

What are the motivations for (European) customers to participate in online co-creation?

Author: Maikel Hofste
University of Twente
P.O. Box 217, 7500AE Enschede
The Netherlands
M.B.Hofste@student.utwente.nl

ABSTRACT

This paper is concerned with identifying the main motivators for consumers to participate in co-creation. Co-creation activities are value creation activities by firms that include close-interaction with the consumer. These activities are nowadays considered as critical for a firm its success. The paper first provides an extensive literature review on the concept of co-creation and on the motivators for consumers to participate in co-creation, and then continues with a conceptual model based on these motivators. These motivators are: Financial, Technology, Social, Personal and Psychological. After this the paper ends with an empirical study which is based on an online test survey. The results with regards to the motivators show that five of these six motivators are positively related to someone's attitude towards online co-creation.

Supervisors 1st : E.Constantinides
2nd: H.G. van der Kaap

Keywords (6)

Co-creation, New product development, Value creation, Motivations for co-creation, Social media

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

1st IBA Bachelor Thesis Conference, November 7th, 2013, Enschede, The Netherlands.

Copyright 2013, University of Twente, Faculty of Management and Governance.

1. INTRODUCTION

In today's markets, technology has provided consumers and companies with possibilities to communicate with each other on whole new level. The available information for both the consumer and companies has increased immensely through the World Wide Web. This has caused that on the one hand consumer now is more empowered and on the other that companies can get a better insight in their customer's desires. "One important outcome of this increased consumer empowerment is that consumers now desire to play a greater role in the process of value creation. This process is referred to as co-creation and can occur in a variety of contexts" (Bolton and Saxena-Iyer, 2009). Consumers are armed with new tools and want to interact with firms and thereby 'co-create' value. This co-creation refers to the practice of product or service development that is collaboratively executed by developers and customers together (Prahalad & Ramaswamy, 2004). The development of social media has opened up several opportunities to co-create. Social media, such as Facebook (1,15 billion) and Twitter (500 million), have reached huge amount of users and is therefore a huge potential for interaction with the consumer. Through these platforms companies can use the customer's inputs for the creation of new products and let the customers participate in co-creation. These customers often know what they want in terms of a product and are good sources of information due to the fact that they are part of the customer segment a company wants to reach with its product. Prahalad and Ramaswamy, (2004) indicated that co-creation with a customer can be seen as the development of customer-supplier relationships through interaction and dialog and that co-creation can lead to a new source of competitive advantage. Next to this the current available literature has identified that there are several different motivators for customers to be active in co-creation. Two major papers on this topic come from Hoyer, Chandy, Dorotic, Krafft, Singh (2010) and Nambisan and Baron (2009). The paper of Hoyer et al., (2010) refers to four different motivators namely, financial, social, technical and psychological factors. While Nambisan and Baron (2009), refer to the hedonic, social integrative, personal integrative and knowledge factors. The differences and similarities of these theories are described later in the paper; however there still is a better understanding needed in terms of what motivates these consumers to co-create online, which leads to this research. In this paper a better understanding will be achieved by first providing a good overview of the current available literature on the topic and then by creating a test survey based on the current available literature to research if these motivations are the same in practice. This literature review will begin with defining the key concept co-creation and the developments which lead to it. After that it continues with describing the advantages and challenges related to co-creation and describing its role within new product development (NPD). The literature review ends with an overview of the motivations for consumers to co-create derived from several studies on this topic. These motivations are then combined into a preliminary research model.

By doing a research through a test survey focused on co-creators, several insights into what motivates people to co-create can be found. These motivations are of utmost importance for a company which also wants to co-create with its customers. As stated by Füller, Bartl, Ernst and Mühlbacher (2006) whereas recent research has especially focused on the different stages of the new product development process wherein customers can be involved, less is known about what motivates these customers to participate in co-creation. Companies which are active in co-creation rely on customers

that are willing to contribute new ideas to their business to be able to innovate and therefore need to know what motivates them.

The main research question is:

What are the motivations for (European) customers to co-create online?

From this research question several sub-questions are derived. What is co-creation? What have been the developments that lead to such an importance of co-creation? How has social media influenced co-creation? What is the position of co-creation in new product development (NPD)? At the end of the literature review a research model will be provided which include the potential motivations for customers to co-create. The main objective of this paper is that next to the derived knowledge from the literature review a pilot survey will be constructed which investigates the motives for consumers to co-create and to test this survey in practice.

2. LITERATURE REVIEW

This section is focused on providing an overview of the current literature written about the motivations of consumers to co-create online. To understand these motives first the basic knowledge about co-creation and the development of co-creation is explained. In addition to this co-creation its position within NPD will be described and an overview of what is written about the motivations to co-create will be provided, on which the research model is based on.

2.1 Co-creation

One important outcome of this increased consumer empowerment is that consumers now desire to play a greater role in the process of value creation. This process is referred to as co-creation and can occur in a variety of contexts (Bolton and Saxena-Iyer 2009). This was also identified by Prahalad and Ramaswamy (2004) which stated that "armed with new tools and dissatisfied with the available choices, consumers want to interact with firms and thereby "co-create" value." Co-creation was originally defined by Kambil, A., Friesen, G. B., and Sundaram, A. (1999) as co-creation of value by a firm's customers. The authors consider that co-creation add new dynamic to the relationship between a producer and a customer by engaging customers within the production and/or distribution of value. Next to this these authors state that customers can be involved in any stage of the value chain which also influences the way managers have to monitor and manage the process of value creation due to the fact that these customers are turned into 'employees'. Bogers, Afuah, & Bastian (2010) consider that co-creation can be similarly used as user innovation or co-innovation, which states that customers are involved in NPD in which they are a source of innovation in order to increase the value of a new product or service. This is also backed up by O'Hern and Rindfleisch (2009) which sees co-creation as a collaborative NPD activity in which consumers actively contribute and try to add value to a new product offering. On the other hand Zwass (2010) sees co-creation more as a subtopic of crowdsourcing and differentiates between two kinds of co-creation which are sponsored co-creation and autonomous co-creation. Sponsored co-creation includes activities where co-creations are made by communities or individuals at the behest of a company whereas autonomous co-creation is more about individuals and communities wherein consumers participate on a voluntary basis independent of an organization. So the main difference between these two is the amount of influence and control a company can have on these communities.

2.2 Value creation: Shifting market roles

To get even a better understanding of the concept co-creation, the development from firms as the main value creators to the new concept co-creation will be described. The first view on this topic comes from Prahalad and Ramaswamy, (2004) whom describe the shift from a firm-centric view to a co-creation view. This shift is not about minor changes to the traditional system and has a huge impact on how companies have to deal with their customers. Another view on the shifting market roles comes from Vargo and Lusch (2004). These authors describe the change from a goods-dominant logic (G-D) towards a service-dominant (S-D) logic.

2.2.1 *Traditional firm-centric view towards a new co-creation view*

In the traditional concept of value creation, value was created inside the firm and outside the markets. Prahalad and Ramaswamy (2004) describe this as the traditional concept of a market, wherein the process of value creation was company-centric. Within this concept the consumers were outside the firm and value creation occurred within the firm. Firms with such a company-centric focus had as main goals within their customer-relationship management: targeting and managing the right customers. As stated in Prahalad and Ramaswamy p. (2004) "Firms focus on the locus of interaction—the exchange—as the locus of economic value extraction. Within this view the interaction between companies and customers is not seen as a source of value creation. This kind of company-customer interaction no longer satisfies most consumers today. This firm-centric view is being challenged by the new empowered, informed and active consumers. These consumers have increased expectations and are increasingly learning that they too can extract value at the traditional point of exchange. (Prahalad & Ramaswamy, 2004) In the co-creation view, all points of interaction between the company and the consumer are considered as opportunities for value creation. In co-creation, direct interactions with consumers and consumer communities are critical for a firm's success. The authors even consider that these interactions can be seen as a new source to gain a competitive advantage for a firm.

2.2.2 *Good dominant logic versus a service-dominant logic.*

Lusch and Vargo (2004) used the distinction between the S-D logic and the more traditional G-D logic to get better understanding of the current shift towards co-creation. In the G-D logic, value is created and manufactured by the firm and then distributed in the market. This normally goes through an exchange of goods and money. The value of a good is then represented by the market price, or what the customer is willing to pay for it. As described by Lusch and Vargo (2004) within the G-D logic the roles of producers and consumers are separated. The firm adds value to a product before it is used by the consumer. This value of such a product mainly lies in its operand resources. The interaction between the customer and the firm is only there during the exchange of goods (When a firm sells its product), however there is a shift going on toward a more S-D logic. Instead of firms being informed to market to customers, they are instructed to market with customers and other partners in the firm's value network (de Chiarra, 2012)

S-D logic holds that all firms are essentially service providers, instead of the providers of goods. These firms exchange service for service, as the fundamental basis of exchange (Vargo & Lusch, 2004). In this view goods are merely seen as 'vehicles' for the provision of service and cannot solely create value but

offer value propositions that provide the fundamentals for value (Flint, 2006). The main differences as stated above between the G-D and S-D logic lie within the basis of exchange. Where the G-D logic mainly sees value-in-exchange, the S-D view mainly sees that value can be derived from use and from co-creating with for example, customers, employees, stakeholders and the government. (Vargo, Maglio & Akaka, 2008) The G-D logic is as stated above focused on the exchange of operand resources (tangible resources) while the S-D logic is focused on operand resources such as knowledge and skills. Next to this, the S-D logic is mainly process oriented unlike the G-D logic which mainly focusses on the output (on the goods) of the firm. This process orientation in S-D requires the involvement of the customer to co-create value.

Both these papers describe the shift from a company centric view wherein value is created only by the firm towards a co-creation view wherein the services and customer interaction is the key for value creation.

2.3 Advantages and challenges related to Co-creation

This part of the paper will go deeper into the advantages and challenges related to co-creation. Within practice and theory it is increasingly recognized that co-creation has the potential to increase a firm's performance (Prahalad & Ramaswamy, 2004). Hoyer et al., p. 292 (2010) states that "By successfully implementing and managing co-creation, a firm can create two significant sources of competitive advantages." These are productivity gains through increased efficiency and improved effectiveness. The increased efficiency is gained through cost-minimization, and reduced operational costs. These cost reductions ,related to co-creation, arise from for example when a firm is able to co-create closely together with its consumers whom are willing to contribute ideas without receiving remuneration and therefore there is less input required to innovate from employees and suppliers. (Evans, Philip & Bob Wolf, 2005) The second source for a competitive advantage related to co-creation is the improved effectiveness. This improved effectiveness can be achieved through the enhancement of product value, increased innovativeness, learning capabilities and a better fit with consumer needs (Fang, Palmatier & Evans, K. R. 2008; Lilien, Morrison, Searls, Sonnack & Von Hippel 2002). The enhancement of product value and a better fit with the consumer needs increases the likelihood of a product being a success on the market and therefore has a higher commercial potential (Fang, Palmatier & Evans, 2008). The increased fit to the consumers' needs increases the price such a consumer is willing to pay for a product and can increase positive attitudes towards the product. Joshi and Sharma, (2004) identified that involving consumer within co-creation, makes the consumer more informed with the challenges, costs and constrains related to NPD, which results in a better understanding of the new product and can even make a consumer appreciate such a product more. Another advantage derived from working closely together as a firm with your customer is that there an improved customer/firm relationship can be developed which then could lead to more brand loyalty. (van Doorn et al., 2010)

2.3.1 *Challenges*

As seen above co-creation is associated with numerous advantages; however there are also several challenges where companies have to deal with if they want to make use of co-creation. One major challenge is the diminished control a company has over its strategic management and planning. As stated by Hoyer et al., p. 293 (2010) "Innovation is a vital

function of management and has crucial impact on business performance. Hence, transferring control over the innovation processes and their outcomes from a firm to its consumers aggravates a firm's strategic planning efforts." There are also other managerial challenges which are related to co-creation. Managers need to deal with the new empowerment of customers and their new role within the company. This empowerment increases complexity of managing the objectives and interests of the firm's stakeholders (Hoyer et al., 2010). This could lead to non-monetary costs such as constraints and coordination-requirements which increase with the number of co-creators. (Bendapudi & Leone 2003; Blazevic and Lievens 2008). Another challenge to overcome is: how to motivate the right customer segments to co-create with you as a firm. A key constraint for companies is that co-creation only works when qualified customers are willing to cooperate and openly share their ideas and knowledge with the company and also truthfully evaluate existing products and new ideas. (Füller, Faullant, & Matzler, 2010; Füller, 2006) The way to overcome this challenge is giving these customers the right incentives for their participation in co-creation, but then the question arises what are the right incentives for such customers?

2.4 Position of Co-creation within NPD

New product development describes the complete process of bringing a product or service to the market. Enkel, Perez-Freije and Gassman, (2005) distinguished between six different stages in the new product development process. These are the idea generation, concept development, core concept and design, concept evaluation, pre-announcement and the market launch stage. Existing literature research often continues on the assumption that NPD is an internal firm-based activity (O'hearn & Rindfleisch, 2010). According to Hauser, Tellis and Griffin, (2006) it has been recognized that successful NPD depends on a deep understanding of consumer needs and product development efforts that meet those needs, however such an understanding is not always identified through traditional marketing research methods. Companies are operating in an uncertain and dynamic environment, which is characterized by changing customer preferences and rapidly changing technologies (MacCormack, Verganti & Iansiti, 2001). Due to this, there has been a shift in the 20th century, the shift from the closed innovation model, towards an open innovation model. Chesbrough (2006) refers to this as a shift from 'self-reliance' philosophy which is focused on generating, developing and commercializing ideas internally, towards an open innovation model which is a model that is more open for external ideas and influences. Within this open innovation model customers are essential participants within the NPD process (O'hearn & Rindfleisch, 2010). Piller, Ihl and Vossen (2011) point out that these customers are actively involved and take part in NPD through co-creation.

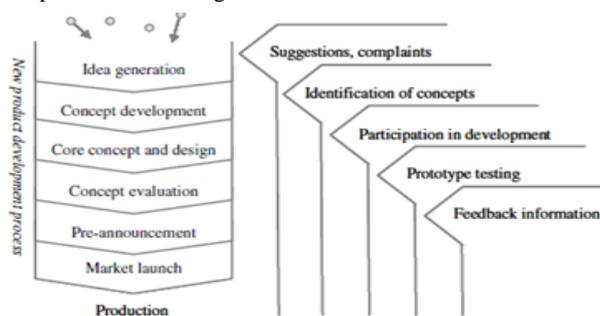


Figure 1: derived from Enkel et al. p.426 (2005) provides an overview of how consumers can be integrated in the new product development process.

As seen in figure 1 Enkel et al. (2005) distinguish five roles which can be full filled by customers during new product development. The first one is providing suggestions and complaints during the idea generation stage. During the second stage of NPD a customer can help identifying product concepts. During the concept and design stage customers can participate in the development of the new product or service. After this phase customers can help to test the concept and provide feedback during the last stages of NPD. This view on NPD is also back up by Hoyer et al. (2010) whom identified that co-creation allows consumers to take an active and central role as participants in the NPD process. These customers can fulfill several roles within this product development process and each role can create different value for the new product or service which is created. Next to this customers can be integrated throughout all the stages of NPD. As stated in Zwass p.25 (2010) that "As the users of products in the most diverse circumstances and the collective possessors of diverse stocks of knowledge and experience, consumers as a whole, and consumer communities as collective bodies, can generate new product ideas, elaborate on ideas generated within organizations, and help to assess the viability of proposed new products. " An example from practice of a company who involves its customers throughout NPD is Threadless.com. Threadless is a t-shirt manufacturer that gets the graphic designs for their t-shirts from its consumers who submit their designs on their website. These members of the website vote on these designs and the most popular are sent into production. These co-creation efforts do not stop at the ideation and product development stages they are also extended to the commercialization and post launch activities of the firm (Hoyer et al., (2010)

2.5 Co-creation and social media

Social Media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content (UGC). The term social media can also be stated as highly interactive platforms via which individuals and communities share, co-create, discuss UGC. (Kaplan and Haenlein, 2010) Social media is used by large and small firms to improve their internal operation and to collaborate in new ways with their customers, business partners and suppliers. The value of social media comes from how a social media platform is used and from the information that is created and shared on these platforms. (Culnan et al. 2010) Kaplan and Haenlein, (2010) differentiate between several social media platforms such as social networks (Facebook, Google+), professional networking sites (LinkedIn, Xing) , forums, blogs and collaborative wiki-projects (Wikipedia). Social media has strongly shifted the power in established markets, and has influenced the competitive behavior of companies due to the fact that customers are more empowered and word of mouth over these social networks can be an opportunity but also a threat for companies. (Kaplan and Haenlein, 2010) One of these opportunities lies within an increased interactivity between companies and customers through virtual communities. Customers voluntarily share information, ideas and suggestions without requiring copyrights to access this information on these communities. (von Hippel, 2010) Virtual customer integration through for example social media has been identified by Chesbrough (2003) as a way to virtually involve customers in every stage of NPD and using these customers their knowledge, creativity and judgment (Füller et al., 2010)

Piller, Vossen, & Ihl (2012) described the impact of social media on four different NPD methods. An example of this is the lead user method. This is a method of new product development

by innovating together with the 'lead' users of a product. Research has shown that lead users frequently reveal their innovative ideas freely towards firms and other users. They do not want to profit from selling an innovation but from using a professional product produced by the receiving firm (Harhoff, Henkel & Von Hippel, 2003). Social media influences this method through the increased connectivity it provides. This increased connectivity makes it easier to find such lead users; feedback from these lead users is given more easily and faster; like-minded lead users can find and communicate more effectively with each other. In the end this positively influences this innovation method and maybe even could lead to better and larger innovation outcomes.

2.6 Consumer's motivations to co-create

In this part of the paper an overview of the current literature of the motivations for consumer's to co-create will be provided. Several authors have described the potential motivators for customers to co-create. Former research focusses itself on these motivators and put them in relation to the benefits someone can derive from co-creating activities.

One of these authors (Füller et al., 2006) distinguishes between intrinsic motivations and extrinsic motivations for consumers to participate in a certain activity, in this case related to co-creation. Intrinsic motivations for co-creation are focused on the satisfaction someone derives from participating in co-creation. Individuals may consider their contribution to a co-creation project as playful and enjoying and therefore perceive it as rewarding. These individuals derive benefits not from the outcome of the project but more from participating in the activity itself. Intrinsic motivations can also be noticed as interest, involvement, curiosity, satisfaction or a positive challenge (Amabile, 1996). The main reason for this intrinsic motivation is an individual's very own need for feeling competent and self-determination. (Deci & Ryan 1985)

The extrinsic motivations are focused on the outcomes which the customer gains from being active in co-creation. These gains are things like bonuses or status enhancement gained during or after such a project. Appropriate rewards for participating in co-creation will motivate already participating consumers even more to make better contributions, but also can attract new consumers whom are interested, but had no motivation to co-create. The intrinsic and extrinsic are two opposites of each other, where intrinsic focuses on the process of the activity while the other focuses on the outcome of such an activity (Deci & Ryan, 2002). A person also can be both intrinsically motivated as extrinsically motivated to participate in co-creation. An example of this is that someone enjoys competing with others while he is also interested in the financial reward which is provided afterwards. Füller et al., (2006) also considers that there are also different kinds of motives such as curiosity and dissatisfaction with the existing products or receiving monetary rewards.

Another view on consumers their motivations to co-create comes from Hoyer et al., (2010) whom created a conceptual framework of consumer co-creation which includes both the scope and the intensity of co-creation. Within the framework three sets of antecedents are examined. These are the consumer-level motivators, firm-level impediments, and firm-level stimulators. Each of these antecedents can increase the scope and intensity of co-creation. The consumer-level motivators are classified in four different groups namely, financial, social, technical and psychological factors.

Nambisan and Baron, (2009) had another perspective on the topic. They used the Uses and Gratification framework of Katz

et al., (1974) to describe the motivations for consumers to participate in virtual customer environments. The Uses and Gratification framework of Katz et al., (1974) identified four types of benefits that individuals can derive from media usage. Cognitive benefits, social integrative benefits, personal integrative benefits and hedonic or affective benefits. By combining these motivations a complete overview of the motivations for consumers to participate in co-creation can be created. The factors and benefits from the U&G model and the consumer-level motivators will be explained below.

2.6.1 The different potential benefits influencing someone's motivation

The first potential benefit influencing consumers their motivation is the possible financial reward which is related to co-creation. These rewards come in different forms some examples of direct forms of financial rewards are monetary prizes, profit sharing, and discount on the product. (Hoyer, 2010) These benefits also come in indirect forms such as shared of full intellectual property that might be received by engaging in co-creation, however many people are not motivated by just money and choose to free reveal ideas (von Hippel & von Krogh, 2006).

Some indirect rewards from co-creation come through recognition gained from participation which comes in the form of a good reputation in the area of co-creation which can enable a consumer to find employment or gain new clients (Franke & Shah, 2011; Hoyer et al., 2010) which are related to the second factor: social integrative. The social integrative factor refers to the social benefits received from participation in co-creation activities such as a reputation network and increased status. Some may receive social benefits from titles or other forms of recognition that a firm might bestow on particularly valuable contributors. "Social benefits of co-creation comprise increased status, social esteem, "good citizenship," and strengthening of ties with relevant others" (Nambisan & Baron, 2009)

The third factor which influences consumer's motivation to co-create is the 'technology (knowledge)' or learning factor. This factor is derived from the technological, product or service knowledge which is gained through the exchange of ideas with other users or a company. (Hoyer et al., 2010; Nambisan & Baron, 2009) This was also identified by Fuller et al., (2010), which state that people can be motivated to co-create by curiosity and exploration of technology.

The fourth factor is the psychological benefits which one can relate to co-creation. Creative pursuits of co-creation are likely to enhance their intrinsic motivation. Consumers also may also participate in co-creation due to the fact that they are altruistically motivated to contribute, an example of this would be medicine development. While others may be motivated by high involvement or dissatisfaction about the product. (Hoyer et al., 2010)

The fifth factor is 'hedonic' this is defined as the enjoyment or pleasure a consumer receives from co-creating. Due to the fact that a consumer receives enjoyment from co-creating with a company they are more motivated to do so. (Zwass, 2010). This enjoyment can come from the interactions or for example the problem solving which can be a source of mental or intellectual stimulation. (Nambisan and Baron, 2009)

The last factor is the personal integrative this relates to the benefits which someone receives in terms of reputation, status, achievement or sense of self efficacy which someone gains from participating in co-creation (Katz et al., 1974). To add to this Zwass (2010) identified that identity construction part is of the personal integrative.

Motivational factors	Authors
Financial	Füller et al., (2010); Hoyer et al.,(2010)
Social integrative	Füller et al., (2010); Hoyer et al.,(2010) Katz, Blumler and Gureviitch, (1974); Nambisan and Baron, (2009)
(Technology) Knowledge	Füller et al., (2010); Hoyer et al.,(2010); Katz et al., (1974); Nambisan and Baron, (2009)
Psychological	Füller et al., (2010); Hoyer et al.,(2010); Katz et al., (1974); Nambisan and Baron, (2009)
Hedonic factor	Katz et al., (1974); Nambisan and Baron, (2009)
Personal integrative	Katz et al., (1974); Nambisan and Baron, (2009)

Figure 2 provides an overview of the several motivators for co-creation and on which literature they are based on.

Next to these factors positively influencing someone's motivation to co-create, there are also things that keep the consumer from participating in co-creating. For example if consumers have difficulties conveying their preferences or latent needs, or have no or low involvement with the product they may not appreciate the benefits which are related to co-creation (Etgar, 2008; Franke, Keinz & Steger, 2009). Next to this there are consumers that are willing to share their knowledge without any acknowledgement for doing this; however there are also consumers that are not willing to share their 'intellectual property' without receiving compensation. As stated by Hoyer et al. p.289 (2010) "A lack of consistency in intellectual property policies might create perceptions of unfairness among consumer contributors. "This will demotivate a consumer to co-create. Furthermore, too much bureaucracy within the co-creation activity can lead to a perception that the process of co-creation is too complicated and not worth the effort for the consumer. (Columbo, Lucking, Mcinnes, 2011) Another deterrent can be that there is not enough transparency between the consumer and the company. If a company does not share enough knowledge with a consumer, then this person will not be motivated and maybe not even able to participate in the co-creation activity (Prahald & Ramaswamy, 2004).

3. RESEARCH MODEL AND HYPOTHESES

3.1 Research model

The conceptual model on which the survey is based on, is derived from the works of Füller, (2010); Hoyer et al. (2010); Katz et al., (1974) and Nambisan and Baron (2009). The main independent variables of the research model are financial, social integrative, technology i.e. knowledge, psychological, hedonic

and personal integrative which are all explained above. These factors as described could all influence the attitude a consumer has towards online co-creation. It is also considered that one's attitude towards online co-creation can influence the person its participation. It is assumed that the factors have a positive relationship with the attitude towards co-creation. Next to these the relationship between someone's attitude and participation is considered as a positive one. This is backed up by MacKenzie, Lutz and Belch (1986) who found that there is a positive relationship between the attitude one has and which consequences the individual takes based on the attitude. The more positive the attitude is the more likely someone will participate in online co-creation.

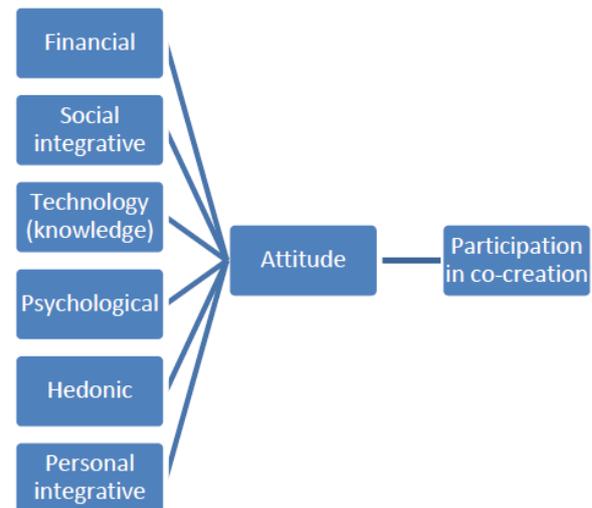


Figure 3: Conceptual research model: Motivations for customers to participate in online co-creation.

For the six different factors several measurements are determined from the works of Füller, (2010); Hoyer et al., (2010); Nambisan and Baron (2009); Zwass (2010). The financial factor is measured through a reward of cash, a product or service discount, a possible job offer, compensation in equity, and to obtain intellectual property ownership from participating in online co-creation. Forming new personal relationships, enhance existing relationships, to be part of a community and to match with community norms measure the social integrative factor. Technology(knowledge) factor is measured in terms of someone has learned from co-creation, developed new or current skills, acquired knowledge, fulfilled in its need for information and if someone participated out of curiosity. The psychological factor is measured from someone's passion, someone's inner need to make a return, to express itself, enhance self-esteem and self-efficacy and by having a challenge. The hedonic factor is measured by if someone entertains itself from participating, changes their state of mind, to offer satisfaction and to enjoy problem solving and idea generation. As last factor the personal integrative is measured by: construct an identity, advance in career, to have products/services that benefit my personal use, to signal or earn interest of potential employers or investors and to compete with others.

3.2 Hypotheses

In this part the hypotheses were the conceptual model is based on will be explained. The parameters for these hypotheses are derived from the literature namely from the papers of Füller (2010); Hoyer et al. (2010); Nambisan & Baron (2009) and Zwass (2010).

H1: Financial rewards have a positive effect on customer's attitude to participate in online co-creation

H2: Social integrative benefits have a positive effect on customer's attitude to participate in online co-creation

H3: Learning benefits have a positive effect on customer's attitude to participate in online co-creation

H4: Psychological benefits have a positive effect on customer's attitude to participate in online co-creation

H5: Hedonic integrative benefits have a positive effect on customer's attitude to participate in online co-creation.

H6: Personal integrative benefits have a positive effect on customer's attitude to participate in online co-creation.

H7: A positive attitude has a positive effect on the willingness to participate in co-creation.

4. METHODOLOGY

This research was conducted to determine what motivates consumers to co-create-online. Participants were asked to share their experiences by answering questions and statements categorized in the variables derived from the theory were the research model is based on

4.1 Sample and Data collection

The data was collected within one week time in October 2013. The questionnaire was distributed through several social media platforms including Facebook, Twitter and an email was sent to other contacts of the authors. The distribution of the questionnaire led to a sample of 104(See Appendix A1). The sample consisted of 73,1 % male and 26,9 % female respondents, with an average age between 20-25 years. The participants were mainly of a Dutch or German nationality with some exceptions such as a Chinese nationality. The sample mainly consists of students/young working adults, which are related to the University of Twente or Saxion. People participated voluntarily and did not receive any financial or non-financial remuneration.

4.2 Measurements and methods

As stated before the questionnaire was posted on sever social media websites, wherein the participant were asked to fill in the survey within unlimited time. The survey consisted out of four parts. First the survey starts with some questions with regards to the demographic aspects of each participant to gain a general insight into the sample. The second part includes questions about their social media usage and for what reasons they use social media. At the end of this part the participants were asked if they were involved with online co-creation. The third part only was visible for people whom participated in online co-creation, was about their motivations to co-create. These questions about the motivations are based on the factors of the research model (See figure 3). Next to this the third part also consists of questions with regards to their attitude and participation towards co-creation. The fourth part only was visible to the participant whom not participated in online co-creation. This part consisted of questions with regards to why they did not participate in online co-creation and if they will participate in online co-creation in the future.

The questions were mostly based on a Likert response scale with a 5-point format. "1" Not at all and "5" Very likely or "1" Strongly disagree and "5" strongly agree. The amount of choices and statements differed per question.

4.3 Data analysis

For the analysis of the data several statistical tests were used, to be able to test the several factors the measurements for the variables had to be combined into the specific variable they belong to. To be sure that these parameters could be used to form a scale and to be sure they are internally consistent a Cronbach's alpha test was applied (Cronbach, 1951). The Cronbach's alpha test indicated that the parameters from each variable measure the same thing and that they are correlated with each other, this was also expected due to the fact that these measurements were derived from other studies. This test was done for the eight different variables of the research model. The next goal was to find out if there is a relationship between the six independent variables and the dependent variable attitude. To test this two different correlation tests were used. Pearson product-moment correlation coefficient and the nonparametric Spearman's rank correlation coefficient test, these tests both measure if there is a linear correlation between two variables. Before these tests could be applied the assumptions for these tests had to be fulfilled. These assumptions are that the data has to be quantitative, straight enough (linearity), has no extreme outliers and it has to be normally distributed. The linearity and the outlier assumptions were tested by looking at the scatterplots created per independent variable and the variable attitude (See Appendix B3). If the data was normally distributed and the outliers were acceptable, a 1-tailed Pearson test was used and if it was not normally distributed and the data for the variable had outliers that would have an influence on the outcome a 1-tailed Spearman's Rho test was used (See Appendix B4).

4.4 Results

In this part of the paper the results from the empirical study on the survey will be described (Appendix B) and the hypotheses from section 3.2 will be tested. As stated above all the measurements for the six factors all have been tested for the Cronbach's alpha, which makes sure that they can be combined into the eight variables.

In this part of the paper the results from the empirical study on the survey will be described (Appendix B) and the hypotheses from section 3.2 will be tested. As stated above all the measurements for the six factors all have been tested for the Cronbach's alpha, which makes sure that they can be combined into the eight variables.

As we can see in appendix B1 the factors Learning and Hedonic have the highest means with respectively 3,69 and 3,33 with standard deviations of 0,79 and 0,85. The Social factor has the lowest mean of 2,93 with a standard deviation of 0,85. By looking closer at the specific variables it can be said that from the financial factors receiving a discount on a product or service on average scored the highest (Mean of 3,5 with respectively a standard deviation of 1,187) The learning factor scored overall the highest in terms of means, however from the learning factor acquire knowledge on product or services scored the highest with a mean of 3,85 with an standard deviation of 1,077. Entertainment scored the highest for the hedonic factor (Mean of 3,65 and a standard deviation of 1.041). For the personal integrative factor having products or services that benefit personal use scored the highest with a mean of 3,62 and a standard deviation of 0,985. Within the social integrative factor, out of solidarity had the highest mean (3,29 and a standard deviation of 1,088). To have a challenge scored the highest for the psychological factor (mean of 3,35 and a standard deviation of 1,125). For the dependent variables attitude and participation

earning a cash reward scored the highest with means of 4.09 and 3,85 with standard deviations of 0,965 and 1.158.

4.4.1 Results of the study on the hypotheses

H1: Financial rewards have a positive effect on customer's attitude to participate in online co-creation is rejected

The first hypothesis about the financial motivations of consumers to co-create online is rejected. The data found from the survey indicated that the combined means of the parameters are not normally distributed (Measured through the Shapiro-Wilk test) and therefore a Spearman's Rho test was applied to find out if there is a relationship between financial reward and a consumer's attitude towards online co-creation. This test was not found significant ($p > 0,05$) and therefore there cannot be said that there is a relationship between the dependent and independent variable from the test-survey its sample.

Within the variable 'financial reward' there are some remarkable things in terms of means. The means for the direct financial rewards 'earn a cash reward' and especially 'earn a discount on a product/service' are high compared to the other three measurements which can be considered as indirect financial rewards. This can indicate that, for this sample, people are motivated by a direct financial reward but not as much by indirect rewards. By testing the direct financial rewards for correlation with the attitude a significant correlation was found. The correlation is a moderate positive relationship between the variables of 0,358 with a p of 0,019. (See Appendix B4)

H2: Social integrative benefits have a positive effect on customer's attitude to participate in online co-creation is not rejected

This hypothesis is not rejected; the data indicated that the data for this variable has a normal distribution and that there are no extreme outliers. Therefore a Pearson correlation test was applied. The Pearson correlation test was highly significant ($p < 0,001$) which indicates that there is a moderate positive relationship ($r = 0,497$) between the social integrative benefits and someone's attitude towards online co-creation.

H3: Learning benefits have a positive effect on customer's attitude to participate in online co-creation is not rejected

This hypothesis is also not rejected; the data indicated that this variable was not normal distributed and that it had some extreme outliers; however a Spearman's Rho test still could be applied to measure the correlation with the attitude. This test was found significant ($p = 0,008$). Therefore it can be stated that for this sample, there is a moderate positive relationship ($r = 0,408$) between the variable (Technology) knowledge and the attitude of a consumer towards online co-creation.

H4: Psychological benefits have a positive effect on customer's attitude to participate in online co-creation is not rejected

The assumptions were met for the psychological benefits, so a Pearson test could be used. The Pearson correlation test is highly significant for this hypothesis with a $p < 0,001$. There also is a moderate positive correlation between the psychological benefits someone can receive from participating in online co-creation and someone's attitude towards co-creation ($r = 0,498$)

H5: Hedonic benefits have a positive effect on customer's attitude to participate in online co-creation is not rejected

This hypothesis also can be considered as not rejected. The assumptions were met for the hedonic benefits (Normally distributed and it had not extreme outliers). The correlation between hedonic integrative benefits and someone's attitude is highly significant. It is even considered as a strong positive

correlation (0,581) with a p lower than 0,001. Therefore it can be stated that there is a strong correlation between the hedonic integrative benefits and someone's attitude to participate in online co-creation.

H6: Personal integrative benefits have a positive effect on customer's attitude to participate in online co-creation is not rejected.

The personal integrative data was also normally distributed and had no extreme outliers. So it is stated that the personal integrative benefits has the highest positive correlation of all the variables in relation to someone's attitude. With an r of 0,688 it can be considered as a very strong correlation, while the Pearson test was found significant ($p < 0,001$)

H7: Customer's attitude to participate in online co-creation positively influences a customer's participation in online co-creation.

With this hypothesis the relationship between someone's attitude and if someone participates in online co-creation is tested. This relation between attitude and a customer's participation in online co-creation is highly significant ($p < 0,001$). These two variables are as expected very strongly positively correlated (0,914). If someone's attitude is positive toward online co-creation then it is also very likely someone will participate. This is in line with the paper of MacKenzie, Lutz and Belch (1986).

To summarize the findings it can be stated that all the hypotheses were considered as not rejected, with exception of the factor financial reward. The factor financial reward is therefore divided in two groups, direct and indirect rewards. The direct rewards were significant in terms of the Spearman's Rho test. From this it can be stated that from this sample all the variables (except the indirect financial rewards) have a positive relationship with someone's attitude towards online co-creation, however the one with the strongest one is the personal integrative factor. This is backed up by the multi regression analysis as stated in appendix B5 which shows that the personal integrative factor is the only significant factor for that test.

4.4.2 Other interesting results

Some other results worth mentioning are the reasons for people not to participate in online co-creation (See appendix C1); these reasons are different per participant. The main reason people did not participate in online co-creation was that they had a lack of time to be able to participate, however more interesting are the other reasons. Reasons such as that in the opinion of the respondents customers should not be involved within product/service development of businesses (36%), that they were not aware of the possibility (24%), that respondents didn't know how to engage in online co-creation (20%) and that some of the survey participants believed that businesses would not take their ideas seriously (18,6%).

5. DISCUSSION & CONCLUSION

This paper provides the reader with a detailed literature review about co-creation in combination with a conceptual model, which is focused on giving a complete overview of the motivations for consumers to participate in online co-creation. The literature review first defined the concept co-creation and then continued with the developments which lead to this new emerging view on value creation. It then continued with describing the main benefits and challenges related to co-creation. After this, it described the impact of social media on co-creation and continued with describing the position of co-creation within NPD. The literature review ended with the motivations for consumers to participate in co-creation.

5.1.1 Literature review

The introduction of the Web 2.0 and the upcoming of different social media platforms have contributed to a new empowered customer. This empowered customer has more knowledge, is better informed and is aware of its own needs. Armed with new tools, consumer want to interact with firms and thereby 'co-create' value. This development has forced companies to shift their value creation methods from a firm-centric to a customer-centric view by closely integrating customers into their value creation process. These empowered customers can be of value through all the stages of new product development and can have significant influences on almost all aspects of a firm. By successfully implementing and managing co-creation, a firm can potentially gain two sources of competitive advantages, namely increased effectiveness and increased efficiency, however co-creation also can create some challenges for companies. These challenges are related to a lower control and the time consuming process co-creation can be. Consumers still need to be motivated to participate in co-creation. The literature findings show several different motivators for consumers to co-create. These motivators have been combined into one conceptual model. This conceptual model is based on the papers of Füller (2010), Hoyer et al., (2010), Katz et al., (1974) and Nambisan and Baron (2009). These motivators are: Financial rewards, social integrative, technology (knowledge), psychological, hedonic and personal integrative benefits. This model was tested through a pilot questionnaire and contributes to the existing literature by combining the available literature on the motivations for customers to participate in online co-creation.

5.1.2 Empirical study

The empirical study has shown some interesting results for the hypotheses. The study among the 104 respondents has shown that 6 of the total of 7 hypotheses can be considered as significant. These factors "social integrative", "Technology (knowledge)", "Psychological", "Hedonic" and "Personal integrative" are all considered to have a positive relationship with someone's attitude towards online co-creation. From all the variables the "Personal integrative" showed the strongest positive relationship with attitude, which is backed up by the multiple regression analysis (Appendix B5). Next the relationship between the independent variables and the dependent variables the relationship between attitude and participation was tested. The relationship between these two is considered as a very strong positive one and was highly significant, which was expected due to the fact that this relationship already was confirmed by other literature.

The only hypothesis that was rejected was the hypothesis about the financial rewards. The sample showed that the relationship between financial reward and someone's attitude was not significant; however this could be related to the small sample size. Due to this outcome another test was run, wherein the direct financial rewards and the indirect financial rewards were split up. This led to a significant moderate positive relationship between attitude and the direct financial rewards, whereas the relationship between the indirect financial rewards and attitude was not significant.

The practical implications of these findings are that consumers can be motivated through all of these 6 different benefits. Companies can make use of this by promoting these perceived benefits in their co-creation activities, which then could lead to more participation by consumers in their co-creation activities. Especially a focus on the personal integrative benefits could shift someone's attitude towards online co-creation due to the fact that the personal integrative benefits have the strongest

relationship with the variable attitude. Some specific factors which respondents of the survey found important were: the possibility to gain knowledge through co-creation, develop new skills, to entertain/enjoy and to benefit my personal use. These also could be addressed and promoted by firms who want more participation in their co-creation projects.

These findings are consistent with the findings of Nambisan and Baron (2009). These authors focused on identifying the motivations for customers to participate in virtual customer environments. Their empirical study supports the four types of benefits, which are derived from the Uses & Gratification model (Katz et al., 1974), to have a significant influence on customer's their participation. Nambisan and Baron (2009) also considered 'monetary rewards' as a potential motivator for consumers to co-create, however the authors state that these only work as a short term incentive.

Another very interesting point that was found was that more than 67% of the survey respondents did not participate in online co-creation before, while more than 40% of them would like to participate in the future. Some of the main reasons why they did not participate in co-creation earlier on were: that they were not aware of the possibility, that some of the respondent did not know how to engage in online co-creation and that they believed that businesses would not take their ideas seriously. These are reasons which can be overcome through a better communication from a firm towards its customers or other consumers, which then would lead to more people who are willing to participate in online co-creation.

5.1.3 Improvements for the survey

Several suggestions for improvement of the survey (See appendix C2) will be discussed here. The first improvement suggested is that there should be questions added for the 'non-co-creators'. This should be done, because more than 67% of the respondents existed of non-co-creators. If someone filled in that they did not participate in co-creation then they only got two more questions afterwards about the reasons why they did not participate until now. By adding more questions which are focused at their reasons to not participate in co-creation, several new insights into these reasons could be obtained. Insights such as, what would motivate this group to be active in online co-creation and what are the main inhibitors for these people to be active in online-creation, which would be of value for businesses. Another suggestion for improvement would be that there should be questions added about the respondents their activities on social media and then especially focused on finding out what kind of social media platforms would be the most suitable for co-creation activities. The questions in the survey are now just measuring what social media respondents use and how much time they make use of it.

5.1.4 Limitations and further research

There were also several limitations for this research. The first limitation which will be addressed is the small sample size which was collected from sending out the survey. The sample size consisted only of 104 respondents of whom only 34 participated in online co-creation activities before. The respondents mainly came from the author its personal contacts or from the supervisors their contacts. The sample cannot be considered heterogeneous, due to the fact that the respondents mainly were students who follow a bachelor or master degree and who are between the 20 and 25 years old. There are only a few people in the sample who have a job or who are not following a higher education. From the participants around 90% came from the Netherlands or Germany and from the people who did participate in online co-creation even more than 95% was Dutch. This small sample size could lead to a potential bias

due to the fact that it is not representative for the whole population. Another limitation lies within the time restrictions for this study. The author had a limited time of ten weeks to conduct this research and had to collect the data from the survey within one week time. This led to this small sample size, which made it in combination with the limited statistical knowledge of the author hard to interpret the results properly and therefore the results, cannot be considered representative.

Further research should be focused on a larger scale than this study; the main goal of this would be to get a representative sample for the population so that the results could be generalized. This would lead to a more valid and correct overview of the motivations for consumer to participate in online co-creation. A suggestion to obtain this would be that other kinds of distribution channels should be used. The authors distributed their survey through their own Facebook and Twitter, which narrowed down the amount and diversity of the respondents. By using other distribution channels a bigger amount and a more diverse amount respondents can be gathered, which then can lead to a more representative sample. The next suggestion is that the conceptual model should be adjusted before further research will be conducted. The conceptual model does not consider any other influences than the six motivations. The model should be extended with the deterrents and moderators influencing someone's willingness to participate in online co-creation which then also should be added to the survey. Another option for further research would be a focus on specific customer segments, for example on co-creation communities. This would give a better insight on what motivates these people to co-create, due to the fact that members from such a community are active in co-creation. Results from such a study could, for example, help companies improve their own co-creation activities.

6. REFERENCES

- Amabile, T. M. (1996). *Creativity in context: Update to "the social psychology of creativity."* Westview Press.
- Bendapudi, N., & Leone, R. P. (2003). Psychological implications of customer participation in co-production. *Journal of marketing*, 14-28.
- Blazevic, V., & Lievens, A. (2008). Managing innovation through customer coproduced knowledge in electronic services: An exploratory study. *Journal of the Academy of Marketing Science*, 36(1), 138-151.
- Bogers, M., Afuah, A., & Bastian, B. (2010). Users as Innovators: A Review, Critique, and Future Research Directions. *Journal of Management*, 36(4), 857-875. doi:10.1177/0149206309353944
- Bolton, Ruth N. and Shruti Saxena-Iyer (2009), "Interactive Services: A Framework, Synthesis and Research Directions," *Journal of Interactive Marketing*, 23 (1), 91-104.
- Chesbrough, H. W. (2006). The era of open innovation. *Managing innovation and change*, 127(3), 34-41.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297-334.
- Culnan, M. J. et al. (2010): How large U.S. companies can use twitter and other social media to gain business value, in: *MIS Quarterly Executive*, Vol. 9, No. 4, S. 243-259.
- De Chiara, A. (2012). SD Logic and CSR: the management of social capital for the value creation in SMEs. *jbm-Journal of Business Market Management*, 5(2), 137-153.
- Deci, E. L., & Ryan, R. M. (1985). *Self-Determination*. John Wiley & Sons, Inc..
- Deci, E. L., & Ryan, R. M. (Eds.). (2002). *Handbook of self-determination research*. University Rochester Press.
- Enkel, E., Perez-Freije, J., & Gassmann, O. (2005). Minimizing market risks through customer integration in new product development: learning from bad practice. *Creativity and Innovation Management*, 14(4), 425-437.
- Etgar, M. (2008). A descriptive model of the consumer co-production process. *Journal of the Academy of Marketing Science*, 36(1), 97-108.
- Franke, N., & Shah, S. (2011). ePub WU Institutional Repository How Communities Support Innovative Activities: An Exploration of Assistance and Sharing Among End-Users.
- Franke, N., Keinz, P., & Steger, C. J. (2009). Testing the value of customization: when do customers really prefer products tailored to their preferences?. *Journal of Marketing*, 73(5), 103-121.
- Pralhad, C.K., & Ramaswamy, V. (2004). *The Future of Competition: Co-Creating Unique Value with Customers*. Boston: Harvard Business School Press.
- Pralhad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of interactive marketing*, 18(3), 5-14
- Piller, F. T., Ihl, C., & Vossen, A. (2011). *Customer Co-Creation: Open Innovation with Customers*.
- Piller, F., Vossen, A., & Ihl, C. (2012). From social media to social product development: the impact of social media on co-creation of innovation. *Die Unternehmung*, 65(1).
- Fang, E., Palmatier, R. W., & Evans, K. R. (2008). Influence of customer participation on creating and sharing of new product value. *Journal of the Academy of Marketing Science*, 36(3), 322-336.
- Füller, J., Bartl, M., Ernst, H., & Mühlbacher, H. (2006). Community based innovation: How to integrate members of virtual communities into new product development. *Electronic Commerce Research*, 6(1), 57-73.
- Füller, J., Faullant, R., & Matzler, K. (2010). Triggers for virtual customer integration in the development of medical equipment—From a manufacturer and a user's perspective. *Industrial Marketing Management*, 39(8), 1376-1383.
- Hauser, J., Tellis, G. J., & Griffin, A. (2006). Research on innovation: A review and agenda for marketing science. *Marketing Science*, 25(6), 687-717.
- Harhoff, D., Henkel, J., & Von Hippel, E. (2003). Profiting from voluntary information spillovers: how users benefit by freely revealing their innovations. *Research policy*, 32(10), 1753-1769.
- von Hippel, E., & Von Krogh, G. (2006). Free revealing and the private-collective model for innovation incentives. *R&D Management*, 36(3), 295-306.
- Hoyer, W. D., Chandy, R., Dorotic, M., Krafft, M., & Singh, S. S. (2010). Consumer cocreation in new product development. *Journal of Service Research*, 13(3), 283-296.
- Kambil, A., Friesen, G. B., & Sundaram, A. (1999). Co-creation: A new source of value. *Outlook Magazine*, 3(2), 23-29.
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business horizons*, 53(1), 59-68.

- Katz, E., Blumler, J.G., & Gurevitch, M. (1974). Utilization of Mass Communication by the Individual. In: *The Uses of Mass Communications: Current Perspectives on Gratifications Research*. Beverly Hills, CA: Sage, 19–32.
- Lilien, G. L., Morrison, P. D., Searls, K., Sonnack, M., & Von Hippel, E. (2002). Performance assessment of the lead user idea-generation process for new product development. *Management science*, 48(8), 1042-1059.
- Lücking, C. M., Colombo, C., & McInnes, C. R. (2010, September). Orbit control of high area-to-mass ratio spacecraft using electrochromic coating. In *61st International Astronautical Congress, IAC 2010* (pp. IAC10-C1).
- MacCormack, A., Verganti, R., & Iansiti, M. (2001). Developing products on “Internet time”: The anatomy of a flexible development process. *Management science*, 47(1), 133-150.
- MacKenzie, S. B., Lutz, R. J., & Belch, G. E. (1986). The role of attitude toward the ad as a mediator of advertising effectiveness: A test of competing explanations. *Journal of marketing research*, 130-143.
- Nambisan, S., & Baron, R. A. (2009). Virtual Customer Environments: Testing a Model of Voluntary Participation in Value Co-creation Activities. *Journal of Product Innovation Management*, 26(4), 388-406.
- O’Hern, Matthew S. and Aric Rindfleisch (2009), “Customer Co-Creation: A Typology and Research Agenda,” in *Review of Marketing Research*, Vol. 6, Naresh K. Malholtra, ed. Armonk, NY: M.E. Sharpe, 84-106.
- Shapiro, S. S., & Wilk, M. B. (1965). An analysis of variance test for normality (complete samples). *Biometrika*, 52(3/4), 591-611.
- Van Doorn, J., Lemon, K. N., Mittal, V., Nass, S., Pick, D., Pirner, P., & Verhoef, P. C. (2010). Customer engagement behavior: theoretical foundations and research directions. *Journal of Service Research*, 13(3), 253-266.
- Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of marketing*, 1-17.
- Vargo, S. L., Maglio, P. P., & Akaka, M. A. (2008). On value and value co-creation: A service systems and service logic perspective. *European management journal*, 26(3), 145-152.
- Zwass, V. (2010). Co-creation: Toward a taxonomy and an integrated research perspective. *International Journal of Electronic Commerce*, 15(1), 11-48.

7.1.2 Appendix B: Descriptives; Cronbach alpha; Assumptions; Pearson and Spearman Rho tests.

B1. Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Fin	34	1,00	4,60	2,9765	1,03017
Know	34	1,00	5,00	3,6941	,79275
Hedon	34	1,00	5,00	3,3309	,85218
Personal	34	1,00	4,40	2,9706	,82113
Social	34	1,00	5,00	2,9314	,85489
Psych	34	1,00	5,00	3,0588	,80983
Valid N (listwise)	34				

Financial rewards

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Participate Earn cash reward	34	1	5	3,24	1,232
Participate receive discount on product/service	34	1	5	3,50	1,187
Participate earn possible job offer	34	1	5	2,88	1,320
Participate earn equity	34	1	5	2,62	1,280
Participate obtain intellectual propertyownership	34	1	5	2,65	1,323
Valid N (listwise)	34				

Social integrative

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Participate personal relationships	34	1	5	2,74	1,136
Participate enhance existing relationships	34	1	5	3,09	1,215
Participate part of a community	34	1	5	2,94	1,071
Participate match norms	34	1	5	2,79	1,200
Participate get certain social standing/recognition]	34	1	5	2,74	1,109
Participate ToSupport/Solidarity	34	1	5	3,29	1,088
Valid N (listwise)	34				

Technology (Knowledge)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Participate learn through co-creation	34	1	5	3,62	1,155
Participate develop current/new skills	34	1	5	3,59	1,158
Participate acquire knowledge product/services	34	1	5	3,85	1,077
Participate fulfill need information	34	1	5	3,62	,954
Participate out of curiosity	34	1	5	3,79	1,008
Valid N (listwise)	34				

Psychological

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Participate Passionate	34	1	5	3,18	,968
Participate Innerneed to return	34	1	5	2,88	1,250
Participate express myself	34	1	5	3,06	1,071
Participate enhance my self-esteem/self-efficacy	34	1	5	2,82	1,058
Participate have a challenge	34	1	5	3,35	1,125
Valid N (listwise)	34				

Hedonic

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Participate entertain myself	34	1	5	3,65	1,041
Participate change my state of mind	34	1	5	2,85	1,105
Participate offer satisfaction improving product service	34	1	5	3,29	1,060
Participate enjoy	34	1	5	3,53	1,187
Valid N (listwise)	34				

Personal

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Participate construct identity	34	1	4	2,29	1,115
Participate advance career	34	1	5	2,97	1,291
Participate benefit personal use	34	1	5	3,62	,985
Participate signal/earn employers/investors	34	1	5	3,03	1,467
Participate compete with others	34	1	5	2,94	1,179
Valid N (listwise)	34				

B2. Cronbach alpha tests

Cronbach's alpha	
Financial	0,870
Social	0,846
Knowledge	0,792
Hedonic	0,779
Personal	0,700
Psychological	0,790
Attitude	0,838
Participate	0,842

Financial:

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,870	,869	5

Inter-Item Correlation Matrix

	Participate Earn cash reward	Participate receive discount on product/service	Participate earn possible job offer	Participate earn equity	Participate obtain intellectual propertyownership
Participate Earn cash reward	1,000	,642	,651	,443	,461
Participate receive discount on product/service	,642	1,000	,522	,449	,424
Participate earn possible job offer	,651	,522	1,000	,762	,652
Participate earn equity	,443	,449	,762	1,000	,705
Participate obtain intellectual propertyownership	,461	,424	,652	,705	1,000

Social integrative:

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,846	,847	6

Inter-Item Correlation Matrix

	Participate personal relationships	Participate enhance existing relationships	Participate part of a community	Participate match norms	Participate get certain social standing/recognition]	Participate ToSupport/Solidarity
Participate personal relationships	1,000	,763	,485	,403	,520	,334
Participate enhance existing relationships	,763	1,000	,423	,304	,377	,369
Participate part of a community	,485	,423	1,000	,768	,726	,405
Participate match norms	,403	,304	,768	1,000	,640	,349
Participate get certain social standing/recognition]	,520	,377	,726	,640	1,000	,318
Participate ToSupport/Solidarity	,334	,369	,405	,349	,318	1,000

Knowledge

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,792	,793	5

Inter-Item Correlation Matrix

	Participate learn through co-creation	Participate develop current/new skills	Participate acquire knowledge product/services	Participate fulfill need information	Participate out of curiosity
Participate learn through co-creation	1,000	,649	,489	,166	,243
Participate develop current/new skills	,649	1,000	,533	,265	,340
Participate acquire knowledge product/services	,489	,533	1,000	,593	,390
Participate fulfill need information	,166	,265	,593	1,000	,672
Participate out of curiosity	,243	,340	,390	,672	1,000

Hedonic

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,779	,777	4

Inter-Item Correlation Matrix

	Participate entertain myself	Participate change my state of mind	Participate offer satisfaction improving product service	Participate enjoy
Participate entertain myself	1,000	,454	,262	,377
Participate change my state of mind	,454	1,000	,556	,524
Participate offer satisfaction improving product service	,262	,556	1,000	,619
Participate enjoy	,377	,524	,619	1,000

Personal integrative

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,700	,680	5

Inter-Item Correlation Matrix

	Participate construct identity	Participate advance career	Participate benefit personal use	Participate signal/earn employers/investors	Participate compete with others
Participate construct identity	1,000	,448	,105	,291	,267
Participate advance career	,448	1,000	,372	,641	,198
Participate benefit personal use	,105	,372	1,000	,155	-,072
Participate signal/earn employers/investors	,291	,641	,155	1,000	,579
Participate compete with others	,267	,198	-,072	,579	1,000

Psychological

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,790	,801	5

Inter-Item Correlation Matrix

	Participate Passionate	Participate Innerneedto return	Participate express myself	Participate enhance my self-esteem/self-efficacy	Participate have a challenge
Participate Passionate	1,000	,468	,603	,505	,497
Participate Innerneedto return	,468	1,000	,300	,190	,246
Participate express myself	,603	,300	1,000	,598	,535
Participate enhance my self-esteem/self-efficacy	,505	,190	,598	1,000	,512
Participate have a challenge	,497	,246	,535	,512	1,000

Attitude towards online co-creation

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,838	,827	6

Inter-Item Correlation Matrix

	Perception financial reward	Perception learn develop new skills]	Perception entertain myself	Perception advance career	Perception benefit in social status]	Perception enhance self-esteem
Perception financial reward	1,000	,159	,068	,288	,094	,167
Perception learn develop new skills]	,159	1,000	,623	,756	,652	,592
Perception entertain myself	,068	,623	1,000	,430	,355	,257
Perception advance career	,288	,756	,430	1,000	,727	,665
Perception benefit in social status]	,094	,652	,355	,727	1,000	,829
Perception enhance self-esteem	,167	,592	,257	,665	,829	1,000

Participation

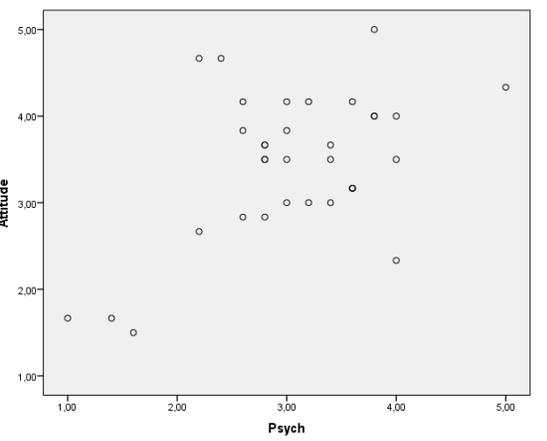
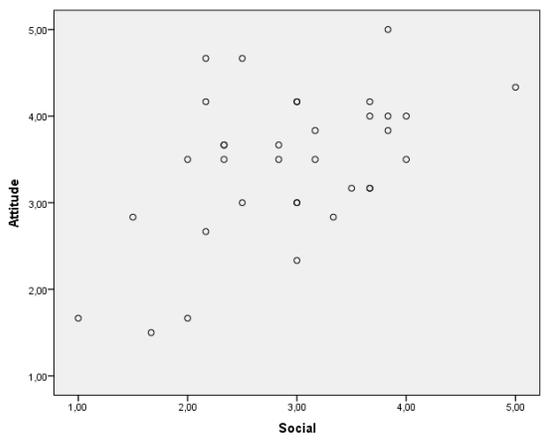
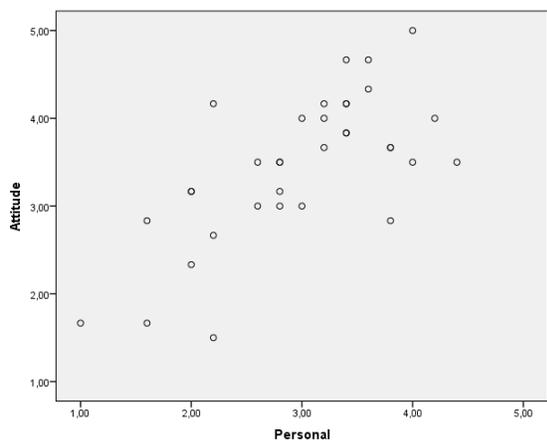
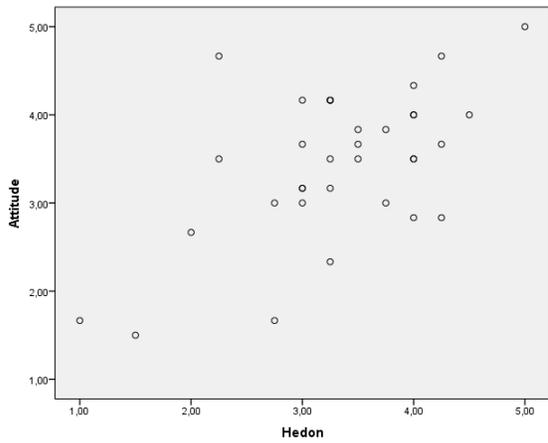
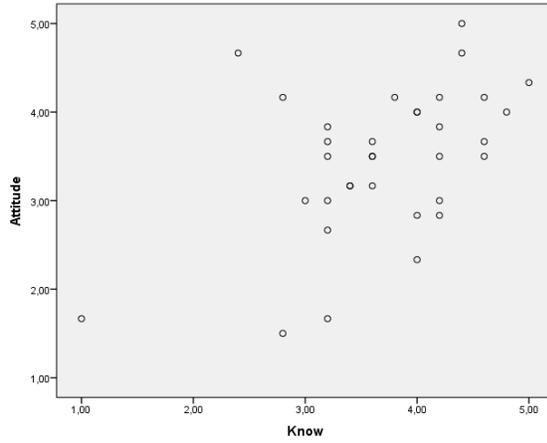
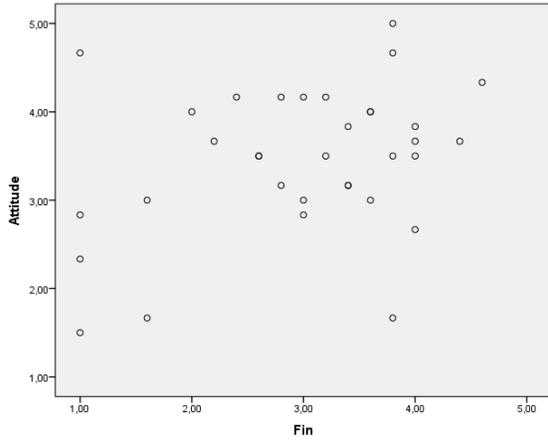
Reliability Statistics

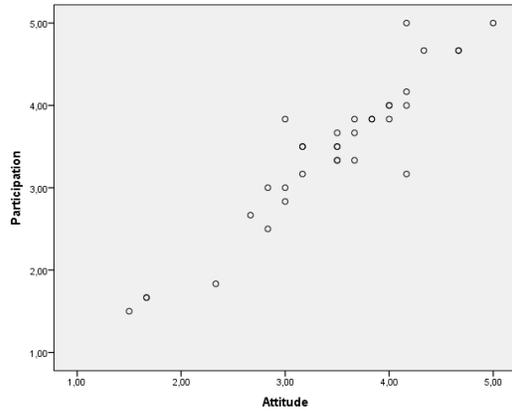
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,842	,836	6

Inter-Item Correlation Matrix

	Tend to participate financial reward	Tend to participate Learn from it and develop Skills	Tend to participate Entertain	Tend to participate Advance in career	Tend to participate Benefit social status	Tend to participate Self-Esteem
Tend to participate financial reward	1,000	,187	-,059	,338	,252	,134
Tend to participate Learn from it and develop Skills	,187	1,000	,603	,676	,659	,585
Tend to participate Entertain	-,059	,603	1,000	,439	,417	,401
Tend to participate Advance in career	,338	,676	,439	1,000	,747	,695
Tend to participate Benefit social status	,252	,659	,417	,747	1,000	,809
Tend to participate Self-Esteem	,134	,585	,401	,695	,809	1,000

B3. Scatterplots and tests of normality for the assumptions of Pearson and Spearman Rho.





Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Fin	,130	34	,156	,919	34	,015
Know	,121	34	,200 [*]	,927	34	,026
Attitude	,139	34	,096	,954	34	,158
Hedon	,143	34	,076	,954	34	,165
Personal	,111	34	,200 [*]	,971	34	,476
Social	,099	34	,200 [*]	,980	34	,760
Psych	,110	34	,200 [*]	,966	34	,354
Participation	,120	34	,200 [*]	,946	34	,093

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

B4. Pearson and Spearman's Rho correlation tests.

Correlations

			Attitude	Fin	Know
Spearman's rho	Attitude	Correlation Coefficient	1,000	,254	,408**
		Sig. (1-tailed)	.	,074	,008
		N	34	34	34
	Fin	Correlation Coefficient	,254	1,000	,202
		Sig. (1-tailed)	,074	.	,126
		N	34	34	34
	Know	Correlation Coefficient	,408**	,202	1,000
		Sig. (1-tailed)	,008	,126	.
		N	34	34	34

** . Correlation is significant at the 0.01 level (1-tailed).

Correlations

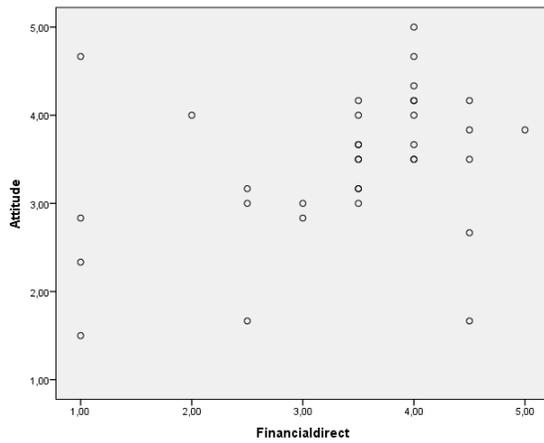
		Attitude	Participation	Hedon	Personal	Social	Psych
Attitude	Pearson Correlation	1	,934**	,581**	,688**	,497**	,498**
	Sig. (1-tailed)		,000	,000	,000	,001	,001
	N	34	34	34	34	34	34
Participation	Pearson Correlation	,934**	1	,568**	,719**	,545**	,482**
	Sig. (1-tailed)	,000		,000	,000	,000	,002
	N	34	34	34	34	34	34
Hedon	Pearson Correlation	,581**	,568**	1	,588**	,571**	,575**
	Sig. (1-tailed)	,000	,000		,000	,000	,000
	N	34	34	34	34	34	34
Personal	Pearson Correlation	,688**	,719**	,588**	1	,521**	,411**
	Sig. (1-tailed)	,000	,000	,000		,001	,008
	N	34	34	34	34	34	34
Social	Pearson Correlation	,497**	,545**	,571**	,521**	1	,845**
	Sig. (1-tailed)	,001	,000	,000	,001		,000
	N	34	34	34	34	34	34
Psych	Pearson Correlation	,498**	,482**	,575**	,411**	,845**	1
	Sig. (1-tailed)	,001	,002	,000	,008	,000	
	N	34	34	34	34	34	34

** . Correlation is significant at the 0.01 level (1-tailed).

Financial direct rewards:

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,782	,782	2



Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Financialdirect	,254	34	,000	,860	34	,000

a. Lilliefors Significance Correction

Correlations

		Attitude	Financialdirect
Attitude	Pearson Correlation	1	,348*
	Sig. (1-tailed)		,022
	N	34	34
Financialdirect	Pearson Correlation	,348*	1
	Sig. (1-tailed)	,022	
	N	34	34

*. Correlation is significant at the 0.05 level (1-tailed).

B5: Multi Regression analysis

Although the small sample size does not allow the usage of such a test, however in this paper it is used to get a brief look at which of the factors has the strongest relationship with attitude.

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	,801	,594		1,350	,188
	Fin	,047	,129	,058	,365	,718
	Know	-,169	,231	-,160	-,731	,471
	Hedon	,271	,206	,276	1,314	,200
	Personal	,548	,194	,537	2,830	,009
	Social	-,151	,263	-,154	-,574	,571
	Psych	,344	,266	,332	1,294	,207

a. Dependent Variable: Attitude

7.1.3 Appendix C

C1. Reasons to not participate in co-creation

Reasons to not participate in co-creation	N=104
I have a lack of time	38,6%
In my opinion customers shouldn't be involved within product/service development of businesses	35,7%
I don't react to news about new products/services.	28,6%
I never discuss about products on social networking websites.	25,7%
I wasn't aware of the possibility	24,3%
I have no knowledge on how to engage in online co-creation activities	20,0%
I am not willing to participate in customer/company forums discussing new products/services.	18,6%
I believe that businesses don't take my ideas seriously.	18,6%
I don't think that I am very good in thinking about new product ideas.	14,3%
I think that other people are more capable of online co-creation	12,9%

C2. Link to the survey

https://docs.google.com/forms/d/1L7fmb_d9-iiFd3x0OGfqdMnbsYZJhG8NcG2X8cMggw/viewform