The fundamentals for a co-creation campaign.

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Abstract

More companies include co-creation campaigns in their marketing strategy. A co-creation campaign helps to create a strong relationship between the customer and the brand. The customer feels involved and the company gains important insights. Most brands create a campaign website to promote and facilitate the co-creation activities. This study focusses on how a co-creation campaign website can be designed to get consumers motivated and having the intention to participate. The study contained a 2x2x2 (Full empowerment v.s select empowerment, financial reward vs. social reward, and complex product vs. simple product) between subjects experimental design. 232 respondents were showed 8 different conditions. These conditions differed in the level of empowerment having either full empowerment or select empowerment, 2 types of reward the participant would receive, either a financial reward or a social reward. The levels of empowerment and type of reward were moderated by product complexity, respondents were showed a simple product or a complex product. These variables were tested on the PAD scale (pleasure, arousal and dominance), intrinsic motivation, extrinsic motivation and intention. The results showed that with a simple product the co-creators prefer full empowerment and with a complex product the co-creators prefer select empowerment. When not having enough knowledge about the product the co-creators seem to prefer a more straightforward task. Also the co-creators gain more pleasure out of a select empowerment task and feel more in control when preforming the task. For companies that would like to initiate a co-creation campaign it is advised to first determine the complexity of the product and then adjust the level of empowerment to ensure high levels of motivations and the intention to participate.

1. Introduction

Co-creation is one of the upcoming marketing tools of the past few years. The website MarketingSociety mentions that in a research done among 1.500 global CEOs it concludes that the most successful organizations these days are the ones that create products together with their consumers and involve them into the organizations main processes (Meyassed, Burgess & Daniel, 2012). With the coming of co-creation, brands are no longer shaped by the marketing managers but more increasingly by the consumers (Christodoulides, Jevons & Anomme, 2012). Customers do no longer want to stand along the sideline, but want to create their own experiences through co-creating with companies (Prahalad & Ramaswamy, 2000). There is a shift from zero consumer empowerment to full consumer empowerment, giving consumers the ability to participate in the production processes of big companies of this world.

Not only consumers benefit from this shift in power, co-creation also has some beneficial aspects for companies. Because companies and consumers produce and interact together, companies can gain important insights from the process (Prahalad & Ramaswamy, 2000). Hoyer et. al. (1990) give some advantages to co-creation in new product development for the company; first, it is a less expensive process to let consumers create products and marketing ads than letting professionals do it. Second, during the process the company creates a strong relationship with the consumers that will lead to brand preference. Third, co-creation can lead to highly effective products and services, because consumers perceive co-created products as more fitting to their needs and having higher quality.

There are some companies that have run or are currently running a co-creation campaign where the consumers have full empowerment. Lays, for example created a whole new product line that was conceptualized by consumers. During this campaign consumers were asked to come up with new crisps flavors. This resulted into three new and innovative flavors that are currently sold in the supermarkets. Another example is from Ikea, who has launched a campaign called Mykea (thisismyikea.com). Consumers can create decorative designs that can be placed in the background of Ikea furniture. These prints that are created by the consumers can be uploaded on a special campaign website and are sold to other consumers.

Both of these examples, as well as many other co-creation campaigns, use a website to promote and facilitate their campaign. The website facilitates the functionalities that allows consumer to participate in a co-creation campaign. The website is the "face" of the campaign and needs to be designed in such a way that consumers are attracted to participated. Also the construct of the co-creation campaign is important to be adjusted in such a way that consumers are motivated and have the intention in participating into the co-creation campaign.

That is why the website atmospherics play an important role in persuading the consumer to participate in the co-creation campaign. This can be translated into either participating or avoiding the co-creation campaign. A more recent study conducted by Eroglu et al. (2001) tested this model on website atmospherics. The study concluded that site atmospherics affected both pleasure and arousal. Website atmospherics have gained more attention recently (Childers, Carr, Peck, & Carson, 2001; Eroglu et al., 2001, 2003; Mathwick, Malhotra, & Rigdon, 2001; Koo & Hu, 2010). Because of this growing interest in website atmospherics researchers have started to look at other characteristics that moderate the effect between website atmospherics and the PAD scale.

Building on this research, the present study will focus on four topics. First, to tests with the PAD model if website atmospherics of a co-creation website have an affect on pleasure, arousal and dominance, which will eventually lead to either approach or avoidance behavior. Secondly, numerous researchers concluded that the level of empowerment affects the consumers. Prahalad and Ramaswamy (2000) state that consumers want to co-create together with companies and have full empowerment. Zhang and Bartol (2010) discovered that full empowerment has a positive effect on intrinsic motivation. It can also be argued that full empowerment would give the co-creator more freedom in the co-creation process than select empowerment and would have a positive affect on motivation and emotional responses. Therefore the researcher wants to investigate if the level of empowerment affects the levels of pleasure, arousal, dominance and motivation of a co-creator that wants to participate into a co-creation campaign.

Third, two recent studies show that there are two stimuli that motivate consumers to participate into a co-creation proces. Hoyer et. al. (2010) found that co-creators are motivated by financial rewards. Nambisan and Baron (2009) discovered that social benefits are the reason that people participate into a co-creation proces. It can be argued that the motivations of financial rewards and social benefits will have a different effects when displayed in a select empowerment co-creation website compared to a full empowerment co-creation website. That is why the financial stimuli and the social benefits stimuli will be tested in a full empowerment co-creation website and a select empowerment website.

Fourth, the researcher argues that product complexity is an important moderator between empowerment and reward on pleasure, arousal, dominance, and motivation. Dahl and Moreau

(2005) argued that people with less knowledge of a complex product or process will gain less enjoyment when working on a related task. That is why it can be argued that high complexity products will have a lower impact on a consumers motivation to participate than a low complexity product. Consumers that need to work on a high complexity product in comparison with a low complexity product might have less knowledge of the product and thus gain less enjoyment working on a related task.

Combining all the conditions the results will give important insights for hosting a co-creation campaign and building the campaign website. What type of reward must be selected for a complex product? And does the company give the consumer select or full empowerment? The result of this research will give companies guidelines for hosting a co-creation campaign and selecting the functions of their website. The content of this research is furthermore described in the following sections.

2. Literature review
2.1 Theoretical foundation
The theoretical foundation of this research is based on the Stimulus, Organism and Response (S-O-R) model. In 1974 the researchers Mehrabian and Russel created the S-O-R framework. This model is most commonly used among environmental psychologists and is also applied when researching website designs. The S-O-R framework suggests that stimuli affect the consumers' emotional state (organism). These emotions eventually lead to a certain behavioral response from the consumer. When translating this to a web environment the stimuli are the atmospheric cues, organisms the cognitive states of consumers, and response as approach/avoidance behaviors (Eroglu et al. 2001).

The S-O-R framework is tested by Eroglu et al. (2001) on website atmospherics. They concluded that website atmospherics affect both pleasure and arousal which eventually leaded to satisfaction and approach/avoidance behavior. Also many other researchers used the S-O-R framework to test emotional responses on website atmospherics (Childers, Carr, Peck, & Carson, 2001; Eroglu et al., 2001, 2003; Mathwick, Malhotra, & Rigdon, 2001; Koo & Hu, 2010). For example, Koo and Ju (2010) used the framework to test the emotional responses on website atmospherics and used perceptual curiosity as moderator between atmospherics and emotional reactions.

2.2 Website atmospherics
Kotler (1973-1974) defines atmospherics as "the conscious designing of space to create certain buyer effects, specifically, the designing of buying

2

environments to produce specific emotional effects in the buyer that enhance purchase probability". Similar to the atmospherics of offline stimuli there are also online atmospheric cues (e.g., colors, graphics, layout, and design). These stimuli can provide information about the brand or retailer (e.g., quality of the brand, the target audience) and influence consumer responses during the visits of the website.

The definition for atmospherics can also be translated to web atmospherics. Web atmospherics is the designing of a web environment in such a way that it creates a positive effect towards users in order to increase the positive consumer responses (e.g., site revisiting, time browsing on site, etc.) (Dailey, 2004). For example, Eroglu, Machleit and Davis (2003) found that increasing qualities of the online store atmospherics have a positive effect on the level of pleasure felt by the shopper. Also Mosteller, Donthu and Eroglu (2014) researched processing fluency in website atmospherics, looking at the background, font type and information intensity in product information forms.

When discussing web environments, the context is mainly constricted to visual and audio cues, where researchers in website atmospherics mainly focus on visual cues. Next to visual cues there are also functional cues that can be identified in a website (Liang & Lai 2002). When testing atmospherics in a servicescape there are also visual cues (colors, lighting, materials, etc) and functional cues (spatial lay-out, furniture, technology, etc). Functional cues in a website environment relate to functions such as a the possibility to pay for an article you have bought on the website, the function to give comments and feedback on products, and the function to create an online profile on the website. Functional cues in website atmospherics are an interesting part of website atmospherics and that is why in this study the researcher will focus on website functionality atmospherics. The author of this research also suggests that functional aspects might have a higher impact on participation than visual cues. For example, it can be argued that a co-creator is more keen with the function to sell his creations than the right color scheme on the website.

*2.3 Select empowerment vs. full empowerment*
From the companies point of view there are multiple strategies to host a co-creation campaign. Fuchs and Schreier (2011) make a distinction between multiple levels of empowerment, ranging from a lot of consumer empowerment to no consumer empowerment. The first level is zero empowerment, this is the traditional way of producing products. The second level is create empowerment, where the company creates the

ideas and selects which products will be produced. The third level is select empowerment, this is where small levels of co-creation come into sight. The company thinks of new ideas for product development and the consumer selects the best idea. Although this is not full co-creation, the first signs of cooperation between consumer and company are visible. Thanks to the great success stories of open source programs such as Linux there has become a shift in power. That is why the fourth level, named full empowerment, is a new way of developing products. Consumers are asked to generate ideas and eventually select what products are going to be developed. This means that consumers can help companies generate ideas and be involved in new product development (Piller, Ihl and Vossen, 2011). From this shift in power the companies gain rewards from consumers such as increased loyalty (Sawhney et al., 2005).

(Amabile, 1996; Spreitzer, 1995) discovered that psychological empowerment makes notable contribution to someone's intrinsic motivation. According to Ryan and Deci (2000) intrinsic motivation is defined as the doing of an activity for someones own satisfaction. When someone is intrinsically motivated that person wil act out of fun or challenge instead of external rewards or pressure. Zhang and Bartol (2010) confirmed the link between empowerment and intrinsic motivation on their recent study on empowerment and creativity. They researched the link between empowerment and intrinsic motivation and between intrinsic motivation and creativity. Both links were confirmed in their research. To reach the highest level of motivation for consumers to participate into a co-creation campaign it is important to know what level of empowerment leads to the highest levels of motivation.

Based on the findings of Amible (1996), Spreitzer (1995), and Zhang and Bartol (2010) it can be argued that empowerment has an positive effect on motivation, the consumers who participate in a co-creation campaign with full empowerment compared to select empowerment have a more positive affect on motivation. In practice this can mean that a consumer might select one out of three new products (Select empowerment) or is allowed to come up with a totally new product (Full empowerment). The co-creation website must be designed in such a way to make either the select empowerment or the full empowerment possible. Because zero empowerment and create empowerment are not a form of co-creating, these were left out of scope. The motivations of someone to participate into a co-creation process is described in the next section.

- *H1:* Full empowerment will have a more positive effect on intrinsic motivation than select empowerment
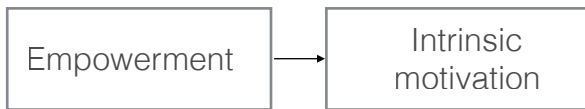
*2.3 Reward, the motivation to co-create*
Besides that the level of empowerment has a positive effect on intrinsic motivation there are also aspects that have an affect on extrinsic motivations to participate in a co-creation campaign. According to Ryan and Deci (2000) extrinsic motivation is the contrast of intrinsic motivation. Where people who are intrinsically motivated will do an activity because they think it's fun, or are challenged. People who are extrinsically motivated will do an activity because they might get a reward, or are ordered to do so. There are two extrinsic motivations that motivate consumers to participate into a co-creation campaign.

First, Hoyer et. al. (2010) found that consumers that participate into a co-creation campaign are motivated by financial rewards. Financial rewards can exist of prizes from winning a competition, able to sell the product to other consumers, or direct shares in profit from the firm that organizes the co-creation campaign. secondly, Nambisan and Baron (2009) found that consumers are motivated by the social benefits they gain from participating. This can refer to the recognition they gain, increased status, social esteem, and creating relationships with other co-creators. The type of reward that is selected for a co-creation campaign might therefore affect extrinsic motivation. This effect might also be influenced by the level of empowerment as described above. When having full empowerment the co-creator might have need for a different type of reward than select empowerment.

When translating the type of rewards into website functionalities, the co-creation website might be adjusted in such a way that it allows the co-creator to share their input for the campaign on the different social media. This way it enables the co-creator the get their social reward and gaining for example increased status and social esteem. The financial reward might be a direct price that is communicated on the website or a complex system that allows co-creators to sell their creation on the platform. This last example was used in a co-creation campaign done by Ikea. Co-creators were able to design a product and sell it on the specially design Ikea website.

Based on the findings done by Hoyer et. al. (2010) and Nambisan and Baron (2009) the researcher argues that gaining a reward for participating into a co-creation campaign should have a positive effect on the participants extrinsic motivation. Also the level of empowerment might influence the type of reward needed to achieve the highest level of extrinsic motivation. When a co-creator has full empowerment and is allowed the freedom to think of a new product (full empowerment) this might be experienced differently than selecting one out of three products (select empowerment). It can be argued that it would cost more effort to think of a new product than selecting one, the co-creator might therefore have more need of a reward. Therefore, the reward could have a more positive effect on extrinsic motivation when the level of empowerment is full compared with when the level of empowerment is select. Based on this the following hypothesis are formalized. As found by the researchers above, motivation to participate into a co-creation campaign can be split into financial motivation and social motivation. Merging these finding the researcher has come to the following model:

- *H2:* A reward will have a positive effect on extrinsic motivation
- *H3*: A reward will have a more positive effect on extrinsic motivation when the level of empowerment is full compared to when the level of empowerment is select
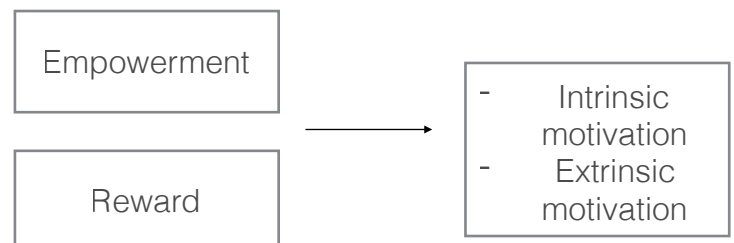

2.3 Pleasure, arousal and dominance
Organism is the second dimension of the S-O-R framework and refers to the emotional response a person might have. The exposure to one of the stimuli as described in the previous sections might influence the emotional and cognitive state of the consumer. These emotional and cognitive responses that a person might have when exposed to a stimuli might change the relationship towards the object. For example, when the user of the co-creation website is exposed to the functionality of the website to sell their creation this might affect his/her emotional state. The most common dimensions that have been studied are the pleasure, arousal and dominance (PAD) dimensions of reactions to atmospheric stimuli (Childers, Carr, Peck, & Carson, 2001; Eroglu et al., 2001, 2003; Mathwick, Malhotra, & Rigdon, 2001; Koo & Hu, 2010).

Pleasure is defined as "the degree to which a person feels good, joyful, happy, or satisfied in a situation (Menon & Kahn, 2002). In this study pleasure is defined as the degree to which a person feels good, joyful, happy, or satisfied in a co-creation campaign website environment. Arousal is defined as "the degree to which a person feels stimulated, active, or alert. In the current study arousal is defined as the amount a person who engages in a online co-creation campaign feels stimulated, active, or alert when navigating through the campaign website. Dominance is defined as "the degree that the consumer has or perceives having control over the situation" (Massara, Lui & Melara, 2009). In this study dominancy is defined as the degree to which a person feels restricted, controlling, helpless or guided in a co-creation campaign website environment. Because full empowerment gives the co-creator more freedom to contribute in the co-creation process than select empowerment it can be argued that this would have a positive effect on the motivation and emotional responses of the co-creator. On the other hand, the co-creator is more likely to feel in control when having options to choose from (select empowerment). The researcher therefore hypothesizes that full empowerment will have a more positive effect on pleasure, arousal than select empowerment and select empowerment will have a more positive effect on dominance than full empowerment.

- *H4*: Full empowerment will have a more positive affect on pleasure than select empowerment.
- *H5*: Full empowerment will have a more positive affect on arousal than select empowerment.
- *H6*: Select empowerment will have a more positive affect on dominance than full empowerment.
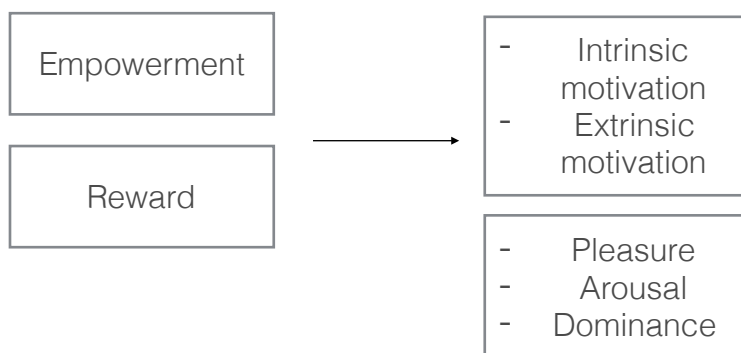
2.4 The intention to co-create
The final dimension of the S-O-R framework is the response. In this research the response refers to the intention a participant has after being exposed to the website stimuli. The response can exist of positive intentions when being exposed to the stimuli. For example, does the user of the website

tend to participate in the co-creation campaign, stay on the website, or further explore the website. Other responses can lead to negative intention, for example leaving the website. It could be argued that a co-creator who has full empowerment in a co-creation campaign enjoys the process more than a co-creator who has select empowerment. When enjoying the proces more the intention to stay on the website and further explore it will be higher. When the co-creator notices that there is a reward for participating into the co-creation campaign the intention to participate and staying on the co-creation website might be higher. When the co-creator only has to select a given option (select empowerment) instead of needing to create a new product by itself (full empowerment) the affect of a reward might lead to a higher level of intention to participate into the co-creation campaign. Therefore the following hypothesis were stated:

- *H7*: Full empowerment will have a more positive affect on intention than select empowerment.
- *H8*: A reward will have a more positive affect on intention when the level of empowerment is select compared to when the level of empowerment is full

2.5 Product complexity as a moderator
Co-creation can be used for different types of products and different types of challenges. For the Mykea campaign the consumer has to make a design to place on Ikea furniture what is something that not everybody can do. Whilst for the Lay's flavor battle the consumer only has to think of a funny and new flavor and let other consumers vote for the best flavor, which is a less complex thing to do.

Not many researchers have made a distinction between complexity of co-created products. Fuchs and Schreier (2011) conducted research on three different types of products: T-shirts, furniture and Bicycles. They suggest that a high complexity co-created product can be perceived of lesser quality because the consumer does not have the appropriate knowledge. Also the average consumer will not be able to compete with a more knowledgeable consumers when creating a high complexity product. There might be a negative outcome when an average consumers is participating in a co-creating process with lack of knowledge.

Numerous researchers mention that people with enough skill in a complex task are more likely to use their own knowledge to complete the task than those with lower levels of skill (Alba & Hutchinson 1987; Sanbonmatsu, Kardes, & Herr 1992). When people need to perform a complex task that allows them the freedom to use their own knowledge, people with a higher skill are likely to gain more

enjoyment of a task than those with lower skill (Dahl & Moreau, 2005). While co-creators with a low skill are more likely to gain enjoyment out of a simple task. It can be argued that when a consumer needs to create a high complexity product compared with a low complexity product and does not have the skill for it, the participants might have more enjoyment in participating with a simple product. For example, thinking of a new ice flavor is less complex than developing a new video editing software tool. The researcher argues that the co-creator might feel less motivated when seeing that the co-creation campaign based on a complex product. Because it can be argued that different product categories require a different amount of skill and therefore effect their enjoyment for the task, the study will be tested on a simple and complex product category.

The product complexity might moderate the effects of empowerment and reward on intention, intrinsic motivation and extrinsic motivation. When having full empowerment but a complex product the effects of empowerment (which should lead to high levels of motivation) might be reduced. Because the co-creator's motivation might be reduced when seeing that the product is very complex and therefore gain less enjoyment out of the task. This same effect might occur for the effects of reward on intention, intrinsic motivation and extrinsic motivation. The co-creator might get motivated when seeing that it will gain a reward for participating. However, when seeing that the product it needs to co-create is very complex this persons motivation might get reduced. There for the following hypothesis were stated.

- *H9*: A reward will have a more positive effect on intention with low complexity products compared to high complexity products
- *H10*: A reward will have a more positive effect on intrinsic motivation with low complexity products compared to high complexity products
- *H11*: A reward will have a more positive effect on extrinsic motivation with low complexity products compared to high complexity products
- *H12*: Empowerment will have a more positive effect on intention with low complexity products compared to high complexity products
- *H13*: Empowerment will have a more positive effect on intrinsic motivation with low complexity products compared to high complexity products
- *H14*: Empowerment will have a more positive effect on extrinsic motivation with low complexity products compared to high complexity products

2.6. Research model
The theoretical framework is based on the S-O-R model from Mehrabian and Russel. The stimuli the levels of empowerment, the type of reward and product complexity. The stimuli lead to pleasure, arousal, dominance, extrinsic motivation or intrinsic motivation. That will eventually lead to either the intention to co-create or not to co-create. Combining all the variables as described in the literature review section the researcher has come to the following research model:

Figure 1: Research model:
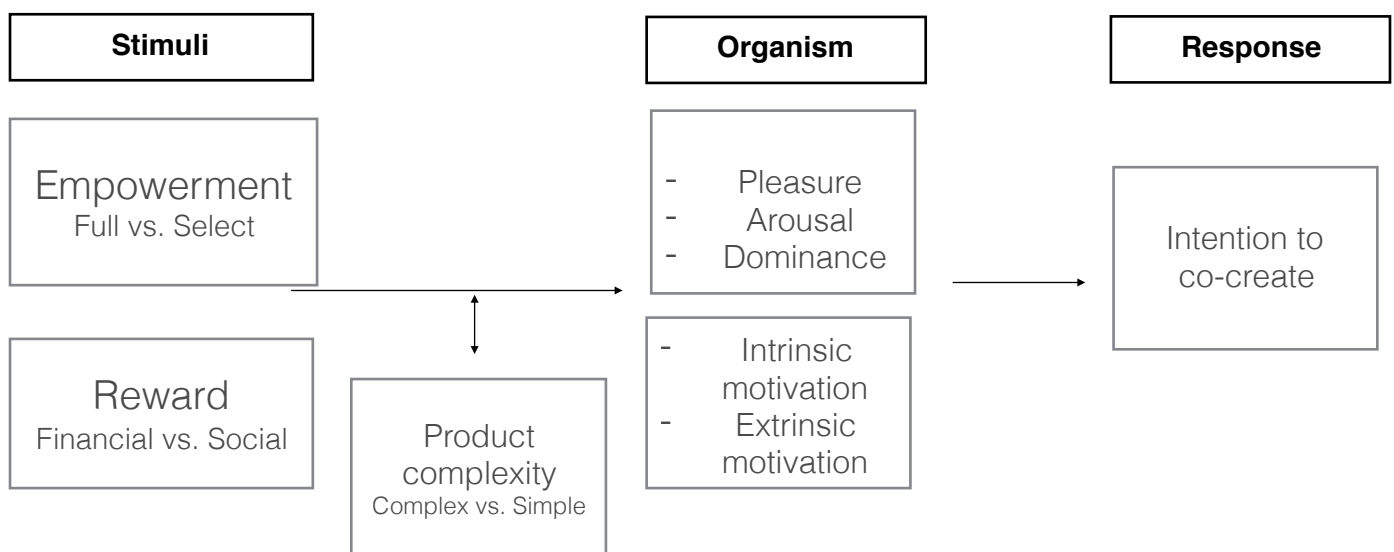
3. Method
In this section the design of this research, the methods and instruments, the procedures, and the

respondents are described. A online questionnaire will be used to collect al the necessary data.

3.1 Design
This research is a 2 x 2 x 2 between subjects experimental design. The two effects of a full empowerment website and a select empowerment website combined with the reward types financial functionality and the social functionality will be tested on levels of pleasure, arousal, dominance, intrinsic motivation, extrinsic motivation and intention. The effects of levels of empowerment and reward type are moderated by high complexity products versus low complexity products.

3.2 Pre-test
A pre-test was conducted to test the different scales and manipulations. The pre-test was conducted in the presence of the researcher to gather immediate and verbal feedback. For each condition one respondent was selected, this leaded into a total of 8 respondents. Each participant had to fill in the survey online while giving verbal feedback. With the feedback the different scales and manipulations were edited to the final version.

3.3 Stimulus materials
To measure the affect of empowerment, product complexity, motivation and the PAD Scale 8 different conditions were made. A basic website template was used as basis for the 8 conditions (See two example conditions on the following page). The levels of empowerment were differentiated by wether the respondent could make up their own new product (full empowerment) or could select one product out of three options (select empowerment). The differences in product complexity were found in a research done by van der Lof (2013) were the researcher discovered that respondents think of ice-cream as a simple product and computer software as a complex product. Therefor, product complexity was manipulated by either showing a website for ice- cream or a website for video editing software. To manipulate the reward and social functionality, people could either win €500,- for their contribution (the financial functionality) or were able to share their input on Facebook and Twitter (social functionality). The conditions were placed into a online questionnaire and distributed online. The participants were randomly assigned to one of the eight conditions. Two conditions are displayed in Figure 2 and Figure 3.

3.4 Measures
The questionnaire consisted of six constructs

Figure 3: condition select empowerment, simple product and social reward

namely; pleasure - arousal - dominance scale, intention, intrinsic motivation and extrinsic motivation. Each of the constructs are described below.

3.4.1 PAD Scale
The three emotional responses pleasure, arousal and dominance will be tested on each condition. The emotional responses are measures with 5 point semantic scale items. Each emotional response included 4 items. These items are selected from research done by Mehrabian and Russell (1974). The result of their research included a list of items that best fit with each emotional response.

Pleasure was measured with a 5 point semantic scale with the items happy/unhappy, inconvenient/ convenient, satisfied/dissatisfied, and pleased/ annoyed. Arousal with a 5 point semantic scale with different the items activated/deactivated, aroused/calm, excited/bored, and sleepy/wide awake. Dominance is measured with a 5 point semantic scale with the items controlling/insecure, serious/unserious, influential/uninfluential, and useless/helpfull.

3.3.2 Intention
Intention was also measured with a 5 point semantic scale. Four questions were asked about the intention of the respondent. This included the items; "I would like to keep use of this co-creation website in the future", "I would rather use this co-creation website than other co-creation websites", "I will frequently use this co-creation website in the future", and "I will recommend others to use this co-creation website".

3.3.3 Intrinsic and extrinsic motivation
Motivation was also measured in a separate scale existing of three items for intrinsic motivation adapted from Amabile (1985), Tier-ney Farmer, and Graen (1991). This 5 point semantic scale included the items: "I enjoy finding solutions to this

company's problems", "I enjoy creating new products for companies, and i enjoy improving this company's products". Besides three items for intrinsic motivation there were also two items for extrinsic motivation, this 5 point semantic scale included the items: i enjoy sharing my ideas with others, and i enjoy gaining rewards for my work.

before starting the analyses for the reliability of the constructs was conducted. For every construct the number of items and the Cronbach's alpha's are displayed in table 1. All the items scored a sufficient Cronbach's alpha so none were deleted.

3.3.4 Manipulation checks
Manipulation checks were added to the survey to verify if the respondents understood the manipulations for empowerment correctly. This 5 point semantic scale included 2 items: "I get the opportunity to create my own ice flavor (or Video Software)", and "my possibilities to create my own ice flavor (or video software) are restricted".

Table 1. results reliability of constructs

Construct	N items	Alpha
Pleasure	4	.81
Arousal	4	.82
Dominance	4	.79
Intention	4	.89
Intrinsic motivation	3	.84
Extrinsic motivation	2	.68

3.4 Participants
259 respondents entered the survey, 21 cases were deleted because they did not fully completed the survey. 3 respondents were younger then 18 and therefore excluded from the data because the researcher wants at least semi-adults for this research, this resulted into 232 useable respondents[1]. Participants were recruited by numerous online channels such as Facebook, Twitter, and direct mailing. 90 respondents were female and 143 male, their average age was 34 with the lowest age of 18 and the highest of 67. The respondents were distributed over the 8 conditions, the lowest number in one condition was 20 and the highest was 34, as can also be seen in Table 2.

Table 2. Distribution between conditions

	N	Percentage of total respondents	Type of product	Type of reward	Level of empowerment	Average age	Distribution Male/Female
	32	14%	Complex	Reward	Full	31	56% / 44%
	32	14%	Complex	Reward	Select	34	64% / 26%
	25	11%	Complex	Social	Full	30	58% / 42%
N=232	28	12%	Complex	Social	Select	35	61% / 39%
	33	14%	Simple	Reward	Full	35	70% / 30%
	34	15%	Simple	Reward	Select	33	47% / 53%
	20	9%	Simple	Social	Full	31	75% / 25%
	29	13%	Simple	Social	Select	34	52% / 48%

4. Results
The results of the analyses will be discussed in this section. The section starts with the main effects followed by the interaction effect.

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[1] On the 12th of January the survey was placed on a platform for respondents, this resulted into a large (N= 155) group of respondents. To check if there were no significant differences between this group and the rest of the respondents an independent sample t-test was conducted. No statistically significant differences were discovered except for the variable arousal.

8

A factorial between groups analysis of variance (ANOVA) was used to investigate the effects of the type of reward (financial reward versus a social reward), product complexity (simple product versus complex), and the level of empowerment (select versus full empowerment on the variables pleasure, arousal, dominance, intrinsic motivation, extrinsic motivation and intention for main and interaction effects.

4.1 Manipulation check

The first analysis was conducted to investigate the results of the manipulation check questions for the level of empowerment. The first manipulation (I get the opportunity to create my own (video software or ice flavor)) had a mean result of $M = 3.32$, $SD = .93$ and did not result into a statistically significant result, t = .327 $p = .242$. The second manipulation (My possibilities to create my own (video software or ice flavor) are restricted) check questions had a mean result of $M = 3.18$, $SD = .92$ and did also not result into a statistically significant

results, t = 1,526 $p = .895$.

4.2 Main effects

The ANOVA revealed a statistically significant main effect for empowerment on pleasure, F (7, 224) = 4,364, $p = .038$. Where select empowerment ($M = 3.95$, $SD = .70$) has a more positive effect on pleasure than full empowerment ($M = 3.72$, $SD = .87$). Empowerment also has a statistically significant main effect on dominance, F (7, 224) = 6.15, $p = .014$. Where select empowerment ($M = 3.61$, $SD = .68$) has a more positive effect than full empowerment ($M = 3.35$, $SD = .8$). Although the main effect of arousal was not statistically significant it had an almost significant effect (F (7, 224) = 6.09, $p = .08$). All the mean results and main effects for empowerment are displayed in table 3 and table 4.

No statistically significant main effects were found for the type of reward. All the mean results and main effects for reward are displayed in table 3 and table 5.

Table 3. Overview of means and standerd deviations for all conditions

	Pleasure	Arousal	Dominance	Intention	Intrinsic Motivation	Extrinsic motivation
	M (SD)	**M (SD)**	**M (SD)**	**M (SD)**	**M (SD)**	**M (SD)**
Select Empowerment	3.95(.70)	3.53(.78)	3.61(.68)	3.36(.78)	3.67(.75)	4.10(.74)
Full Empowerment	3.72(.87)	3.33(.89)	3.35(.79)	3.36(.82)	3.73(.77)	4.04(.70)
Complex product	3.66(.76)	3.23(.73)	3.33(.73)	3.29(.81)	3.63(.76)	4.07(.68)
Simple product	4.02(.79)	3.64(.89)	3.64(.73)	3.42(.78)	3.76(.75)	4.03(.76)
Financial reward	3.83(.85)	3.48(.90)	3.43(.80)	3.34(.80)	3.73(.71)	4.05(.73)
Social reward	3.85(.71)	3.37(.75)	3.55(.67)	3.38(.80)	3.66(.82)	4.04(.71)

Table 4. Main effects of Empowerment

Effects	Dependend Variabel	DF	F	Sig.	N2
	Pleasure	**1**	**4.364**	**.038**	**0.19**
	Arousal	1	3.095	.080	0.14
	Dominance	**1**	**6.149**	**.014**	**.027**
Empowerment	Intention	1	.046	.830	.000
	Intrinsic Motivation	1	.221	.647	.001
	Extrinsic Motivation	1	.39	.843	.000

Table 5. Main effects of Reward

Effects	Dependent Variabel	DF	F	Sig.	N2

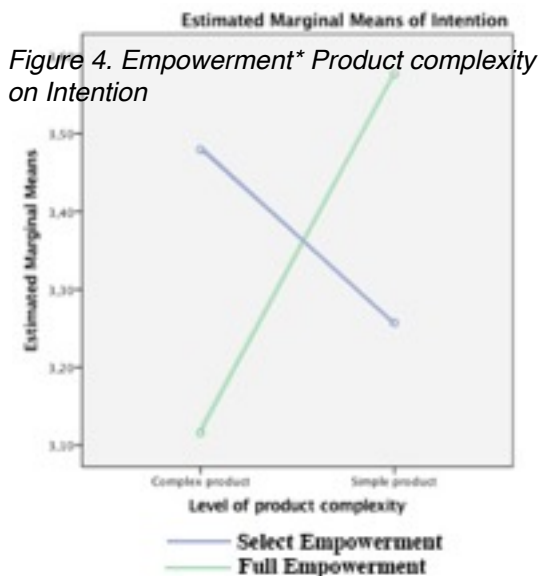|					
	Pleasure	1	.029	.865	.000
	Arousal	1	.885	.348	.004
	Dominance	1	1.367	.243	.006
Reward	Intention	1	.085	.771	.000
	Intrinsic Motivation	1	.421	.517	.002
	Extrinsic Motivation	1	.21	.884	.000

4.3 Interaction effects

Further analyses were performed to discover any interaction effects. A statistically significant interaction indicated that the effects of empowerment on intention depend on the level of product complexity, $F (7, 224) = 10,902, p = .001$. Simple effects analyses were used to further examine the interaction between the level of empowerment and product complexity on intention. The nature of the interaction shows that when the level of empowerment is full and the product complexity is simple, this has a higher mean result for intention than combining full empowerment with a complex product. Also when the level of empowerment is select and the product is complex this has a higher mean result for intention compared to combining select empowerment with a simple product. The interaction effect is also displayed in Figure 4.
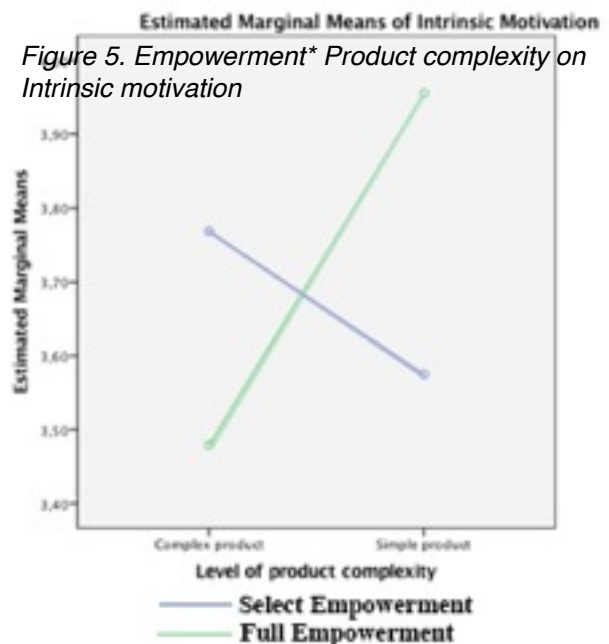
Also a statistically significant interaction revealed that the effects of product complexity on intrinsic

Figure 4. Empowerment* Product complexity on Intention

motivation depend on the level of empowerment, $F (7,224) = 11,493, p = .001$. The simple effects analyses showed the same nature of this interaction as for the results on intention. Combining full empowerment with a simple product results into a higher mean result for intrinsic motivation than combining select empowerment with a simple

product. Also when combining select empowerment with a complex product this results into a higher mean result for intrinsic motivation than combining select empowerment with a simple product. The interaction effect is also displayed in figure 5.

Another statistically significant interaction showed that the effects of product complexity on extrinsic motivation depend on the level of empowerment, $F (7,224) = 6,322, p = .013$. Simple effect analyses also showed the same interaction as for intention and intrinsic motivation. Full empowerment and a simple product result into a higher mean result on

Figure 5. Empowerment* Product complexity on Intrinsic motivation

extrinsic motivation than full empowerment and a complex product. Also select empowerment and a complex product result into a higher mean result on extrinsic motivation the select empowerment and a simple product. The nature of this interaction effect is also displayed in figure 6. All the interaction effects for empowerment and product type are displayed in table 6.

The last statistically significant interaction showed that the effects of empowerment on intention depend on the type of reward, $F (7, 224) = 4,277, p = .04$. The simple effects analyses showed that when combining full empowerment with a financial

10

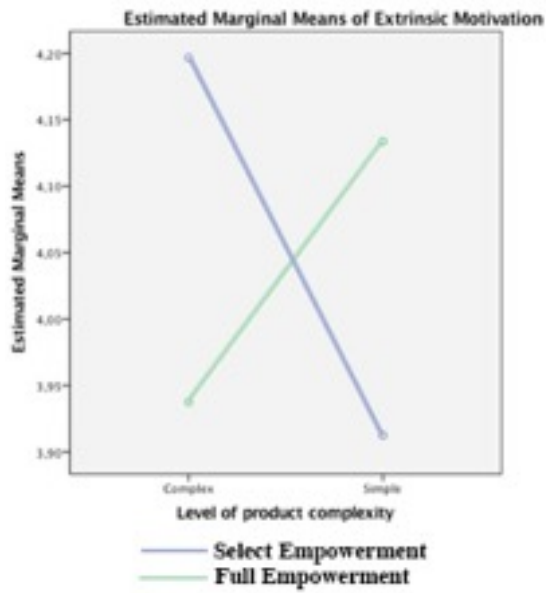Estimated Marginal Means of Extrinsic Motivation

*Figure 7. Empowerment * Reward on intention*

reward this results into a higher mean result on intention than combining full empowerment with a social reward. Also combining select empowerment with a social reward this results into a higher mean result on intention than combining select empowerment with a financial reward. The interaction effect is also displayed in figure 7. All the interaction effects for empowerment and type of reward are displayed in table 7. No interaction effects were found for product type and reward type. The results can be found in table 8. There were also no 3-way interaction effects found in this research.
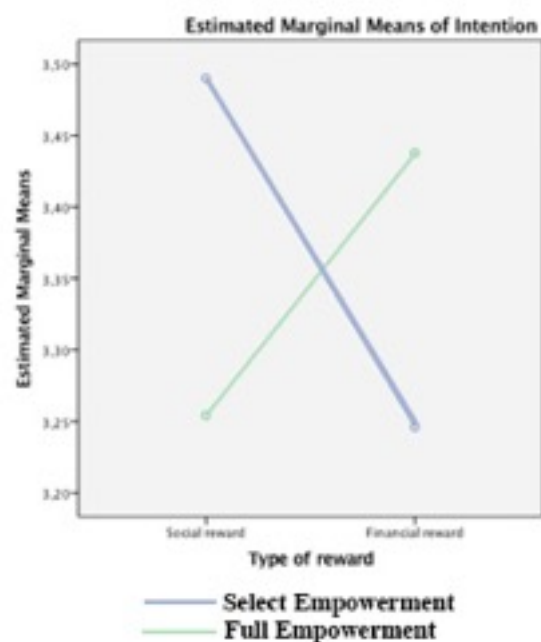

Estimated Marginal Means of Intention

*Table 6. Interaction effects empowerment * product type*

Effects	Dependent Variabel	DF	F	Sig.	n2
Empowerment * Product type	Pleasure	1	.315	.470	.002
	Arousal	1	1.341	.155	.009
	Dominance	1	.004	.948	.001
	Intention	**1**	**10.902**	**.001**	**.046**
	Intrinsic motivation	**1**	**11.493**	**.001**	**.049**
	Extrinsic motivation	**1**	**6.322**	**.013**	**.027**

*Table 7. Interactions effects for empowerment * reward*

Effects	Dependent Variabel	DF	F	Sig.	n2
Empowerment * Type of reward	Pleasure	1	.007	.935	.000
	Arousal	1	.735	.392	.003
	Dominance	1	.268	.605	.001
	Intention	**1**	**4.277**	**.040**	**.019**
	Intrinsic motivation	1	1.119	.291	0.05
	Extrinsic motivation	1	.114	.736	.001

*Table 8. Interaction effects for Reward * Product type*

Effects	Dependent Variabel	DF	F	Sig.	N2
Reward * Product type	Pleasure	1	.173	.678	.001
	Arousal	1	.225	.341	.002
	Dominance	1	.768	.382	.003
	Intention	1	1.742	.188	.008
	Intrinsic motivation	1	.180	.671	.001
	Extrinsic motivation	1	.636	.426	.003

Table 9. Overview confirmed or rejected hypothesis

Hypothesis	Effect	F.	Sig.	Rejected or confirmed
H1	Main effect empowerment on intrinsic motivation	0.46	.830	Rejected
H2	Main effect reward on extrinsic motivation	.21	.884	Rejected
H3	Interaction effect Reward * Empowerment on Extrinsic motivation	.114	.736	Rejected
H4	Main effect empowerment on Pleasure	4.364	.038	**Confirmed**
H5	Main effect empowerment on Arousal	3.095	.80	Rejected
H6	Main effect empowerment on Dominance	6.149	.014	**Confirmed**
H7	Main effect empowerment on Intention	.046	.830	Rejected
H8	Interaction effect Reward * Empowerment on intention	4.277	.040	**Confirmed**
H9	Interaction effect Reward * Product complexity on intention	1.742	.188	Rejected
H10	Interaction effect Reward * Product complexity on intrinsic motivation	.180	.671	Rejected
H11	Interaction effect Reward * Product complexity on Extrinsic motivation	.636	.426	Rejected
H12	Interaction effect Empowerment * Product complexity on Intention	10.902	.001	**Confirmed**

| H13 | Interaction effect Empowerment * Product complexity on Intrinsic motivation | 11.493 | .001 | **Confirmed** |
| H14 | Interaction effect Empowerment * Product complexity on Extrinsic motivation | 6.322 | .013 | **Confirmed** |

4.4 Hypothesis
Followed by these results a number of hypothesis as stated in the literature review section of this research are either confirmed or rejected. In table 9 an overview is displayed with rejected or confirmed hypothesis.

5. Conclusion
During this research the author was looking for ways to optimize the emotional responses, intrinsic motivation, extrinsic motivation and the intention to participate into a co-creation campaign. This was done by manipulating different variables in a co-creation campaign website. By altering the level of empowerment, the complexity of the product and the reward the co-creator would receive, different responses were measured and analyzed. This leaded into some interesting results.

5.1 Discussion
The most interesting result that was found in this research is the interaction effect between empowerment and product complexity. The same nature of the interaction was found on intrinsic motivation, extrinsic motivation and intention and is therefore confirmed by three different scales. When full empowerment is combined with a simple product this results in high levels of intrinsic motivation, extrinsic motivation and intention. On the other hand, when select empowerment is combined with a complex product this also results in high levels of intrinsic motivation, extrinsic motivation and intention.

Amabile (1996), Spreitzer (1995), and Zhang and Bartol (2010) found the link between empowerment and intrinsic motivation. The results that were found in this research support their findings. Also Prahalad and Ramaswamy (2000) stated that consumers want to co-create together with companies and have full empowerment. With the results that were found in this research we can conclude that the findings of Prahalad and

Ramaswamy (2000) is not necessarily the case. Full empowerment does not necessarily mean that it would benefit the campaign. It seems that co-creators find it convenient to pick one of the pre-selected products instead of thinking of a total new product when working with a product that is complex. When the product that is co-created is simple the co-creators get more motivated when they have the full freedom to think of a new product. The researcher speculates that co-creators that need to work with a complex product find it to difficult to think of new product names and therefore require guidelines to help them in the process. When working with a simple product the co-creator is capable of generating their own ideas and therefor get more motivated when they are giving the freedom to do so.

Another interesting results that was found in this research was the interaction between the type of reward and the level of empowerment on extrinsic motivation. When a co-creator has select empowerment it seems to have a higher intention to participate when receiving a social reward. However, when the co-creator has full empowerment it has a higher intention to participate when receiving a financial reward. Hoyer et. al. (2010) discovered that consumers are motivated by financial reward but did not take the level of empowerment into account. Therefore the results found in this research extend the findings done by Hoyer et. al. (2010). The same applies for the findings done by Namibian and Baron (2009), who discovered that co-creators are motivated by the social benefits they gain.

It seems that a co-creator has more need for a social reward when having select empowerment and would like a financial reward when having full empowerment. The researcher speculates that full empowerment tasks would cost more effort to execute (Selecting a new name versus making up of a new name) than a select empowerment task. When it is taking more effort for a co-creator to complete the task, the co-creator might have more need for a financial reward when taking more effort and a social reward when taking less effort.

5.2 Limitations
There are some things that could have been done differently in this research. Researchers that would like to build on the findings done in this research can take the following points into account.

One of the things that can be taken into account is

the way that the respondents perceive the difficulty of a product. The complex and simple product were selected from research done by Lof, N. (2013). However, a respondent that works with computers on a daily basis perceives video editing software as less complex than somebody who never works with computers. Young people who grow up with computers and software probably also perceive video editing software as less complex than older people. Therefore future research could take these variables into account. This could be done by adding manipulation check questions to ask if the questions is perceived as complex or simple.

Also the manipulation check questions did not result into a significant result. This might indicate that the manipulations in this research did not have the desired effect. However, the question itself might also not be formulated correctly. It stated: "I get the opportunity to create my own (video software or ice flavor)", the co-creator could perceive for both select empowerment and full empowerment that they get the opportunity to create their own product. Also the second question: "My possibilities to create my own (video software or ice flavor) are restricted" could be perceived for both select and full empowerment to be restricted. In future research the manipulation questions should be formulated differently to receive the desired effect.

5.3 Future research
Besides the limitation that need to be taken into account when building on this research there are also some topics that are interesting to elaborate more closely.

Product complexity seems to be an important variable that has an effect on the co-creation campaign. It influences the way co-creators experience the level of empowerment and the reward they receive. Therefore it would be interesting to investigated more levels of product complexity. For example, products that would range from very simple, simple, normal, complex and very complex products. This would extend the findings done in this research and would create more elaborate guidelines for companies that want to initiate a co-creation campaign.

In the discussion section the researcher speculated that the level of empowerment would influence the perceived effort it would cost to participate into a co-creation campaign. Costing allot of effort the co-creator might require a higher reward to keep him or her motivated. In future research it would be interesting to test this hypothesis by measuring the perceived effort it would cost and the value of reward it would take to keep the co-creator motivated.

5.4 Conclusion
Some important insights were found for companies to take into account when conducting a co-creation campaign. The first thing a company needs to do is to determine if the product that needs to be created is simple or complex. When working with a complex product the level of empowerment should be reduced to keep co-creators motivated. Guidelines could be added to the campaign to help co-creators make choices. When it is made easier for co-creators to participate the value of the reward can be reduced because it would take co-creators less effort to participate. When working with a simple product the co-creators can have full empowerment and should be given the full freedom to generate ideas. However, because it would take more effort to participate there should be a financial reward to keep the co-creators motivated. Taking these fundamental guidelines into account when initiating a co-creation campaign would help the company reach the optimal levels of motivation and eventually the intention to participate.

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7. Apendix

Pleasure
Getting a reward when participating on this website is:
Happy - Unhappy
Convenient - Inconvenient
Satisfied - Dissatisfied
Pleased - annoyed

Arousal
When i use this co-creation website, I'm:
Aroused - Calm
Wide Awake - Sleepy
Excited - Bored
Activated - Deactivated

Dominance
When i use this co-creation website, i'm:
Controlling - insecure
Serious - Unserious
influential - Uninfluential
Helpful - Useless

Intention [Strongly disagree - Strongly Agree]
I would like to use the co-creation website in the future
I would rather use this co-creation website than other co-creation websites
I will frequently use this co-creation website in the future
I will recommend others to use this co-creation website

Intrisinc Motivation [Strongly disagree - Strongly Agree]
I enjoy finding solutions to this company's problems
I enjoy creating new products for companies
I enjoy improving existing products for companies

Extrinsic Motivation [Strongly disagree - Strongly Agree]
I enjoy sharing my ideas with others
I enjoy gaining rewards for my work

Manipulation checks [Strongly disagree - Strongly Agree]
I get the opportunity to create my own (video software or ice flavor)
My possibilities to create my own (video software or ice flavor) are restricted