

# Co-Innovation: Customer Motives for Participation in Co-Creation Processes via Social Media Platforms

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## ABSTRACT

The evolution of the Internet and external trends such as globalization or increased competition have changed the innovation process of organizations that was traditionally executed inside the organization. The concept of co-innovation involving the customer's knowledge, creativity and judgment to generate value is considered to be an upcoming trend for firms. An increasing number of organizations are engaging customers in their new product development activities via social media platforms. In existing literature, the concept of co-innovation in a B2B context in terms of main benefits for the organizations is extensively discussed. However, another closely related issue has received far less attention: what are the factors that motivate customers to participate in co-creation activities? This research aims to identify customers' motives to co-create. Based on the literature, a research model has been developed that incorporates four motivations. These motivations are based on the uses & gratification theory and include learning, social integrative, personal integrative and hedonic benefits. An empirical study in the form of a survey tested each factor's influence on the attitude towards co-creation. The results confirm the significance of the four benefits as main motivators and revealed two clusters of co-creators, 'motivated co-creators' and 'non-motivated co-creators'. For 'motivated co-creators', learning and hedonic benefits were identified to have the most significant influence on a customer's attitude towards co-creation.

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## Keywords

Co-creation, social media, co-innovation, uses & gratification theory, virtual customer integration, customer motivators

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## 1. INTRODUCTION

These days, nearly all organizations face the challenge of rapidly changing and dynamic environments that require organizations to cope with and adapt to changes. The number of competitors in the market is growing due to globalized markets, customers have more choice because of multiple sales channels, and technology has been developed to generate higher volumes of production and lower prices. A significant change can be outlined in the innovation process of companies, substantially triggered by the invention of the Internet and the rising popularity of social media. As the introduction of social media platforms has led to a wider range of interaction possibilities between consumers and producers, contemporary consumers wish to be involved in the product development process of businesses, with the aim of creating products with higher value that better satisfy their needs (Bhalla, 2010; Prahalad & Ramaswamy, 2000). Hence, an incremental shift of focus can be identified within organizations. Traditionally, innovation was a job exclusively for the research and development department of an organization. These workers were triggered by technology without often focusing on the external market. In contrast, the current innovation process relies increasingly on the contribution of customers' ideas and knowledge. This also causes the change from closed innovation towards an open innovation approach, in which not only internal researchers have an influence in innovative developments. Open innovation mainly involves "opening up the innovation process" (Huizingh, 2011, p. 2). This concept of open innovation implies a more active contribution of customers to new product development (NPD) processes (Chesbrough, 2003). Customers are seen as an important and valuable source of product innovation. Based on the existing literature, the inclusion of customers in new product development is becoming a trend for many organizations and is often referred to as "consumer co-creation" (Füller et al, 2010; Füller & Matzler, 2007; Hoyer et al., 2010). Companies aim to discover customers' ideas, comments and knowledge that might help them develop and commercialize new product concepts. Consumer co-creation can be a competitive advantage for businesses since they are able to meet customer needs more successfully.

But the concept of co-creation is based on a voluntary basis, which implies that consumers have to be motivated in order to participate. Therefore, a key constraint of the concept is the consumer's willingness to exchange his ideas and knowledge with organizations. It is vital for businesses to determine what enables consumers to actively share their ideas and what might inhibit their decision to cooperate. The concept and impact of co-creation and its potential benefits and risks for businesses have been discussed in several papers. However, this concept of consumer co-creation has been scarcely researched in a consumer context. Existing literature lacks the focus on consumers, even though consumers form the key constituent of co-creation. With reference to this gap in the literature, this research will deal with the following research question:

*What are the motives for (European) customers to participate in co-creation processes via social media platforms?*

This research is aimed at outlining the customer's motives and discussing them separately. It will contribute to the fundamental understanding of why some customers are more willing to co-innovate than others. This knowledge will enhance a company's capability to co-innovate. Aside from an informatory literature review, this paper also includes an empirical study to support the theoretical background with contemporary evidence. A survey of potential customers, primarily students, outlines the most important motivations of customers to co-innovate online.

The value of this research for organizations is an understanding of the factors that have an impact on the customer's willingness to co-innovate. These factors should be taken into consideration by companies when searching for new potential customers for co-creation.

This paper consists of two parts. The first part is based on a literature review that reveals a definition of the concept of co-innovation and reports motivations for a customer's willingness to co-innovate. Furthermore, social media as an essential contribution to the emergence of co-innovation will be discussed. The second part of this research investigates the empirical study, including the methodology and report of the results. This paper ends with a substantial conclusion and discussion followed by possible limitations that lead to suggestions for further research.

## 2. LITERATURE REVIEW

With the development of co-creation processes that include the active participation of customers in the value creation of products or services, it is vital that companies have a clear understanding of the concept, its main benefits and the motives for the consumer's willingness to co-create. These aspects will be examined in the following literature review. Additionally, social media as a key enabler of co-creation will be outlined.

### 2.1. Shift from firm-centric to customer-centric perspective

As competition increased, organizations began to move from a mass market to smaller segments and on to a single customer perspective. This change correlates with the shift from a firm-centric to a customer-centric view about value creation (Sheth, Sisodia, & Sharma, 2000).

The traditional firm-centric approach towards value creation and innovation assigns a passive role to the customer in product development processes. This approach positions the customer 'outside the firm' whereas the execution of value creation and innovation happens inside the firm (Sahwney, Verona & Prandelli, 2005; Prahalad & Ramaswamy, 2004). Thus, the traditional consumer can be described as passive, unaware and isolated. Sahwney et al. (2005) simply identify the consumer as a 'recipient' of the goods or services that were pushed onto the market.

In contrast to the firm-centric perspective, the customer is valued as an active and integral part of the value creation process in the customer-centric approach. Due to the incremental spread of the Internet and social media usage, the collaboration between customers and the firm occurs on a two-way communication basis. Dissatisfied with contemporary ranges, consumers want to take an active role in the new product development process of organizations in order to create value that corresponds to their demands (Pralhad & Ramaswamy, 2004). This emerging trend represents an adequate alternative to the traditional firm-centric NPD paradigm resulting in enhanced corporate growth and profitability (O'Hern and Rindfleisch, 2001).

According to Prahalad & Ramaswamy (2004), firms should acknowledge the fundamental shift from a firm-centric to customer-centric approach. As the customer-centric approach connects value creation to the market, organizations are able to benefit from customer experiences, ideas and knowledge through close and direct interaction. Furthermore, Baldwin and Hippel (2009) stress the desirability of a transition from the producer-centric approach to an 'open collaborative innovation' model by concluding that it will enhance social welfare.

## 2.2. Co-innovation

### 2.2.1. The concept and benefits

In highly dynamic markets, collaboration with partners as well as with competitors has been advocated by several academics as a paradigm to maintain competitive advantage (Gulati et al., 2000). But more recently, collaboration with customers as a source of product success is discussed.

Prahalad & Ramaswamy (2000) argue that the shift from a passive and isolated customer to an active and connected one who is involved in innovation processes has introduced the concept of co-creation. In literature, many different definitions of co-creation can be found. For instance, co-creation can be defined as "the process by which products, services, and experiences are developed jointly by companies and their stakeholders, opening up a whole new world of value" (Ramaswamy, 2009). Given this definition, Ramaswamy (2009) clearly states the highly valuable outcome for firms engaging in co-creation. The concept of co-creation contributes to increased customer satisfaction due to the creation of value that better fits consumer needs. Romero and Molina (2011) define co-creation as "the new trend in open-business models trying to integrate organizations' competencies and involve customers' individual preferences into network and community formations for the co-creation of the next level of value for products, services and experiences to be launched into the market" (p.447). This definition describes the consumer-company relationship in co-creation processes as a "network and community" implying close and active interaction. Comparing all the different definitions, they all share the fact that co-creation involves close collaboration between the firm and the customer for the purpose of creating value. In this collaborative process, customers are regarded as valuable external resources who share their knowledge, creativity and judgment. In the literature, co-creation is also related to "crowdsourcing" (Brabham, 2008), "co-innovation" (Lee et al., 2012) or "user innovation" (Bogers et al., 2010). Furthermore, "virtual customer integration" can be identified as a significant form of co-creation as customers are virtually involved in the new product development process of organizations via the Internet (Dahan & Hauser, 2002; Fuller, Faullant, & Matzler, 2010).

Integrating co-creation in the NPD process can provide several benefits for the organization as well as the consumer. For the organization, collaborating with their customers can reduce failure rates and enhance the revenue from new products (Rohrbeck et al., 2010). As new products are designed based on consumer suggestions, these products will be more successful on the market due to the increased satisfaction of needs. In addition, co-creation can foster higher product quality, better market understanding and more innovative products (Campbell and Cooper, 1999; Rohrbeck et al., 2010). Kleemann et al. (2008) also point to a reduced time-to-market for new products. Cost reductions can also be achieved by companies because less input from employees is needed and generally consumers receive no payment for their contribution. Furthermore, it has to be said that co-creation offers a great potential to form closer relationships with customers, which might lead to enhanced customer loyalty (Kambil et al., 1999; Hoyer et al., 2010).

Consumers as the key element of co-creation also benefit from the collaboration. By sharing their knowledge, creativity and judgment, customers profit from the innovation as their needs are better satisfied.

### 2.2.2. Social media as a key enabler

The evolution of the Internet has had a significant impact on the cooperation between organizations and consumers since the 1990s (Kleemann, Voß & Rieder, 2008). Prahalad and Ramaswamy (2000) highlight the relevance of the Internet as it facilitates direct contact between producers and consumers. In particular, "collaborative networks" and "virtual customer communities" as key enablers of the co-creation paradigm caught the interest of many academics recently (Romero & Molina, 2011). These networks are an outcome of the introduction of Web 2.0. Web 2.0 alludes to Internet applications that enable and stimulate interactive communication (Kleemann et al., 2008). Kaplan and Haenlein (2010) define the term as a new trend that uses the World Wide Web "as a platform whereby content and applications are no longer created and published by individuals, but instead are continuously modified by all users in a participatory and collaborative fashion" (p. 61). This development has substantially simplified the interaction of users around the world. The Web 2.0 paradigm has led to the rise of social media. "Social media employ mobile and web-based technologies to create highly interactive platforms via which individuals and communities share, co-create, discuss, and modify user-generated content" (Kietzmann et al., 2011, p. 241). This new trend has gained immense popularity over the last few years. According to Kaplan and Haenlein (2010), 75% of Internet users used social media in the second quarter of 2008. The application of social media comes in several different forms as different platforms exist. Some examples of interactive platforms include blogs, content communities (e.g. Youtube) and social networking sites like Facebook or Twitter (Kaplan & Haenlein, 2010). All these different platforms empower users to create and exchange content and interact with each other. Referring to Urista et al. (2008), who researched why young adults use social media, MySpace and Facebook can be identified as the most prominent social networking sites. Furthermore, Urista et al. (2008) point to themes that trigger people to use social media, including convenient communication, curiosity about others and relationship formation and reinforcement.

In the networked world, organizations' awareness of the various opportunities offered by social media is essential when striving for successful collaboration with their customers (Kaplan & Haenlein, 2010). The use of social media has the benefit of worldwide access, and cheap and fast communication among users. Hence, several organizations incorporate social media as a foundation for interaction with customers in value co-creation. The highly interactive nature of social media offers great potential to enhance the success of buyer-seller collaboration, as sellers can reach their buyers in a more effective and convenient manner (Sashi, 2012; Rohrbeck et al., 2010). Organizations can build relationships with existing and new customers more easily. Using social media platforms, firms can reach a larger audience (Sawhney et al., 2005) and can interact with their customers in a less costly way (Rohrbeck et al., 2010). Furthermore, "virtual customer integration" enhances the speed and persistence of customer engagement (Sawhney et al., 2005). Integrating virtual environments into the innovation process, firms might profit from the "collective creativity" of consumers from all over the world (Helms et al., 2012). Thus, many organizations implement the suggestions gained from collaboration with customers via social media and shape their products and services to better correspond to customer desires and wants.

### 2.2.3. Consumer motivations

Despite the increasing proliferation of co-creation, many companies are challenged to find customers who are willing to collaborate and share their knowledge and ideas (O’Hern and Rindfleisch, 2001). Thus, it is crucial for firms to understand why some customers are more willing to engage in co-creation than others. In existing literature, some academics recognize the key importance of the customer’s willingness to co-create value and shift the focus of co-creation from the prevailing B2B context to the B2C context, pointing to consumer motivations. The uses and gratification (U&G) theory provides an approach to consumer motives that forms the basis for followed research (Katz et al., 1974). This approach has been developed from a functionalist perspective on mass media communication presuming that users are very communicative on media platforms (Luo, 2002). There are many studies that are based on the U&G theory and some others that identify different motives, but which can be classified into the four U&G antecedents (Nambisan & Baron, 2007; Füller et al., 2010; Luo, 2002). The following table provides an overview of motivators identified in existing literature and it illustrates the predominance of the four U&G antecedents as essential motives for participation in co-creation.

	Learning / cognitive / technical factors	Social Integrative factors	Personal Integrative factors	Hedonic factors	Financial factors	dissatisfaction with products
Katz et al. (1974)	x	x	x	x		
Nambisan & Baron (2007)	x	x	x	x		
Füller (2008)	x	x	x		x	
Hoyer et al. (2010)	x	x	x		x	
Nambisan & Baron (2009)	x	x	x	x		
Füller (2006)	x	x	x			x

**Table 1** Overview of the occurrence of motivators

The U&G antecedents that act as motivating factors for participation in co-creation include cognitive, social integrative, personal integrative and hedonic benefits. *Cognitive or learning benefits* imply product-related learning. By engaging in co-creation, consumers obtain knowledge and insight into the products, their usage and existing technologies (Nambisan & Baron, 2007). This cognitive benefit might be an important motivation driving consumers who are eager for knowledge to share their ideas with firms. According to the U&G theory, another motivation can be *social integrative* benefits. Consumers might be motivated to participate by receiving some form of recognition, for example a title that might enhance their status. Amazon, for example, awarded the “Top 100 Reviewer” that created a feeling of uniqueness for the recipients (Hoyer et al., 2010). Further, social and relational ties such as social benefits could also strengthen a consumer’s willingness to interact and exchange with other users or companies. Due to the highly interactive nature of co-creation, consumers are able to develop relationships with other users or the company. *Personal integrative benefits* can be in the form of enhanced credibility, status and confidence (Nambisan & Baron, 2009; Katz et al., 1974). Customers might value increased status and confidence as a result of contributing their knowledge to the innovative processes of a company and creating a new product or improving an existing one. The fourth and last antecedent presented in the U&G theory is a *hedonic* benefit, which

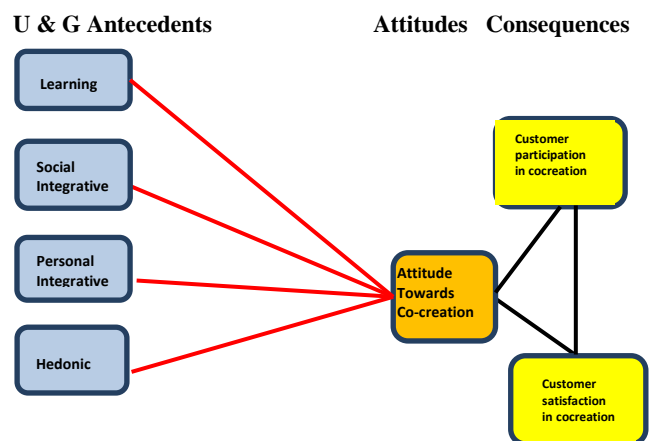
includes enjoyment and entertainment as influencing participation in co-creation activities. Customers might regard their contribution in the co-creation process as a mentally stimulating experience that is interesting, exciting and entertaining (Nambisan & Baron, 2007). Interacting with other users or companies about products or services and closely collaborating with them might be experienced as a highly delightful and exciting activity by customers. This benefit is considered to be perceived by consumers and motivates their participation.

In addition to the U&G theory, Hoyer et al. (2010) classifies potential motivations into financial, social, technical, and psychological factors. Although similarities with the U&G theory can be seen in this approach, Hoyer et al. (2010) presents an additional motivation, i.e. financial factors. As illustrated in the overview (Table 1), social, technical and psychological factors can be assigned to the social integrative, cognitive and personal integrative categories of the U&G theory. Hoyer et al. (2010) states that “some cocreating consumers are motivated by financial rewards, either directly in the form of monetary prizes or profit sharing from the firm that engages in cocreation with them, or indirectly, through the intellectual property that they might receive” (p. 288). But referring to Füller et al. (2010), financial factors cannot be regarded as a significant motivator for customers’ willingness to participate in co-creation.

Furthermore, curiosity about participating, dissatisfaction with existing products, intrinsic interest in co-creation, learning and knowledge-gaining, and sharing own ideas can be identified as other possible motivations (Füller, 2006). As table 1 shows, most of the factors can be equated to the cognitive, social integrative and personal integrative benefits of the U&G theory. Dissatisfaction with existing products might be an additional motivation as consumers might strive to improve existing non-satisfying products.

### 3. RESEARCH MODEL AND HYPOTHESES

In the literature, the most prominent factors affecting the attitude towards co-creation include learning, social integrative, personal integrative and hedonic benefits. These U&G antecedents form the basis of this paper’s research model (Figure 1). The research model demonstrates the association between the benefits for consumers and the attitude towards co-creation. Furthermore, actual participation in co-creation and the coherent satisfaction constitute the consequences of the attitude.



**Figure 2.** Research model

The underlying research model illustrates the interdependency of the variables. The U&G antecedents, which include the consumer's benefits when co-creating with firms, influence the attitude towards co-creation and the proximate participation in and satisfaction with co-creation.

On the basis of the U&G model, hypotheses have been constructed that are aimed at determining whether the antecedents are positively associated with the attitude towards co-creation, and can thus be identified as consumer motivations. Based on the research model, the following four hypotheses will be investigated.

Regarding the literature, many consumers are inquisitive and willing to expand their knowledge. Those customers might be more willing to share their knowledge with companies if they acquire new information and can enhance their knowledge and expertise (Hoyer et al., 2010; Nambisan & Baron, 2007). Thus, the subsequent hypothesis can be stated as:

**H1:** *Learning has a significant and positive influence on the attitude towards co-creation.*

By engaging in co-creation, consumers might benefit from social ties with other users or with the company since the collaboration requires a high degree of interaction and communication (Hoyer et al., 2010). Additionally, participation in co-creation might be enhanced by the expectation of gaining recognition, for example in the form of titles. These benefits lead to the second hypothesis:

**H2:** *Social integrative benefits have a significant and positive influence on the attitude towards co-creation.*

Furthermore, a consumer's motivation might be triggered by personal factors. As previously stated, personal benefits mainly include increased credibility, status and confidence (Nambisan & Baron, 2007). Successfully supporting the company's NPDP processes is assumed to have a positive impact on a participant's self-efficacy. Therefore, personal integrative benefits can be identified as a trigger for a consumer's enhanced motivation to participate in co-creation.

**H3:** *Personal integrative benefits have a significant and positive influence on the attitude towards co-creation.*

Co-creation can be regarded as a creative and stimulating process that entails enjoyment, delight and entertainment for the participating consumers (Nambisan & Baron, 2007). Customers that discover the delight that participation in co-creation provides by engaging the customer to support the company in developing new products or improving existing products are more likely to participate. Hence, the following hypothesis is formulated:

**H4:** *Hedonic benefits have a significant and positive influence on the attitude towards co-creation.*

Based on the research model, a questionnaire has been constructed that forms the basis for this paper's empirical study. Below, the methodology and the results of the survey will be outlined that lead to valuable conclusions at the end.

## 4. METHODOLOGY

An empirical study in the form of an online survey has been conducted with the aim of revealing the importance of the U & G antecedents mentioned above. The survey and its results are vital for drawing significant conclusions that contribute to existing theory.

The content of the survey is based on the theory about co-creation. The formulation of the questions and the corresponding scales have been strongly influenced by existing

literature (see 9.1. Survey Outline in the appendix). Different types of questions are used, including multiple-choice questions, constant sum questions and ranking scale questions such as the Likert scale. The data were collected during a two-week period in May 2013. Regarding the distribution of the survey, social media platforms, primarily Facebook and Twitter, were used to reach respondents worldwide. Ultimately, 239 respondents were identified. The sample essentially comprises students or young professionals from around the world. However, Western European dominance among the respondents can be noted. Based on the distribution channel and respondents, a convenience sample was used.

The analysis of the results was executed by using SPSS and the Latent Gold software. Frequency tables about the first 11 questions of the survey were created via SPSS. These tables provide an overview of the general introduction to the sample (see Tables 1-26 in appendix) which will be discussed in more detail in the results section. Thereafter an exploratory factorial analysis was performed resulting in four motives of participation in co-creation. This analysis was run in order to observe the existence of similarity of factors between previous studies and the data gathered. Furthermore, a latent segmentation methodology is used to define segmentation and profiling of co-creators based on different motives of participation in online co-creation activities by sample analyzed. This type of procedure allows the assignment of individuals to the segments based on their probability of belonging to the clusters, breaking with the restrictions of deterministic assignment inherent to the non-hierarchical cluster analysis (Dillon and Kumar, 1994). Thus, individuals are assigned to different segments under the assumption that the data stems from a mixture of distribution probabilities or, in other words, from various groups or homogenous segments that are mixed in unknown proportions (McLachlan and Basford, 1988). Based on the positioning of the different individuals, with regard to the variables, different grouping patterns can be obtained that fulfill the principles of maximum internal coherence and maximum external differentiation. To carry out the latent segmentation, Latent Gold 4.5 statistical software was used. Finally, based on the clusters obtained, the relationship between each activity of co-creation and the correspondence cluster through across-tables and chi-square statistic has been analyzed in order to dissect the significant differences of each co-creation activity and its position in each obtained cluster.

In the following, the results of the survey will be presented and analyzed so that the research can lead to a discussion comparing the research results to existing literature and the drawing of significant conclusions.

## 5. RESULTS

The underlying questionnaire is intended to discover the applicability and relevance of the previously discussed U&G antecedents as major consumer motives for participation in co-creation activities. This section presents the results of the survey addressing the research question. The analysis of the data collected from the survey is presented in the appendix in the form of tables. For the purpose of clarity, the presentation of results is split into three domains: general introduction analysis, exploratory factorial analysis and latent segmentation analysis.

As a first step in analyzing the data collected from the survey, frequency tables displaying the answers to the 'general introduction' section of the survey, containing questions 1 to 11, have been produced (see frequency tables 1-26 in appendix). These tables provide some valuable information about the sample. In total, 239 participants answered the questionnaire. And most of these respondents (72.4%) are

between 20 and 25 years old. The distribution of gender is nearly balanced as 57.3% are female and 42.7% male. Regarding nationality, it can be stated that the majority of the participants are European (94.5%). Further, a predominance of Germans (55.2%) and Dutch (21.3%) respondents can be identified. When analyzing the occupation, most of the respondents are students: Bachelor's students (61.9%) and Master's students (13%). 46.9% of the respondents spend around one to three hours online a day and 28.9% spend three to six hours online. As to the participants' accounts with different social networking sites, Facebook (96.2%) and YouTube (29.7%) have the highest popularity among the respondents, whereas Twitter (17.6%) and LinkedIn (16.3%) are rarely used. The results also demonstrate that the number of friends or followers on social media sites ranges between 101 and 500 for 64.9% of the participants and 50 of the 239 respondents have more than 500 friends on those sites. Furthermore, the data derived from the survey illustrate that staying in touch with friends and acquaintances, being informed about news and entertainment are the three most important reasons to participate in social media activities. It is striking that just 24.3% of the respondents regard 'making better decisions about products or services they buy' as an important reason for participating in social media activities. This low interest in social media regarding products and services might also explain why only 28.5% of the respondents had already participated in co-creation activities via social media in the last three years. The remaining 69.9% that have not yet participated in co-creation mostly gave the reasons 'never thought about it', 'never participate in forums' and 'never discuss on social networking sites' (see frequency tables 19-26 in appendix). In addition, there are 29 respondents that had not participated in co-creation simply because the opportunity of using social media sites to collaborate with and support companies to create more value was unknown to them.

Secondly, an exploratory factorial analysis (EFA) was done. As a first result of the exploratory factorial analysis (EFA), it can be noted that the Kaiser-Meyer-Olkin (KMO) is meritorious, i.e. higher than 0.8 (Guttman, 1954), and Bartlett's test is highly significant (0.0000), thus indicating that the null hypothesis (i.e. correlation matrix is an identity matrix) is rejected. It shows the validity of the factorial analysis model (Kaiser, 1970). On the other hand, Cronbach's alpha (Cronbach, 1951) values higher than 0.7 indicating the reliability of the extracted factors. In summary, it is a good model acceptability that allows a factor analysis to be done. After factor extraction, an orthogonal varimax rotation was performed on factors with eigenvalues  $\geq 1.0$ , thus allowing minimization of the number of variables with high loadings on a particular factor. From the execution of the exploratory factorial analysis, the following four factors were obtained (see table 27 in the appendix):

Factor 1, **Satisfaction and Enrichment** comprises items on the satisfaction gained from influencing product design and development, satisfaction gained from influencing product usage by other customers, and from helping to design better products. This factor relates to the personal integrative benefit in the U&G theory, which is stated in the fourth hypothesis. Hence, there is no evidence to reject H3.

Factor 2, **Enjoyment** incorporates items relating to the contribution of co-creation to spending some enjoyable and relaxing time, contribution to fun and pleasure, entertainment and stimulating the minds of people, and offering enjoyment derived from problem solving, idea generation, etc. This factor can be equated to the hedonic factor identified in the U&G theory. Therefore, H4 cannot be rejected.

Factor 3, **Network with Community** includes variables relating to expanding the personal network of people, achieving the status/reputation as a product expert in the personal network, enhancing the strength of the person's affiliation with the customer community, and a positive effect on their professional career. This factor corresponds to the previously identified U&G antecedent of 'social integrative benefits'. Thus, it can be stated that H2 cannot be rejected.

Factor 4, **Implications with the Product** is composed of items on enhancing knowledge about the products and their usage, improving knowledge on product trends, related products and technology, and helping people make better product decisions as consumers. This implications with the product might be categorized into the first identified U&G antecedent, i.e. learning. Thus, H1 cannot be rejected.

As a conclusion of this analysis, it can be stated that the four hypotheses of this study can be all accepted, as the four factors positively influence the customer's willingness to engage in co-creation and thus, can be identified as motivators.

Furthermore, as a third step in the analysis of the database, different indicator variables that might have an impact on customer motivations were analyzed using latent segmentation. These different variables include gender, age, nationality and the use of social networking sites (see table 28 in the appendix). Based on the positioning of the different individuals, with regard to these variables, we endeavored to obtain some groupings that fulfill the principles of maximum internal coherence and maximum external differentiation. Using a latent segmentation approach, the first step consisted of selecting the optimum number of segments. The model used estimated from one (no heterogeneity) up to eight (i.e. eight segments or heterogeneity). Table 29 in the appendix shows the estimation process summary and the fit indexes for each of the eight models. Additionally, the Bayesian information criterion (BIC) was considered when evaluating the model fit. The lowest BIC value was considered as the best model indicator (Vermunt and Magidson, 2005). Thus, two different co-creator groups could be identified, i.e. motivated co-creators and non-motivated co-creators. As indicated in table 30 in the appendix, the Wald statistic was also analyzed to evaluate the statistical significance within a group of estimated parameters. For all the indicators a significant p-value associated with the Wald statistics was obtained, confirming that each indicator discriminates between the clusters in a significant way (Vermunt and Magidson, 2005). It is relevant to point out that both segments have the same size (50%). Moreover, all factors load into one cluster, which we have named "motivated co-creators" because the mean values are higher in all factors (i.e. satisfaction and enrichment, enjoyment, network with community, and implications with the product). All values are higher than 2.5 (remember that the values go from 1, very unimportant, to 5, very important). It means that all motivated co-creators consider participation in online co-creation activities to be important and very important. In particular, they consider enjoyment (3.63) and implications with the product (3.80) more important when they participate in co-creation. Satisfaction and network with community as motives for co-creation are considered to be of less value, although are still important (i.e. 2.66 and 2.79, respectively).

In summary, based on data presented in Tables 30 and 31 in the appendix, two different profiles of co-creators can be identified according to our research:

The "*motivated co-creators*" cluster indicates a high mean in F4-Implications with the product (3.8020) and F2-Enjoyment

(3.6382). The mean in F3-Network with community (2.7959) and F1-Satisfaction and enrichment (2.6676) is lower compared to the other two factors. This segment is mainly composed of males (80%) and people over 25 years old (32%). Furthermore, this segment predominantly consists of Dutch co-creators (40%). With respect to the use of social media platforms in this group, Facebook is the most prominent social networking site (92%), followed by LinkedIn (24%). Moreover, accounts with Youtube or Vimeo (36%) and Twitter (36%) can be identified but they are seldom used.

In contrast, the “*non-motivated co-creators*” segment shows a lower mean in all the four factors analyzed. This segment mainly includes females (80%) between 20 and 25 years old (76%). The individuals in this segment come from all over the world, although 48% are German. Regarding the other segment, nearly all individuals in this segment of non-motivated co-creators also have a Facebook account (96%) that is used regularly. 32% of this group do not have an account with LinkedIn but know of it. This group has an account with Blogger, but seldom use it (32%). They do not have an account with Wordpress and do not know of it (36%), but they have an account with YouTube or Vimeo and use it regularly (48%). A high percentage of this group does not have an account with social bookmarking sites (48%). With respect to the other group, this cluster has higher percentage of people with an account with Facebook and use it regularly (96% versus 92%). Nearly half of this group does not have an account with Twitter but know of it (48%). Compared to the previous group, this segment has an account with Instagram, and uses it regularly (32% versus 12%).

## 6. DISCUSSION AND CONCLUSION

This paper investigated the upcoming trend of co-creation between companies and their customers. In existing literature, this concept is predominantly discussed in a B2B context highlighting the benefits for companies. However, this research is aimed at addressing the lack of consideration of consumers by pointing out the main motivations that encourage consumers to participate in co-creation. An empirical study in the form of an online survey was conducted in order to examine the validity of the motivators identified by the literature review.

The literature review revealed that the emergence of the Internet has changed a company's perspective on the value creation process. Traditionally, generating value was a job exclusively done internally by the organization. However, the Internet has enhanced consumers' knowledge and information about products and markets, which is inducing a radical change in the value creation process. Organizations are increasingly recognizing the benefit of involving customers in NPD processes as customers are a valuable source of product success. This customer-centric approach introduces the concept of co-creation. Co-creation has been identified as a process that incorporates customers in new product development by implementing their ideas and suggestions on existing products or even new products. Companies try to interact with customers in order to identify their demands. Social media platforms have been identified as a key enabler of co-creation, as these platforms facilitate access to a larger population around the world and are a more convenient way to interact with their customers.

However, it is essential that customers are motivated to participate in co-creation activities. This research has provided insight into the main motivators that affect a customer's attitude towards co-creation. Companies should be aware of the

importance of these motivators as they are the triggers for customer participation. In the literature, the uses & gratification theory essentially states the main customer motives. These motives include learning, social integrative, personal integrative and hedonic benefits. Several researchers confirmed these four antecedents in their studies (Hoyer et al. (2010); Nambisan & Baron (2009); Fuller et al. (2010)). As illustrated in the research model (figure 2), these four benefits are assumed to positively influence the attitude towards co-creation. This in turn, could lead to participation and satisfaction in co-creation activities. Based on these causal relationships, a survey was conducted aimed at observing the existence of similarity of factors between previous studies and the data obtained from the survey.

Comparing the results of the study with existing literature, a few conclusions can be drawn. First of all, the U&G antecedents as the key elements of the research model are in line with the motivators derived from the data analysis. An analysis of the database identified satisfaction and enrichment, enjoyment, network with community and implications with the product as four factors motivating a customer's willingness to participate in co-creation. These factors say the same as the U&G antecedents and can be classified accordingly. The first factor of satisfaction and enrichment corresponds to the personal integrative benefit stated in the research model; the second factor (enjoyment) corresponds to hedonic benefits; network with community relates to the social integrative benefit and the last factor of implications with the product equates to the learning benefits. In addition, the results of the survey revealed a classification of two clusters: one consisting of 'motivated co-creators' and the other consisting of 'non-motivated co-creators'.

Despite the similarity of the factors derived from the data analysis and the motivators stated in the U&G theory, the results of the survey reveal a difference in the significance of each factor. In the 'motivated co-creators' cluster, enjoyment and implication with the product were identified as having the highest significant impact on the motivation towards co-creation, although satisfaction and enrichment, and network with community also present a significant influence (table 30 in the appendix). The factor with the least influence on motivations is satisfaction and enrichment. Hence, organizations that are striving to find motivated customers should especially bear in mind that these customers essentially intend to gain more knowledge about products and new trends, and they also want enjoyment and appreciate social ties with the organizations. Furthermore, it can be concluded that motivated co-creators mainly use LinkedIn and Facebook as social networking sites. Organizations should thus primarily focus on including Facebook and Twitter as a medium for interacting with and reaching motivated customers. These motivated co-creators are a source of success for an organization and therefore organizations should put an effort into addressing these motivations. By promoting the aforementioned four benefits, organizations might gain a higher number of motivated participants.

These research findings confirm the results of Luo (2002). Luo (2002) concluded that 'entertainment and informativeness' have the most significant influence on a customer's attitude towards co-creation. These two factors correspond to the hedonic and learning benefits that were identified as the main motivators in this study.

All in all, this research study has some essential practical implications for organizations that are recognizing the upcoming trend of co-creation. This study can be regarded as useful for organizations, as it provides insights into the key

elements of co-creation and outlines the most important motivations that influence customers' willingness to engage in co-creation activities. The focus on customer behavior might be beneficial for companies because it is vital that they first understand what triggers customers to share their knowledge, creativity and suggestions. This might lead to a better understanding of customer participation and thus a higher participation rate. When considering co-creation, firms have to bear in mind that customers would participate more if the process offers enjoyment and entertainment, as well as enhanced insight and knowledge of products and technologies. Thus organizations should incorporate these primary customer motives into their co-creation strategy.

However, this research provides insight into customers' motives supported by empirical data, some pointers for further research can be outlined. As this study only focuses on motivators, it would also be interesting to investigate possible deterrents. In other words what factors inhibit the willingness to participate in co-creation activities? This would significantly contribute to existing literature and would help organizations understand their customers better. Furthermore, due to the small sample size of this study, future research should endeavor to obtain a much larger sample in order to enhance the validity and the possibility to generalize the results to a larger population. Future research should also aim to discover additional motives than just the four incorporated in this study and in most of the existing literature, which could lead to a different loading of the factor's significance. Another direction for further research includes increased focus on social media, as it is an essential source of close interaction and facilitates co-creation. In particular, an analysis of the most used social media platforms would represent a stimulating subject whose conclusions contribute to the existing knowledge of the concept of co-creation.

## 7. LIMITATIONS

There are a few limitations of this research that will be outlined in order to stimulate future research on the topic of co-creation.

First of all, the low number of respondents that had participated in a co-creation process with companies constitutes a possible limitation. The results of the survey illustrate that only 68 of the 239 respondents had participated in a co-creation process. This small number does not result in a high validity of the results and thus the derived conclusions might not be applicable to the general population. Therefore, future research should involve more respondents with co-creation experiences in order to obtain more significant results and possibly draw other conclusions that will contribute to existing knowledge.

The sampling method of the distributed survey can be identified as a substantial limitation. As the survey was distributed to acquaintances, there was no random sampling. Hence, the underlying sample primarily consists of students aged between 20-25 years. This lack of diversity among the respondents may cause non-significant results as different age groups, and more importantly diverse educational levels, might reveal other results that could be more easily generalized. Furthermore, the distribution of the survey represents another limitation of this research. The questionnaire was essentially distributed via two social media platforms: Facebook and Twitter. More diverse distribution channels would probably lead to a more heterogeneous sample that would enhance the validity of the results. Moreover, the respondents were mostly European, substantially German and Dutch. This limitation yields results that cannot be generalized to the global market. Distributing the survey to the Asian or American market would most probably

yield different results that strengthen the contemporary knowledge of consumers' motives for co-creation.

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## 9. APPENDIX

### 9.1. Survey Outline

#### GENERAL INTRODUCTION

1. Age
  - a. < 20
  - b. 20 - 25
  - c. > 25
2. Gender
  - a. Female
  - b. Male
3. Nationality
4. Occupation
  - a. Apprenticeship
  - b. Bachelor
  - c. Master
  - d. Job
5. How much time do you usually spend online in an average day?
  - a. 10 - 30 minutes
  - b. 30 - 60 minutes
  - c. 1 - 3 hours
  - d. 3 - 6 hours
  - e. > 6 hours
6. How do you commonly access the Internet? (more than one answer possible)
  - a. From home with a desktop computer
  - b. From home with a laptop
  - c. From home with a tablet
  - d. From work / university with a desktop computer
  - e. From work / university with a laptop
  - f. From work / university with a tablet
  - g. With my mobile phone
7. Indicate in what of the following Social Networking Sites you do have an account and your familiarity / usage of these sites.
  - a. LinkedIn
  - b. Blogger
  - c. Wordpress
  - d. YouTube, VIMEO or other
  - e. Social Bookmarking Sites (Like Delicious, Digg)
  - f. Facebook
  - g. Twitter

Answers per application

I have account and I use it daily

I have an account and I use it seldom or not at all

I don't have account, but I know it

I don't have an account and I don't know it
8. What are important reasons for you to participate in Social Media activities? (more than one answer possible)
  - a. Entertainment
  - b. To get informed about news
  - c. To stay in touch with friends and acquaintances
  - d. To make better decisions about products or services I buy
  - e. To ask for help
  - f. To be able to express my experiences or complaints about products and/or brands I buy
  - g. To help companies make better products
9. How many contacts/friends/followers do you have in the Social Networking Site you mostly use?
  - a. < 10
  - b. 11 - 50
  - c. 51 - 100
  - d. 101 - 500
  - e. > 500

10. In the past 3 years I have participated in online activities involving creation of new products or services (examples: participating in quizzes or challenges, participating in forums discussing product or services ideas, posting such ideas in my social networks or blog, responding to online discussions etc.)
  - a. Yes (Go to Question 12)
  - b. No (Go to Question 11)
11. Reasons I never participate in new product development online: (more than one answer possible)
  - a. I didn't know it is possible.
  - b. I never thought about it.
  - c. I don't think that customers must have a say on products and services that businesses are developing and selling.
  - d. I have no problem with products that do not satisfy me since there are many alternatives to choose from.
  - e. I have no time.
  - f. I believe that businesses don't take customer ideas seriously.
  - g. I don't know how I can participate in new product development online.
  - h. I never discuss about products in social networks.
  - i. I never participate in customer forums discussing new products.
  - j. I never read blog posts about new products.
  - k. I read blog posts about new products but I don't react on them.
  - l. I don't think that I am very good in thinking about new product ideas.

### **ANTECEDENTS U&G THEORY**

12. I participate in online co-creation activities when such activities:

#### **Learning**

- a. Enhance my knowledge about the product and its usage.
- b. Enhance my knowledge on product trends, related products and technology.
- c. Help me make better product decisions as consumers.

#### **Social Integrative**

- d. Expand my personal network.
- e. Raise my status/reputation as product expert in my personal network.
- f. Enhance the strength of my affiliation with the customer community.

#### **Personal Integrative**

- g. Are likely to positively affect my professional career.
- h. Offer me satisfaction from influencing product design and development.
- i. Offer me satisfaction from influencing product usage by other customers.
- j. Offer me satisfaction from helping design better products.

#### **Hedonic Integrative**

- k. Contribute in spending some enjoyable and relaxing time.
- l. Contribute in fun and pleasure.
- m. Entertain and stimulate my mind.
- n. Offer me enjoyment deriving from problem solving, idea generation, etc.

#### **Financial/Material Integrative**

- o. Enhance my financial position directly.
- p. Contribute in creating cheaper products.
- q. Enhance my financial position indirectly. (e.g. by buying products offering higher value)
- r. Deliver non-financial rewards. (e.g. free samples, beta products)

### **MODERATOR EFFECTS**

#### **Community Identification**

13. I believe that customers who participate in co-creation with other customers
 

a. Think like me	Don't think like me
b. Are different from me	Are not different from me
c. Are like me	Are not like me
d. Don't behave like me	Behave like me
e. Could be my friends	Could not be my friends

#### **Brand (and product) Involvement**

14. The chance that I participate in online co-creation is higher if: (YES/NO/NO DIFFERENCE)

- a. I am familiar with the product involved.
- b. I am familiar with the brand involved.
- c. I am user of such a product.
- d. I am a customer of the brand.
- e. I am satisfied with existing products.
- f. I am enthusiastic about the brand.

Web collaboration tools involvement

15. Please indicate whether you have participated in one or more of the activities described below during the last 2 years (multiple answers possible)
- a. I wrote a complaint letter or email.
  - b. I called the customer service line about problems with a new product/service.
  - c. I posted a message on Facebook or Twitter about problems with a new product/service.
  - d. I took part in an online discussion (e.g. blog, forum) about problems with a new product/service.
  - e. I participated in a public forum discussing ideas about new products/services.
  - f. I participated in a company forum discussing ideas about new products/services.
  - g. I wrote a reaction to an independent blog post discussing ideas about new products/services.
  - h. I wrote a reaction to a company post discussing ideas about new products/services.
  - i. I joined a developers team working on new product or service development.
  - j. I took part in an online Beta testing of a new product/service.
  - k. I took part in another form of online user testing of a new product/service.
  - l. I voted for a new product idea on a (social media) website.
  - m. I contributed a new product idea on a (social media) website.
  - n. I discussed new products/services with my friends on Facebook.
  - o. I discussed new products/services with my friends in other social networks.
  - p. I wrote a post about new products/services in my blog.
  - q. I posted messages about new products/services on social media websites (e.g. Twitter, Facebook).

**ATTITUDES**

Attitudes towards co-creation

16. Please vote on the following statements: (STRONGLY AGREE – STRONGLY DISAGREE)
- a. Companies must make it possible for users to be involved in the development of new products/services.
  - b. Users must participate in the development of new products/services without any personal gain or reward.
  - c. Users must participate in the development of new products/services if some kind of personal gain or rewards is involved.
  - d. Users must provide ideas as basis for development of new products/services.
  - e. Users must be able to test product concepts before these are launched.
  - f. Intensive involvement of final customers in the new product development process results in better products/services.
  - g. Engaging customers in the process of new product development increases the danger of leaks of company secrets.
  - h. Users must not be involved in the online innovation process.

**Consequences**

Customer Participation

17. Within the last 3 years...:
- a. I participated in co-creation activities online when no financial or other type of reward was offered.
  - b. I participated in co-creation activities only if a financial or other type of reward was offered.
  - c. I rated a product or service after purchase out of my own initiative.
  - d. I rated a product or service after purchase because I was invited to do so by the seller.

Satisfaction with Co-creation

18. Rate the following statements: (strongly disagree-strongly agree)
- a. I think that co-creation with companies results in better products.
  - b. I think that co-creation with companies results in lower development costs.
  - c. I think that co-creation with companies results in shorter product development time.
  - d. I think that products developed in co-creation with companies have better chances to be successful.
  - e. I think that I will be more satisfied with products developed in co-creation processes.

## 9.2. Results of the survey

*General Introduction (referring to questions 1-11 of the survey outline)*

**Table 1: Age**

	Frequencies	Percentages	Cumulative Percentages
<20	20	8.4	8.4
20-25	173	72.4	80.8
>25	46	19.2	100.0
Total	239	100.0	

**Table 2: Gender**

	Frequencies	Percentages	Cumulative Percentages
Female	137	57.3	57.3
Male	102	42.7	100.0
Total	239	100.0	

**Table 3: Nationality**

	Frequencies	Percentages	Cumulative Percentages
European	226	94.5	94.5
Non- European	13	4.5	4.5
Total	239	100.0	

	Frequencies	Percentages	Cumulative Percentages
Dutch	51	21.3	21.3
German	132	55.2	76.6
Other	56	23.4	100.0
Total	239	100.0	

**Table 4: Occupation**

	Frequencies	Percentages	Cumulative Percentages
Apprenticeship	3	1.3	1.3
Secondary School	5	2.1	3.3
College (HBO)	20	8.4	11.7
Bachelor	148	61.9	73.6
Master	31	13.0	86.6
	32	13.4	100.0

Job	239	100.0
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**Table 5: Time spend online**

	Frequencies	Percentages	Cumulative Percentages
10-30 minutes	5	2.1	2.1
30-60 minutes	14	5.9	7.9
1-3 hours	112	46.9	54.8
3-6 hours	69	28.9	83.7
>6 hours	39	16.3	100.0
Total	239	100.0	

**Table 6: LinkedIn account**

	Frequencies	Percentages	Cumulative Percentages
0	26	10.9	10.9
have account & use it daily	39	16.3	27.2
have account & use it seldom/not at all	45	18.8	46.0
no account & but known	83	34.7	80.8
no account & not known	46	19.2	100.0
Total	239	100.0	

**Table 7: YouTube account**

	Frequencies	Percentages	Cumulative Percentages
0	14	5.9	5.9
have account & use daily	71	29.7	35.6
have account & use seldom/not at all	77	32.2	67.8
no account & but known	73	30.5	98.3
no account & not known	4	1.7	100.0
Total	239	100.0	

**Table 8: Facebook account**

	Frequencies	Percentages	Cumulative Percentages
0	1	.4	.4
have account & use daily	230	96.2	96.7
have account & use seldom/not at all	3	1.3	97.9
no account & but known	5	2.1	100.0
Total	239	100.0	

**Table 9: Twitter account**

	Frequencies	Percentages	Cumulative Percentages
0	25	10.5	10.5
have account & use daily	42	17.6	28.0
have account & use seldom/not at all	49	20.5	48.5
no account & but known	118	49.4	97.9
no account & not known	5	2.1	100.0
Total	239	100.0	

**Table 10: Reasons for participating in Social Media activities: Entertainment**

	Frequencies	Percentages	Cumulative Percentages
no	62	25.9	25.9
yes	177	74.1	100.0
Total	239	100.0	

**Table 11: Reasons for participating in Social Media activities: Informed about news**

	Frequencies	Percentages	Cumulative Percentages
no	83	34.7	34.7
yes	156	65.3	100.0
Total	239	100.0	

**Table 12: Reasons for participating in Social Media activities: Staying in touch**

	Frequencies	Percentages	Cumulative Percentages
no	15	6.3	6.3
yes	224	93.7	100.0
Total	239	100.0	

**Table 13: Reasons for participating in Social Media activities: Better buying decisions**

	Frequencies	Percentages	Cumulative Percentages
no	181	75.7	75.7
yes	58	24.3	100.0
Total	239	100.0	

**Table 14: Reasons for participating in Social Media activities: Asking for help**

	Frequencies	Percentages	Cumulative Percentages
no	177	74.1	74.1
yes	62	25.9	100.0
Total	239	100.0	



**Table 15: Reasons for participating in Social Media activities: Expression of experiences/ complaints**

	Frequencies	Percentages	Cumulative Percentages
no	221	92.5	92.5
yes	18	7.5	100.0
Total	239	100.0	

**Table 16: Reasons for participating in Social Media activities: Helping companies**

	Frequencies	Percentages	Cumulative Percentages
no	236	98.7	98.7
yes	3	1.3	100.0
Total	239	100.0	

**Table 17: Contacts/Friends/Followers on SNS**

	Frequencies	Percentages	Cumulative Percentages
0	1	.4	.4
<10	1	.4	.8
11-50	12	5.0	5.9
51-100	20	8.4	14.2
101-500	155	64.9	79.1
>500	50	20.9	100.0
Total	239	100.0	

**Table 18: Participation in co-creation (in the last 3 years)**

	Frequencies	Percentages	Cumulative Percentages
yes	68	28.5	30.1
no	167	69.9	100.0
Total	239	100.0	

**Table 19: Reasons for no participation in online NPD: Didn't know about it (0=not chosen, 1=chosen)**

	Frequencies	Percentages	Cumulative Percentages
	70	29.3	29.3
0	140	58.6	87.9
1	29	12.1	100.0
Total	239	100.0	

**Table 20: Reasons for no participation in online NPD: Never thought about it (0=not chosen, 1=chosen)**

	Frequencies	Percentages	Cumulative Percentages
	70	29.3	29.3
0	72	30.1	59.4

1	97	40.6	100.0
Total	239	100.0	

**Table 21:** Reasons for no participation in online NPD: **Unnecessary** (0=not chosen, 1=chosen)

	Frequencies	Percentages	Cumulative Percentages
	70	29.3	29.3
0	164	68.6	97.9
1	5	2.1	100.0
Total	239	100.0	

**Table 22:** Reasons for no participation in online NPD: **Don't know how it works** (0=not chosen, 1=chosen)

	Frequencies	Percentages	Cumulative Percentages
	70	29.3	29.3
0	138	57.7	87.0
1	31	13.0	100.0
Total	239	100.0	

**Table 23:** Reasons for no participation in online NPD: **Never discuss on SNS** (0=not chosen, 1=chosen)

	Frequencies	Percentages	Cumulative Percentages
	70	29.3	29.3
0	113	47.3	76.6
1	56	23.4	100.0
Total	239	100.0	

**Table 24:** Reasons for no participation in online NPD: **Never participate in forums** (0=not chosen, 1=chosen)

	Frequencies	Percentages	Cumulative Percentages
	70	29.3	29.3
0	109	45.6	74.9
1	60	25.1	100.0
Total	239	100.0	

**Table 25:** Reasons for no participation in online NPD: **Never read blog posts** (0=not chosen, 1=chosen)

	Frequencies	Percentages	Cumulative Percentages
	70	29.3	29.3
0	138	57.7	87.0

1	31	13.0	100.0
Total	239	100.0	

**Table 26:** Reasons for no participation in online NPD: **Lack of creativity to engage in NPD** (0=not chosen, 1=chosen)

	Frequencies	Percentages	Cumulative Percentages
0	70	29.3	29.3
1	156	65.3	94.6
Total	239	100.0	100.0

*Exploratory Factorial Analysis: Motives of participation in online co-creation activities*

**Table 27: Factor loadings of EFA**

Items (I) about motives of participation in co-creation	Factor 1. Satisfaction and enrichment	Factor 2. Enjoyment	Factor 3. Network with community	Factor 4. Implication with the product
I1-Enhance my knowledge about the product and their usage				.724
I2-Enhance my knowledge on product trends, related products and technology				.725
I3-Help me make better product decisions as consumer				.578
I4-Expand my personal network			.686	
I5-Release my status/reputation as product expert in my personal network			.864	
I6-Enhance the strength of my affiliation with the customer community			.619	
I7-Are likely to positively affect my professional career			.704	
I8-Offer me satisfaction from influencing product design and development	.651			
I9-Offer me satisfaction from influencing product usage by other customers	.530			
I10-Offer me satisfaction from helping design better products	.711			
I11-Contribute in spending some enjoyable and relaxing time		.766		
I12- Contribute in fun and pleasure		.815		
I13-Entertain and stimulate my mind		.832		
I14-Offer me enjoyment deriving from problem solving, ideas generation, etc.		.753		
I15-Earn me money directly	.662			
I16-Contribute in creating cheaper products	.699			

I17-Enhance my financial position indirectly (e.g. by buying products offering higher value)	.600			
I18-Deliver non-financial rewards (receiving product for free, beta products, etc.)	.717			
% Variance explained	46.99%	11.16%	8.29%	5.79%
Cumulative variance	46.99%	58.15%	66.45%	72.25%
Cronbach's alpha	.878	.914	.812	.843

*Latent Segmentation: A typology of co-creators based on motives of participation in online co-creation activities*

**Table 28: Indicators and covariates**

VAR.	ITEMS MEASURED	CATEGORIES
<b>I N D I C A T O R S</b>	<b>Motives of participation in co-creations:</b>	Very unimportant
	F1- Satisfaction and enrichment	Unimportant
	F2- Enjoyment	Neither unimportant nor important
	F3- Network with community	Important
	F4- Implication with the product	Very important
<b>C O V A R I A T E S</b>	Gender	Female Male
	Age	Less than 20 years old Between 20 and 25 years old More than 25 years old
	Nationality	Dutch German Rest of Europe America Rest of world
	Use of Social Media tools: LinkedIn Blogger Wordpress YouTube, VIMEO or other Social bookmarking sites (Delicious, Digg, etc.) Facebook Twitter Instagram	Have an account and use it regularly Have an account and use it seldom Don't have an account but know it Don't have an account and don't know

**Table 29: Estimates and fix indexes**

Number of conglomerates	LL	BIC(LL)	Npar	Class.Err.	E <sub>s</sub>	R <sup>2</sup>
1-Cluster	-216.2317	733.6892	77	.0000	1.0000	1.0000
<b>2-Cluster</b>	<b>-117.3402</b>	<b>715.8593</b>	<b>123</b>	.0000	1.0000	1.0000
3-Cluster	-98.8832	858.8984	169	.0000	1.0000	1.0000

4-Cluster	-66.8999	974.8847	215	.0001	.9996	.9998
5-Cluster	-37.1556	1095.349	261	.0000	.9998	.9999
6-Cluster	-31.5015	1263.994	307	.0000	1.0000	1.0000
7-Cluster	-10.9516	1402.847	353	.0001	.9994	.9997
8-Cluster	-5.8578	1572.612	399	.0000	.9998	.9999
LL=log-likelihood; BIC=Bayesian information criterion; Npar=number of parameters; Class.Err.=classification error; E <sub>s</sub> = entropy statistic ( <i>entropy R-squared</i> ); R <sup>2</sup> =Standard R-squared						

**Table 30: Profile of co-creators (indicators): Motives of participating in co-creation activities**

	MOTIVATED CO-CREATORS	NON-MOTIVATED CO-CREATORS	Wald	p-value	R <sup>2</sup>
Cluster Size	50.00%	50.00%			
<b>Indicators</b>					
F1-Satisfaction and enrichment	<b>2.6676</b>	2.4884	14.5703	.00014	.0192
F2- Enjoyment	<b>3.6382</b>	3.0410	9.3799	.0022	.1011
F3- Network with community	<b>2.7959</b>	2.2538	4.1007	.043	.0758
F4- Implication with the product	<b>3.8029</b>	2.5626	19.3978	1.1e-5	.2795
In <b>bold</b> is marked the higher weight obtained by each factor per cluster					

**Table 31: Profile of co-creators (covariates): Descriptive criteria**

DESCRIPTIVE CRITERIA (Covariates)	CATEGORIES	MOTIVATED CO-CREATORS	NON-MOTIVATED COCREATORS	Wald	p-value
<b>Gender</b>	Female	48%	<b>80%</b>	06201	.043
	Male	<b>52%</b>	20%		
<b>Age</b>	Less than 20 years old	4%	4%	.0490	.094
	Between 20 and 25 years old	64%	<b>76%</b>		
	More than 25 years old	<b>32%</b>	20%		
<b>Nationality</b>	Dutch	<b>40%</b>	8%	3.0355	.055
	German	32%	<b>48%</b>		
	Rest of Europe	20%	<b>24%</b>		
	America	8%	8%		
	Rest of world	0%	<b>12%</b>		
<b>LinkedIn</b>	Have an account and use it regularly	<b>24%</b>	16%	2.6112	.062
	Have an account and use it seldom	24%	24%		
	Don't have an account but know it	28%	<b>32%</b>		
	Don't have an account and don't know it	16%	16%		
<b>Blogger</b>	Have an account and use it regularly	8%	<b>16%</b>	2.8046	.042
	Have an account and use it seldom	28%	<b>32%</b>		
	Don't have an account but know it	0%	0%		
	Don't have an account and don't know it	<b>52%</b>	32%		

<b>wordpress</b>	Have an account and use it regularly	<b>8%</b>	4%	1.5174	.082
	Have an account and use it seldom	<b>16%</b>	8%		
	Don't have an account but know it	<b>40%</b>	32%		
	Don't have an account and don't know it	24%	<b>36%</b>		
<b>YouTube / Vimeo</b>	Have an account and use it regularly	4%	<b>48%</b>	.3331	.095
	Have an account and use it seldom	<b>36%</b>	28%		
	Don't have an account but know it	<b>24%</b>	16%		
	Don't have an account and don't know it	0%	0%		
<b>Social Bookmarking Sites</b>	Have an account and use it regularly	<b>8%</b>	0%	3.0865	.038
	Have an account and use it seldom	<b>32%</b>	24%		
	Don't have an account but know it	0%	0%		
	Don't have an account and don't know it	44%	<b>48%</b>		
<b>Facebook</b>	Have an account and use it regularly	92%	<b>96%</b>	.2223	.089
	Have an account and use it seldom	4%	0%		
	Don't have an account but know it	4%	4%		
	Don't have an account and don't know it	0%	0%		
<b>Twitter</b>	Have an account and use it regularly	20%	<b>36%</b>	208632	.041
	Have an account and use it seldom	<b>36%</b>	0%		
	Don't have an account but know it	40%	<b>48%</b>		
	Don't have an account and don't know it	0%	0%		
<b>Instagram</b>	Have an account and use it regularly	12%	<b>32%</b>	2.5610	.063
	Have an account and use it seldom	<b>24%</b>	4%		
	Don't have an account but know it	<b>48%</b>	32%		
	Don't have an account and don't know it	4%	4%		
In <b>bold</b> is marked the higher percentage obtained by each category per cluster					