



The Impact of Different Customer Empowerment Strategies on Product Creativity and Purchase Intention

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I hope reading this thesis will be a pleasure to you.

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Abstract

More and more companies see the added value of involving customers in certain business activities. Companies are therefore increasingly connecting with customers to generate promising ideas for new products. The active role of customers in new product development has become more feasible because the internet allows companies to build online communities. Through these communities, companies can listen to and integrate with customers from all over the world. Customer empowerment in new product development is conceptualized along two basic dimensions: customer empowerment to create (ideas for) new products, and; customer empowerment to select the products (designs) that will be produced, which leads to four different empowerment strategies, namely zero empowerment, create empowerment, select empowerment, and full empowerment. The aim of this study is to examine the effect of different customer empowerment strategies in new product development and the purchase intentions of observing customers. Moreover, the study investigates if the two main dimensions of creativity, namely perceived product novelty and perceived product meaningfulness mediate this relationship. The study also examines if these relationships differ between familiar versus unfamiliar brands. To test these relationships, an online experiment is conducted where a familiar and an unfamiliar brand of crisps, a popular product within the FMCG branch, are branded with different levels of customer empowerment in formulation of a new flavour. While the current literature finds significant effects of customer empowerment to create relative to zero empowerment, this study comprehensively examines the effects of all the empowerment strategies and finds that the four customer empowerment levels lead to no significant differences in purchase intention within the chosen product category. The results of the experiment also do not support the mediation effect of the two dimensions of product creativity and the moderation effect of brand familiarity. As expected, a positive significant effect of perceived product novelty and product meaningfulness on purchase intention is supported. Overall, this thesis combines different streams of research namely crowdsourcing, creativity, and branding, and outlines ideas for possible further research in this exciting area.

(Keywords: customer empowerment, product creativity, product novelty, product meaningfulness, branding, purchase intention, brand familiarity)

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1. Introduction

A few decades ago, companies themselves took care of creating value. The company and the consumer had two clearly different roles. The company was the one who developed the product and the consumer was the one who consumed the product and was only involved at the point of purchase. During this period there was a traditional model for new product development, in which the companies were responsible for generating new product ideas and for deciding which products should eventually be produced (Fuchs & Schreier, 2011). Currently, companies have to create value under tremendous pressure. Competition is so intense and profit margins are getting smaller. Therefore, the need to innovate is greater than ever (Prahalad & Ramaswamy, 2003). At the same time, customers want to have an influence on the innovation process of companies and want to interact with them, and this is where co-creation arises (Prahalad & Ramaswamy, 2004). The internet enables customers to be more informed and empowered and therefore the traditional way of value exchange is changing. Consumers are no longer entirely dependent on companies. They can also have consumer-to-consumer dialogues and are able to choose the company they want to have a relationship with based on their own feelings and thoughts (Prahalad & Ramaswamy, 2004).

While the market changed from a company-centric market to a more customer-centric market, companies have to make it easy to interact with their customers. One way to do that is by holding a crowd-sourcing contest to generate new ideas. Crowdsourcing, the same as the term user-driven design, is a method where companies make use of their user communities, the crowd, to generate ideas for new products (Dahl, et al., 2015). This can relate to the five different stages in the new product development process, which are ideation, concept development, product design, product testing, and product introduction (Ulrich & Eppinger, 2000). After the end of the crowdsourcing contest, the best ideas must be selected in order to continue the development process for these ideas. Companies can decide to also empower the customers/crowd for this selection, or they can select it themselves. One of the most cited examples of a company that empowers its customers to create, but also to select their products, is the T-shirt manufacturer Threadless. This company has created an online community which is invited to submit new T-shirt designs and the community can vote for the T-shirts that should be produced. But there are plenty of firms who generated ideas through a platform they created, like 'MyStarbucksIdea', 'LEGO ideas', but also the platform of Frito-Lay, with the campaign

‘Do us a Flavour’, also known as ‘Maak de smaak’ in the Benelux, where customers were invited to submit new possible flavours of potato crisps.

While the process of value creation is shifting from a company-centric to a customer-centric view, also the meaning of value is changing. Companies compete to match customer needs and requirements by adding various types of value to products. An example of this added value is product creativity, which is defined as the originality and appropriateness of a product (Horn & Salvendy, 2006). According to Horn et al. (2006), product creativity offers value by allowing consumers to feel an emotional impact and identity with the product.

The market is changing and the role of customers in new product development is more and more important. The changing market demand also has caused a transition from product-based to value-based competition (Horn & Salvendy, 2006). Therefore, the amount of research on both topics, the role of customers in new product development and the added value of product creativity, increases. In several studies it has been proven that customers prefer user-designed more than company-designed products (Allen, et al., 2018; Dahl, et al., 2015; Fuchs & Schreier, 2011; Nishikawa, et al., 2017). In this researches companies who used the crowd in new product development are seen as more innovative and it also creates feelings of identification and empowerment. There are also studies that have shown that this effect is attenuated or reversed in certain conditions, for example with luxury goods, highly complex products and, in cultures with high power-distance beliefs (Fuchs, et al., 2013; Schreier, et al., 2012; Paharia & Swaminathan, 2019)

1.1 Problem Statement and Research Questions

This study will contribute to the existing literature in the field of customer empowerment in new product development. Nowadays, customers play an important role in the new product development process of companies. Crowdsourcing contests are one way to come up with new ideas for companies. Subsequently, companies can choose the winning product themselves, but customers can also do this on the platform that the company made. The purpose of this research is to increase our understanding of the effects of different customer empowerment strategies in new product development on the purchase intention of customers that are exposed to co-created products. So, this study focuses on customers who are exposed to the fact that the product is selected and/or developed with the help of customers, also called observers, and not on the customers who have actually helped with the selecting and/or development of the product. In addition, the mediating effect of perceived product novelty and the perceived product

meaningfulness will be examined to assess what customer empowerment does with product creativity and if this impacts the purchase intention of customers. Also, the effect of brand familiarity will be added, to see if customer empowerment has a more positive effect on the purchase intention for well-known brands or whether it has the opposite effect. And vice versa, what is the effect for less well-known brands? In order to address these questions, the following research question will be answered:

“Have different customer empowerment strategies in new product development different effects on purchase intention and can these effects be accounted to differences in perceived product creativity of customers?”

In order to give a comprehensive answer to this question, the following sub-questions are arranged:

- *What is customer empowerment and what are the different customer empowerment strategies in new product development?*
- *What is the conceptualization of product creativity?*
- *How do different customer empowerment strategies influence the dimensions of product creativity?*
- *What is the effect of the dimensions of product creativity on the purchase intention of customers?*

In addition, the following question has been arranged to determine whether there is a moderation effect on the product creativity that customers perceive:

- *Does the degree of brand familiarity moderate the effect of the customer empowerment strategy on the perceived product creativity and intention to purchase?*

A clear overview of the development of these questions can be found in the conceptual model in chapter two, figure 1. In this model, the relationships between X (customer empowerment strategy) and Y (purchase intention) and the moderator (brand familiarity) and mediators (perceived product novelty and perceived product meaningfulness) are shown schematically. In the next chapter, the hypotheses from this model will also be explained and substantiated.

1.2 Academic and practical relevance

To date, many studies have been conducted to see if the role of customers in the new product development process of companies have an effect on customer behavior and perception (Dahl,

et al., 2012; Dahl, et al., 2015; Franke, et al., 2009; Hunter & Garnefeld, 2008). In addition, various studies are dedicated to measure the effects of customer empowerment on the performance of a company (Nishikawa, et al., 2017; Nishikawa, et al., 2013). Some studies focused on customers who have cooperated on the co-creation process and others focused on customers who are exposed to co-created products/services. This study is dedicated to customer involvement related to observers of co-created products. This research will contribute to the literature by theoretically describing perceived product creativity and empirically testing whether the four different customer empowerment strategies influence the dimensions of product creativity differently and if this has different effects on purchase intention. Although several dimensions of product creativity are mentioned in the literature, there appears to be a consensus surrounding the dimensions of novelty and meaningfulness (Rubera, et al., 2012). Following the tradition of research about product creativity dividing it into different dimensions, this study provides further empirical validation of the conceptualizing of product creativity of Im and Workman (2004), who also use the dimensions novelty and meaningfulness. Although potential influences of customer involvement on product creativity have been discussed in the literature (Amaoko-Gyampah, 2007; Rubera, et al., 2010), empirical studies of these effects are rare. In addition, this study also examines whether product creativity influences consumer behavior, taking purchase intention into account. Another aspect of this study has to do with the familiarity of the different brands because the current literature shows a limitation on this interesting influencer aspect on consumer perceptions. For brands with high and low brand familiarity, the effect on perceived product creativity of customers will be considered. This study builds on existing studies and literature on how customer empowerment and product creativity influence customers behavior. Therefore, various relevant theories from existing literature have been applied in the context of this master thesis.

This study also offers new perspectives for managers, designers, and marketing departments involved in crowdsourcing contests or companies that have not yet made use of this way of customer empowerment but are considering this for the future.

The aim is to identify the perceived product creativity of customers who are exposed to co-created products in a better way. With these insights, managers and designers can determine how to market their new products when these are generated from crowdsourcing contests. Thus, marketers can decide for themselves whether they use customer empowerment as a potential source of competitive advantage (Hunter & Garnefeld, 2008). When companies have a better

understanding of the perceived product creativity and behavioral intentions of their customers, there is a possibility that this has an extra contribution to the results of the company. Also, brand familiarity in relationship with perceived product creativity is an important measure of marketing and advertising effectiveness.

1.3 Structure of the Thesis

In the first chapter and introduction is explained how and why companies involve customers in the new product development process of the company. Also, the research questions that will be answered in this thesis are provided, as well as the academic and practical relevance of this master thesis. In chapter two the existing literature on customer empowerment in new product development is evaluated. The mediators and moderator that are investigated in this study are also addressed in this chapter. In addition, a conceptual model of this research has been provided whereas ten hypotheses are formulated. Chapter three is dedicated to the research methodology that has been used to test the hypotheses and complete the empirical research. In chapter four, the performed data analysis is presented, and an explanation of the hypotheses is given. The last chapter is dedicated to the conclusion of the study, the general discussion, substantive implications, limitations of the research, and future research possibilities.

2. Literature review

2.1 The conceptual model

The purpose of this study is to provide new insights on how consumers experience newly developed products that are created through co-creation and selected through the company themselves or the customers, by looking at the purchase intention of customers. This chapter explains further the concepts that are relevant regarding this research topic. To give a clear overview of the structure of the study and to set the theoretical framework, a conceptual model is developed, which is illustrated in figure 1. The arrows in this model represent different hypotheses. The hypotheses are based on the literature review, which is described in this chapter. The first part of this chapter consists of the definition of customer empowerment and the concepts that are related to that. It addresses the conceptualization of co-creation, the different strategies of customer empowerment, the transformation of the market from product-centric to customer-centric, the consequences of this change, and the outcome of customer empowerment in the new product development process. Subsequently, the contextual consideration of the research will be given, here the perceived product creativity of customers regarding co-created products and brand familiarity is investigated, also known as the mediating and moderation effects in this study.

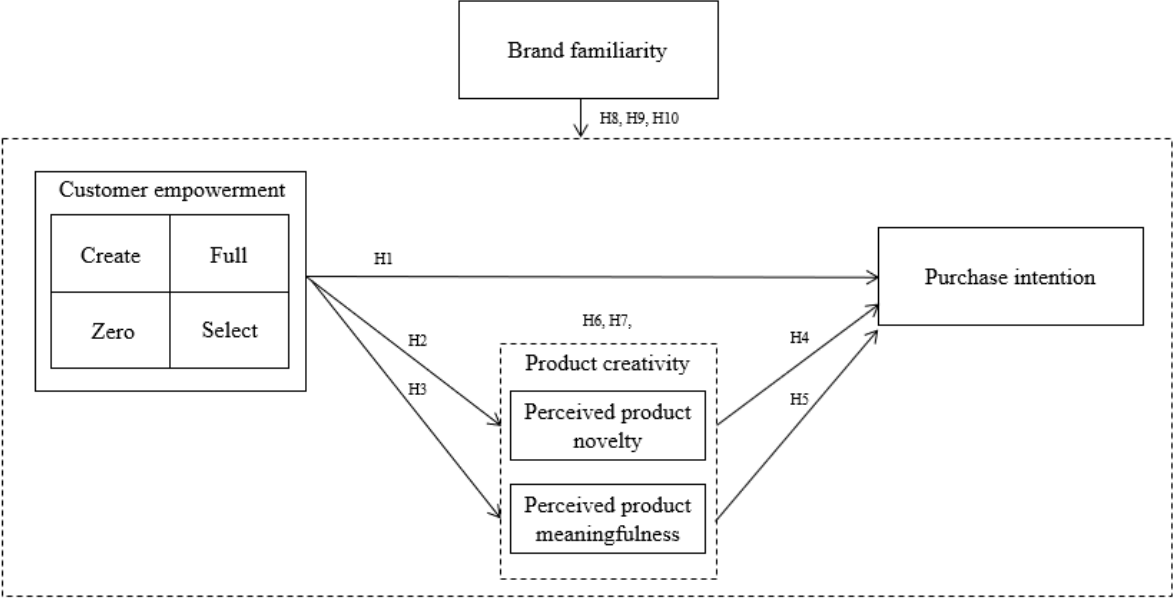


Figure 1: The Conceptual Model

2.2 Customer empowerment in new product development

2.2.1 Conceptualization customer empowerment and co-creation

The era in which customers play an important role in the development process of companies all started with the rise of the internet. The web has three important and valuable properties entailed in the development process of companies, which are communication, conceptualization, and computation (Dahan & Hauser, 2002). The web allows companies to communicate easily and quickly with their customers, but customers can also communicate easily with each other. This new form of communication saves time to understand the wishes and needs of customers compared to traditional methods like telephone and central-locating interviewing. The second important role according to Dahan & Hauser (2002) is the conceptualization of new products; graphic- and audio technologies are used to project new products and product properties. Before this technique was possible, product concepts were first made into a prototype, but this is often expensive and time-consuming. Also, the virtual prototypes can be tested early in the development process because they are quickly available. Finally, according to Dahan and Hauser (2002), computation enables improvement over fixed survey designs by dynamically adapting webpages in real time. This happens when respondents are participating in an online survey, based on mathematical algorithms.

At the same time as these developments taking place, both companies and customers themselves are becoming aware that they no longer have a passive role in the production process. Consumers are no longer involved in only the moment of purchase, but play an important role in collaborating to create value through product innovation (Sawhney, et al., 2005). Customers are aware of the empowerment they have in the market. This also means that customers want to negotiate prices, they are not necessarily lower, but customers want to set a price according to their utility rather than a price that matches the cost of production (Prahalad & Ramaswamy, 2004). Companies can no longer ignore the empowerment of customers therefore it is important to get the most out of it. Customers want to see differentiation, but we are also moving to a world where it is so difficult to differentiate your products and services, due to globalization, deregulation, outsourcing and the convergence of industries and technologies (Prahalad & Ramaswamy, 2004). This major business discontinuities and the quick evolution of the Internet have blurred the roles that companies play (Prahalad & Ramaswamy, 2000).

So, value has undergone a huge transformation, it is created by both the company and the customer. The interaction between companies and customers leads to co-created unique

experiences. Co-creation can have different meanings. Prahalad and Ramaswamy (2004) define it as ‘*joint creation of value by the company and the customer*’, another, more narrow, way to define co-creation is ‘*customer’s participation in product development*’ (Füller, et al., 2010). This is in line with the perspective of Roberts et al. (2005), where they pinpoint that ‘*it enables companies to learn from and with consumers in the context of contemporary consumption*’ (Roberts, et al., 2005). Over the years, many different meanings have been formulated, but in summary, it comes down to the fact that co-creation creates a certain value through the interaction between customers and companies. There are also a number of (potential) terms, that are synonymous with co-creation, which are co-development, co-innovation, co-production, collaborative innovation, customer new product development, joint development, lead users, participatory innovation, and user-centric innovation (Greer & Lei, 2012). In this study, the focus is on co-creation in the new product development process and in marketing communication, but co-creation can exist along the whole marketing process, including customer relationship management, customer support, sales, and brand building (Sawhney, et al., 2005).

For customers, there are several reasons why they engage in the co-creation process (Yadav, et al., 2016). One of the reasons is that when customers co-create, they get a higher degree of customization and therefore the products or services closely meet the needs of the customers. Co-creation also provides a chance for customers to show their creativity to a wider public which raises the prestige of a customer. Another motive is that customers can earn money or another contribution when they join in a crowdsourcing contest and feel rewarded for that. Co-creation also leads to self-employment. Finally, customers enjoy it when they are involved in the co-creation campaign. An overview of these reasons is provided in figure 2.



Figure 2: Why do customers co-create? (Yadav, et al., 2016)

2.2.2 Strategies of customer empowerment

The previous section describes what customer empowerment is. This section focuses on the strategies that companies can use when deploying customer empowerment. According to Fuchs and Schreier (2011), there are four different co-creation strategies that a company could imply. These four strategies are based on two dimensions, which are ‘creating’ and ‘selecting’. So, companies can create products themselves, but they can also empower customers to create products. Besides, companies can select the products that should be produced or can empower customers to decide. Figure 3 illustrates a matrix with the four different strategies a company could implement.

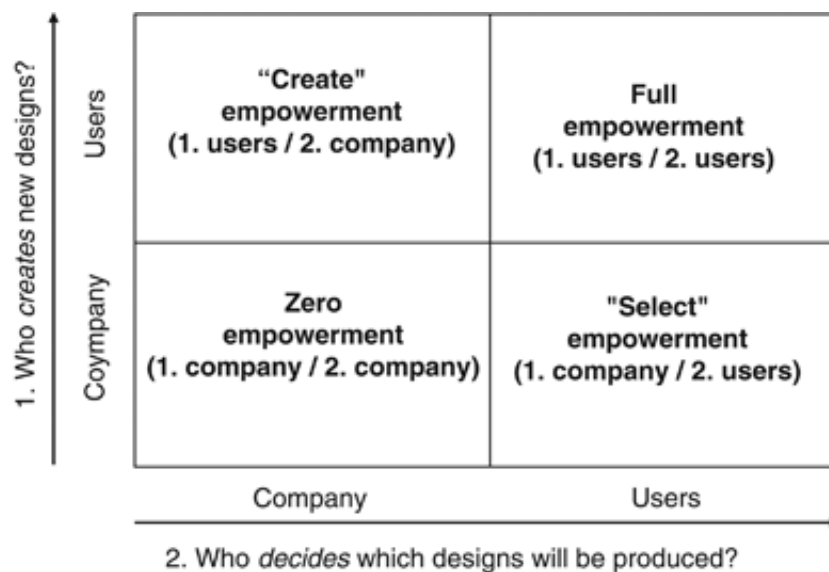


Figure 3: Customer empowerment strategies in NPD (Fuchs & Schreier, 2011)

According to Fuchs & Schreier (2011), in the first strategy, also named as the ‘zero empowerment’ strategy, the customer participation is equal to zero. This strategy can be referred to the traditional production strategy, the only role of customers is to have needs. In the ‘select empowerment strategy’, the company is responsible for the concepts of different products, but the customer can decide which product should appear on the market. The ‘create empowerment strategy’ implies that customers can come up with new product ideas, but the company is the one who decides which product should be market. The last strategy is the ‘full empowerment strategy’, where the customers are responsible for the development of new product ideas but also for the selection of the product that will be commercialized. To provide a clear idea of the four strategies, an example will be given for each of the four strategies.

Zero empowerment – Apple

An example of a company that does not involve customers in their new product development process is Apple. Apple has their own design teams that develop new products. It is also the company who is responsible to decide which product should come to market. Apple has their own events where they announce what customers can expect from Apple in the upcoming period. Apple is known for its own specific designs. Hence this example shows that there are also companies which can be successful without the involvement of customers in their development process.

Select empowerment – Eyewish

The strategy of Eyexpert, a part of the company Eyewish, is an example of a select empowerment strategy. The company hands out different types of eye contacts to different opticians. The opticians gave their customers the samples and they had to choose which eye contacts were the best. Their choice had to be based on various aspects. In this way, the company could decide which eye contacts were best received by the consumer and which therefore should be included in their assortment.

Create empowerment – Starbucks

An example of a company that has been managing a successful campaign for years based on the strategy of empowerment to create is Starbucks. ‘My Starbucks Idea’ launched in 2008 to engage customers and build relationships with them. Customers who are on the online platform can submit new ideas, can view new ideas of other customers and can look for ideas where the company is working on. The company has a team who decides which are the best ideas and then there is another team who works out these ideas (Harvard Business School, 2015).

Full empowerment – Threadless

As mentioned before, one of the most cited examples of full empowerment is the T-shirt manufacturer Threadless. The company is based in Chicago and founded in 2000 by two designers. Over the years, Threadless has created a strong online community which is invited to submit new T-shirt designs and the community can vote for the T-shirts that should be produced (Fuchs & Schreier, 2011). Threadless is an example of a company that is completely dependent on its customers. Other examples of companies who use this empowerment strategy in their development processes are Lego, Muji, Dell, and Ducati.

2.2.3 Transformation of market; product-centricity to customer-centricity

This section provides a more detailed background of the customer empowerment approach in the new product development process nowadays in comparing with a few decennia's ago. Noted earlier, the rise of the internet has played a major role in the attention that companies give to their customers. The technology has made it possible to engage customers more broadly, more richly, and more speedily, but at the same time it has also become very easy for customers to get in touch with companies (Sawhney, et al., 2005). With these new technologies it is possible for companies to build a relationship with their customers. How strong this relationship is, has become increasingly important for companies. In the traditional concept of the market, companies were strongly focused to sell as many products as possible to as many people as possible. In this perception of the market, the only value for the business came from the product. With the new methods to build on relationships with customers, it is mainly important to have loyal customers instead of acquiring new ones.

With this shift from product profitability to customer profitability, also the way you market your products has changed (Shukla, 2010). When a company builds a relationship with their customers it is important that the customer has the feeling that he or she is special to them, because they also bring value to the company. Therefore, the way of communication must be individualistic. Traditionally, companies communicated to a large group of people, also known as mass-marketing. Marketing channels that are used for this are television, radio stations, and ads. The use of these channels is covered by the term above-the-line marketing. The opposite of this form of marketing is below-the-line marketing. This form of marketing focuses on the individual and uses channels like direct mailing. The purpose of this way of communication is to build on your relationship with your target group (Shukla, 2010). New technologies make it possible to segment groups of customers and approach them in an individualistic way. Currently, customers are very often exposed to advertisements of companies and know exactly what is in the market. Therefore, a strong relationship with the customer, where the company listens and interacts, is very important to make a customer loyal to your brand.

Since the market had been changed from product- or company-centric to customer-centric, the role of customers is not only consuming the product anymore but involves much more than that. Customers actively participate in the value chain of companies. New product development is one of these marketing processes in this value chain. The next paragraph is dedicated to how customer involvement can contribute to the new product development process.

2.2.4 Outcome of customer empowerment in the new product development process

The result of customer empowerment in the new product development process of companies is a more discussed topic in the academic literature. Appendix 1 gives an overview of studies which are dedicated to the effects of customer empowerment in the new product development process of companies. With the upgrade of all technologies, the development of products has become easier. In addition, it has become more difficult to distinguish your product from others. But at the same time, customers are able to support companies in their development process, as long as the company makes the effort to build on a relationship with their customers. To gain a competitive advantage, companies must, therefore, rely on the co-created value that customers bring (Prahalad & Ramaswamy, 2004). This value creation leads to two streams of competitive advantage (Hoyer, et al., 2010). First, it leads to gains in productivity due to the increase in efficiency, it reduces operating costs and risks (Fuchs & Schreier, 2011). Secondly, co-creation also leads to more effectiveness in various ways according to Hoyer et al. (2010). Obtaining ideas from customers is relatively cheap. In addition, less market research has to be carried out because the ideas come directly from the customer and therefore the products already have a better fit with their needs. Besides, products can be introduced to the market faster. However, another positive outcome of customer empowerment in the new product development process is that it not only affects the internal part of the process but is also reflected in the relationship between the company and its customers (Fuchs & Schreier, 2011). Customers can create preferences for these specific brands, but this can also improve the perception of the product and the innovation ability. Subsequently, this can improve their behavioral intentions (Dahl, et al., 2015; Dahl, et al., 2012; Franke, et al., 2009). In addition, negative outcomes of customer empowerment in the new product development process have also been investigated in different studies. One important question in the literature is whether customers can compete with experts working in research & development centers. It depends on the type of product, but for very technical products it is often the case that customers lack the competence for suggesting innovative and valuable development (Lagrosen, 2005). Another study done by Fuchs et al. (2013), shows that the positive customer-design effect is attenuated for luxury fashion brands. Luxury products designed by customers are perceived to be lower in quality and fail to signal high status. This results in a loss of agentic feelings for the consumer. In a recent study done by Paharia & Swaminathan (2019), also a negative outcome of a user-design approach has been found. This research demonstrates that in cultures with high power-distance beliefs consumers value company expertise, leading to higher quality inferences, which will contribute to their

relative preference for company-designed products. Low power-distance consumers prefer user-design approaches, because of their general preference for equality.

For every company, it is different whether it achieves great successes from the use of an open innovation process. If a company decides to use an open-innovation process, this can be more complicated than it looks than it seems at first sight. Companies have to decide how and when to open their innovation process. Over the years a lot of information has been collected about the success factors and common problems for different types of empowerment strategies. This has enabled companies to make informed decisions and to manage problems that arise (King & Lakhani, 2013).

2.3 Influences of customer empowerment on purchase intention and product creativity – hypotheses development

The previous part was mainly devoted to the business perspective of customer involvement in new product development. This part is dedicated to the consumer perspective. In the new product development process, companies are focusing on the customer demands and expectations beyond manufacturing efficiency and cost reduction (Horn & Salvendy, 2006). As mentioned, a company can decide to involve customers in their new product development process. Customers can create new product/service ideas and the company can decide which of these ideas can best fulfill the customer need. Or the company can decide to let customers select one of the newly submitted ideas. As mentioned before, this thesis studies if the influence of these different customer empowerment strategies on customers' purchase intention are different from each other and also investigates the effect of these strategies on product creativity, consisting of the dimensions perceived product novelty and perceived product meaningfulness. Product creativity plays a crucial role in the product development process. It contributes to the success or failure of a product.

2.3.1 Customer empowerment and purchase intention

Purchase intention can be defined as the effort that customers are willing to make to buy products. There are many different factors that affect the consumer's purchase intention, like experiences, attitudes, perceptions, and evaluations (Moreira, et al., 2016). But this study focuses on the effect of customer empowerment on purchase intention. Different studies showed that labeling crowdsourced new products as user designed positively affects the performance of the product on the market (Nishikawa, et al., 2017; Fuchs, et al., 2010; Dahl, et

al., 2015). Dahl et al. (2015) concluded in their research that observing consumers prefer to buy from a company that empowers their customers in the development process rather than from companies that only use professional designers because of the increased identification they have. The research demonstrates that ‘‘the attributions made by observing consumers with respect to the user-driven firm activate a ‘user-identity’ that stimulates feelings of empowerment through a vicarious experience shared with the user community’’ (Dahl, et al., 2015). The current literature mainly compares the effects of customer empowerment with those of zero empowerment and shows a lack of information about the differences between the four empowerment strategies. This study is an attempt to see if there are differences between the levels of customer empowerment. So, whether full empowerment scores higher or lower than empowerment to create, whether empowerment to create scores higher or lower than empowerment to select, and whether empowerment to select scores higher or lower than zero empowerment. Since the knowledge of these differences is rare, this study is more exploratory. As mentioned before, this study focuses on observers of co-created products. It can be assumed that observers feel affinity with the customers who are involved in the creation of the product, although they have not contributed in the process themselves. So, the identification of the observers with the user-designers leads to a higher preference for the product and therefore also to a greater chance of purchase. Since the four different empowerment strategies reflect the extent to which customers have assisted in the development process, it can be assumed that the affinity for full empowerment is greater than for empowerment to create, and the affinity for the empowerment to create is greater than for the empowerment to select, and so on. Another assumption that is made in this thesis is that when customers see that the product has been co-developed by other customers it is likely that this arouses a certain curiosity and therefore, they are more inclined to try the product. Here is also assumed that when customers see a product that has been fully developed by users, this arouses more curiosity than a product that has only been created or selected by users. So, based on the literature and the assumptions made here the following is hypothesized:

H1: The higher the customer empowerment in the new product development, the higher the effect on purchase intention of nonparticipating customers (‘observers’).

2.3.2. Conceptualization of product creativity

There are many different definitions of creativity and it has been investigated in many fields of studies (Rubera, et al., 2012). A lot of current studies in product creativity are built on Amabile's exploration of creativity within poetry, music, and painting (Amabile, 1982). According to Amabile, an object is creative to the extent that it is novel and appropriate, correct or a valuable response to the task at hand. This conceptualization has been widely used in this research area (Dahl & Moreau, 2005; Andrews & Smith, 1996, Smith, et al., 2007; Im et al., 2008). Equivalent definitions of product creativity have also been used by various researchers in this field. This study attempts to extend the understanding of creativity in products, focusing on fast moving consumer goods. In the academic literature, creativity has been conceptualized as consisting of different dimensions. Most of the researchers indicated to the newness, novelty, and originality when they define creativity (Sadi & Al-Dubaisi, 2008). According to Im and Workman (2004), creativity consists of the dimensions of novelty and meaningfulness. When defining product creativity, novelty alone is insufficient. The novel element must also be meaningful (Ang & Low, 2000). This study investigates these two dimensions because of the consensus surrounding these dimensions in the academic literature. In the next section, both dimensions are discussed, and the corresponding hypotheses have been formulated.

2.3.3 Perceived product novelty

Im and Workman (2004) view the dimensions 'novelty' as consisting of the extent to which a product differs from conventional practice. This dimension focuses on the difference of competing alternatives in a way that is valued by customers (Sethi, et al., 2001). Other similar definitions for these dimensions that are used by researchers are originality, newness, and unexpectedness. A way of assessing the novelty of a product is to compare the characteristics of that product with those of other products that are meant to fulfill the same need (Sarkar & Chakrabarti, 2011). The differences indicate how novel the product is compared to the other products. The dimension 'novelty' can be linked to the concept of innovation. The involvement of customers in the new product development process is also called co-innovation. Comparing the definitions of product creativity and product innovation, this shows that both are associated with the newness of the product (Horn & Salvendy, 2006). According to Horn & Salvendy (2006), the factors relating to the newness of product innovation address the product's newness to the customer (firm or market), the newness of the technology, and the customer's level of experience with the products. In contrast, the factors relating to the newness of product

creativity address the product's originality and surprise as well as how the newness is expressed, or the style associated with the newness. Thus, product innovation is much broader. Table 1 shows the different factors of each construct. The innovation effect of user-design has been studied in the academic literature (Schreier, et al., 2012). This research shows that companies who involve users in their new product development process are associated with a higher innovation ability. In this study, respondents indicated four different user design factors that might increase the perceived innovation ability. Schreier et al. (2012) have named these four factors as the number argument, the diversity argument, the user argument, and the constraints argument. The following section describes each of these factors according to Schreier et al. (2012).

Number argument

Respondents stated that the more people are involved, the more creative ideas will come to mind. Companies are tied to a limited number of professional designers, but when customers are involved in the production process, the number of people involved increases and therefore the number of product ideas also rises. In addition, it has been proven that the more ideas you have, the more likely it is that highly creative products arise (Szymanski, et al., 2007; Valacich, et al., 1995; Van Gundy, 1988). So, a reason that customers expect companies to have higher innovation opportunities when they use customers in the new product development process may be based on the fact that quantity boosts quality.

Diversity argument

Another argument that is closely related to the previous argument is the diversity argument. Customers might expect that the group of users that are involved in the new development process are more diverse in terms of background. They have other demographic characteristics, interests, skills etcetera. Customers can perceive this as a huge difference when comparing this to a small group of designers who only try to mirror the diversity of their customers (Rigby and Viswanath 2006). Other research has shown that there is a common belief that diversity influences creativity because of the different perspectives of people (Mannix & Neale, 2005; Robinson & Dechant, 1997)

User argument

The third factor is that customers might expect that users who help with the development of new products belong to the same group of people who will use the product in the end and

therefore the innovation ability increases. The chance that these people have the same characteristics is more likely when compared to professional designers because they have not the same role as the consumer. Professional designers might not be aware of consumer needs and wants (Von Hippel, 2006).

Constraints argument

The final argument is the constraints argument which means that customers might perceive users who are involved in the new development process do not have considered specific company requirements such as deadlines, targets, margins, positioning etcetera. Therefore, they are less constrained in coming up with new creative ideas. In contrast, designers that work for the company are constrained by these requirements.

In addition to these arguments, it is also the case that this thesis investigates the effect of user-driven design in the branch of crisps. Coming up with new crisp flavours does not necessarily require high skills, but rather has to do with the level of creativity. Therefore, it can be expected that customers will be able to come up with novel creative ideas. So, little is known about how customer empowerment influences product creativity and therefore also novelty. But based on the literature and the assumptions made here the following is hypothesized:

H2: *Customer empowerment in the new product development process has a positive effect on the perceived product novelty of nonparticipating customers ('observers').*

Product innovation	Product creativity
“an idea, practice, or object that is perceived as new by an individual or other unit of adoption” (Rogers, 2003, p. 12).	The extent to which a product exhibits novelty and appropriateness, elicits arousal and pleasure, and is compatible with the judge’s preferences.
Innovation factors	Creativity factors
<ul style="list-style-type: none"> • Product newness to firm • Product newness to customers • Product newness to market • Technical uncertainty • Technical inexperience (newness) • Technical cost • Discontinuity of benefits • Customer benefits • Product superiority • Change in behavioral patterns • Business experience 	<ul style="list-style-type: none"> • Novelty (element of originality and surprise in the product) • Elaboration and synthesis (the elegance, organic nature, and expertise of the design) • Resolution (how well the product fills the need or works to resolve the problem) • Centrality (the interest in the product) • Applicability (the importance of the product) • Pleasure (the enjoyment from the product) • Arousal (the stimulation from the product)

Table 1: Comparison of Product Innovation and Product Creativity (Horn & Salvendy, 2006)

2.3.4 Perceived product meaningfulness

Im and Workman (2004) view the dimensions ‘meaningfulness’ as consisting of the extent to which a product is viewed as consistent with the category. For the company, the product or idea must be relevant to their goals and must be something from which they can reasonably expect to extract some value (Sadi & Al-Dubaisi, 2008). Other similar definitions for these dimensions that are used by researchers are appropriate, relevant, usefulness, and utility. How important the use of a product is, depends on the impact of that product on the lives of its users (Sarkar & Chakrabarti, 2011). Products that are more important to society should have a higher value for usefulness. Sarkar & Chakrabarti (2011) identified five levels of the usefulness of a product. The product in this study is food, which means level four according to Table 2. Because crisps do not really belong to the first necessity of life, level four of importance is debatable.

<i>Code</i>	<i>Points in a scale of 5</i>	<i>Level of importance</i>	<i>Type of importance</i>	<i>Examples</i>
A	5 (>4.0–5.0)	Extreme importance	Life saving drugs, life support systems	Oxygen cylinder, pace makers
B	4 (>3.0–4.0)	Very high importance	Compulsory daily activities	Taking food, using restroom
C	3 (>2.0–3.0)	High importance	Shelter, social interaction	Pen, belt, clothes, housing, spectacles, shoes
D	2 (>1.0–2.0)	Medium importance	Machines for daily needs	Cleaning machine, vacuum cleaner, water pump, water heaters
E	1 (0.0–1.0)	Low importance	Entertainment systems, recreation systems	Computer games, bowling, go-carting

Table 2: Level of importance of different products (Sarkar & Chakrabarti, 2011)

Robey & Farrow (1982) posited that user involvement is positively related to perceived usefulness, because people who have contributed to determining the requirements and design are more likely to believe in the usefulness of the system, where the study focused on a management information system and not on a product (Robey & Farrow, 1982). This thesis focuses on a product and the observers of co-created products, but it is still likely that customer involvement is positively related to product meaningfulness. If we look back at the four factors described in the previous section, it can be argued that it is likely that these will also influence the meaningfulness of the product. In particular, the "user argument", which indicates that customers may think that users can come up with products that have a closer fit to their needs (Schreier et al. 2012). According to Fuchs & Schreier (2011), nonparticipating customers will perceive a company who empowers customers in their new product development process as

more customer oriented than a company that does not empower their customers. They stated that customers believe that such companies “put customer’s interest first” and therefore are better at and more willing to understand their needs. In addition, needs that are difficult to identify because these needs are not clearly expressed by customers can be discovered through co-creation in the development process. When these needs are identified, it is more likely that this will benefit the meaningfulness of the created product. The existing literature and the assumptions that made here give reasons to believe that customer empowerment increases the meaningfulness of the created product. Therefore, the following is hypothesized:

***H3:** Customer empowerment in the new product development process has a positive effect on the perceived product meaningfulness of nonparticipating customers (“observers”).*

2.3.5 Product creativity and purchase intention

In the previous sections, the definition of product creativity and purchase intention is already discussed and there is showed that many different factors motivate purchase intention. This section focuses only on the perceived product creativity, and the dimensions of it, to see how these perceptions can influence customers’ buying intention. It has been concluded from various studies that customer perceptions are directly related to purchase intention (Farley & Ring, 1970; Bettman, 1970). When an aspect of a product is more valued by a consumer, the consumer is more likely to be positively disposed to the product, this increases the intention to buy (Pappu, et al., 2007). Horn & Salvendy (2009) reveals in their study that product creativity plays a role in consumer behavior. The study validates a three-dimensional model of product creativity (Affect, Novelty, and Importance) and supports that at least one of these product creativity dimensions explains the variance of willingness to purchase (Horn & Salvendy, 2009). Thus, the result of this research indicates that product creativity influence willingness to purchase consumer products to some degree. Since novelty and usefulness are positive characteristics to value a product, it can be assumed that when the perceived value of these characteristics increases, the purchase intention will also be positively influenced. Based on the existing literature and the assumptions made here, the following is hypothesized:

***H4:** Perceived product novelty will have a positive effect on the purchase intention of nonparticipating customers (“observers”).*

***H5:** Perceived product meaningfulness will have a positive effect on the purchase intention of nonparticipating customers (“observers”).*

This study is also an attempt to examine whether the effects of customer empowerment on purchase intention, could be accounted to perceived product novelty and meaningfulness. In the previous section is already described that it is expected that there will be a direct effect of customer empowerment on purchase intention. In addition, customer empowerment is expected to have a positive effect on perceived novelty and meaningfulness and these two dimensions are also expected to have a positive effect on purchase intention. The mediation hypotheses are based on the previously described literature and are as follows:

H6: Perceived product novelty mediates the relationship between customer empowerment and purchase intention of nonparticipating customers ('observers').

H7: Perceived product meaningfulness mediates the relationship between customer empowerment and purchase intention of nonparticipating costumers ('observers').

2.4 The influence of brand familiarity

Brand familiarity refers to the degree to which a consumer is aware of the brand. It consists of the consumers' presence, awareness, and knowledge of a specific brand (Lehman, et al., 2008). In other words, familiarity describes the extent to which a brand is seen and thought of by the consumer. A brand becomes familiar because of various factors such as brand associations, brand usage, prior exposure, word of mouth, and advertisement. As people have a personality, brands also have a certain personality. Brand personality can be defined as: "the set of human characteristics associated with a brand" (Aaker, 1997). These brand personalities are often created by the manufacturers themselves and are used to convince customers that their products fit the needs of customers best (Aaker, 1996). According to Aaker (1997), brand personality has a symbolic function, so it not directly concerns product-related attributes, but it is more about the self-expression of customers. Little is known whether high familiar brands can benefit as much from co-creation as low familiar brands, but brands with a high brand familiarity often have a stronger brand personality than brands that are less well known (Dijk, et al., 2014). Therefore, it might not be interesting or less interesting for customers to change a well-known brand themselves because the brand may lose its personality or certain characteristics (Etgar, 2007). Another reason according to Etgar (2007), is that customers might have more confidence in the knowledge and experience of the R&D department of companies with high brand awareness. So due to the high brand familiarity of well-established brands, customer empowerment in new product development will probably be less effective compared to less

established brands which do not have a brand personality. Therefore, the following is hypothesized:

H8: *Customer empowerment in the new product development process will have less effect on purchase intention when there is a high level of brand familiarity than when there is a low level of brand familiarity.*

H9 *Customer empowerment in the new product development process will have less effect on the perceived product novelty when there is a high level of brand familiarity than when there is a low level of brand familiarity.*

H10: *Customer empowerment in the new product development process will have less effect on the perceived product meaningfulness when there is a high level of brand familiarity than when there is a low level of brand familiarity.*

This literature review, including the hypotheses, is the first part of this study. In order to test the hypotheses, an empirical study is conducted. This study is based on an experimental survey. The next chapter presents the methodology of this study, but first an overview of the hypotheses is given.

2.5 Summary of hypotheses

The following table provides a summary of the hypotheses that are proposed in this study.

Hypotheses	
<i>H₁</i>	The higher the customer empowerment in the new product development, the higher the effect on purchase intention of nonparticipating costumers (“observers”).
<i>H₂</i>	Customer empowerment in the new product development process has a positive effect on the perceived product novelty of nonparticipating costumers (“observers”).
<i>H₃</i>	Customer empowerment in the new product development process has a positive effect on the perceived product meaningfulness of nonparticipating costumers (“observers”).
<i>H₄</i>	Perceived product novelty will have a positive effect on the purchase intention of nonparticipating costumers (“observers”).
<i>H₅</i>	Perceived product meaningfulness will have a positive effect on the purchase intention of nonparticipating costumers (“observers”).
<i>H₆</i>	Perceived product novelty mediates the relationship between customer empowerment and purchase intention of nonparticipating costumers (“observers”).
<i>H₇</i>	Perceived product meaningfulness mediates the relationship between customer empowerment and purchase intention of nonparticipating costumers (“observers”).
<i>H₈</i>	Customer empowerment in the new product development process will have less effect on purchase intention when there is a high level of brand familiarity than when there is a low level of brand familiarity
<i>H₉</i>	Customer empowerment in the new product development process will have less effect on the perceived product novelty when there is a high level of brand familiarity than when there is a low level of brand familiarity.
<i>H₁₀</i>	Customer empowerment in the new product development process will have less effect on the perceived product meaningfulness when there is a high level of brand familiarity than when there is a low level of brand familiarity.

Table 3: Summary of hypotheses

3. Methodology

This chapter explains which methodology has been applied in this study, both for collecting and analyzing the data. The first section describes the experimental design. The second part consists of the operationalization of the dependent variables, mediating, moderating and control variables through different items. The third part is dedicated to the measuring of scale reliability. Finally, an introduction is given for the factor analysis and the choice model that have been applied in the research.

3.1 Experimental design

To test these hypotheses, an online survey is conducted. The survey was created in the online survey tool Qualtrics. The link of this survey is posted on different social media platforms (e.g. Facebook, LinkedIn, Instagram, WhatsApp). By using an integrated option in Qualtrics the link randomly assigned the respondents to one of the eight questionnaires which are different on brand familiarity (Lay's vs. Terra) and the level of customer empowerment (zero, select, create, full). Noted earlier, according to Sarkar & Chakrabarti (2011) food has a high impact on the lives of users, therefore a product which is edible is implemented in the advertisements. The product 'crisps' have been chosen because respondents can have a clear interpretation when talking about customer involvement in this branch. In addition, customers may have come into contact with this concept before, since in the Netherlands the "Maak de smaak" campaign was conducted by Lay's and also the "Do us a flavour" campaign was conducted in the United States. It is possible that the effect for other product categories is higher, but since this branch has not been investigated before, crisps are used in this study. For the context of high brand familiarity, the brand 'Lay's' is used since Lay's is the best-known crisp brand in the world (Brandes, sd). On the other hand, the brand 'Terra' is used to ensure low brand comprehension. This brand has a few selling points. Fictitious advertisements are used to create a context in which respondents can relate themselves to situations that might occur in real life (see Appendix 2). In total there were eight different questionnaires, which were different in the brand that is visible and different in the segment of customer empowerment. The sample size in this thesis is based on the statistical power, which is the probability of accepting the alternative hypothesis if it is true. The statistical power increases when the sample size increases. When the statistical power is higher, the probability of making a Type II error is lower. This error occurs when one fails to reject a null hypothesis that is actually false. In other words, a false finding is accepted as true. A statistical power of 0.80 is acceptable for multivariate analysis of variances (Field, 2013). The minimum respondents per group is set on 20 respondents to realize a statistical

power of 0.80 (Cohen, 1992) (Field, 2013). To ensure sufficient statistical power, this research aimed for a sample size of 280, which is a total of 35 respondents per group. After the number of desired respondents has been collected, the dataset is analyzed.

3.1.1 Survey construction

The survey consisted of an introduction without information about the purpose of the study in order to prevent biased outcomes. Then an advertisement of Terra or Lay's was shown with accompanying questions about the different constructs. Subsequently, another advertisement was shown of the brand that was not shown in the first advertisement with the same questions again. Afterwards, respondents had to indicate which of the previously shown products was preferred if they had to buy one of the two products. In the last part of the survey, respondents were asked to fill in questions related to the control variables. The survey and the survey flow are included in Appendix 3 and 4 respectively. All questions related to the advertisements consisted of a 7-point Likert scale. Table 4 provides an overview of the eight different advertisement combinations that were used in the survey. Initially, it was intended to investigate all possible combinations, which are 32 options in total. Due to the limitation in time and resources, it was decided to focus the research on these eight different scenarios, which are more interesting because of the expected results. Here you can see that all four different empowerment strategies of the brand with high brand familiarity have been compared with the full empowerment strategy of the brand with low brand familiarity. In addition, the four different empowerment strategies of the brand with low brand familiarity have been compared with the zero empowerment strategy of the brand with high brand familiarity. These eight combinations still allowed the research to confirm the hypotheses in a responsible manner because in the first advertisement all different empowerment strategies in combination with low and high brand familiarity have been questioned.

	Survey	Advertisement 1	Advertisement 2
Level of customer empowerment brand familiarity	A	Full High (FH)	Full Low (FL)
	B	Create High (CH)	Full Low (FL)
	C	Select High (SH)	Full Low (FL)
	D	Zero High (ZH)	Full Low (FL)
	E	Full Low (FL)	Zero High (ZH)
	F	Create Low (CL)	Zero High (ZH)
	G	Select Low (SL)	Zero High (ZH)
	H	Zero Low (ZL)	Zero High (ZH)

Table 4: Eight different survey conditions

3.2 Measurement of the variables

To ensure the validity and reliability of the measurements that are used in the online survey, the scales in the conceptual model are constructed from items in existing literature scales. This resulted in the separation of perceived product novelty, perceived product meaningfulness, purchase intention, and brand familiarity. First all variables are discussed below, followed by an overview of all the variables that are used in the data analysis.

3.2.1 Dependent variable

The dependent variable in the conceptual model is purchase intention. Purchase intention is measured through three items based on existing research of Rubera et al. (2011). The construct consisted of a seven-point Likert scale. The participants had to evaluate to what extent they agree with the statements. The scale ranged from strongly disagree (=1), disagree, slightly disagree, neither agree nor disagree, slightly agree, agree, to strongly agree (=7).

3.2.2 Independent variable

The independent variable in this study is the level of customer empowerment that the company used to develop and market their product. In total there are four options, which are zero empowerment, select empowerment, create empowerment, and full empowerment. These are the customer empowerment strategies that are mentioned in the literature review. To express these different strategies of different brands, visual stimulus in the survey are used which already have been described in the previous section and included in Appendix 2. Since customer empowerment is a categorical variable that consists of several groups, several dummy variables have been created to include this variable in the regression analysis that will be used to examine the data.

3.2.3 Mediating variables

There are two mediating variables in this study, which are perceived product novelty and perceived product meaningfulness. Both are dimensions of product creativity. Some studies have combined the dimensions of novelty and meaningfulness, but recent studies indicate that separately examining these dimensions is more appropriate because both dimensions have different antecedents and consequences (Im & Workman, 2004; Rubera, et al., 2010; Sethi & Sethi, 2009).

Perceived product novelty

Perceived product novelty is measured with a four-item scale consisted of a seven-point Likert scale according to the research of Im and Workman (2004). The participants had to indicate to what extent they agree with the four statements.

Perceived product meaningfulness

Perceived product meaningfulness is measured with a four-item scale consisted of a seven-point Likert scale also according to the research of Im and Workman (2004). Again, the participants had to indicate to what extent they agree with the four statements.

3.2.4 Moderating variable

The moderator in this study has to do with the brand familiarity of a company. This involves low brand familiarity versus high brand familiarity. The brands Lay's and Terra were used to ensure high and low brand familiarity. In the different questionnaires, each participant was asked to indicate to what extent they agreed with the statements with regards to the brand familiarity of the two brands. Three items on a seven-point Likert scale were used based on existing research (Lehmann, et al., 2008; Kent & Allen, 1994).

3.2.5 Control variables

In order to assure that the variations in purchase intention are caused by the independent variables this study included control variables. One of the control variables that is included in the conceptual model is product involvement. This variable has been used broadly as control variable for decision making in the field of marketing (Dholakia, 1997). Product involvement refers to the level of a consumer's interest in purchasing a certain product (Bian & Moutinho, 2011; Mittal, 1995), and plays a crucial role in behavioral processes. To ensure that there were no significant differences in the different survey groups product involvement is included. This control variable is measured through two items on a seven-point Likert scale based on existing research (Mittal & Lee, 1989; Beatty & Tapade, 1994). The other control variables that have been measured and included in the analysis are age, gender, and educational level. Besides, two control cases where Lay's and Terra do not contain any information of customer empowerment are included in this study.

On the next page, an overview of all the variables is presented in Table 5.

Variable name	Type of variable	Scale	Levels
Customer empowerment	Independent variable	Categorical	1 = Full 2 = Create 3 = Select 4 = Zero
Full empowerment	Independent variable	Categorical	1 = Full empowerment 0 = other
Create empowerment	Independent variable	Categorical	1 = Create empowerment 0 = other
Select empowerment	Independent variable	Categorical	1 = Select empowerment 0 = other
Zero empowerment	Independent variable	Categorical	1 = Zero empowerment 0 = other
Perceived product novelty	Mediator	Continuous	Seven-point Likert scale
Perceived product meaningfulness	Mediator	Continuous	Seven-point Likert scale
Purchase intention	Dependent variable	Continuous	Seven-point Likert scale
Brand familiarity	Control variable	Continuous	Seven-point Likert scale
Brand familiarity ad	Moderator	Categorical	1 = Familiar 0 = Unfamiliar
Product involvement	Control variable	Continuous	Seven-point Likert scale
Age	Control variable	Continuous	Numerical
Gender	Control variable	Categorical	1 = Male 2 = Female
Achieved education	Control variable	Categorical	1 = No education 2 = Primary education 3 = Secondary education 4 = Secondary vocational education 5 = University for Applied Sciences 6 = University
Choice model			
Empowerment Terra vs. Lay's	Independent variable	Categorical	1 = Terra > Lay's 0 = Terra = Lay's
Novelty difference	Mediator variable	Continuous	Seven-point Likert scale
Meaningfulness difference	Mediator variable	Continuous	Seven-point Likert scale
Choice	Dependent variable	Categorical	1 = Terra 0 = Lay's

Table 5: Overview measured variables

3.3 Reliability of scale measurement

The term reliability is used to express the degree to which the measure of a construct is consistent or dependable. Which means that if the same constructs are measured several times, we will get always pretty much the same results. In order to provide accurate measurements, the scale reliability is measured with Cronbach's alpha, which is a widely used measurement to test reliability. This measurement method is designed by Lee Cronbach in 1951 and the formula

is as follows: $\alpha = \frac{K}{K-1} \left(1 - \frac{\sum_{i=1}^K \sigma_{Y_i}^2}{\sigma_X^2}\right)$

K indicates the number of items in the measure, σ_X^2 is the variance of the observed total scores, and $\sigma_{Y_i}^2$ is the observed variance of item i . Cronbach's alpha is expressed as a number between 0 and 1 (Tavakol & Dennick, 2011). The outcome must be at least 0.7 in order to be considered as acceptable for reliability. Between 0.8 and 0.9 is good and everything above is excellent. The next chapter presents the Cronbach's alpha for each construct.

3.4 Factor analysis

Factor analysis is a statistical technique to determine the actual underlying dimensionality by reducing the size of a dataset (Williams, et al., 2010). In factor analysis, these underlying dimensions, or factors, are estimated from the data and are believed to reflect constructs that can be measured directly (Field, 2013). The factors, which are straight lines, can be described mathematically by an equation, as follows:

$$Y_i = b_1 X_{1i} + b_2 X_{2i} + \dots + b_n X_{ni} + \epsilon_1$$

For this thesis, a factor analysis is conducted to see whether the two dimensions of product creativity, which are product novelty and product meaningfulness, can belong to one dimension or whether it is better to separate them. In order to perform a factor analysis, the dataset must meet several requirements. First, the variables must be measured on a ratio or interval scale. Since these items are measured with a Likert scale, this requirement is met. Second, it must be easy to interpret the polarity of the variables. That is why two items have been reversed because these questions have been asked in the changing direction. The results of the Kaiser-Meyer-Olkin test and the Bartlett's Test of Sphericity, which are the other criteria, are discussed in the next chapter together with the other results of the analysis.

3.5 Choice model

As described earlier, at the end of the survey, the respondents were asked which of the two previously shown products they would prefer if one product had to be chosen. In general, when customers buy a bag of crisps, they face a shelf where they can choose from a range of different types of crisps. The customer makes a choice that depends on various factors. Therefore, an extra element has been added in this study that partly imitates this choice. This element examined the customer's choice when confronted with two products, one of Lay's and one of Terra, with the associated empowerment strategy that has been used to market the crisps. It was examined if the factors, customer empowerment, perceived product novelty, and perceived product meaningfulness determine the customer's choice between Lay's and Terra. Because the dependent variable is dichotomous, a logistic regression has been applied for the analysis.

4. Results

4.1 Preparatory analyses

4.1.1 Descriptive statistics

In this study, 280 completed surveys were collected. The data is checked for missing values and outliers by studying the frequencies and histograms. No missing values are found. The sample consists of eight different groups. So, each group consisted of 35 respondents. The sample consists of 183 females (65.4%) and 97 men (34.6%). A Chi-Square test showed that there is no significant difference for gender between the conditions ($\chi^2(7), N = 280) = 3.319, p = .87$). The average age of the respondents was 29.6 years and ranged from 15 to 63 years old. No significant differences were found for age ($F(7, 272) = .921, p = .49$). Furthermore, most of the respondents finished the University of Applied Sciences (38.2%), followed by Secondary Vocational Education (26.1%), University (22.5%), Secondary education (12.5%), and Primary education (0.07%). Also, no significant differences were found for education ($F(7, 272) = .828 = .564$). The table below provides an overview of these statistics for each of the eight groups.

Survey	N	Level of customer empowerment (1 2)	Brand familiarity (1 2)	Gender	Average age	Education
A	35	Full Full	High Low	M:14 F:21	29.9	University of Applied Sciences
B	35	Create Full	High Low	M:14 F:21	27.4	University of Applied Sciences
C	35	Select Full	High Low	M:14 F:21	29.4	Secondary Vocational Education
D	35	Zero Full	High Low	M:12 F:23	28.7	University of Applied Sciences
E	35	Full Zero	Low High	M:12 F:23	29.2	University of Applied Sciences
F	35	Create Zero	Low High	M:10 F:25	32	University of Applied Sciences
G	35	Select Zero	Low High	M:12 F:23	27.9	Secondary Vocational Education
H	35	Zero Zero	Low High	M:9 F:26	32.7	University of Applied Sciences

Table 6: Descriptive statistics respondents

4.1.2 Factor analysis

To see if the dimensions product novelty and product meaningfulness are reliable constructs and if these constructs can form one reliable construct of product creativity, a factor analysis is conducted. The extraction method that has been used is the principal component analysis, since this is a well-established mathematical technique for reducing dimensionality of data. An orthogonal rotation method (varimax) was used based on the assumption that the factors are independent of each other. As mentioned earlier, the sample size must be tested based on the Kaiser-Meyer-Olkin criterion. Table 7 below shows the outcomes of this criterion. The value is greater than the limit value of 0.500, so the constructs passed this test. Also, the Bartlett's test of Sphericity is passed with a significance level of .000. The item 'The product provides radical differences from other crisps' and the item 'The product is considered unsuitable for my desires' have low commonalities, namely loadings below .300. Therefore, these two items will be eliminated from the constructs since they could be problematic in the further analysis. The reason that these two items have a low loading may be because these questions have been asked in a different direction. Studies often show that respondents have difficulty interpreting these questions.

Criteria Factor analysis

Kaiser-Meyer-Olkin	.805
Bartlett's Test of Sphericity	.000

Table 7: Factor analysis test results

In Table 8 the further results of the factor analysis are presented without the two items which are mentioned above. The results show that two factors can clearly be distinguished for the first three items and the last three items. Thus, it can be concluded that the dimensions product novelty and product meaningfulness do not form one construct of product creativity together, but they are two reliable constructs themselves. Therefore, in further analysis, these dimensions will still be considered as separate constructs.

Item	Loading	Loading
The product can be considered as revolutionary	.897	
The product provides radical differences from other crisps	.846	
The product is really ‘out of ordinary’	.837	
The product is useful for me		.884
The product is appropriate for my needs and expectations		.884
The product is relevant to my needs and expectations		.879

Table 8: Factor analysis results

4.1.3 Items and constructs – Cronbach’s alpha

The last test to acquire reliable constructs is calculating the Cronbach's alpha. For each construct, it was examined whether the items were reliable. The values were all above 0.7 and can therefore be considered as acceptable and reliable. The table below shows the Cronbach’s alpha for each construct.

Construct	Cronbach’s alpha	Internal consistency
Perceived product novelty	.860	Good
Perceived product meaningfulness	.893	Good
Purchase intention	.929	Excellent
Brand familiarity	.953	Excellent
Product involvement	.940	Excellent

Table 9: Cronbrach’s alpha

4.1.4 Means customer empowerment strategy

Several ANOVA’s are conducted to check if the measurements are significantly different between the four empowerment strategies. In Table 10, the means and standard deviations per

group are shown. In the following section, all these results will be discussed separately to test the hypotheses.

	Zero empowerment	Select empowerment	Create empowerment	Full empowerment	Zero empowerment	Full empowerment
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
	Advertisement 1				Advertisement 2	
Perceived product novelty	3.13 (1.17)	3.33 (1.47)	3.49 (1.28)	3.03 (1.27)	3.87 (1.37)	4.69 (1.50)
Perceived product meaningfulness	4.21 (1.48)	4.36 (1.38)	4.07 (1.22)	4.24 (1.27)	4.24 (1.34)	4.21 (1.41)
Purchase intention	4.44 (1.39)	4.56 (1.46)	4.23 (1.41)	4.24 (1.59)	4.69 (1.50)	4.44 (1.44)
Product involvement	4.26 (1.71)	4.25 (1.82)	4.43 (1.75)	4.41 (1.71)	4.22 (1.73)	4.45 (1.75)
	N = 70	N = 70	N = 70	N = 70	N = 140	N = 140

All variables are measured on seven-point scales (1= strongly disagree; 7 = strongly agree).

Table 10: Overview of means for customer empowerment strategies

4.1.5 Outcomes of control variables and manipulation check

It has already been discussed in the descriptive section that there were no significant differences between the eight groups for age, gender and level of education. As mentioned earlier, product involvement might influence the decision making of customers. Therefore, it is important that there are no significant differences between the eight conditions for this control variable. The outcomes of the ANOVA showed that there are no significant differences between the eight conditions ($F(7,272) = 0.521, p = .82$). Thus, the further analyses are not influenced by this variable. Besides, the results of the manipulation check of brand familiarity showed that Lay's is seen as a brand which has high brand familiarity, while Terra is seen as a brand which has low brand familiarity. The brand familiarity differs significantly between the groups ($F(7,272) = 212.88, p = .00$), which was the purpose of the experience and is therefore also reflected in conditions 1 to 4 compared to 5 to 8. The results of these measurements are shown in Appendix 5.

4.2 Hypotheses testing

In the first place One-way analyses of variance (ANOVA) are used to measure the effect of customer empowerment on purchase intention. Secondly, different regression analyses are performed to test if perceived product novelty and perceived product meaningfulness mediate the relationship between customer empowerment and purchase intention. Different regressions analyses, where the mediating effect is combined with the moderating effect, are performed to test the effect of the moderator brand familiarity. Finally, logistic regression was performed to test if the choice for Lay's or Terra can be explained by one or more included predictors in this study.

4.2.2 Customer empowerment

The effect of customer empowerment on purchase intention is studied. Hypothesis 1 states that people differ in purchase intention followed from the level of customer empowerment. The One-Way ANOVA tested whether the dependent variable purchase intention differs across the four customer empowerment levels (full, create, select, zero). Table 11 shows that the means for the different empowerment categories are different. The mean for the select empowerment is the highest, but the test shows no significant difference in purchase intention between the four groups ($F(3, 276) = .83, p = 0.477$). The Tukey post-hoc test was performed to test if the four empowerment strategies differ significantly from each other. The empowerment to select (mean = 4.56), the empowerment to create (mean = 4.23), as well as the full-empowerment (mean = 4.24) produced no significantly higher intention to purchase than the zero-empowerment strategy (mean = 4.44; $p = .97, p = 0.82, p = 0.85$, respectively). So, based on these results H_1 : The higher the customer empowerment in the new product development, the higher the effect on purchase intention of nonparticipating costumers ('observers'), is rejected.

In the second part of the survey, only full empowerment and zero empowerment were investigated. These results have also been compared with each other but show no significant difference for purchase intention ($F(1,278) = 2.14, p = 0.144$). These results are also included in Table 11.

	Zero empowerment	Select empowerment	Create empowerment	Full empowerment	Significance Tests	Zero empowerment	Full empowerment	Significance Tests
	M (SD)	M (SD)	M (SD)	M (SD)	F-Value (p-value)	M (SD)	M (SD)	F-Value (p-value)
	Advertisement 1					Advertisement 2		
Purchase intention	4.44 (1.39)	4.56 (1.46)	4.23 (1.41)	4.24 (1.59)	0.832 (0.477)	4.69 (1.50)	4.44 (1.44)	2.144 (0.144)
	N = 70	N = 70	N = 70	N = 70		N = 140	N = 140	

All variables are measured on seven-point scales (1= strongly disagree; 7 = strongly agree). Significant difference between empowerment scenarios are observed for purchase intention: (Zero – Select) ($p>.967$); (Zero – Create) ($p>0.822$); (Zero – Full) ($p>0.851$)

Table 11: Overview of purchase intention for customer empowerment strategies

4.2.3 Mediation analysis - Product creativity

The mediation analyses are conducted to check whether product creativity, which consists of the two dimensions product novelty and product meaningfulness, mediates the relationship between the different levels of customer empowerment and purchase intention. So, these analyses determine whether the variable " product creativity " (partly) explains the relationship between the independent and the dependent variable. In this paragraph hypotheses 2, 3, 4, 5, 6 and 7 are tested.

4.2.3.1 Product novelty

A regression analysis is conducted to test whether the perceived product novelty mediates the relationship between the level of customer empowerment and purchase intention. Figure 3 shows the conceptual model of this mediating relationship.

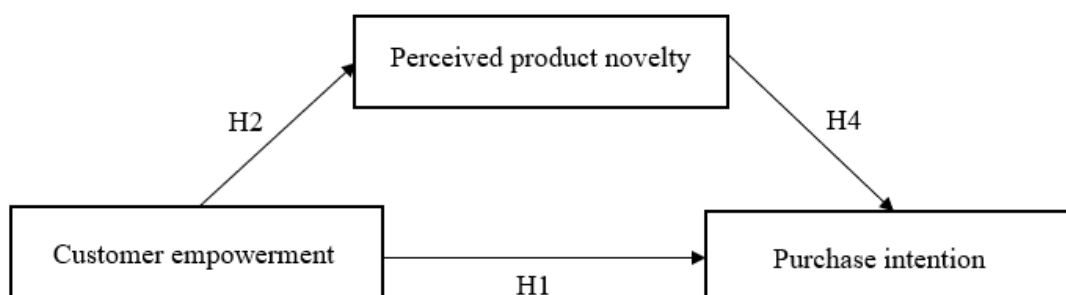


Figure 3: Mediation effect Perceived product novelty

To test this mediation effect the method of Baron and Kenny (1986) is used. Baron and Kenny's method has been cited in thousands of scientific papers. They suggested that mediation is tested through three regression models. For mediation to occur, all three pathways need to be significant (Baron & Kenny, 1986). The steps are as follows:

1. The relationship between customer empowerment and purchase intention must be significant. The model for this regression analysis will be as follows:
$$\text{purchase intention} = \alpha + \beta_1 * \text{full empowerment} + \beta_2 * \text{create empowerment} + \beta_3 * \text{select empowerment} + \varepsilon.$$
2. The relationship between customer empowerment and the perceived product novelty must be significant. The model for this regression analysis will be as follows:
$$\text{perceived product novelty} = \alpha + \beta_4 * \text{full empowerment} + \beta_5 * \text{create empowerment} + \beta_6 * \text{select empowerment} + \varepsilon.$$
3. The last step is making a regression model with all the variables to see if there is a change in the β of customer empowerment. The model will be as follows:
$$\text{purchase intention} = \alpha + \beta_7 * \text{full empowerment} + \beta_8 * \text{create empowerment} + \beta_9 * \text{select empowerment} + \beta_{10} * \text{perceived product novelty} + \varepsilon.$$

A distinction can be made between full and partial mediation. In full mediation, the relationship between X and Y is fully explained by M (mediator). This means that the direct relationship between X and Y is not significant when we also include M as a predictor of Y. In the case of partial mediation, the relationship between X and Y is also partly explained by M, but a direct relationship between X and Y also remains. Full mediation is considered by Baron and Kenny (1986) as the strongest form of mediation. Even though the method of Baron and Kenny has been extensively used by scientist, this approach also has limitations. Other studies often show that the mediator variable only represents a part of the relationship between X and Y, because the direct relationship can also be explained by other / omitted mediators. In addition, it can also be stated that a non-significant effect of the total effect, which consists of both the direct and indirect effect, does not directly mean that no mediating effect can be established. The mediating effect and the direct effect can be opposite in their value, in a way that these effects can cancel each other out. Therefore, an alternative is to see whether the indirect effect ($a \times b$) is significant or not. The Sobel test can be used to test whether this indirect effect is significant. The Sobel test works well in a large sample, but it is recommended to use the bootstrapping

method to determine whether there is an indirect effect, because this test has a higher power in comparison to the Sobel test suggested by Baron and Kenny (1986). The macro PROCESS, provided by Preacher and Hayes (2004), is downloaded and is used as an extension in SPSS to perform the bootstrap test. The results discussed here are shown in Table 12 at the end of this section.

To measure the first pathway, a linear regression was performed on the dependent variable purchase intention with customer empowerment as the predictor. Since customer empowerment is a categorical variable with four groups, three dummy variables (full, create, select) have been created with zero empowerment as the base case to perform the regression model. The model explained 0.9% of the variance ($R^2 = .009$, $F(3, 276) = .832$, $p = .477$). Customer empowerment (full, create, select) is not significantly related with purchase intention ($\beta = -.200$, $t(276) = -.81$, $p = .420$); ($\beta = -.214$, $t(276) = -.87$, $p = .387$); ($\beta = .114$, $t(276) = .46$, $p = .645$), respectively. This shows that pathway 1 (H_1) is rejected.

A linear regression is also performed to measure the second pathway, with the dependent variable ‘perceived product novelty’ and the predictor ‘customer empowerment’. The model explained 1.8% of the variance ($R^2 = .018$, $F(3, 276) = 1.72$, $p = .163$). This shows that customer empowerment is not significantly associated with perceived product novelty ($\beta = -.100$, $t(276) = -.45$, $p = .650$); ($\beta = .357$, $t(276) = 1.62$, $p = .106$); ($\beta = .200$, $t(276) = .91$, $p = .365$), respectively. So, pathway 2 (H_2) is rejected.

To measure the last pathway, a linear regression is performed on the dependent variable ‘purchase intention’ with ‘customer empowerment’ and ‘perceived product novelty’ as predictors. The model explained 18% of the variance ($R^2 = .182$, $F(4, 275) = 15.28$, $p = .000$). Customer empowerment was not significantly associated with purchase intention ($\beta = -.153$, $t(275) = -.68$, $p = .498$); ($\beta = -.382$, $t(275) = -1.69$, $p = .093$); ($\beta = .020$, $t(275) = .09$, $p = .928$), respectively. To confirm whether perceived product novelty mediates the relationship between customer empowerment and purchase intention, the Bootstrap test is conducted to determine whether the indirect effect is significant. The bootstrapping analysis shows that the confidence interval 95% does include zero (-.3044 to 0.0292), confirming the indirect effect. These results of the bootstrap test suggest that there is no mediation effect. On the other hand, perceived product novelty was significantly and positively associated with purchase intention ($\beta = .469$, $t(275) = 7.6$, $p = .000$), which means that when the perceived product novelty is higher, purchase intention is also higher.

In conclusion, H₂: Customer empowerment in the new product development process has a positive effect on the perceived product novelty of nonparticipating costumers (“observers”), is rejected and H₄: Perceived product novelty will have a positive effect on the purchase intention of nonparticipating costumers (“observers”), is confirmed. The mediating effect of the perceived product novelty does not exist in this research model, therefore, H₆: Perceived product novelty mediates the relationship between customer empowerment and purchase intention of nonparticipating costumers (“observers”), is rejected.

The data from the second part of the survey is used to compare an unfamiliar brand with full empowerment with a familiar brand with zero empowerment. Here, the model for the first pathway explained 0.8% of the variance ($R^2 = .008$, $F(1, 278) = 2.15$, $p = 0.144$). The results show that the level of customer empowerment is not significantly related to purchase intention ($\beta = -.257$, $t(278) = -1.46$, $p = .144$). This shows again that pathway 1 (H₁) is rejected.

The model for the second pathway explained 7.6% of the variance ($R^2 = .076$, $F(1, 278) = 22.9038$, $p = .000$). The results show that an unfamiliar brand labeled as fully empowered induce a higher perceived product novelty among observing customers relative to a familiar brand that does not empower customers ($\beta = .821$, $t(278) = 4.79$, $p = .000$). So, pathway 2 (H₂) is confirmed. The result needs to be interpreted with caution though as respondents in the second part of the survey were primed with different stimulus in the first part.

The model for the last pathway explained 57% of the variance ($R^2 = .570$, $F(2, 277) = 183.56$, $p = .000$). Here customer empowerment was significantly associated with purchase intention ($\beta = .375$, $t(277) = 3.12$, $p = .002$), which means that the perceived novelty is higher when the company uses the full empowerment strategy compared to the zero empowerment strategy. To confirm whether perceived product novelty mediates the relationship between customer empowerment and purchase intention, the Bootstrap results are analyzed to determine whether the indirect effect is significant. The bootstrapping analysis shows that the confidence interval 95% does not include zero (-.8902 to -.3702), confirming the indirect effect. These results of the bootstrap test suggest that there is a mediation effect. The, perceived product novelty was significantly and positively associated with purchase intention ($\beta = .770$, $t(277) = 19.03$, $p = .000$), which means that when the perceived product novelty is higher, purchase intention is also higher.

In conclusion, based on the results of the second part of the survey H₂: Customer empowerment in the new product development process has a positive effect on the perceived product novelty of nonparticipating costumers (“observers”), H₄: Perceived product novelty will have a positive effect on the purchase intention of nonparticipating costumers (“observers”), and H₆: Perceived product novelty mediates the relationship between customer empowerment and purchase intention of nonparticipating costumers (“observers”), are confirmed. The reason for the deviating results will be discussed in the next chapter.

	Model 1	Model 2	Model 3
	Pathway 1	Pathway 2	Pathway 3
Dependent variables			
	Purchase intention	Perceived product novelty	Purchase intention
Advertisement 1			
Independent variables			
Full empowerment	-.200	-.100	-.153
Create empowerment	-.214	.357	-.382
Select empowerment	.114	.200	.020
Perceived product novelty	–	–	.469***
R²	.009	.018	0.182***
Confidence interval Bootstrap			(-.3044 to 0.0292)
Advertisement 2			
Independent variables			
Full empowerment unfamiliar brand	-.257	-.821	.375**
Perceived product novelty	–	–	.770***
R²	.008	.076***	0.570***
Confidence interval Bootstrap			(-.8902 to -0.3702)
**p < 0.01			
***P < .001			

Table 12: Mediation Regression results for perceived product novelty

4.2.3.2 Product meaningfulness

Also, a regression analysis is conducted to test whether the perceived product meaningfulness mediates the relationship between the level of customer empowerment and purchase intention. Figure 4 shows the conceptual model of this mediating relationship.

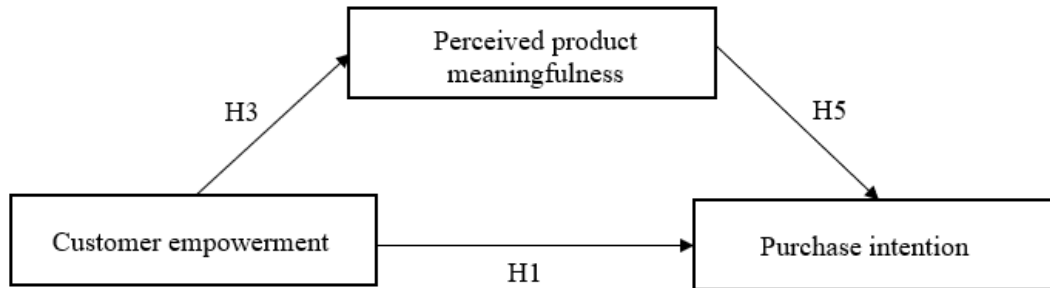


Figure 4: Mediation effect Perceived product meaningfulness

Again, mediation is tested using three models. All three pathways need to be significant for mediation to occur.

1. The relationship between customer empowerment and purchase intention must be significant. The model for this regression analysis will be as follows:
$$\text{purchase intention} = \alpha + \beta_1 * \text{full empowerment} + \beta_2 * \text{create empowerment} + \beta_3 * \text{select empowerment} + \varepsilon.$$
2. The relationship between customer empowerment and the perceived product meaningfulness must be significant. The model for this regression analysis will be as follows:
$$\text{perceived product meaningfulness} = \alpha + \beta_4 * \text{full empowerment} + \beta_5 * \text{create empowerment} + \beta_6 * \text{select empowerment} + \varepsilon.$$
3. The last step is making a regression model with all the variables to see if there is a change in the β of customer empowerment. The model will be as follows:
$$\text{purchase intention} = \alpha + \beta_7 * \text{full empowerment} + \beta_8 * \text{create empowerment} + \beta_9 * \text{select empowerment} + \beta_{10} * \text{perceived product meaningfulness} + \varepsilon.$$

The results discussed here are shown in Table 13 at the end of this section.

To measure the first pathway, a linear regression was performed on the dependent variable “purchase intention” with “customer empowerment” as the predictor. Again, the three dummy variables are included to perform the regression model. The model explained 0.9% of the variance ($R^2 = .009$, $F(3, 276) = .832$, $p = .477$). Customer empowerment is not significantly related with purchase intention ($\beta = -.200$, $t(276) = -.81$, $p = .420$); ($\beta = -.214$, $t(276) = -.87$, $p = .387$); ($\beta = .114$, $t(276) = .46$, $p = .645$), respectively. This shows again that pathway 1 (H_1) is rejected.

A linear regression is also performed to measure the second pathway, with the dependent variable “perceived product meaningfulness” and the predictor “customer empowerment”. The model explained 0.6% of the variance ($R^2 = .006$, $F(3, 276) = .536$, $p = .658$). This shows that customer empowerment is not significantly associated with perceived product meaningfulness ($\beta = .029$, $t(276) = .13$, $p = .900$); ($\beta = -.143$, $t(276) = -.63$, $p = .529$); ($\beta = .143$, $t(276) = .63$, $p = .529$), respectively. So, pathway 2 (H_3) is rejected.

To measure the last pathway, a linear regression is performed on the dependent variable “purchase intention” with “customer empowerment” and “perceived product meaningfulness” as predictors. The model explained 45.1% of the variance ($R^2 = .451$, $F(4, 275) = 56.386$, $p = .000$). Customer empowerment was not significantly associated with purchase intention ($\beta = -.221$, $t(275) = -1.20$, $p = .233$); ($\beta = -.110$, $t(275) = -.60$, $p = .551$); ($\beta = .010$, $t(275) = .06$, $p = .956$), respectively. To confirm whether perceived product meaningfulness mediates the relationship between customer empowerment and purchase intention, the Bootstrap test is conducted to determine whether the indirect effect is significant. The bootstrapping analysis shows that the confidence interval 95% does include zero (-.2643 to 0.2151), confirming the indirect effect. These results of the bootstrap test suggest that there is no mediation effect. On the other hand, perceived product novelty was significantly and positively associated with purchase intention ($\beta = .728$, $t(275) = 14.87$, $p = .000$), which means that when the perceived product novelty is higher, purchase intention is also higher.

In conclusion, H_3 : Customer empowerment in the new product development process has a positive effect on the perceived product meaningfulness of nonparticipating costumers (“observers”) is rejected and H_5 : Perceived product meaningfulness will have a positive effect on the purchase intention of nonparticipating costumers (“observers”), is confirmed. The mediating effect of the perceived product meaningfulness does not exist in this research model,

therefore, H7: Perceived product meaningfulness mediates the relationship between customer empowerment and purchase intention of nonparticipating costumers (“observers”), is rejected.

The data from the second part of the survey was also analyzed to test the mediating effect of perceived product meaningfulness. The results of the three regression models give no different outcomes compared to the results of advertisement one (see Table 13) and will therefore not be discussed further.

	Model 1	Model 2	Model 3
	Pathway 1	Pathway 2	Pathway 3
Dependent variables			
	Purchase intention	Perceived product meaningfulness	Purchase intention
Advertisement 1			
Independent variables			
Full empowerment	-.200	.029	-.221
Create empowerment	-.214	-.143	-.110
Select empowerment	.114	.143	.010
Perceived product meaningfulness	–	–	.728***
R²	.009	.006	0.451***
Confidence interval Bootstrap			(-.2643 to 0.2151)
Advertisement 2			
Independent variables			
Full empowerment unfamiliar brand	-.257	-.036	-.230
Perceived product meaningfulness	–	–	.750***
R²	.008	.000	0.496***
Confidence interval Bootstrap			(-.2597 to 0.2188)
**p < 0.01			
***P < .001			

Table 13: Mediation Regression results for perceived product meaningfulness

4.2.4 Mediation analysis combined with moderation analysis – brand familiarity

In the following paragraphs hypotheses 8, 9, and 10 are tested again based on mediation analyses. To do this research in the correct way, the analyses are combined with the moderation effect of brand familiarity. In the previous section, the mediation analyses were checked for the overall sample. These analyses showed that in this research perceived product novelty and perceived product meaningfulness do not mediate the relationship between customer empowerment and purchase intention. Since this study also explores if brand familiarity has an effect on these relationships, this section provides the mediation analysis again, first only the familiar brand and then only for the unfamiliar brand. Since in the second part of the survey respondents only had the opportunity to see an advertisement with full empowerment of Terra and zero empowerment of Lay's, it is not possible to analyze this data to detect a moderation effect, so only the data of the first advertisement is examined in this section.

4.2.4.1 Purchase intention and product novelty

A regression analysis is conducted for both the familiar and the unfamiliar brand to test whether the perceived product novelty mediates the relationship between the level of customer empowerment and purchase intention. Figure 5 shows the conceptual model of this moderating and mediating relationship.

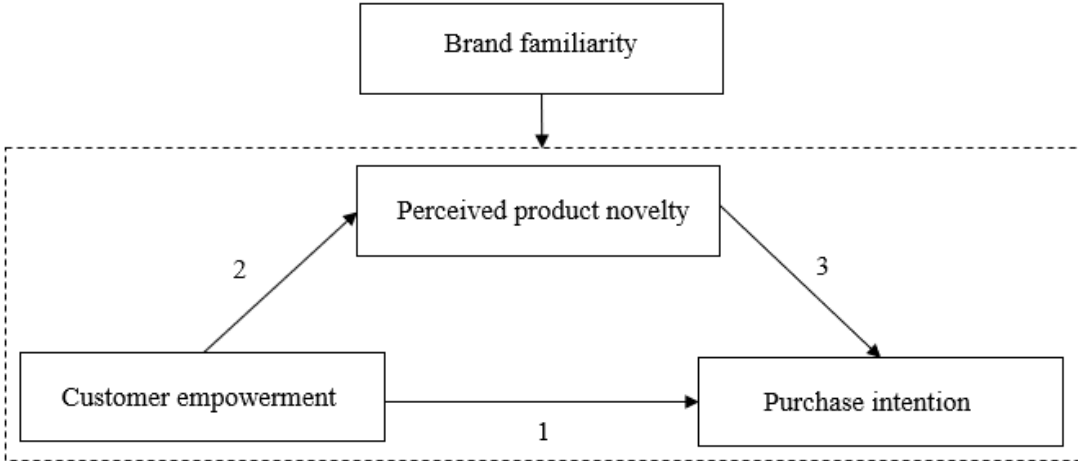


Figure 5: Moderation effect brand familiarity on mediating effect perceived product novelty

The results discussed here are shown in Table 14 at the end of this section.

First pathway

High brand familiarity

To measure the first pathway, a linear regression was performed on the dependent variable ‘‘purchase intention’’ with ‘‘customer empowerment’’ as predictor. Again, the three dummy variables are included to perform the regression model. The model explained 0.0% of the variance ($R^2 = .004$, $F(3, 136) = .20$, $p = .899$). Customer empowerment is not significant related with purchase intention ($\beta = .029$, $t(136) = 0.08$, $p = .936$); ($\beta = -.057$, $t(136) = -.16$, $p = .872$); ($\beta = .200$, $t(136) = 0.56$, $p = .573$), respectively.

Low brand familiarity

The same linear regression is performed for the low familiar brand. This model explained 0.2% of the variance ($R^2 = .020$, $F(3, 136) = .944$, $p = .421$). Customer empowerment is not significant related with purchase intention ($\beta = -.429$, $t(136) = -1.22$, $p = .223$); ($\beta = -.371$, $t(136) = -1.06$, $p = .291$); ($\beta = .029$, $t(136) = 0.08$, $p = .935$), respectively.

These results show that pathway 1 is rejected for both the familiar as the unfamiliar brand.

Second pathway

High brand familiarity

A linear regression is also performed to measure the second pathway, with the dependent variable ‘‘perceived product novelty’’ and the predictor ‘‘customer empowerment’’. The model explained 3.6% of the variance ($R^2 = .036$, $F(3, 136) = 1.67$, $p = .176$). This shows that the create empowerment has a significant effect on perceived product novelty ($\beta = .714$, $t(136) = 2.22$, $p = .028$), but full and select empowerment are not significantly associated with perceived product novelty ($\beta = .286$, $t(136) = .89$, $p = .375$); ($\beta = .343$, $t(136) = 1.067$, $p = .288$), respectively.

Low brand familiarity

The same linear regression is performed for the low familiar brand. The model explained 3.2% of the variance ($R^2 = .032$, $F(3, 136) = 1.49$, $p = .220$). This shows that the level of customer empowerment is not significantly associated with perceived product novelty ($\beta = -.486$, $t(136) = -1.65$, $p = .101$); ($\beta = -.619$, $t(136) = -1.04$, $p = .392$); ($\beta = .057$, $t(136) = 1.94$, $p = .846$), respectively.

So pathway 2 is partly confirmed for the familiar brand and completely rejected for the unfamiliar brand.

Third pathway

High brand familiarity

To measure the last pathway, a linear regression is performed on the dependent variable ‘‘purchase intention’’ with ‘‘customer empowerment’’ and ‘‘perceived product novelty’’ as predictors. The model explained 16.9% of the variance ($R^2 = .169$, $F(4, 135) = 6.87$, $p = .000$). Customer empowerment was not significantly associated with purchase intention ($\beta = -.099$, $t(135) = -.306$, $p = .760$); ($\beta = -.377$, $t(135) = -1.143$, $p = .255$); ($\beta = .046$, $t(135) = .142$, $p = .887$), respectively. To confirm whether perceived product novelty mediates the relationship between customer empowerment and purchase intention, the Bootstrap test is conducted to determine whether the indirect effect is significant. The bootstrapping analysis shows that the confidence interval 95% does include zero (-.2617 to 0.2224), confirming the indirect effect. These results of the bootstrap test suggest that there is no mediation effect. On the other hand, perceived product novelty was significantly and positively associated with purchase intention ($\beta = .448$, $t(135) = 5.18$, $p = .000$), which means that when the perceived product novelty is higher, purchase intention is also higher.

Low brand familiarity

The same linear regression is performed for the low familiar brand. The model explained 20% of the variance ($R^2 = .208$, $F(4, 135) = 8.86$, $p = .000$). Customer empowerment was not significantly associated with purchase intention ($\beta = -.175$, $t(135) = -0.55$, $p = .584$); ($\beta = -.371$, $t(135) = -1.18$, $p = .242$); ($\beta = -.001$, $t(135) = -.004$, $p = .997$), respectively. To confirm whether perceived product novelty mediates the relationship between customer empowerment and purchase intention, the Bootstrap test is conducted to determine whether the indirect effect is significant. The bootstrapping analysis shows that the confidence interval 95% does include zero (-.2617 to 0.2224), confirming the indirect effect. These results of the bootstrap test suggest that there is no mediation effect. On the other hand, perceived product novelty was significantly and positively associated with purchase intention ($\beta = .521$, $t(135) = 5.66$, $p = .000$), which means that when the perceived product novelty is higher, purchase intention is also higher.

So, pathway 3 is rejected for both the familiar as the unfamiliar brand.

In conclusion. H₈: Customer empowerment in the new product development process will have less effect on the purchase intention when there is a high level of brand familiarity than when

there is a low level of brand familiarity and H₉: Customer empowerment in the new product development process will have less effect on the perceived product novelty when there is a high level of brand familiarity than when there is a low level of brand familiarity, will be rejected.

	Model 1	Model 2	Model 3
	Pathway 1	Pathway 2	Pathway 3
Dependent variables			
	Purchase intention	Perceived product novelty	Purchase intention
High brand familiarity			
Independent variables			
Full empowerment	.029	.286	-.099
Create empowerment	-.057	.714*	-.377
Select empowerment	.200	.343	.046
Perceived product novelty	–	–	.448***
R²	.004	.036	0.169***
Confidence interval Bootstrap			(-.2617 to 0.2224)
Low brand familiarity			
Independent variables			
Full empowerment	-.429	-.486	-.175
Create empowerment	-.371	-.619	-.371
Select empowerment	.029	.057	-.001
Perceived product novelty	–	–	.521***
R²	.020	.032	0.208***
Confidence interval Bootstrap			(-.2617 to 0.2224)
*p < 0.05			
**p < 0.01			
***P < .001			

Table 14: Mediation / Moderation Regression results for perceived product novelty

4.2.4.2 Product meaningfulness

A regression analysis is conducted for both the familiar and the unfamiliar brand to test whether the perceived product meaningfulness mediates the relationship between the level of customer empowerment and purchase intention. Figure 6 shows the conceptual model of this moderating and mediating relationship.

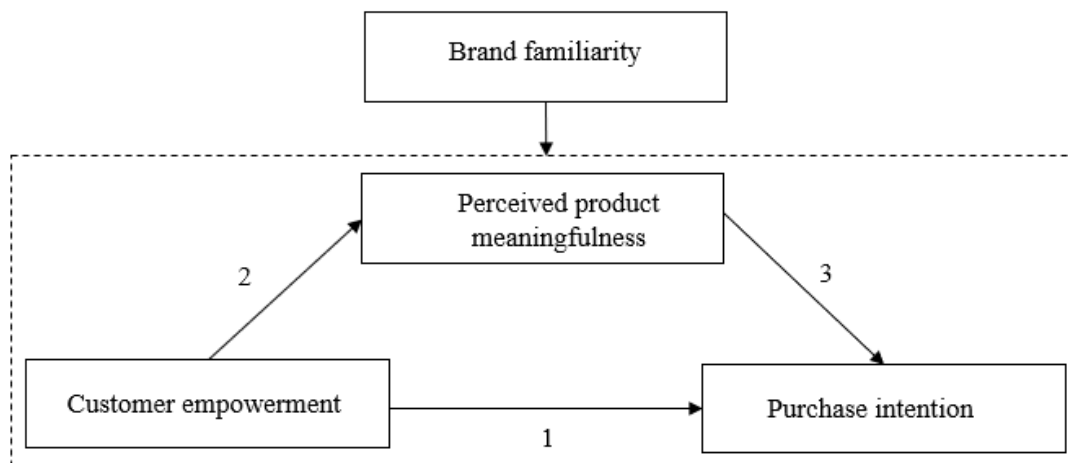


Figure 6: Moderation effect brand familiarity on mediating effect perceived product meaningfulness

The results discussed here are shown in Table 15 at the end of this section.

First pathway

High brand familiarity

To measure the first pathway, a linear regression was performed on the dependent variable ‘purchase intention’ with ‘customer empowerment’ as predictor. Again, the three dummy variables are included to perform the regression model. The model explained 0.0% of the variance ($R^2 = .004$, $F(3, 136) = .20$, $p = .899$). Customer empowerment is not significantly related with purchase intention ($\beta = .029$, $t(136) = 0.08$, $p = .936$); ($\beta = -.057$, $t(136) = -.16$, $p = .872$); ($\beta = .200$, $t(136) = 0.56$, $p = .573$), respectively.

Low brand familiarity

The same linear regression is performed for the low familiar brand. This model explained 0.2% of the variance ($R^2 = .020$, $F(3, 136) = .944$, $p = .421$). Customer empowerment is not significantly related with purchase intention ($\beta = -.429$, $t(136) = -1.22$, $p = .223$); ($\beta = -.371$, $t(136) = -1.06$, $p = .291$); ($\beta = .029$, $t(136) = 0.08$, $p = .935$), respectively.

These results show that pathway 1 is rejected for both the familiar as the unfamiliar brand.

Second pathway

High brand familiarity

A linear regression is also performed to measure the second pathway, with the dependent variable ‘perceived product meaningfulness’ and the predictor ‘customer empowerment’. The model explained 0.4% of the variance ($R^2 = .004$, $F(3, 136) = 0.18$, $p = .908$). This shows that the level of customer empowerment is not significantly associated with perceived product novelty ($\beta = .086$, $t(136) = 0.266$, $p = .791$); ($\beta = -.143$, $t(136) = -.443$, $p = .658$); ($\beta = .029$, $t(136) = 0.89$, $p = .929$), respectively.

Low brand familiarity

The same linear regression is performed for the low familiar brand. The model explained 1.2% of the variance ($R^2 = .012$, $F(3, 136) = 0.55$, $p = .653$). This shows that the level of customer empowerment is not significantly associated with perceived product novelty ($\beta = -.029$, $t(136) = -0.088$, $p = .930$); ($\beta = -.143$, $t(136) = -.442$, $p = .660$); ($\beta = .257$, $t(136) = 0.80$, $p = .428$), respectively.

So pathway 2 is rejected for both the familiar as the unfamiliar brand.

Third pathway

High brand familiarity

To measure the last pathway, a linear regression is performed on the dependent variable ‘purchase intention’ with ‘customer empowerment’ and ‘perceived product meaningfulness’ as predictors. The model explained 45.9% of the variance ($R^2 = .459$, $F(4, 135) = 28.68$, $p = .000$). Customer empowerment was not significantly associated with purchase intention ($\beta = -.035$, $t(135) = -.134$, $p = .984$); ($\beta = .049$, $t(135) = .187$, $p = .852$); ($\beta = .179$, $t(135) = .683$, $p = .496$), respectively. To confirm whether perceived product novelty mediates the relationship between customer empowerment and purchase intention, the Bootstrap test is conducted to determine whether the indirect effect is significant. The bootstrapping analysis shows that the confidence interval 95% does include zero (-.2512 to 0.2755), confirming the indirect effect. These results of the bootstrap test suggest that there is no mediation effect. On the other hand, perceived product novelty was significantly and

positively associated with purchase intention ($\beta = .742$, $t(135) = 10.66$, $p = .000$), which means that when the perceived product meaningfulness is higher, purchase intention is also higher.

Low brand familiarity

The same linear regression is performed for the low familiar brand. The model explained 44.8% of the variance ($R^2 = .448$, $F(4, 135) = 27.34$, $p = .000$). Customer empowerment was not significantly associated with purchase intention ($\beta = -.408$, $t(135) = -1.546$, $p = .124$); ($\beta = -.269$, $t(135) = -1.02$, $p = .310$); ($\beta = -.155$, $t(135) = -.587$, $p = .558$), respectively. To confirm whether perceived product novelty mediates the relationship between customer empowerment and purchase intention, the Bootstrap test is conducted to determine whether the indirect effect is significant. The bootstrapping analysis shows that the confidence interval 95% does include zero (-.2512 to 0.2755), confirming the indirect effect. These results of the bootstrap test suggest that there is no mediation effect. On the other hand, perceived product novelty was significantly and positively associated with purchase intention ($\beta = .715$, $t(135) = 10.22$, $p = .000$), which means that when the perceived product novelty is higher, purchase intention is also higher.

So, pathway 3 is rejected for both the familiar as the unfamiliar brand.

In conclusion. H_{10} : Customer empowerment in the new product development process will have less effect on the perceived product meaningfulness when there is a high level of brand familiarity than when there is a low level of brand familiarity, will be rejected.

	Model 1	Model 2	Model 3
	Pathway 1	Pathway 2	Pathway 3
Dependent variables			
	Purchase intention	Perceived product meaningfulness	Purchase intention
High brand familiarity			
Independent variables			
Full empowerment	.029	.086	-.035
Create empowerment	-.057	-.143	.049
Select empowerment	.200	.029	.179
Perceived product meaningfulness	–	–	.742***
R²	.004	.004	0.459***
Confidence interval Bootstrap			(-.2512 to 0.2755)
Low brand familiarity			
Independent variables			
Full empowerment	-.429	-.029	-.408
Create empowerment	-.371	-.143	-.269
Select empowerment	.029	.257	-.155
Perceived product meaningfulness	–	–	.715***
R²	.020	.012	0.448***
Confidence interval Bootstrap			(-.2512 to 0.2755)
*p < 0.05			
**p < 0.01			
***P < .001			

Table 15: Mediation / Moderation Regression results for perceived product meaningfulness

4.3 Choice model

In the previous chapter, the reason for performing a choice model test is discussed. To give a clear overview of what is investigated, a conceptual model is included in figure 7.

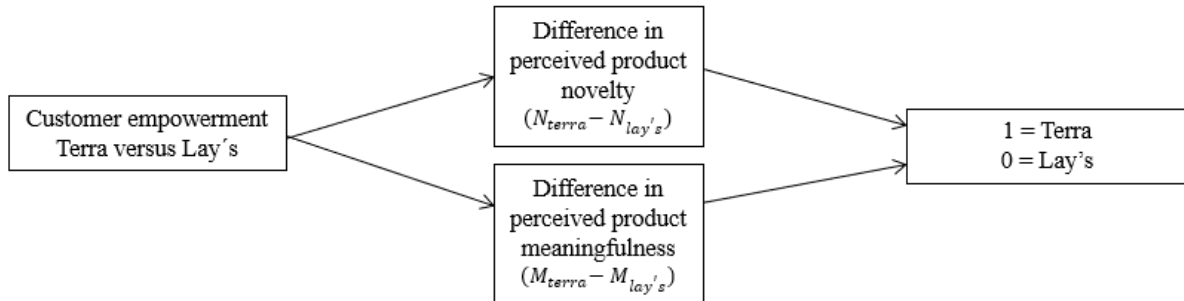


Figure 7: Conceptual model choice model

The eight different surveys consisted of eight different combinations of two advertisements. These options were already shown in Table 4. If we look at the customer empowerment of Terra versus the customer empowerment of Lay's in these advertisement combinations, two different options can be distinguished. One possibility is that Terra has more customer empowerment than Lay's and the other possibility is that the customer empowerment is equal. For survey 1 and 8 applies that the customer empowerment was equal for both brands and for the other 6 surveys, the customer empowerment of Terra was more than the of Lay's. The choice model is conducted with the binary logistic regression method in SPSS. The results of the Omnibus Tests of Model Coefficients show that the model yields a chi-square of 75.586, which is highly significant, $p = 0.000$. The output of this test in SPSS is included in Appendix 6. Overall, the model can predict 71.1% of the cases correctly. The current model correctly classifies 118 customers who did choose for Lay's but misclassifies 36 customers (it correctly classifies 76.6% of cases). The model also correctly classifies 81 customers who did choose for Terra but misclassifies 45 others (it correctly classifies 64.3% of cases). Since the further results of this logistic regression do not show any significant results for customer empowerment, the interpretation is not further discussed. From these results it can also be concluded that the customer empowerment strategy has no significant effect on the customer's choice between Terra and Lay's.

4.4 Summary of the results

In this chapter, all the hypotheses are tested and presented. Table 16 shows an overview of the confirmed and rejected hypotheses.

Hypotheses	Confirmed / rejected
<i>H₁</i> The higher the customer empowerment in the new product development, the higher the effect on purchase intention of nonparticipating costumers (“observers”).	Rejected
<i>H₂</i> Customer empowerment in the new product development process has a positive effect on the perceived product novelty of nonparticipating costumers (“observers”).	Rejected and Confirmed
<i>H₃</i> Customer empowerment in the new product development process has a positive effect on the perceived product meaningfulness of nonparticipating costumers (“observers”).	Rejected
<i>H₄</i> Perceived product novelty will have a positive effect on the purchase intention of nonparticipating costumers (“observers”).	Confirmed
<i>H₅</i> Perceived product meaningfulness will have a positive effect on the purchase intention of nonparticipating costumers (“observers”).	Confirmed
<i>H₆</i> Perceived product novelty mediates the relationship between customer empowerment and purchase intention of nonparticipating costumers (“observers”).	Rejected and Confirmed
<i>H₇</i> Perceived product meaningfulness mediates the relationship between customer empowerment and purchase intention of nonparticipating costumers (“observers”).	Rejected
<i>H₈</i> Customer empowerment in the new product development process will have less effect on purchase intention when there is a high level of brand familiarity than when there is a low level of brand familiarity	Rejected
<i>H₉</i> Customer empowerment in the new product development process will have less effect on the perceived product novelty when there is a high level of brand familiarity than when there is a low level of brand familiarity.	Rejected
<i>H₁₀</i> Customer empowerment in the new product development process will have less effect on the perceived product meaningfulness when there is a high level of brand familiarity than when there is a low level of brand familiarity.	Rejected

Table 16: Overview rejected and confirmed hypotheses

5. Conclusion

In this last chapter, the empirical findings that are presented in the previous chapter are discussed. After this general discussion, the managerial implications and the research limitations are provided. Finally, some recommendations for future research are given. The chapter ends with a conclusion, here the findings formulate answers for the questions that are central in this research and give a substantiated answer on the problem statement ‘‘Have different customer empowerment strategies in new product development different effects on purchase intention and can these effects be accounted to differences in perceived product creativity of customers?’’.

5.1 General discussion

The objective of this study was to identify the effect of product creativity following customer empowerment in the new product development on purchase intention. And within this research also the moderating effect of brand familiarity is measured. The main findings of this study compared to the existing literature will be discussed in this paragraph.

This thesis focused on the four different strategies of customer empowerment, which are full, create, select and zero empowerment. The results showed that purchase intention is not significantly higher when the level of customer empowerment increases or decreases. This finding is not directly in line with earlier findings, where researchers conclude from their results that customer empowerment has a positive effect on purchase intention. In the study of Nishikawa et al. (2017), they found that labeling crowdsourced new products as ‘‘customer ideated’’ versus not mentioning the specific source of design at the point of purchase positively affects the product’s actual market performance. Also, Fuchs & Schreier (2011) found that nonparticipating customers develop significantly stronger behavioral intentions when customers are empowered in the new product development process compared to the zero empowerment scenario. The results of this thesis showed that purchase intention is higher when the perceived product novelty is higher. The same applies to perceived product meaningfulness. But both dimensions of product creativity are no mediating variables between customer empowerment and purchase intention according to the results of the first advertisement in the survey. For the results of the second advertisement where only the zero and full empowerment strategies were included, a mediation effect of product novelty is established. Further research could help to better understand these results. Some of these findings are in line with earlier results of existing research. Novelty and meaningfulness are two measurements to see how

consumers perceive a product. Different studies revealed that customer perceptions are directly related to purchase intention (Farley & Ring, 1970; Bettman, 1970). Customers have a higher purchase intention when they valued a product more. For example, Rubera et al. (2011) found that product novelty and meaningfulness have a positive effect on purchase intention, which is in line with this study.

Different studies also revealed that customer empowerment in the new product development process can have negative outcomes. This also depends on the product that needs to be developed. Lagrosen (2005) shows that if the development requires technical knowledge, the question is if customers lack the knowledge compared with experts working in research and development teams. The study of Fuchs et al. (2013) found that consumer demand for a given luxury fashion brand collection is reduced if the collection is labeled as user designed because customers perceive the product as lower in quality. Since crisps, a fast-moving consumer good, is examined in this study, the above scenarios do not apply to this study. A reason that this study does not show significant results for customer empowerment on purchase intent may depend on the chosen product. In a study done by Fuchs & Schreier (2011) the highest positive significant effects for customer empowerment in the new product development process came from t-shirts, compared to other product categories that are included, which are furniture and bicycles. Also, in another study which is done by Dahl et al. (2012) where in addition to t-shirts, household products, breakfast cereals, and sports products were researched, this result is revealed. So, there may be a possibility that the study reveals a significant result when another product is implemented in the research. The research of Fuchs & Schreier (2011), where different results for different product categories were found, seems to acknowledge this explanation of differences in results.

The results of the first data showed that the different customer empowerment strategies in the new product development process have no significant effect on the perceived product novelty and perceived product meaningfulness. The reason for this could be that there are already so many different crisp flavours on the market. Customers may feel that there are not coming new and tastier crisps on the market than the existing ones. In addition, the development of new flavours is also not a new concept in the market, as mentioned earlier, various campaigns have already been conducted in which customers could submit a new crisp flavour. These reasons can be the cause of the result that the perceived product novelty and meaningfulness of the

respondents in this study is not influenced by the empowerment of the customer to create and/or select the crisps.

This research investigated both the effects of high and low familiar brands, to see if there were differences between the purchase intention for high or low familiar brands and between the effect of customer empowerment on purchase intention. The results showed that purchase intention is not significantly higher for low familiar brands compared to high familiar brands. Which is in line with the study of Dijk et al. (2014). It was expected that customer empowerment has more effect on purchase intention for low familiar brands compared to high familiar brands, because high familiar brands often have a stronger brand personality and therefore it might be not interesting for customers to change a well-known brand themselves. Besides, customers might have more confidence in the knowledge and experience of experts working for the company with high brand familiarity. But the results show that these assumption are not true. An explanation for this result could be that the perceived differences of crisps for high and low familiar brands are not that big that they affect the purchase intention of a consumer. It could be the case that other product categories in the fast-moving consumer goods industry show significant results or that this only has an impact on slow-moving consumer goods. In addition, it may also be that consumers prefer to participate in the development process of a familiar brand, because the impact is higher compared to a unfamiliar brand.

5.2 Managerial Implications

The findings of this study are intended to provide a better understanding of different customer empowerment strategies in the new product development process and contribute to existing studies on the effects of perceived product creativity of crowdsourcing practices. The study mainly had an exploratory goal and the purpose of this study was also to complement previous studies on the perceived product perception of observers. Therefore, this thesis complements on earlier research on the perception of consumers on co-created products in relation to purchase intention (Schreier, et al., 2012; Dahl, et al, 2012; Nishikawa, et al., 2017). Many previous studies in this research area have been investigating the perceived perception of quality, consumer identification, and innovation ability. This study contributes by examining if there is an effect on product creativity, which consists of two dimensions; novelty and meaningfulness. Although no results were found for different levels of customer empowerment on the dimensions of product creativity, a positive effect was found for the perceived product novelty and perceived product meaningfulness on purchasing intention. These results are

relevant for retailers and marketers, since these findings refer to the buying behavior of customers in the fast-moving consumer goods industry. A product that radiates more novelty and meaningfulness increases the buying behavior of the consumer. Future research can expand on this, to see how retailers and marketers can implement this value increase in their path to purchase strategy. In a retail context, brands that offer their products on the market, should design the marketing mixes in a way that the perceived product creativity is as high as possible. The results of the first part of the study found that customer empowerment has no impact on the perceived product creativity, which means that observers do not rate the novelty and the meaningfulness of the product higher when customers are empowered in the new product development process. The results of the second part show that customer empowerment has a significant positive effect on the perceived product novelty but not on perceived product meaningfulness. Here the perceived novelty is higher when the company fully empowers their customers in the new product development comparing to the situation where customers have zero empowerment. Besides the perceived novelty has also a positive effect on purchase intention. Therefore, it can be said that it is good for retailers to show in their product communication to their customers that users are involved in the new product development process. Since ambiguous results have been found, further research is needed to confirm this. The data shows that there is no significant difference in the effect of customer empowerment on purchase intention for high and low familiar brands, which implies that retailers don't have to use different ways of communication with regards to the used customer empowerment strategy for products with high brand familiarity versus products with low brand familiarity. However, in the research only one type of communication is used. To conclude that brand familiarity doesn't affect the relationship between customer empowerment and purchase intention, testing different types of communication may be useful. It is suggested that the findings will be useful for researchers, managers, designers and marketing departments who are interested in the understanding of customer empowerment and product creativity for a firm's positioning in the market. At the same time, the study has several limitations, which are discussed in the next section.

5.3 Limitations and recommendations for future research

Like most research, this study has several limitations. The first one, maybe the most important one, is related to the generalizability of the results in relation to customer empowerment in general. The study consisted of particularly one product category in the fast-moving consumer goods industry, which is crisps. The respondents saw an advertisement with a bag of crisps on

it, which differs on brand and the used customer empowerment strategy in the new product development of the crisps. The flavour of the new bag of chips was ‘sweet potato’, this is already an existing flavour in the market. Therefore, the outcome of perceived product creativity may differ drastically when another non-existing product was used in the advertisement. On top of that, if respondents have based their consideration on the advertised product, the outcome is also highly dependent on whether they like or not like the specific flavour ‘sweet potato’. For these reasons, the conclusions from this study are not applicable to customer empowerment in the new product development process in general. So the conclusions that are made based on the non-significant effects between customer empowerment, purchase intention and perceived product creativity, that has been purposed must be interpreted with caution, since these results may differ for other product categories, and co-creation contexts. So, in future research, different kind of product categories, both fast moving consumer goods, and slow moving consumer goods, have to be examined to see if the results for different levels of customer empowerment will change and show significant differences.

Another important limitation of this research is that it was mentioned in the introduction of the survey that the respondents would see two advertisements of two different brands, but no explanation has been given about customer empowerment. It is discussed earlier that this was done to prevent biased outcomes, but there is also a chance that the respondent did not look carefully enough at the product information about the used customer empowerment strategy and was mainly focused on the design of the crisps, the flavour, and the associated brand. Therefore, it could be that the different customer empowerment strategies show no significant differences for the results of the first advertisement and shows a significant difference in the results of the second advertisements. The data of second advertisements only made it possible to compare one empowerment strategy of the unfamiliar brand with one empowerment strategy of the familiar brand. Existing research that also investigated the effects of customer empowerment in the new product development mainly used advertisements as stimuli e.g. (Fuchs & Schreier, 2011; Dijk, et al., 2014; Nishikawa, et al., 2017; Dahl, et al., 2015). However, none of these studies measures whether the effect was caused by the level of customer empowerment in new product development in the advertisement. To determine how much attention a respondent pays to the fact that the product is created and/or selected by customers, future research should come with possibilities to measure this, for example with eye-tracking. In addition, future research may also ask how respondents perceive the empowerment, with

items such as ‘This brand makes me feel that I can make a difference’; ‘This brand makes me feel like I have been ‘empowered’’, et cetera.

Although the sample size is sizable (280) and there are no power issues, a bigger sample size could improve the outcomes of this research. Only eight different combinations have been investigated due to the limitation in time and resources, but further research can compare the 32 possible options in total. In addition, the results of the second advertisement showed some significant results for the two different levels of customer empowerment. Since only two groups are compared here, the sample per group is larger. From this result, it can be concluded that a larger sample size might have yielded more significant results.

A fourth limitation in this research is that this study mostly captured only purchase intention as an outcome variable. Follow-up research might explore other interesting outcome variables, like brand experience, brand loyalty, brand satisfaction. Also, future research is needed to explore what factors influence the perception of a consumer towards co-created products. This study only focuses on the dimensions of product creativity, but qualitative research might find out which other consumer perceptions are influenced by customer empowerment in new product development.

In this research only one type of communication was used, namely a simple advertisement. Follow-up research might explore whether customer empowerment has a different effect when communicated through other types of communication, like TV commercials. In TV advertising, the brand can make use of sound and, in addition, the customers who are empowered in the development process can be involved and tell their story.

The literature review shows that the empowerment of customers in the new product development process is an upcoming development. Interesting to investigate is what will happen when many firms engage customers for co-creation. If it becomes the norm it may be that it no longer has any effect on the customer's perception, but it can also ensure that it gets more and more attention from the consumer.

In conclusion there are several limitations that raise questions. Is the effect of customer empowerment different for other product categories? Are there product specifications that make products more sensitive to customer empowerment? Can unfamiliar brands ever beat familiar brands through communication? Is the effect of customer empowerment different for different ways of communication? What customer segment is more responsive to companies who involve

customers in their product development process? Is co-creation not already the norm in this always online world? Answers to these questions will help researchers and managers to more fully understand the role of customers in this new era in which customers have no longer a passive role in the production process but can also influence the kind of products that will appear in the market.

5.4 Conclusion

The overall question in this research was ‘‘Have different customer empowerment strategies in new product development different effects on purchase intention and can these effects be accounted to differences in perceived product creativity of customers?’’. In conclusion, the results of this study show different outcomes. First, it was concluded that there were no significant differences for the different empowerment strategies on purchase intention and perceived product creativity. Additional results showed that there was a significant difference for the effect of full empowerment on perceived product novelty compared to the zero empowerment. Furthermore, perceived product novelty and perceived product meaningfulness are no significant mediators in the relationship between customer empowerment and purchase intention in the first results of the research, but perceived product novelty is a mediator in the analysis of the second part of the results. Further, the perceived product novelty and perceived product meaningfulness have a positive significant effect on purchase intention. The effects of customer empowerment and the perceived product creativity on purchase intention are not different for high familiar brands versus low familiar brands.

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7. Appendix

Appendix 1: Overview of studies; customer empowerment in the new product development process

Paper	Author(s)	Focus	Nature of study (journal)	Findings
The Value of Marketing Crowdsourced New Products as Such: Evidence from Two Randomized Field Experiments	Hidehiko Nishikawa, Martin Schreier, Christoph Fuchs, Susumu Ogawa 2017	Whether actively marketing a crowdsourced new product as “customer-ideated” at the POP may incrementally increase that product's actual market performance	Empirical research (Journal of Marketing Research)	Labeling crowdsourced new products as “customer-ideated” (vs. not mentioning the specific source of design at the POP) positively affects the product's actual market performance
The Psychological Effects of Empowerment Strategies on Consumers' Product Demand	Christoph Fuchs, Emanuela Prandelli, Martin Schreier 2010	Analyze some of the psychological consequences for customers who are empowered to select the products a company should market.	Empirical research (Journal of Marketing)	Indicate that customers who are empowered to select the products to be marketed show stronger demand for the underlying products even though they are of identical quality in objective terms
The Innovation Effect of User Design: Exploring Consumers' Innovation Perceptions of Firms Selling Products Designed by Users	Martin Schreier, Christoph Fuchs, Darren Dahl 2012	Exploring consumers' innovation perceptions of firms selling products designed by users	Empirical research (Journal of Marketing)	The firm pursuing common design by users is associated with higher innovation ability
All That Is Users Might Not Be Gold: How Labeling Products as User Designed Backfires in the Context of Luxury fashion brands	Christoph Fuchs, Emanuela Prandelli, Martin Schreier, & Darren W. Dahl 2013	Analyze the effect of a labeled as user designed collection in the context of luxury fashion industry	Empirical research (Journal of Marketing)	Consumer demand for a given luxury fashion brand collection is reduced if the collection is labeled as user (vs. company) designed.
Why and When Consumers Prefer Products of User-Driven Firms: A Social Identification Account	Christoph Fuchs, Martin Schreier, & Darren W. Dahl 2015	Investigate if nonparticipating users are better able to identify with a user-driven firm and thereby influence their attitudes and preferences toward the firm's products and activities	Empirical research (Management Science article)	Nonparticipating, observing consumers prefer to buy from user-rather than designer-driven firms because of an enhanced identification with the firm that has adopted this user-driven philosophy.
Co-opting Customer Competence	C.K. Prahalad, Venkatram Ramaswamy 2000	Investigate the evolution and transformation of customers	Conceptual research (Harvard Business Review)	The innovation process shifted from manufacturer-centric to consumer-centric. Thanks to the Internet the role of the consumer changed from a passive to an active creator of value.

Appendix 2: Advertisements

Customer select and created + high brand familiarity



NEW

Lay's

WE PROUDLY PRESENT OUR NEWEST FLAVOUR

created and selected by consumers

Lay's
Lays Sweet Potato Chips

The story behind the new flavour of Lay's crisps

On Lay's online platform, 3000 consumers submitted their concept for the newest flavour of Lay's crisps. Among the submissions, the consumers selected the best idea. This flavour is now available!

Company select + high brand familiarity



NEW

Lay's

WE PROUDLY PRESENT OUR NEWEST FLAVOUR

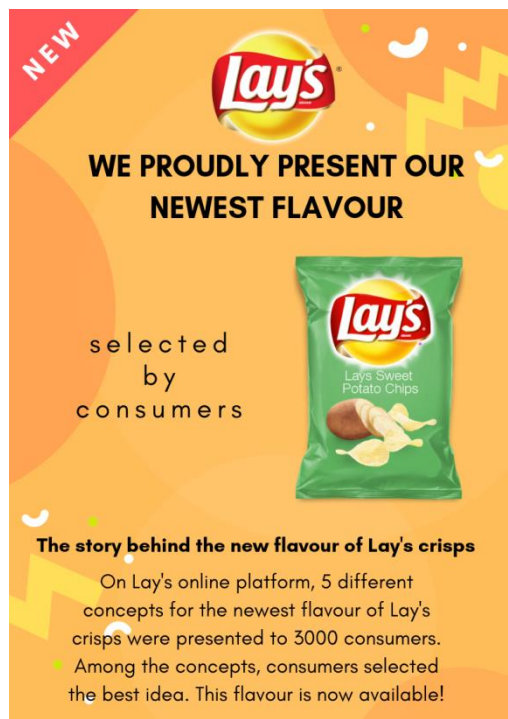
created by consumers

Lay's
Lays Sweet Potato Chips

The story behind the new flavour of Lay's crisps

On Lay's online platform, 3000 consumers submitted their concept for the newest flavour of Lay's crisps. Among the submissions, Lay's selected the best idea. This flavour is now available!

Customer select + high brand familiarity



NEW

Lay's

WE PROUDLY PRESENT OUR NEWEST FLAVOUR

selected by consumers

Lay's
Lays Sweet Potato Chips

The story behind the new flavour of Lay's crisps

On Lay's online platform, 5 different concepts for the newest flavour of Lay's crisps were presented to 3000 consumers. Among the concepts, consumers selected the best idea. This flavour is now available!

Zero empowerment + high brand familiarity



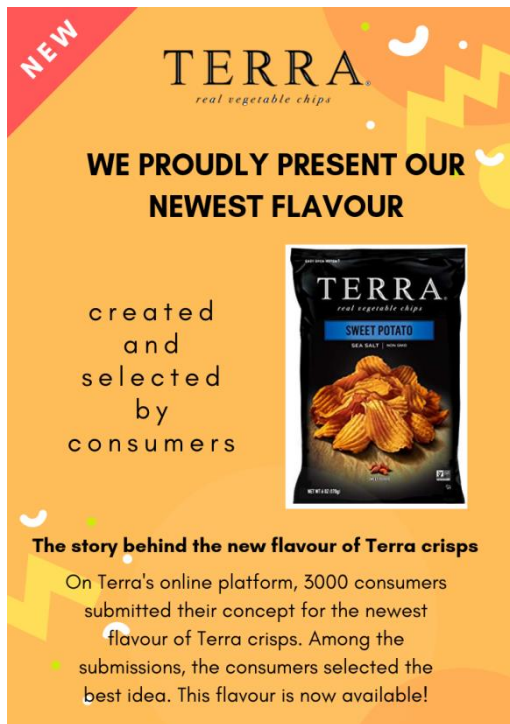
NEW

Lay's

WE PROUDLY PRESENT OUR NEWEST FLAVOUR

Lay's
Lays Sweet Potato Chips

Customer select + low brand familiarity




NEW

TERRA
real vegetable chips

**WE PROUDLY PRESENT OUR
NEWEST FLAVOUR**

created
and
selected
by
consumers



The story behind the new flavour of Terra crisps

On Terra's online platform, 3000 consumers submitted their concept for the newest flavour of Terra crisps. Among the submissions, the consumers selected the best idea. This flavour is now available!

Company select + low brand familiarity



NEW

TERRA
real vegetable chips

**WE PROUDLY PRESENT OUR
NEWEST FLAVOUR**

created
by
consumers



The story behind the new flavour of Terra crisps

On Terra's online platform, 3000 consumers submitted their concept for the newest flavour of Terra crisps. Among the submissions, Terra selected the best idea. This flavour is now available!

Customer select + low brand familiarity



NEW

TERRA
real vegetable chips

**WE PROUDLY PRESENT OUR
NEWEST FLAVOUR**

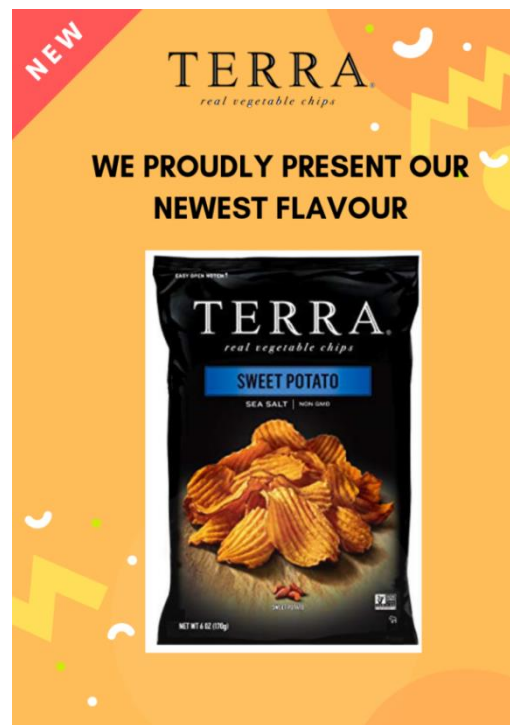
selected
by
consumers



The story behind the new flavour of Terra crisps

On Terra's online platform, 5 different concepts for the newest flavour of Terra crisps were presented to 3000 consumers. Among the concepts, the consumers selected the best idea. This flavour is now available!


Zero empowerment + low brand familiarity



NEW

TERRA
real vegetable chips

**WE PROUDLY PRESENT OUR
NEWEST FLAVOUR**



Appendix 3: Questionnaire

Dear respondent,

Thank you for participating in this questionnaire, which takes an important part of my master thesis Marketing at the Erasmus University. This research focusses on the launch of a new product. Completing the questionnaire will take up to approximately 8 minutes. Your anonymity is guaranteed, and the data is not provided to third parties. Thank you in advance for your participation!

If you have any questions regarding this study, please contact marieke-dewit@live.nl.

Please, carefully read what is being asked for each question. There are no good or wrong answers, just give your opinion. The brands Lay's and Terra will soon introduce a new crisps flavour on the market. Lay's and Terra are very curious about your opinion of the new product and the brand. After this screen, an advertisement of one of these brands and their new crisps flavour will appear. Carefully read all the information in the advertisement!

The following statements are about your perceived product novelty (Im & Workman, 2004)
Based on your impression of the advertisement, please rate to what extent you think that this product...

- 1) is really "out of ordinary"
- 2) can be considered as revolutionary
- 3) provides radical differences from other crisps
- 4) reflects a customary perspective in this industry (reverse coded)

The following statements are about your perceived product meaningfulness (Im, et al., 2008)

Please rate to what extent you think that this product...

- 1) is relevant to my needs and expectations
- 2) is considered unsuitable for my desires (reverse coded)
- 3) is appropriate for my needs and expectations
- 4) is useful for me

The following statements are about your purchase intention (Rubera, et al., 2012)

Based on your impression of the advertisement and the brand, you can indicate on a scale of 1 to 7 to what extent you agree with the statements.

- 1) If I were buying crisps, I would include this package among my options
- 2) If I were buying crisps, I would buy this package
- 3) If it were available, I would buy this package

Brand familiarity (Kent & Allen, 1994) ***and background information***

Please again indicate on a scale of 1 to 7 to what extent you agree with the following statements.

- 1) I am familiar with this brand
- 2) I have experience using this brand
- 3) I know a lot about the brand

Again, we will show you an advertisement of one of these two brands. Read all information in the advertisement carefully, because they can differ!

The following statements are about your perceived product novelty (Im & Workman, 2004)

Based on your impression of the advertisement, please rate to what extent you think that this product...

- 1) is really “out of ordinary”
- 2) can be considered as revolutionary
- 3) provides radical differences from other crisps
- 4) reflects a customary perspective in this industry (reverse coded)

The following statements are about your perceived product meaningfulness (Im, et al., 2008)

Please rate to what extent you think that this product...

- 1) is relevant to my needs and expectations
- 2) is considered unsuitable for my desires (reverse coded)
- 3) is appropriate for my needs and expectations
- 4) is useful for me

The following statements are about your purchase intentions (Rubera, et al., 2012)

Based on your impression of the advertisement and the brand, you can indicate on a scale of 1 to 7 to what extent you agree with the statements.

- 1) If I were buying crisps, I would include this package among my options
- 2) If I were buying crisps, I would buy this package
- 3) If it were available, I would buy this package

Brand familiarity (Kent & Allen, 1994) ***and background information***

Please again indicate on a scale of 1 to 7 to what extent you agree with the following statements.

- 1) I am familiar with this brand
- 2) I have experience using this brand
- 3) I know a lot about the brand

You are arrived at the last part of this questionnaire. In this last part, questions will be asked to gather some background information.

Product choice

You have seen two advertisements of Lay's and Terra. If you had to purchase one of the two products, which product would you choose? Take the product information that may have been in the advertisement into account in your decision.

Product involvement (Mittal & Lee, 1989) (Beatty & Talpade, 1994)

- 1) In general, I have strong interest in crisps
- 2) Crisps are very relevant to me

What is your gender?

-
- Male
 - Female

What is your age in years?
..... years

What is your highest (achieved) education?

- No education
- Primary education
- Secondary education
- Secondary vocational education
- University for Applied Sciences
- University

Appendix 4: Survey flow

Block: Introduction (2 Questions)

Block randomizer – evenly present elements

Block: survey 1 (11 Questions)

Block: survey 1 (11 Questions)

Block: survey 1 (11 Questions)

Block: survey 1 (11 Questions)

Block: survey 1 (11 Questions)

Block: survey 1 (11 Questions)

Block: survey 1 (11 Questions)

Block: survey 1 (11 Questions)

Block: background info (5 Questions)

Appendix 5: Results manipulation check

Descriptives

Brandfamiliarity (manipulation check) ad 1

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
condition 1	35	5,88	,583	,099	5,68	6,08	5	7
condition 2	35	5,94	,684	,116	5,71	6,18	5	7
condition 3	35	5,94	,684	,116	5,71	6,18	5	7
condition 4	35	6,00	,594	,100	5,80	6,20	5	7
condition 5	35	1,66	,873	,147	1,36	1,96	1	5
condition 6	35	1,83	,923	,156	1,51	2,15	1	5
condition 7	35	2,03	1,150	,194	1,63	2,42	1	5
condition 8	35	2,20	1,232	,208	1,78	2,62	1	6
Total	280	3,93	2,191	,131	3,68	4,19	1	7

ANOVA

Brandfamiliarity (manipulation check) ad 1

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1132,803	7	161,829	212,877	,000
Within Groups	206,775	272	,760		
Total	1339,577	279			

familiar with the brand * Brand familiarity ad 1 Crosstabulation

Count

		Brand familiarity ad 1		Total
		Low brandfamiliarity	High brandfamiliarity	
familiar with the brand	Strongly disagree	50	0	50
	Disagree	61	0	61
	Slightly disagree	20	0	20
	Neither agree nor disagree	4	0	4
	Slightly agree	5	5	10
	Agree	0	52	52
	Strongly agree	0	83	83
Total		140	140	280

experience using the brand * Brand familiarity ad 1 Crosstabulation

Count

		Brand familiarity ad 1		Total
		Low brandfamiliarity	High brandfamiliarity	
experience using the brand	Strongly disagree	57	1	58
	Disagree	60	2	62

	Slightly disagree	13	1	14
	Neither agree nor disagree	7	1	8
	Slightly agree	2	5	7
	Agree	1	56	57
	Strongly agree	0	74	74
Total		140	140	280

know a lot about the brand * Brand familiarity ad 1 Crosstabulation

Count

		Brand familiarity ad 1		Total
		Low brandfamiliarity	High brandfamiliarity	
know a lot about the brand	Strongly disagree	70	1	71
	Disagree	46	5	51
	Slightly disagree	6	17	23
	Neither agree nor disagree	10	38	48
	Slightly agree	7	47	54
	Agree	1	21	22
	Strongly agree	0	11	11
Total		140	140	280

Appendix 6: Results choice model (logit model)

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	74,586	3	,000
	Block	74,586	3	,000
	Model	74,586	3	,000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	310,772 ^a	,234	,313

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than ,001.

Classification Table^a

	Observed	Predicted		Percentage Correct
		Lay's	Terra	
Step 1	which of the two products	118	36	76,6
		45	81	64,3
Overall Percentage				71,1

a. The cut value is ,500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	EmpowermentTerraversusLays	,258	,320	,649	1	,420	1,294
	Differencenovelty	,701	,130	29,112	1	,000	2,017
	Differencemeaningfulness	,502	,136	13,662	1	,000	1,652
	Constant	-,662	,176	14,096	1	,000	,516

a. Variable(s) entered on step 1: EmpowermentTerraversusLays, Differencenovelty, Differencemeaningfulness.