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Identification of barriers to co-create on-line: the perspectives of customers and companies

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Abstract

Purpose – Value co-creation is an important topic of interest in marketing domain for the past decade. Co-creation via the internet has received a particular attention in the literature (O'Hern and Rindfleisch, 2010). Although there have been substantive number of studies of what motivates customers to participate in value co-creation in the internet-based platforms, there is a lack of research of what the deterrents are that may prevent customers from contributing their ideas online. This research was undertaken to define the deterrents from the customers and companies' point of view. Furthermore, the difference, if exists, between the users' and marketing professionals' ranking of the inhibitors to co-creation online is also studied.

Design/methodology/approach – This exploratory qualitative research is based on 20 in-depth semi-structured interviews with customers and 20 in-depth semi-structured interviews with marketing specialists from different companies. Spearman's rank correlation is applied to explore the relationship between the internet users' and marketers' responses.

Findings – There are nine constraining factors. The results show that although there is a repetition of the mentioned constraining factors indicated by the both groups of the interviewees, the ranking of the barriers is distinctive.

Research Implications – New conceptual information is received on what restrains customers from co-creation from both customers' and companies' point of view.

Practical Implications – This paper explains the potential problems to be confronted when launching a co-creation project in the internet-based platforms and offers managers a preliminary guide to comprehension of the users' deterrents rating.

Originality – The paper that defines deterrents to co-creation online.

Keywords Qualitative research, Value, Social networking sites, Consumer behavior internet, Creativity, Creative consumers

Paper type Research paper

1. Introduction

According to the research priorities presented by Marketing Science Institute (MSI) in 2016-2018, one of the most significant needs and interests of the companies in terms of marketing directions is how to adopt innovation and design to the company's strategy. One of such innovation drivers is the concept of value co-creation (Prahalad and Ramaswamy, 2000, 2004), which is defined as "a collaborative new product development activity, in which

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consumers actively contribute and select various elements of a new product offering" (O'Hern and Rindfleisch, 2010, p. 85).

With the introduction and growth of the internet services and social media popularity which provides improved interaction possibilities with companies, customers want to be a part of the product development/improvement so that the products will be of a higher value for them (Bhalla, 2010; Prahalad and Ramaswamy, 2000). Because of the fact that co-creation activity and its results are difficult to imitate by competition, the integration of such practice into marketing strategy may bring competitive advantage to the company (Lee *et al.*, 2012). Accordingly, organizations are concerned in attraction of the customers that wish to contribute their ideas to the co-creation process (Roggeveen *et al.*, 2012). Understanding not only motivating but also inhibiting factors that affect customers' participation may facilitate the successful outcome of the co-creation practice (Dabholkar and Sheng, 2011).

There has been a substantial research done of what motivates customers to participate in co-creation activities in the internet-based platforms (Urista *et al.*, 2008; Nambisan and Baron, 2009; Hoyer *et al.*, 2010; Roberts *et al.*, 2014; Constantinides *et al.*, 2015). The topic of the barriers has also been under certain examination: there are studies that try to identify barriers in knowledge-sharing communities of practice (Ardichvili *et al.*, 2003); those that work with general definition of "internet usage" (Porter and Donthu, 2006) and "Internet of things" (Balaji and Roy, 2017); those that concentrate on studying only one possible barrier, e.g. psychological distance (Holmqvist *et al.*, 2015). However, it is difficult to find particular studies in the academic literature focused on identifying and studying constrains to co-creation online in a general and broad way.

Moreover, there are several actors involved by interacting and participating in a value co-creation process (Payne *et al.*, 2008; Romero and Molina, 2011) who build a dialog and transmit information and other resources for organizational resource formation and development (Gummesson and Mele, 2010). It is defined that both a customer and a company's marketing professional are essential parts for co-creation "since the customer is the axis around which the entire value co-creation process revolves and it is the marketer who facilitates this process" (Bharti *et al.*, 2014, p. 416).

Hence, this exploratory study is aimed on the basis of 20 in-depth semi-structured interviews with customers and 20 in-depth semi-structured interviews with marketing specialists to identify the deterrents to participation in the co-creation process in the internet-based platforms from the customers' and companies' point of view. Furthermore, following the methodology of Bharti *et al.* (2014), the distinctive ranking, if appears, of the deterring factors by users and marketers will be examined.

This paper will contribute existing literature in several ways:

- new conceptual information will be received on what restrains customers from co-creation online (Hoyer *et al.*, 2010);
- the factors will be identified by both of the actors of co-creation online users and marketers (Gummesson and Mele, 2010);
- the ranking of the inhibitors by both groups will be quantitavely compared (Bharti *et al.*, 2014); and
- the paper serves as a starting point for the future research, as information generated from the interviews can be used as a basis for quantitave analysis in order to generalize the findings.

2. Literature review

2.1 Co-creation and the internet

Over the past years, new ideas have been developed and built on a revised logic that is more oriented on intangibility of resources, relationships with customers, and the co-creation of value. The pioneering paper by Vargo and Lusch (2004) on the service-dominant logic (S-D) for marketing was the starting point for the researchers' interest in value co-creation (Fuller *et al.*, 2006; Grönroos, 2006; Hoyer *et al.*, 2010; Nambisan and Baron, 2009). As the S-D logic implies, "value is defined and co-created by customers rather than being embedded in the output" (Yazdanparast *et al.*, 2010, p. 379).

Prahalad and Ramaswamy (2004) argue that not only a firm's transparency and access are important factors, but also the infrastructure that company must build to support the "dialog" with consumers. This process can be facilitated by digital technologies and the internet, that serve as a linkage between company and customer and customer with other customers. Internet-based platforms, or Web 2.0, refer to World Wide Web websites that develop usability (user-friendly), user-generated content and interoperability (being adaptable to different devices) for the end users (DiNucci, 1999).

The study by Sawhney *et al.* (2005) examines how the internet as a convenient platform can assist in co-creation with customers. First, it helps to convert one-way customer communication into an on-going dialogue with them. Second, the internet is a platform for creating virtual customer environments that permit a company to know what customers think about and how they interact in society with the same interests (Nambisan, 2002). Third, it allows "the use of independent third-parties to reach non-customers – competitors' customers or prospective customers" (Sawhney *et al.*, 2005, p. 14).

Social media internet-based platforms are defined as "a group of Internet based applications that build on the ideological and technological foundations of Web 2.0, and allow the creation and exchange of user generated content" (Kaplan and Haenlein, 2010, p. 61). Such platforms not only allow the information flow via social interaction channels but also enable public membership and the generation of user level content (Abrahams *et al.*, 2012). Possessing characteristics such as unlimited timeframe, non-geographically connection, great communication transparency, and multi-party information sharing, social media permits the introduction of a range of value co-creation projects, where not only users can effortlessly interact with each other (Muniz and Schau, 2005), but also marketing managers can "attend to" and cooperate with their customers (Kaplan and Haenlein, 2010). According to Dahan and Hauser (2002), social media acts as a useful intermediary between businesses and customers: companies have received the opportunity to assimilate its consumers in the business activities (Bartl *et al.*, 2012; Sawhney and Prandelli, 2000). Luo *et al.* (2015) found that the participation in co-creation projects run on social media platforms improve the relationship of consumer with brand and user with other users, which furthermore contributes to generating agreeable brand community atmosphere.

2.2 Motivators and barriers to co-creation online

The theory of planned behavior explains a person's intention to perform a behavior at a defined time and place (Ajzen, 1985). It suggests that three determinants guide behavior intentions which in turn affects the behavior performance: an individual's attitude toward behavior, subjective norms and perceived behavioral control (Ajzen, 1985). Furthermore, according to the theory, a number of factors may simplify (motivate) or inhibit performance of a behavior.

Motivation for co-creation was chosen as a separate direction in research in service dominant logic domain. One of the major research lines has been started by Wasko and Faraj (2000) with their pioneering attempt to examine motivators for co-creation, the paper

based on the reasons why people participate in electronic communities either because of their personal self-interest, or because of the concern for the community. In 2004, Hennig-Thurau *et al.* (2004) intended to explain what motivates customers to engage in the electronic word-of-mouth on the consumer-opinion platforms. First empirical study on motivators for co-creation online applying uses and gratification theory (U&G) (Katz *et al.*, 1973) was conducted by Nambisan and Baron (2009). Another three studies published in 2015 are based on motivators in the co-creation online: two using U&G (Constantinides *et al.*, 2015; Zhang *et al.*, 2015); another building its own conceptual framework (Zhang and Kandampully, 2015).

Having the substantive amount of research on motivators to co-creation online, the literature about inhibiting factors to co-creation online is limited to a short number of studies. The qualitative approach to identify barriers to employees' participation in Caterpillar virtual communities of practice was the first study that tried to identify deterrents to participation in online knowledge sharing practice: information hoarding, fear to loose face, fear to let the colleagues down, more clear directions, to earn the right to post, too difficult problem – are some of the factors defined (Ardichvili *et al.*, 2003).

Later, Porter and Donthu (2006) studied the perceived access barriers to the internet usage in general. They claim that though access barriers have an important influence, perceptions concerning ease of use and usefulness have a more significant effect on consumer's attitude towards the use of the internet. Another qualitative study by Gerber and Hui (2013) was dealing with deterrents to participation in crowdfunding online. Correia *et al.* (2015) mentioned that innovation in terms of co-creation online creates barriers and challenges; however, their paper answers different research question that the current study.

Cheung and To (2016) suggested that perceived usefulness measures the point to which a consumer considers that using social media to share his or her opinions on products or services is useful. The most recent study by Balaji and Roy (2017) named deterrents to value co-creation in the Internet of things as "determinants of value cocreation", which are superior functionality, esthetic appeal, ease of use and presence.

There is a clear research gap: no study exists that would explicitly define the inhibiting factors to co-creation in the internet-based platforms; the studies that have been researching in the related topics (knowledge sharing communities online, Internet of things, etc.) offer a dispersed information about the possible barriers. Based on the literature review two propositions can be developed:

P1. There is a set of inhibiting factors to co-creation in the internet-based platforms.

P2. Some of the deterrents defined by related studies (Table I) can be similar to the obstacles to co-creation in the internet-based platforms.

3. Methodology

The use of qualitative research was suggested by Corbin and Strauss (1990) to capture the context of the research at the highest possible richness level. The method of in-depth semi-structured interviews (Gwinner *et al.*, 1998; DiCicco-Bloom and Crabtree, 2006) has been chosen to gain insights on a topic.

To identify the inhibiting factors to co-creation the content analysis was applied. "Content analysis is a technique for gathering data that consists of codifying qualitative information in anecdotal and literary form into categories to derive quantitative scales of varying levels of complexity" (Abbott and Monsen, 1979, p. 504). The similar technique was applied to the study by Andreu *et al.* (2010) and Bharti *et al.* (2014).

Table I. Literature associated with the topic of deterrents in co-creation online

Authors	Objective	Deterrents defined
Ardichvili *et al.*, 2003	Motivation and barriers to participation in virtual knowledge-sharing communities of practice	Information hoarding, fear to lose face, fear to let the colleagues down, more clear directions, to earn the right to post, to difficult problem
Porter and Donthu, 2006	Using the technology acceptance model to explain how attitudes determine internet usage: The role of perceived access barriers and demographics	Age, education, income and race are associated differentially with beliefs about the internet, and these beliefs influence a consumer's attitude toward and use of the internet
Gerber and Hui, 2013	What motivates and deters particitpation in Crowfunding community?	Fear of failure, lack of trust
Correia *et al.*, 2015	Marketing communications model for innovation networks	Mentioned the existence of barriers, but did not explore them
Cheung and To, 2016	Examines factors that drive to co-create in social media and includes perceived usefulness as a key antecedent of consumer attitudes	Perceived usefulness measures the degree to which a consumer believes that using social media to share his or her experiences, opinions, and ideas on products or services is useful
Balaji and Roy, 2017	Determinants of value co-creation to the Internet of things	Superior functionality, aesthetic appeal, ease of use, and presence

Following a key informant approach (Kumar *et al.*, 1993; Philipps, 1981), this study is based on 20 in-depth semi-structured interviews with users and 20 in-depth semi-structured interviews that were conducted with professional digital marketing managers, marketing managers, or professional agents that were hired to introduce (and to maintain) the online co-creation practice for a company; so both actors of the co-creation activity are considered (Gummesson and Mele, 2010). In total, 20 interviews with each group of the participants are considered to form a satisfactory amount of the interviews in qualitative research (Bertaux, 1981; Creswell, 1998).

In the first part, the purposive sampling was chosen as sampling approach where the participants are chosen according to predetermined criteria (Lincoln and Guba, 1985; Patton, 1990) in our case the definition of the user: "individual who can access the Internet, via computer or mobile device, within the home where the individual lives. This indicator does not record use, or frequency of use, but only access. In order to have access, the hardware equipment must be in working conditions, the Internet subscription service must be active, and the individual household member must have access to it at any time (there must be no barriers preventing the individual from using the Internet)" (Internet Live Stats, 2017). Furthermore, the user does not have an age limit (neither minimum, nor maximum).

The total number of users worldwide in 2016 was 3,424,971,237, as calculated by using data by International Telecommunication Union (ITU), World Bank and United Nations Population Division (Internet Live Stats, 2017). As of July 2013, the internet users were distributed as shown in Figure 1.

Source: Internet Live Stats, 2013; (elaboration of data by International Telecommunication Union (ITU) and United Nations Population Division).

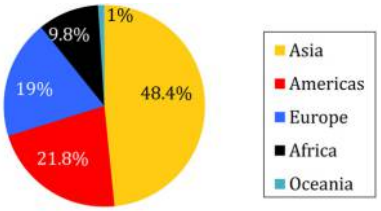
In all, 20 individuals were selected for the interviews are internet users, from those ten males and ten females of different nationalities; aged between 23 and 61 years old (Appendix 1) (Figure 2).

The interviews were conducted in the period of October-November 2016. Each interview took 23 min on average (DiCicco-Bloom and Crabtree, 2006). The interviews were started with explanation of the concept and giving some examples to make the interviewee more confident and informed about the subject. The complete guide is presented in Appendix 2.

In the second part of the study, the marketing practitioners were interviewed. The marketers were selected in LinkedIn database using purposive sampling, according to their skills and previous experience in co-creation. The search was conducted by looking for "digital marketing", "co-creation", "co-creation project" and "social media skills". Afterwards, the message asking for the personal or Skype interview was sent to the selected candidates. Finally, 20 of them agreed to participate in this study, from those nine females and eleven males. The marketers that were not currently involved in the co-creation project online (45 per cent) had been involved in such task from two to five months before the interview.

The in-depth interviews were conducted during May-November of 2016 as a private meeting or via Skype (if the candidate was unavailable for private meeting, or was a resident outside Spain). The guide for the interview with this group of interviewees consisted of asking for describing particular case and personal experience in motivating customers for co-creation online to define if this person is relevant for the study, and then from this experience he or she was asked to name the barriers that they think might have been the reason of why the customers did not participate in the company's online co-creation practice. The first question was the qualifier and the following question helped in answering the research question.

Non-directive approach (McCracken, 1990) was chosen to avoid indicating "the right" answer desired by the interviewer, but controlled (Burgess, 1982). Thus, the interviews were



Sources: Internet Live Stats, 2013; (elaboration of data by International Telecommunication Union (ITU) and United Nations Population Division)

Figure 1. Distribution of the world's users by regions

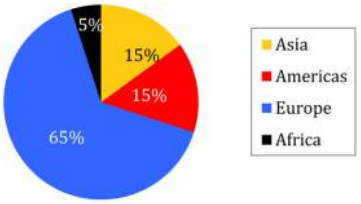


Figure 2. Distribution of the interviewed users by regions

not limited to the three questions. Hence, interviewer was avoiding leading questions, but rather taking a role of active listener. Both groups were interviewed in English.

Atlas.ti was used as analytical software for applying content analysis technique to the codifying of the interviews' transcripts, as well as generating visible results of the qualitative data gathered during the interviews.

Nine inhibiting factors were determined that seem to influence the customer's attitude toward participation in co-creation activities online. The importance and relevance of each deterrent was estimated by identifying the frequency this term or its denotation was used by the interviewee. Therefore, to arrange and analyze the responses the frequency table was prepared. Then, those frequencies were ranked, where the factor with the highest count was placed as number 1. Based on the content analysis performed, two categories of the inhibiting factors are identified post priori, i.e. internal and external.

4. Analysis and results

4.1 Deterrents to Co-creation online

The theory of planned behavior (Ajzen, 1985) states that factors that may constrain the performance of a behavior can be classified into internal to the individual (a set of personal characteristics and willpower), while the other factors (that depend on the environment or other person) are situated externally to the individual. Using this theoretical framework and after applying content analysis, nine inhibiting factors were detected and further divided into two subcategories: internal and external factors.

4.1.1 Internal factors

4.1.1.1 Lack of trust. Trust is defined as "an expectancy of positive (or nonnegative) outcomes that one can receive based on the expected action of another party in an interaction characterized by uncertainty" (Bhattacharya *et al.*, 1998, p. 462). Following this definition, if there is lack of trust a person may expect a negative or nonexistent outcome in an interaction with another party. One of the marketers commented:

> People think that I'm taking advantage on them. They do not trust the organization. – online strategist, Autodesk.

The cornerstone of the trust is the organizational reputation building, which can be reached through transparency of business processes, sustainable organizational behavior within a market, and open dialogue with its customers (Jaworski and Kohli, 2006). One of the interviewed users said:

> Trust and confidence this is what I want to feel towards the company – Participant 8 (Tanzania, 24).

The customer willingness to share information is based on the trust (Bharti *et al.*, 2014). In a trusting environment, people believe that their conduct will result in beneficial consequences because others can cooperate with them and are willing to prolong assistance (Pangil and Chan, 2014). Thus, we can assume that when the user does not have enough trust for the organization, it can negatively affect his attitude toward participation in co-creation online.

4.1.1.2 Technology anxiety. Both the organizations and customers can benefit from the use of the internet-based platforms; however, there are users who feel uncomfortable exploiting some technological interfaces (Meuter and Bitner 2003). One of the participants mentioned:

> I'm spending a lot of time online. However, I still have feeling that technology is a lot smarter than I am, and with one wrong click, my telephone will be broken. – Participant 5 (Spain, 64).

Companies should be aware of how the technology anxiety degree impacts the level of participation in the online projects. Dyck and Smither (1994) found that older people feel less confident and more technology anxious than the young people. Furthermore, Teo (2001) studied how the age as a demographic variable influences the internet usage activities. The research found out that age is negatively related to messaging and downloading activities. One of the marketers commented:

> New generation is not afraid of the technology. They know that it's here to help. – digital marketing planner, Teritori Creativo.

As co-creation is highly comunicational process, we can assume that the elder the person, the more anxious and less self-confident he or she is toward participation in co-creation online.

4.1.1.3 No shared values with brand. Rokeach (1973) defined a value as "an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (p. 5). Moreover, values can drive behavior: "a value is a single belief that transcendentally guides actions and judgements across specific objects and situations" (Rokeach, 1968, p. 160). One of the interviewees said:

> If you ask me, which brand I will support in co-creation – Barcelona FC or Real Madrid FC, I would definitely choose my team, Barca FC. I can't be helping the company that is totally against my likes and beliefs. – Participant 10 (Spain, 23).

Fang *et al.* (2012) state that the awareness of the values that a brand transmits to the public as its brand image, takes a significant part in affecting customers' motivation to participate in any activities proposed by this company. One of such activities will be a co-creation project in the internet-based platforms. The professional says:

> You need to be a fan. So when there is no bonding or need of the product people won't help. – brand manager and developer, Boekenbo).

Therefore, we can suggest an assumption of a connection of how users perceive the reputation of the brand and its values and their willingness to help.

4.1.1.4 Skepticism. Consumer doubt or skepticism is applied by user to protect himself from misleading marketing practice (Mangleburg and Bristol, 1998).

> I want to be sure that if my idea will be chosen as the best one among the others, it will be protected and reserved under my name – Participant 11 (Turkey, 25).

Co-founder of Mindful Leading says "they [customers] experience the fear of not being heard among a huge number of other voices".

Skepticism assists consumers in keeping themselves from fraud and deceptive claims (Mangleburg and Bristol, 1998). However, when accumulated and widespread, consumer skepticism can challenge marketing practice efficiency (Pollay and Mittal, 1993). One of such marketing practices is co-creation online, and one of the reasons of not participating can be customers' skepticism toward this marketing practice.

4.1.1.5 Inertia. The opinion formation is a complex abstractive construct that is impacted by the presence of different types of social influences. According to Das *et al.* (2015), one of such factors can be the majority effect. This effect is caused by the existence of a large group of individuals that share similar opinions.

> I think a lot of people consider it's something strange. Maybe if one person starts to participate in co-creation activities maybe his/her friends will follow. - digital planner, Escribá.

Huang and Yu (1999) defined inertia as a non-conscious form of human emotion. If the individual is prone to inertia and his or her reference group has negative attitudes toward participation in co-creation activities online, there is a possibility that an individual will be influenced and his personal attitudes will also be changed in a similar way.

> I remember one survey I was filling in. I stopped on one of the questions as it was too long to read, and I gave up the whole process – Participant 4 (Italy, 27).

Individuals that are disposed to inertness tend to avoid long questions (Pauwels, 2004). Furthermore, one of the marketers said:

> The deadline is very necessary. Without it the users may postpone their participation to indefinite period – co-creation strategist, Humantific.

The research by Battistella *et al.* (2015) suggests that fixed project deadline can be used as an incentive for the virtual communities of practice that participate in the development of Web applications. Therefore, it can be assumed that the absence of the deadline may be a stimulus of growing inertia in the users' intention to participate in co-creation online.

4.1.1.6 Technology-perceived ease of use. Perceived ease of use is defined as "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320). One of the interviewed customer said:

> I'm not interested in difficult questions. I would rather prefer yes/no type, or something that wouldn't require minimum effort from my side – Participant 10 (Spain, 24).

Davis (1989) also suggested that a function perceived to be easier to use is more probable to be executed by users. Applying this to our study, the technology-perceived ease of use may affect the participation in co-creation online.

4.1.2 External factors

4.1.2.1 Task layout. According to Ansari and Mela (2003), well-prepared communication channels not only facilitate customer decisions but also reduce excessive information flow; this in turn, yields relevant products and highly satisfied customers. One of the marketers explained:

> So many things are going on so they [customers] are overloaded by the information. – digital marketing consultant, Appszoom.

The way the task is explained is perceived by the customers as one of the parts of the task layout. If the user experience information overloads, he or she may not be able to "respond" to some of the messages (Jones *et al.*, 2004), in our case the co-creation task.

> [. . .] a trouble understanding of the task. Many times you give text instructions, but some people do not understand. There is kind of a barrier [. . .] any kind of a difficulty would serve as a reason to give up. – senior consultant, Leap Vision.

When the task is complicated, it negatively affects the desire to solve a problem (Wright and Brehm, 1989). In addition, previous research has discovered that people will activate their energy when the incentives to do so are satisfactory, but will stop to do so when the result is unclear or less significant for them (Brehm and Self, 1989).

4.1.2.2 No offline meeting. Understanding social bonds development among users is essential for user participation in co-creation online (Yin *et al.*, 2015). One of the marketers said:

> You can't have co-creation campaigns fully online, you need offline and online together. If you do the blending then people can actually be activated truly in a social process. If you just have it online it simply does not work. – consultant, Co-creation design.

McCully *et al.* (2011) claim that although offline interactions reinforce relationships of the online community members, these interactions weaken the community's sustainability in terms of online involvement.

4.1.2.3 Personal availability. According to the research conducted by Holland and Baker (2001), time constraints influence customers' level of participation in the internet-based activities. Indeed, "I do not have time for this" reason was the most frequently mentioned factor by the customers during the interview process.

> I just have so many things to do, that when I come home the Internet and social media are the sources to relax. I do not want to spend my free time on any projects. – Participant 1 (Bulgaria, 24).

Hence, marketers should consider a personal availability of the customer and offer convenient schedules, as time constraint can negatively influence the attitude toward participation in co-creation online.

The identified deterrents divided into two groups of internal and external (Ajzen, 1985), and previously explored motivators by Constantinides *et al.* (2015) and their possible effect on the attitude toward co-creation are visually presented in Figure 3.

4.2 Frequency table

The total number of nine inhibiting factors extracted from the data provided by both customers and marketing professionals is enumerated in Table II. Afterwards, how many times the factor was mentioned by respondents (first column – by customers; second column – by marketers) was calculated for its frequency.

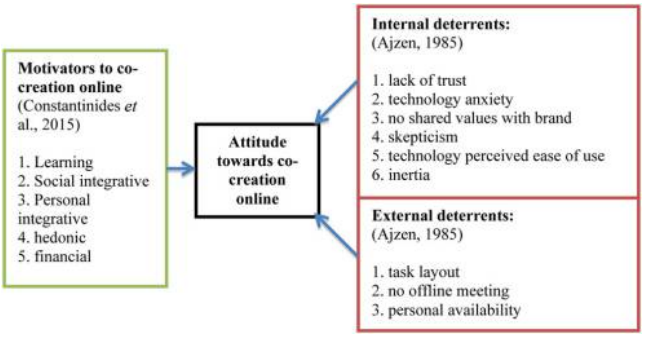


Figure 3. Schema of deterrents and their effects on attitude towards co-creation online

#	Factor	Frequencies of customers	Frequencies of marketers
1	Task layout	15	9
2	Skepticism	13	15
3	Personal availability	12	8
4	Technology anxiety	10	16
5	Inertia	10	12
6	Lack of trust	9	10
7	No shared values with brand	9	6
8	Technology perceived ease of use	5	6
9	No offline meeting	0	2

Table II. Inhibiting factors that influence customer participation in co-creation online

We can see that eight barriers were identified by customers; however, nine were mentioned by the working professionals.

4.3 Rank correlation table

The eight common factors mentioned by both groups of the interviewees were ranked in descending order (Table III) according to their frequency. The ranks for the factors that have the same frequency were averaged [(6 + 7)/2 = 6.5] and assigned a "tied" scores. The factor "No offline meeting" was not considered, as the customer group of respondents did not mention it.

To analyze the correlation between two sets of ranks Spearman's rank correlation was applied. The frequency ranks for customers group and marketers group are these two variables, respectively. The formula of Spearman's rank correlation for the tied ranks is the following:

$$\rho = \frac{\sum_i (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_i (x_i - \bar{x})^2 \sum_i (y_i - \bar{y})^2}}$$

The Spearman's correlation coefficient in this case is $\rho = 0.387$, which indicates the medium association between ranks of the customers' group and marketers' group. This signifies that marketers rank the barriers to co-creation online differently from the customers that may lead to the inappropriate marketing techniques used to encourage customer participation in co-creation projects online.

5. Future research propositions

Following the propositions developed on the basis of the literature review and taking together the information generated from the interviews, four major propositions for the future research can be developed:

(1) *P1*: Deterrents to co-create can be divided into two subgroups: internal, referring to the customer's personal barriers; and external, those that are caused by the companies or external environment.

(2) *P2*: Internal deterrents to co-create online consists of lack of trust, technology anxiety, not having shared values with brand, skepticism, technology perceived ease of use, and inertia.

(3) *P3*: External barriers to co-create online consists of task layout, no offline meeting, and personal availability.

(4) *P4*: Deterrents to co-create have a negative influence on user's attitude towards participation in co-creation online.

Table III. Rank wise classification of inhibiting factors in co-creation online

#	Factors	Ranks customers	Ranks marketers
1	Task layout	1	5
2	Skepticism	2	2
3	Personal availability	3	6
4	Technology anxiety	4.5	1
5	Inertia	4.5	3
6	Lack of trust	6.5	4
7	No shared values with brand	6.5	7.5
8	Technology perceived ease of use	7	7.5

6. Discussion, conclusion and implications

Value co-creation is still an emerging topic not only for academia but also for companies that want to be innovative and follow recent marketing trends. One of these trends as has been discussed in this paper is co-creation using internet-based platforms (Sawhney *et al.*, 2005). As it provides many benefits to the company (competitive advantage, increased brand loyalty, etc.), managers should know how to involve as many as possible users in such activities.

In this exploratory study, the barriers to co-creation online were identified and compared by customers' and marketing professionals' rankings. Based on the twenty in-depth interviews with users and twenty in-depth interviews with marketing professionals, nine factors were found that might prevent a user from inserting effort to co-creation online. Another finding is that, the defined barriers have distinctive ranking from customers' and managerial sides ($\rho = 0.387$). Based on the mentioned results, a number of theoretical and practical implications can be offered regarding the role of inhibiting factors to co-creation online.

The study complements exisiting value co-creation literature in two major ways: first of all, following the research line proposed by Hoyer *et al.* (2010) the online dimension have been added to the study of the deterrents to co-creation: nine inhibiting factors that prevent users from co-creation online have been defined. These new findings not only broaden the comprehension of the concept of value co-creation online but also serve as important parameters to be included in the studies of co-creation in the internet-based platforms.

Second, by applying the conceptual theory of Gummesson and Mele (2010), the constraining factors have been identified by both of the actors of co-creation online (users and marketers).

Some of the results go in line with the previous literature findings. The barrier "task layout" was previously mentioned by Ardichvili *et al.* (2003) who named it as "too difficult problem". The concepts of the deterrents "skepticism" and "lack of trust" appeared in the research of Gerber and Hui (2013). The similarity of the deterrents "technological anxiety" and "technological perceived ease of use" was found in the study by Balaji and Roy (2017) who referred to them as a determinants "ease of use" and "aesthetic appeal". The factors "personal availability", "inertia" and "no shared values" are defined for the first time in this study and these can complement the understanding of the longitudinal perspective of inertia, predisposicion of personal availability and also the level of individualism of the value generation.

A number of managerial implications can be derived from this research. The nine restraining factors are suggested to be divided into six internal and three external factors. This finding makes managers understand what are the potential problems to be confronted when launching a co-creation project to an online public. Being aware of those factors a marketer should think not only how to increase users' motivation but also how to weaken the negative effect of the deterrents. Furthermore, knowing the external factors practitioners may decide to confront them first, whereas the ways to diminish the effect of internal deterrents (which are more user-related) need to be further explored. For example, the effect of the deterrent "task layout" can be relatively easily minimized by providing a user-friendly and accessible platform for co-creation; the solution for the barrier "no offline meeting" can be provided by organizing an assembly of the users if their number is defined and limited; to decrease the effect of the deterrent "personal availability", the manager can provide an open access to the platform, thus giving an opportunity to the customers to be flexible in their time organization.

It is important to point out that the second finding suggests that there is medium association between ranks of the users and managers' group. This result can indicate that managers and users may weigh the inhibiting factors differently. Therefore, the current paper offers managers a preliminary guide to comprehension of the users' deterrents rating.

7. Limitations and future research directions

As this study is the first that investigated qualitatively customers' barriers to co-creation online, it has many limitations that should be seen as possible directions for future research. Although there are already some results that might be used by practitioners, there is still some extensive work that must be done by the researchers.

First, there is a need for the quantitative study to generalize the findings. Taking into consideration the previous study on motivational factors to co-creation online (Constantinides *et al.*, 2015), it would be enlightening to answer some important research questions, for example, to what extent previously identified barriers influence the attitude towards participation in co-creation online? How strong is this effect compared to the motivators? Can this effect vary for different age groups, genders, and/or nationalities? What can this effect be moderated and/or mediated by? Structural equation modeling is a possible technique that can be applied to respond these interrogations. Figure 4 summarizes the possible model to be considered, and structural equation modeling is anticipated as the possible technique that can be applied to respond these interrogations.

Second, one of the limitations of this study is that it does not explain how to combat the deterrents. The topic has arisen several times during the interviews, however the way of battling deterrents in the case of 35 per cent of the marketers, was providing the participants with some valuable tangible resources. The future research should explore the ways of confronting each of the barriers to provide managers with a practical tool to be used when launching the co-creation projects online. The future studies should also consider including both users and marketers to find the objective solutions to each of the predefined deterrent.

Finally, the study explores barriers to customer participation in co-creation only online. One of the possible research lines is to apply the methodology used by this study for other contexts, for instance, co-creation inside the company with employees, etc.

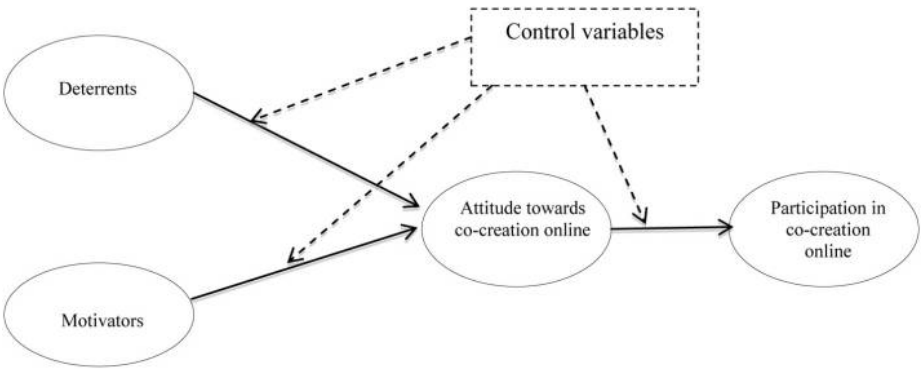


Figure 4.
Research model

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Appendix 1

Table A1. Personal information of the users

#	Company	Position
Participant 1	Bim Bam Roi for Escribà	Digital planner
Participant 2	Olympus Europe	Ecommerce and digital marketing manager
Participant 3	Territori Creativo	Digital strategy consultant
Participant 4	U-Play Online	Marketing manager
Participant 5	Kellog's	Marketing consultant
Participant 6	Appszoom	Digital marketing consultant
Participant 7	TRENDSform	Trend expert
Participant 8	Autodesk	Online strategist
Participant 9	Solved.Fi	CEO
Participant 10	Leap Vision	Senior Consultant
Participant 11	CoCreata	Founding partner
Participant 12	Co-creation Design	Co-creation designer
Participant 13	Boekenbon	Brand manager and developer
Participant 14	Awwwards.com	Digital marketing planner
Participant 15	LEGO Future Lab	Senior concept designer
Participant 16	Philips	People research and co-creation
Participant 17	Philips Lighting	Head of co-creation
Participant 18	Humantific	Co-creation strategist
Participant 19	Mindful Leading	Co-founder
Participant 20	Cosentino	Project coordinator

Table A2. Personal information of the marketers

#	Nationality	Exp	Age	Sex
Participant 1	Bulgaria	✓	24	F
Participant 2	Spain		34	M
Participant 3	Ukraine		61	M
Participant 4	Italy	✓	27	F
Participant 5	Spain		64	F
Participant 6	Spain	✓	42	M
Participant 7	Mexico	✓	30	F
Participant 8	Tanzania	✓	24	F
Participant 9	Serbia		23	M
Participant 10	Spain		23	M
Participant 11	Turkey	✓	25	F
Participant 12	Vietnam	✓	37	F
Participant 13	Spain	✓	23	M
Participant 14	France		24	F
Participant 15	Iran		30	M
Participant 16	Costa Rica		25	M
Participant 17	Ecuador	✓	39	M
Participant 18	Cyprus	✓	30	F
Participant 19	Belarus		43	F
Participant 20	Spain	✓	39	M

Appendix 2

(1) The guide of the interview with users:
- Have you participated in co-creation online?
- Would you ever want to do so?
- Can you please outline the reasons for your answer (if no, why not?).

(2) The guide of the interview with marketers:
- Description of the position and responsibilities of the interviewee;
- How does he/she understand the concept of the co-creation;
- Does/Did the company participate in such co-creation online to develop new product?
- What is the case he/she was/is personally involved in?
- What tools did the company use to motivate customers?
- What from his/her personal experience can be the reason for customers to be restrained from participation on-line in co-creation for NPD

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