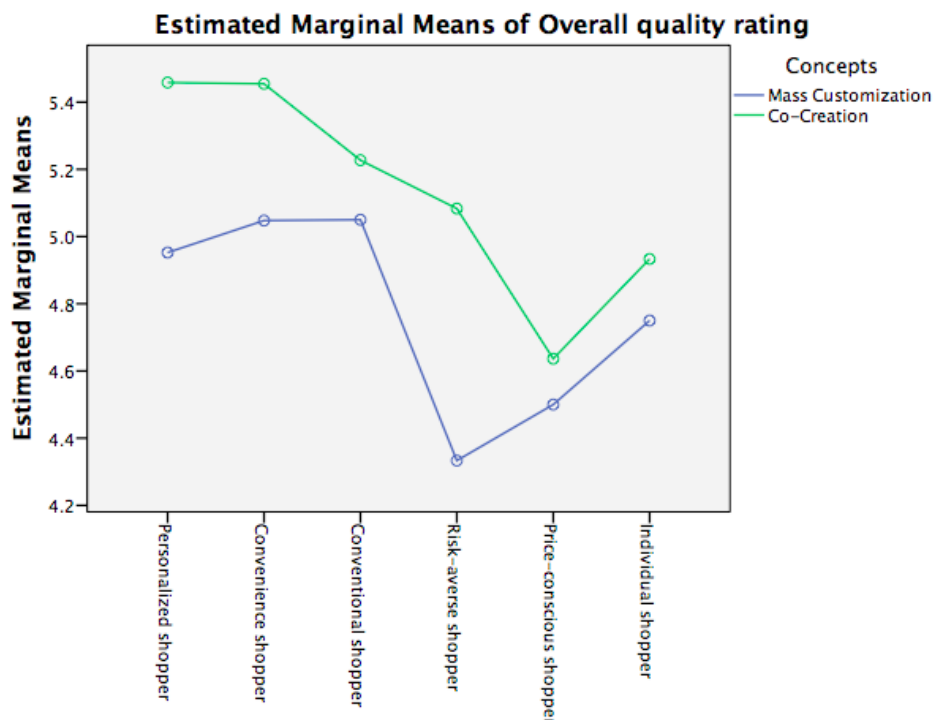
Cluster Number of Case	(I) Concepts	(J) Concepts	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	90% Confidence Interval for Difference <sup>b</sup>	
						Lower Bound	Upper Bound
Personalized shopper	Mass Customization	Co-Creation	-.506	.327	.123	-1.046	.034
	Co-Creation	Mass Customization	.506	.327	.123	-.034	1.046
Convenience shopper	Mass Customization	Co-Creation	-.407	.334	.224	-.958	.145
	Co-Creation	Mass Customization	.407	.334	.224	-.145	.958
Conventional shopper	Mass Customization	Co-Creation	-.177	.338	.600	-.736	.381
	Co-Creation	Mass Customization	.177	.338	.600	-.381	.736
Risk-averse shopper	Mass Customization	Co-Creation	-.750 <sup>*</sup>	.424	.078	-1.450	-.050
	Co-Creation	Mass Customization	.750 <sup>*</sup>	.424	.078	.050	1.450
Price-conscious shopper	Mass Customization	Co-Creation	-.136	.428	.751	-.844	.572
	Co-Creation	Mass Customization	.136	.428	.751	-.572	.844
Individual shopper	Mass Customization	Co-Creation	-.183	.424	.666	-.883	.517
	Co-Creation	Mass Customization	.183	.424	.666	-.517	.883

Based on estimated marginal means

\*. The mean difference is significant at the

b. Adjustment for multiple comparisons: Bonferroni.

### Profile Plots



## Willingness to Pay

### Descriptive Statistics

Dependent Variable: Imagine that your favorite fashion webshop offers consumer co-cr

Concepts	Cluster Number of Case	Mean	Std. Deviation	N
Mass Customization	Personalized shopper	28.05	14.609	20
	Convenience shopper	25.95	18.123	21
	Conventional shopper	28.37	12.121	19
	Risk-averse shopper	22.93	9.743	15
	Price-conscious shopper	26.56	12.596	16
	Individual shopper	32.75	19.836	12
	Total	27.25	14.695	103
Co-Creation	Personalized shopper	29.22	19.219	23
	Convenience shopper	25.41	18.136	22
	Conventional shopper	27.14	15.896	22
	Risk-averse shopper	19.75	9.583	12
	Price-conscious shopper	23.55	10.737	11
	Individual shopper	32.33	22.270	15
	Total	26.75	17.208	105
Total	Personalized shopper	28.67	17.040	43
	Convenience shopper	25.67	17.915	43
	Conventional shopper	27.71	14.112	41
	Risk-averse shopper	21.52	9.621	27
	Price-conscious shopper	25.33	11.754	27
	Individual shopper	32.52	20.822	27
	Total	27.00	15.977	208

### Levene's Test of Equality of Error Variances<sup>a</sup>

Dependent Variable: Imagine that your favor

F	df1	df2	Sig.
.821	11	196	.619

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Concepts + QCL\_1 + Concepts \* QCL\_1

### Tests of Between-Subjects Effects

Dependent Variable: Imagine that your favorite fashion webshop offers consumer co-created T-Shirts!

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2086.423 <sup>a</sup>	11	189.675	.733	.706	.039
Intercept	140491.480	1	140491.480	542.571	.000	.735
Concepts	70.728	1	70.728	.273	.602	.001
QCL_1	1983.067	5	396.613	1.532	.182	.038
Concepts * QCL_1	113.541	5	22.708	.088	.994	.002
Error	50751.577	196	258.937			
Total	204470.000	208				
Corrected Total	52838.000	207				

a. R Squared = ,039 (Adjusted R Squared = -,014)



### Estimates

Dependent Variable: Imagine that your favorite fashion webshop offers consumer co-created T-Shirts!

Concepts	Cluster Number of Case	Mean	Std. Error	90% Confidence Interval	
				Lower Bound	Upper Bound
Mass Customization	Personalized shopper	28.050	3.598	22.103	33.997
	Convenience shopper	25.952	3.511	20.149	31.756
	Conventional shopper	28.368	3.692	22.267	34.469
	Risk-averse shopper	22.933	4.155	16.067	29.800
	Price-conscious shopper	26.563	4.023	19.914	33.211
	Individual shopper	32.750	4.645	25.073	40.427
Co-Creation	Personalized shopper	29.217	3.355	23.672	34.763
	Convenience shopper	25.409	3.431	19.739	31.079
	Conventional shopper	27.136	3.431	21.467	32.806
	Risk-averse shopper	19.750	4.645	12.073	27.427
	Price-conscious shopper	23.545	4.852	15.527	31.564
	Individual shopper	32.333	4.155	25.467	39.200

### Pairwise Comparisons

Dependent Variable: Imagine that your favorite fashion webshop offers consumer co-created T-Shirts! How much...

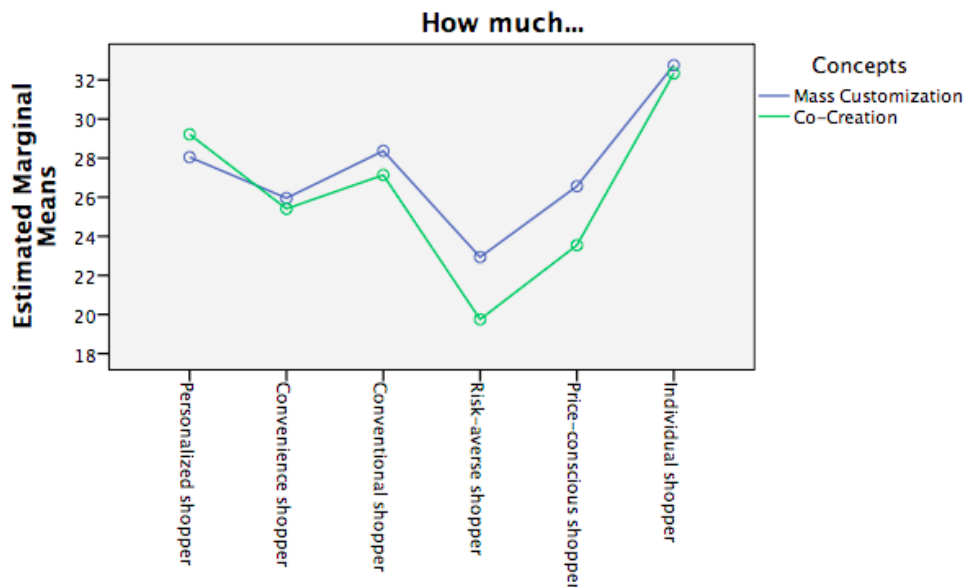
Cluster Number of Case	(I) Concepts	(J) Concepts	Mean Difference (I-J)	Std. Error	Sig. <sup>a</sup>	90% Confidence Interval for Difference <sup>a</sup>	
						Lower Bound	Upper Bound
Personalized shopper	Mass Customization	Co-Creation	-1.167	4.920	.813	-9.298	6.963
	Co-Creation	Mass Customization	1.167	4.920	.813	-6.963	9.298
Convenience shopper	Mass Customization	Co-Creation	.543	4.909	.912	-7.570	8.657
	Co-Creation	Mass Customization	-.543	4.909	.912	-8.657	7.570
Conventional shopper	Mass Customization	Co-Creation	1.232	5.040	.807	-7.097	9.561
	Co-Creation	Mass Customization	-1.232	5.040	.807	-9.561	7.097
Risk-averse shopper	Mass Customization	Co-Creation	3.183	6.232	.610	-7.116	13.483
	Co-Creation	Mass Customization	-3.183	6.232	.610	-13.483	7.116
Price-conscious shopper	Mass Customization	Co-Creation	3.017	6.303	.633	-7.399	13.433
	Co-Creation	Mass Customization	-3.017	6.303	.633	-13.433	7.399
Individual shopper	Mass Customization	Co-Creation	.417	6.232	.947	-9.883	10.716
	Co-Creation	Mass Customization	-.417	6.232	.947	-10.716	9.883

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

### Profile Plots

Estimated Marginal Means of Imagine that your favorite fashion webshop offers consumer co-created T-Shirts!



## Innovativeness

### Descriptive Statistics

Dependent Variable: Innovativeness

Concepts	Cluster Number of Case	Mean	Std. Deviation	N
Mass Customization	Personalized shopper	4.4286	1.15980	21
	Convenience shopper	4.5429	1.17498	21
	Conventional shopper	4.8100	.92332	20
	Risk-averse shopper	4.4800	.98793	15
	Price-conscious shopper	4.0625	1.04491	16
	Individual shopper	4.4333	.94131	12
	Total	4.4762	1.05443	105
Co-Creation	Personalized shopper	5.2833	.71970	24
	Convenience shopper	5.0545	.81692	22
	Conventional shopper	4.8727	.69706	22
	Risk-averse shopper	5.0500	.56649	12
	Price-conscious shopper	4.3273	1.44575	11
	Individual shopper	4.7200	1.00797	15
	Total	4.9453	.88910	106
Total	Personalized shopper	4.8844	1.03352	45
	Convenience shopper	4.8047	1.02863	43
	Conventional shopper	4.8429	.80309	42
	Risk-averse shopper	4.7333	.86291	27
	Price-conscious shopper	4.1704	1.20474	27
	Individual shopper	4.5926	.97109	27
	Total	4.7118	1.00057	211

### Levene's Test of Equality of Error Variances<sup>a</sup>

Dependent Variable: Innovativeness

F	df1	df2	Sig.
1.718	11	199	.072

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Concepts + QCL\_1 + Concepts \* QCL\_1

### Tests of Between-Subjects Effects

Dependent Variable: Innovativeness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	24.953 <sup>a</sup>	11	2.268	2.436	.007	.119
Intercept	4298.689	1	4298.689	4616.813	.000	.959
Concepts	8.897	1	8.897	9.555	.002	.046
QCL_1	9.488	5	1.898	2.038	.075	.049
Concepts * QCL_1	3.942	5	.788	.847	.518	.021
Error	185.288	199	.931			
Total	4894.760	211				
Corrected Total	210.240	210				

a. R Squared = .119 (Adjusted R Squared = .070)

### Estimates

Dependent Variable: Innovativeness

Concepts	Cluster Number of Case	Mean	Std. Error	90% Confidence Interval	
				Lower Bound	Upper Bound
Mass Customization	Personalized shopper	4.429	.211	4.081	4.777
	Convenience shopper	4.543	.211	4.195	4.891
	Conventional shopper	4.810	.216	4.453	5.167
	Risk-averse shopper	4.480	.249	4.068	4.892
	Price-conscious shopper	4.063	.241	3.664	4.461
	Individual shopper	4.433	.279	3.973	4.894
Co-Creation	Personalized shopper	5.283	.197	4.958	5.609
	Convenience shopper	5.055	.206	4.715	5.395
	Conventional shopper	4.873	.206	4.533	5.213
	Risk-averse shopper	5.050	.279	4.590	5.510
	Price-conscious shopper	4.327	.291	3.846	4.808
	Individual shopper	4.720	.249	4.308	5.132

### Pairwise Comparisons

Dependent Variable: Innovativeness

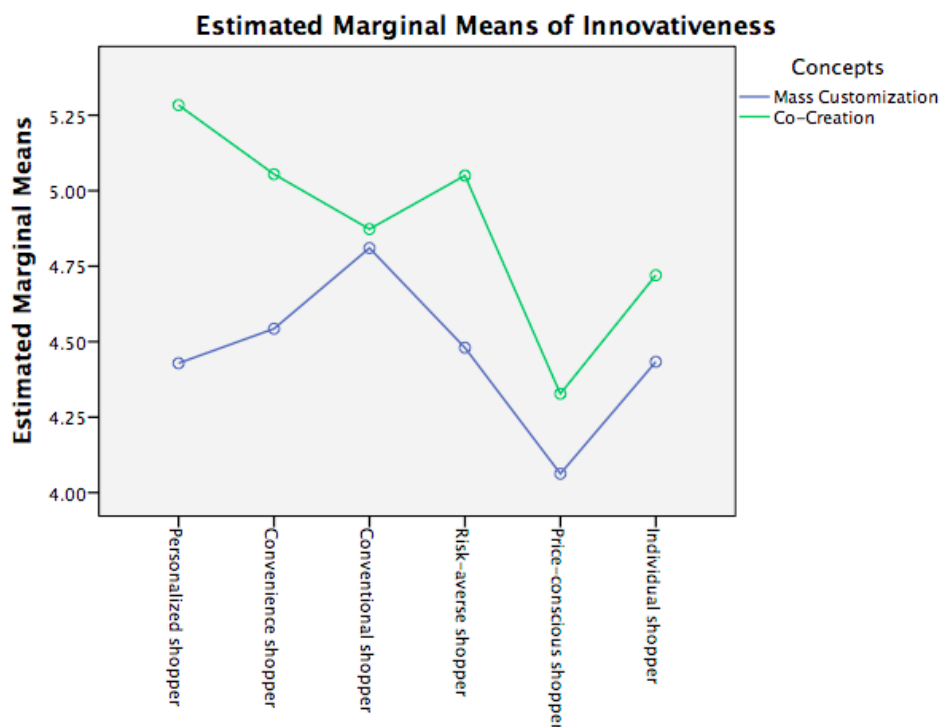
Cluster Number of Case	(I) Concepts	(J) Concepts	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	90% Confidence Interval for Difference <sup>b</sup>	
						Lower Bound	Upper Bound
Personalized shopper	Mass Customization	Co-Creation	-.855*	.288	.003	-1.331	-.378
	Co-Creation	Mass Customization	.855*	.288	.003	.378	1.331
Convenience shopper	Mass Customization	Co-Creation	-.512*	.294	.084	-.998	-.025
	Co-Creation	Mass Customization	.512*	.294	.084	.025	.998
Conventional shopper	Mass Customization	Co-Creation	-.063	.298	.834	-.555	.430
	Co-Creation	Mass Customization	.063	.298	.834	-.430	.555
Risk-averse shopper	Mass Customization	Co-Creation	-.570	.374	.129	-1.188	.048
	Co-Creation	Mass Customization	.570	.374	.129	-.048	1.188
Price-conscious shopper	Mass Customization	Co-Creation	-.265	.378	.484	-.889	.360
	Co-Creation	Mass Customization	.265	.378	.484	-.360	.889
Individual shopper	Mass Customization	Co-Creation	-.287	.374	.444	-.904	.331
	Co-Creation	Mass Customization	.287	.374	.444	-.331	.904

Based on estimated marginal means

\*. The mean difference is significant at the

b. Adjustment for multiple comparisons: Bonferroni.

### Profile Plots



## Attractiveness

### Descriptive Statistics

Dependent Variable: Attractiveness

Concepts	Cluster Number of Case	Mean	Std. Deviation	N
Mass Customization	Personalized shopper	5.3016	.99390	21
	Convenience shopper	5.1587	1.05208	21
	Conventional shopper	5.4167	.81560	20
	Risk-averse shopper	4.8889	1.11744	15
	Price-conscious shopper	4.7708	1.09354	16
	Individual shopper	5.4167	1.47110	12
	Total	5.1683	1.07330	105
Co-Creation	Personalized shopper	5.8750	1.09814	24
	Convenience shopper	5.6061	.84601	22
	Conventional shopper	5.2576	1.11237	22
	Risk-averse shopper	4.9444	1.07152	12
	Price-conscious shopper	4.6970	.84924	11
	Individual shopper	4.9111	.77117	15
	Total	5.3270	1.04500	106
Total	Personalized shopper	5.6074	1.07846	45
	Convenience shopper	5.3876	.96754	43
	Conventional shopper	5.3333	.97391	42
	Risk-averse shopper	4.9136	1.07653	27
	Price-conscious shopper	4.7407	.98421	27
	Individual shopper	5.1358	1.14077	27
	Total	5.2480	1.05964	211

### Levene's Test of Equality of Error Variances<sup>a</sup>

Dependent Variable: Attractiveness

F	df1	df2	Sig.
.597	11	199	.830

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Concepts + QCL\_1 + Concepts \* QCL\_1

### Tests of Between-Subjects Effects

Dependent Variable: Attractiveness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	25.121 <sup>a</sup>	11	2.284	2.157	.018	.107
Intercept	5298.496	1	5298.496	5004.832	.000	.962
Concepts	.156	1	.156	.147	.701	.001
QCL_1	16.304	5	3.261	3.080	.011	.072
Concepts * QCL_1	7.150	5	1.430	1.351	.245	.033
Error	210.677	199	1.059			
Total	6047.111	211				
Corrected Total	235.798	210				

a. R Squared = .107 (Adjusted R Squared = .057)

### Estimates

Dependent Variable: Attractiveness

Concepts	Cluster Number of Case	Mean	Std. Error	90% Confidence Interval	
				Lower Bound	Upper Bound
Mass Customization	Personalized shopper	5.302	.225	4.931	5.673
	Convenience shopper	5.159	.225	4.788	5.530
	Conventional shopper	5.417	.230	5.036	5.797
	Risk-averse shopper	4.889	.266	4.450	5.328
	Price-conscious shopper	4.771	.257	4.346	5.196
	Individual shopper	5.417	.297	4.926	5.908
Co-Creation	Personalized shopper	5.875	.210	5.528	6.222
	Convenience shopper	5.606	.219	5.244	5.969
	Conventional shopper	5.258	.219	4.895	5.620
	Risk-averse shopper	4.944	.297	4.454	5.435
	Price-conscious shopper	4.697	.310	4.184	5.210
	Individual shopper	4.911	.266	4.472	5.350

### Pairwise Comparisons

Dependent Variable: Attractiveness

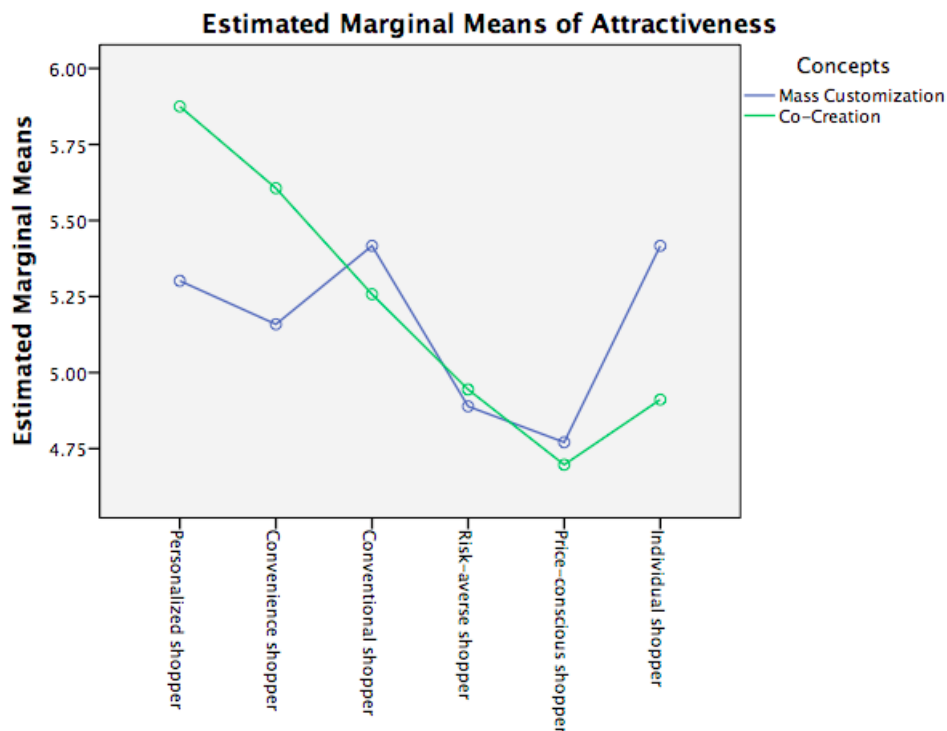
Cluster Number of Case	(I) Concepts	(J) Concepts	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	90% Confidence Interval for Difference <sup>b</sup>	
						Lower Bound	Upper Bound
Personalized shopper	Mass Customization	Co-Creation	-.573*	.307	.064	-1.081	-.065
	Co-Creation	Mass Customization	.573*	.307	.064	.065	1.081
Convenience shopper	Mass Customization	Co-Creation	-.447	.314	.156	-.966	.071
	Co-Creation	Mass Customization	.447	.314	.156	-.071	.966
Conventional shopper	Mass Customization	Co-Creation	.159	.318	.617	-.366	.684
	Co-Creation	Mass Customization	-.159	.318	.617	-.684	.366
Risk-averse shopper	Mass Customization	Co-Creation	-.056	.398	.889	-.714	.603
	Co-Creation	Mass Customization	.056	.398	.889	-.603	.714
Price-conscious shopper	Mass Customization	Co-Creation	.074	.403	.855	-.592	.740
	Co-Creation	Mass Customization	-.074	.403	.855	-.740	.592
Individual shopper	Mass Customization	Co-Creation	.506	.398	.206	-.153	1.164
	Co-Creation	Mass Customization	-.506	.398	.206	-1.164	.153

Based on estimated marginal means

\*. The mean difference is significant at the

b. Adjustment for multiple comparisons: Bonferroni.

### Profile Plots



## Social Status

### Descriptive Statistics

Dependent Variable: Social\_Status

Concepts	Cluster Number of Case	Mean	Std. Deviation	N
Mass Customization	Personalized shopper	3.9048	1.79317	21
	Convenience shopper	4.0714	1.55953	21
	Conventional shopper	4.0250	1.57676	20
	Risk-averse shopper	2.9000	1.27055	15
	Price-conscious shopper	4.3750	.86603	16
	Individual shopper	4.3750	1.17018	12
	Total	3.9429	1.49086	105
Co-Creation	Personalized shopper	3.6458	1.92512	24
	Convenience shopper	3.5682	1.69941	22
	Conventional shopper	3.6136	1.28111	22
	Risk-averse shopper	2.5000	1.38170	12
	Price-conscious shopper	2.9545	2.04273	11
	Individual shopper	3.8000	1.66690	15
	Total	3.4434	1.68794	106
Total	Personalized shopper	3.7667	1.84822	45
	Convenience shopper	3.8140	1.63308	43
	Conventional shopper	3.8095	1.42689	42
	Risk-averse shopper	2.7222	1.31071	27
	Price-conscious shopper	3.7963	1.59482	27
	Individual shopper	4.0556	1.46978	27
	Total	3.6919	1.60872	211

### Levene's Test of Equality of Error Variances<sup>a</sup>

Dependent Variable: Social\_Status

F	df1	df2	Sig.
2.905	11	199	.001

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Concepts + QCL\_1 + Concepts \* QCL\_1

### Tests of Between-Subjects Effects

Dependent Variable: Social\_Status

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	52.393 <sup>a</sup>	11	4.763	1.930	.037	.096
Intercept	2615.631	1	2615.631	1059.924	.000	.842
Concepts	17.420	1	17.420	7.059	.009	.034
QCL_1	32.104	5	6.421	2.602	.026	.061
Concepts * QCL_1	6.264	5	1.253	.508	.770	.013
Error	491.083	199	2.468			
Total	3419.500	211				
Corrected Total	543.476	210				

a. R Squared = .096 (Adjusted R Squared = .046)

**Estimates**

Dependent Variable: Social\_Status

Concepts	Cluster Number of Case	Mean	Std. Error	90% Confidence Interval	
				Lower Bound	Upper Bound
Mass Customization	Personalized shopper	3.905	.343	3.338	4.471
	Convenience shopper	4.071	.343	3.505	4.638
	Conventional shopper	4.025	.351	3.445	4.605
	Risk-averse shopper	2.900	.406	2.230	3.570
	Price-conscious shopper	4.375	.393	3.726	5.024
	Individual shopper	4.375	.453	3.626	5.124
Co-Creation	Personalized shopper	3.646	.321	3.116	4.176
	Convenience shopper	3.568	.335	3.015	4.122
	Conventional shopper	3.614	.335	3.060	4.167
	Risk-averse shopper	2.500	.453	1.751	3.249
	Price-conscious shopper	2.955	.474	2.172	3.737
	Individual shopper	3.800	.406	3.130	4.470

**Pairwise Comparisons**

Dependent Variable: Social\_Status

Cluster Number of Case	(I) Concepts	(J) Concepts	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	90% Confidence Interval for Difference <sup>b</sup>	
						Lower Bound	Upper Bound
Personalized shopper	Mass Customization	Co-Creation	.259	.469	.582	-.517	1.035
	Co-Creation	Mass Customization	-.259	.469	.582	-1.035	.517
Convenience shopper	Mass Customization	Co-Creation	.503	.479	.295	-.289	1.295
	Co-Creation	Mass Customization	-.503	.479	.295	-1.295	.289
Conventional shopper	Mass Customization	Co-Creation	.411	.485	.398	-.391	1.213
	Co-Creation	Mass Customization	-.411	.485	.398	-1.213	.391
Risk-averse shopper	Mass Customization	Co-Creation	.400	.608	.512	-.605	1.405
	Co-Creation	Mass Customization	-.400	.608	.512	-1.405	.605
Price-conscious shopper	Mass Customization	Co-Creation	1.420*	.615	.022	.404	2.437
	Co-Creation	Mass Customization	-1.420*	.615	.022	-2.437	-.404
Individual shopper	Mass Customization	Co-Creation	.575	.608	.346	-.430	1.580
	Co-Creation	Mass Customization	-.575	.608	.346	-1.580	.430

Based on estimated marginal means

\*. The mean difference is significant at the

b. Adjustment for multiple comparisons: Bonferroni.

**Profile Plots**

