



Research Article

How Co-creating Enhances the Quality of a Brand-consumer Relationship, using the U&G Approach: The Coca-Cola Case

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Abstract

The concept of co-creation or value creation has been the subject of several research studies. While the concept of co-creation seems recent, Badot and Cova (1995) have developed it a while ago, in the early 1990s. Despite the thorough discussions about the strategic consequences of the concept of co-creation of value, the cognitive, affective and conative mechanisms of the motivating factors for co-creation still lack investigations. To remedy that omission in literature, we propose in this study to determine the motivating factors that involve the consumer in a co-creation activity focusing on its impact, loyalty and customer retention. Thus, our research introduced a new relationship of U & G approach to the concept of the joint value creation, which, to our knowledge, has never been the subject of empirical or theoretical study. A questionnaire was developed and distributed via Google Drive to the consumers and users of our chnia tarbijtek -"what's your nickname"- study produced by Coca-Cola proposed application. 360 questionnaires were completed and a structural equation (SEM) with AMOS was used to test the hypothesis. The results show that the social and personal integration affects the online co-creation positively, while learning gives the opposite result. Co-creation affects the strength of the relationship, trust and the satisfaction of both customers and consumers positively as well. The final product shows that loyalty is to a further extent linked to the strength of the relationship between the producer and the consumer.

Keywords: co-creation, U & G approach, personal and social integration, learning, strength of relationship,

Introduction

The revolution in the new information and communications technologies (ICT) field has contributed to the development of a new era of customers' empowerment. Every concept frequently defined as marketing reinvention actually corresponds to a new revolution. It is true that at the time of Marketing 2.0, companies have considered consumers, and especially their values. Their desires, needs and feelings were at the heart of managerial concerns. It is indeed within this new generation marketing that the subject of interest is located and perfectly suits to current issues, what is known as co-creation. Nowadays, more and more companies are trying to follow the trend, by actively integrating their customers in their new products and services development processes, Romero, Constantine's and Brünink, (2014). This case of technical marketing, dim but frequent, uses the Internet to create content: co-creation online.

Co-creation is the process by which companies, their partners and the final consumer jointly develop products, services and experiences, leading to a new space where the value created would be shared (Ramaswamy, 2009). This form of cooperation has increased with the technological advances (ICT) (Neuhofer et al., 2013) which promoted the development of social networks, blogs, forums and creative platforms. Thanks to these new interconnected tools for socialization, customers can now actively contribute to the development of new products, ideas and concepts (Hoyer et al., 2010; Nambisan, 2002; Ogawa and Piller, 2006). The companies did realize it and saw it as an opportunity. Upstreaming or down streaming the value chain, or co-creating along with the costumers, who could be experts (lead users) or mere users (emergent nature) represent the key to unlock new sources of competitive advantages for brands (Hoyer et al., 2010; Ogawa and Piller, 2006; Prahalad, 2004; Nambisan, 2002). By having access to brands' platforms, the customers could share their opinions and experiences

concerning the product. They could also discuss freely and participate in the evolution of the company's offer and develop its image and reputation. Thus, some brands have found the way to keep their customers loyal while reducing the risks associated with creating a new product or service (Romero et al., 2014; Ramaswamy, 2009). The eYeka platform is a good illustration that allows consumers and major brands to collaborate on creative projects and give in return an amount of money to the winning project. Indeed, a study of Rajah et al., (2012) adopted a positivist attitude to study the influence of co-creation of nomological net marketing results. In addition, this study will examine the causal pathways between the co-creation and trust and the co-creation and strength of the relationship, two paths postulated in theory but not yet tested. Furthermore, the contributions of the study will provide empirical support for the influence of co-creation on downstream construction marketing results. To this end, we are going to inquire about the benefits of the customer's experience of co-creation with a company. We will go beyond the benefits in terms of innovation, reputation and product tests. We will also examine the customer's motives that induced him to engage in a co-creative experience. The theoretical foundations lead us to determine the motivating factors involving the consumer in a co-creation activity. These foundations focus on the impact of the factors on loyalty and retention of the customer in the Tunisian context.

The first part of this work will be devoted to a literature review on the determinants and consequences of co-creation in the industrial context. The second part will present the results of the confirmatory analysis conducted among 360 consumers. The conclusion will be a discussion of the results and the managerial implications of this study.

Theoretical Background

Motivations

In the virtual world, the Uses and Gratifications approach (U & G) seems to be the most useful and relevant one to explain the different existing patterns that push current customers to participate in online co-creation activities (Romero et al., 2014). According to the U & G approach, customers' benefits coming from the use of media are split into two dimensions: cognitive and affective (Kietzmann, 2011). The former is related to the benefits that customers expect to receive in exchange for their participation (Nambisan, and Baron, 2007; Urista et al., 2008), while the latter is associated with positive and negative feelings generated by the clients during their online interaction with the brand. This could eventually affect the attitudes and feelings of customers towards the company (Nambisan and Baron, 2007; Urista et al., 2008). Joining and participating in communities offer several benefits to the customers such as the exchange of information and / or emotional support (Thureau et al., 2004). Other customers are motivated by financial factors (profit or gain), whereas some others by social factors (Social benefits of Co-Creation) such as social esteem, civism, and networking (Nambisan and Baron, 2009).

Learning benefits

Some may be motivated by the desire to acquire technological knowledge (product/service) by participating in forums and groups led by the manufacturer. These customers could participate in the co-creation process for knowledge enrichment purposes. Creative activities of Co-Creation reinforce intrinsic motivation and the sense of self-expression and pride (Csikszentmihalyi, 1996; Etgar, 2008). Other studies express different motives, but they can all be classified as the predecessors of the U&G approach (Luo, 2002; Nambisan and Baron, 2007; Fuller et al., 2010). Social and personal integration trigger different motives as well.

Social integration

another form of consented client services when participating in cooperative online creating activities based on relational and social ties, created while developing together new products and services with other customers and/or employees of the company on social media platforms.

Due to the close interaction with other individuals, customers could develop a sense of belonging to the online community, they feel involved in the co-creation process and gain a social identity, both outcomes are perceived as benefits (Hoyer et al., 2010; Nambisan and Baron, 2009; Nambisan and Baron, 2007).

Personal integration

Self-efficiency and the pursuit of community's status could represent a different kind of value for customer benefits. By participating in online co-creation processes, customers can generate a higher sense of self-efficiency: they contribute into innovative processes of the company from the expansion of the customer product-related knowledge and enhance his/her problem-solving skills.

By generating new ideas with high potential, customers could gain a reputation and a status of great influence, leading to the improvement of the state, credibility and self-efficiency (Nambisan and Baron, 2007) related to expertise (Nambisan and Baron, 2009).

Satisfaction

Customer satisfaction is defined as the extent to which the service provided continues to meet customer expectations (Delgado-Ballester and Munuera-Aleman, 2001). In the context of co-creation on service recovery conducted by Dong et al., (2008), the results showed that the customer co-created recovery solution generated higher levels of satisfaction and promoted the will to carry on. According to Vargo et al., (2008), all the research studies to this date confirm that client participation in the value creation process

is essential for the development of an innovative product or service that could meet the needs of the customers. This result is coherent along with the concept of satisfaction in terms of decision (Heitmann et al., 2007). They postulate that customers feel satisfied or dissatisfied not only with the product but also with the purchase process itself. The satisfaction induced by the decision is associated with the service development process and thus goes beyond the satisfaction. Moreover, Fleming et al., (2003) added that customer engagement generates emotional satisfaction, and emotionally satisfied clients display two levels higher of customer loyalty, successively reducing the switching behavior related to the rational customer satisfaction toward the company (Fleming Coffman and Harter, 2005). According to Kotze and Plessis (2003), co-production is the customer active involvement in service delivery, contributing at the same time to the satisfaction of their own perceptions, quality and value. Thus, it proves to be that when customers are satisfied with their own performance of co-creation, they are willing to spend more money for the service, or to re-buy the product which creates in them a loyal attitude toward the brand or the organization.

Trust

It is the key element that holds and connects customers and organizations together, making the process of co-creation feasible. It is a bilateral process that requires a shared effort by brands and customers while trying to keep their promises (for instance, the credibility of the construction) and a mutual commitment. In the Co-creation paradigm, increased trust can be supported by the DART process: Dialogue, Access, Risk assessment and Transparency (Pralhad and Ramaswamy, 2004). Others suggest that the strengthening of trust in virtual environments could be facilitated by Jarvenpaa et al., (1998):

(1) A proactive style of actions, (2) the interactions focused on work, (3) optimized teamwork spirit, (4) leadership dynamics, clear goals and roles, (5)

frequent interactions (6) and immediate feedback. Thus, the transparency of information in the interaction process remains essential for building trust between brands and consumers in co-creating activity for an effective participation.

Furthermore, Malaviya and Spargo (2002) and Mascarenhas et al., (2004) argue that co-creation generates a high level of trust within the buyer-seller relationship. In that sense, and according to Dwyer and Tanner (2006), trust is "the belief that the word or promise by one party is reliable and that such party will fulfill its obligations in an exchange relationship." Conceptually, it is suggested that a higher degree of customer co-creation generates higher levels of trust between the client and the distributor (Evans and Wolf, 2005; Leadbeater, 2006; Lundkvist and Yaklef 2004; Malaviya and Spargo, 2002; Mascarenhas et al., 2004). Hence, the construction of trust is considered relational.

2.7. The literature refers to "**the strength of the relationship**" for a further explanation; it is the extent to which a relationship lasts (Barnes and Howlett, 1998; Crosby et al., 1990; Crosby and Stephens, 1987; Kandampully and Duddy, 1999; Liljander, 2000; Zineldin 1999). Hence, the strength of the relationship is often defined as "the measure and degree / breadth of the relationship" (Bove and Johnson, 2001; Shemwell and Cronin, 1995). In consequence, research confirms that a strong relationship is the desired result of building efforts undertaken by the brand (Crosby and Stephens, 1987; Czepiel, 1990; Granovetter, 1973; Jackson, 1985; Williams, 1997). Some researchers limit the definition of the strength of the relationship to measuring the level of trust and customer engagement (Bove and Johnson, 2006; Shemwell and Cronin, 1995; Rajah et al., 2008). Moreover, Egan (2011) considers that the creation of a better value to the customer while involving them in the process is seen as the basis for a long-term relationship development with the users. It should also be mentioned that co-creation through the customization of interactions and customized specific problem-solving

processes can facilitate more intimate and stronger seller-buyer relationships (Claycomb and Martin, 2001). Evanschitzky et al., (2006), argue that a strong relationship between seller and buyer contributes to customer loyalty. Therefore, interaction and dialogue that arise in co-creation lead to the creation of a strong seller-buyer relationship, which in turn improves customer equity (Kumar et al., 2010; Van Doorn et al., 2010).

Hypothesis and Conceptual Model

Hypothesis

Customer benefits: Relationship between motivational factors and co-creation

According to literature, motivation is a key factor that drives the consumer to participate in a co-creative activity. According to some researchers, what motivates the consumer to do so is either intrinsic or extrinsic motivation or benefit perceived by the customer (the four factors of U & G approach). We opted to explain the motivational factors that can be linked to learning, social integration and personal integration (benefits of the U & G theory.) Literature reveals that customers are increasingly eager and curious to expand their knowledge. Therefore, according to these researchers, customers may be more willing to share their knowledge with companies if in return; they could acquire new information that can improve their knowledge and expertise (Hoyer et al., 2010; Nambisan and Baron, 2007). It implies that learning is an important agent to the willingness of customers to participate in co-creation. Hence:

- **H1a:** Learning has a positive influence on the customer's co-creation.

By engaging in co-creation and post co-creation, according to Hoyer et al., (2010), customers could benefit from social ties with other users or with the brand itself. Thus, the collaboration requires a high degree of interaction and communication. In addition, co-creation with a brand can be reinforced by the need for recognition.

These advantages lead us to the second hypothesis which is:

- **H1b:** The social integration benefits have a positive influence on co-creation.

Moreover, as previously reported, the benefits mainly include personal credibility, status and trust (Nambisan and Baron, 2007). That is the reason that motivates customers to co-create. Therefore, personal integration services may be identified as a trigger for motivation, enhancing consumer participation in co-creation. Thus, we could assume the following:

- **H1c:** The personal integration benefits have a significant and positive impact on the co-creation.

Producer Benefits: Relationship between Co-Creation, satisfaction, trust, strength of relationship and brand loyalty

Relationship between co-creation and satisfaction

Empirical studies have investigated the co-creation and its influence on satisfaction and repeated purchase intention (Dong, Evans and Zou, 2008). Others argue that the effects of co-creation on consumers are asymmetrical and induce positive results with perceived quality and satisfaction (Bendapudi and Leone, 2003). In addition, the authors confirmed the hypothesis that the level of customer engagement in value creation influences their satisfaction with the brand, loyalty, and their intention to spend more, (Grissemann and Stokburger-Sauer, 2012). As a result:

- **H2:** Co-creation has a positive effect on customer satisfaction with the brand.

Relationship between Co-creation and Satisfaction

Several authors argued that a higher degree of co-creation with the customer generates higher levels of trust between the customer and the company (Leadbeater, 2006; Evans and Wolf, 2005). Furthermore, certain research studies show that the co-creation leads to trust between the company and its consumers,

and trust in its turn contributes to strong links between them (Boyle, 2007; Mascarenhas et al., 2004; Malaviya and Spargo, 2002). The more consumers co-create, the more their trust level increases. Hence, we come to the following hypothesis:

- **H3:** Co-creation positively influences the level of trust of the customer towards the brand

Relationship between Satisfaction, Trust and Strength of relationship

Some authors have also found that the correlation between customer engagement in creating value and the strength of the relationship is negative if customers do not feel satisfied and do not trust the brand (Akhter and Shrivastava, 2014).

Relationship between Trust and Strength of the relationship

Previous research has shown immutably that satisfaction and trust lead to building a strong bond between the customer and the company in order to create strong relationships (Rajah et al., 2008). Furthermore, research shows a strong correlation between co-creation and trust between the buyer and the seller: trust in its turn helps strengthen the buyer / seller relationship (Boyle, 2007; Mascarenhas et al., 2004; and Malaviya and Spargo, 2002). Moreover, Morgan and Hunt (1994) demonstrated that trust is a key factor in the development of buyer-seller relationship. It follows the fourth hypothesis.

- **H4:** Trust positively influences the strength of relationship between customer and buyer.

Relationship between satisfaction and the strength of relationship

The literature on the service quality satisfaction confirms that trust clarifies the strength of the customer-seller relationship (Claycomb and Martin, 2001; Storbacka et al., 1995). According to Fleming et al., (2003), satisfaction decreases the level of switching towards the company and

increases the sense of belonging, which makes the relationship between the company and the customer stronger than before. In this context, we conclude that co-creation through the client's active participation, interaction and customization can affect customer satisfaction, trust, and create strong relationships between the company and the client. Hence the fifth hypothesis:

- **H5:** Satisfaction has a positive effect on the relationship strength with the brand.

Relationship between Strength of the relationship and Loyalty

In the same vein, Auh et al., (2007) studied the co-production and its influence on the attitudes of loyalty and behavior. According to Evanschitzky et al., (2006), the strong relations between sellers and buyers reinforce customer loyalty. Therefore, this logic suggests that the solid relationship precedes customer loyalty and the strength of the relationship between the buyer and the seller will influence the degree of customer loyalty (Bove and Johnson, 2001; Hausman, 2001). In addition, it should be said that co-creation has great potential to create closer relationships with customers, which could lead to enhanced customer loyalty (Hoyer et al., 2010; Kambil et al., 1999). Therefore, the argument in this position proves the strength of the relationship of an antecedent to customer loyalty representing an important step from co-creation to achieving fidelity. As a result, the following hypothesis can be emitted:

- **H6:** *The relationship strength positively affects consumer loyalty towards the brand.*

The Conceptual Model

In summary, based on the above discussion, a conceptual model has been developed and has been devoted to determining the motivating factors involving the consumer in a Co-creation activity, and their indirect impact on the quality of the customer-brand relationship and loyalty. This model is represented below:

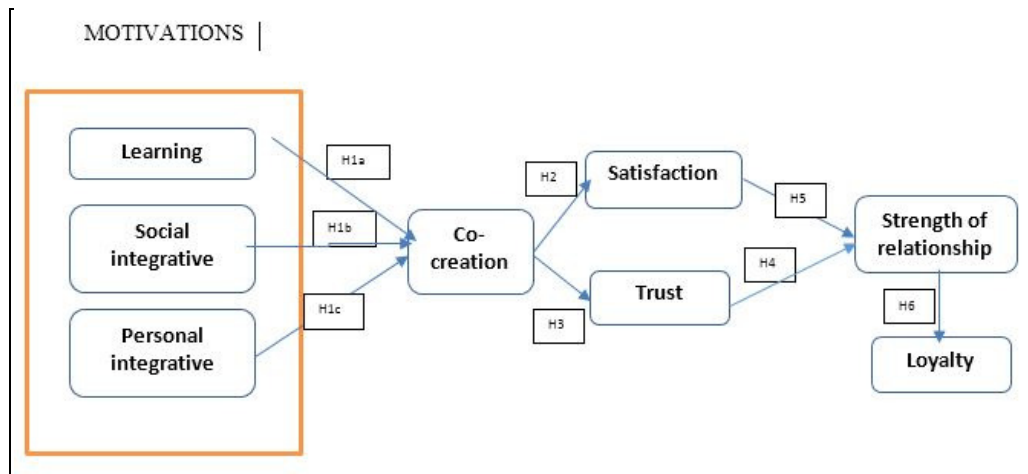


Figure 1: Conceptual framework

Methodology

Measures

The questionnaire consists of measurement scales borrowed from literature and each concept will be operationalized using a valid scale that will be brought back to the Tunisian context for the purposes of the study. All the measurement scales were adopted from the literature and adjusted to the research setting of co-creation. Therefore, pre-existing measuring scales were used. Three items were used for learning; these were adopted from Hoyer et al., (2010); Nambisan and Baron, (2007). The variable personal integration was measured with four items; this element was also adopted from Hoyer et al., (2010) and; Nambisan and Baron, (2007). Three items developed by Hoyer et al., (2010) were used to measure the social integration.

Three items were developed by Rajah et al., (2008) to measure co-creation. Satisfaction and Trust were measured with scales developed by (Prahalad, and Ramaswamy, 2003) constituted of three items each. To measure relationship strength, a scale with nine items by Rajah et al., (2008) was used. The brand loyalty variable consisted of two dimensions: attitudinal loyalty and behavioral loyalty which form the loyalty variable and it was measured with a scale with nine items as developed by Pritchard

et al., (1999). All scales used in this study can be found in Appendix 1. All the items were measured using a five-graduation Likert scale. From (totally disagree=1 to totally agree=5)

Sample and data collection

The target population for the study was customers who had an experience with co-creation. Sample selection was the result of convenient sampling. Data collection took two months. A questionnaire was developed and pre-tested with 30 customers (10% of the sample). The questionnaire was adjusted following the various comments and suggestions. The administration of the final questionnaire was conducted through Google Drive online. This method is favorable and inexpensive, compared to other types of surveys

The final questionnaire was distributed to 405 users of our consumer product study, 360 usable responses were obtained (89%) after excluding incomplete questionnaires. Users are divided between men and women aged 18 and older, knowing the Coca-Cola "chniatarbijtek" application, and participated in co-creating and customizing their soft drink bottle one week before the study. The Coca-Cola brand was chosen for this study because of its local as well as its international reputation on the market, and its previous experience in co-creation.

Coca-Cola applied the co-creation in different ways through different names, respecting the uniqueness of each population. The co-creation approach used by Coca-Cola that we found in Tunisia is called: "ChniaTrabijtek?" or in English: "What is your nickname?" This initiative will be our study case.

Analysis Method

First, we have proceeded with an exploratory analysis (Spss.20) by using the Principal Component Analysis (PCA) that allows the researcher to examine the properties of the eight measuring instruments, and to reduce the number of items. This method is usually used when processing a large amount of data. Researchers recommend this method for a first purification item, to identify latent measures scales (Gerbing and Hamilton, 1997). Confirmatory factor analysis was used to assess the properties and the

validity of the measurement model using AMOS 20. In order to measure the construct reliability and validity scales, Cronbach alpha scores were used to validate the measurement model and test its convergent and discriminant validity (Akrou, 2010).

Results

Reliability and validity tests

The dimensionality of the eight variables was examined, and the analysis showed that the scale of each concept has a one-dimensional structure with sufficient KMO values (Kaiser-Meyer-Olkin) higher than 0,6. In this analysis, the items whose communality was insufficient (<0.5) were removed. The Cronbachs' alpha of each variable was greater than 0, 7. The results are presented in Table 1.

Table 1: Scales Reliabilities

Scale	Number of Items	Dimensionality	KMO	α Cronbach	% of explained variance	Joreskog's Rho	AVE
Learning	3 items	Unidimensional	0.660	0.795	68.464	0,91	0,87
Social Integration	3 items	Unidimensional	0.658	0.781	69.751	0,84	0,78
Personal Integration	3 items	Unidimensional	0.821	0.702	74.151	0,85	0,81
Co-creation	4 items	Unidimensional	0.814	0.863	70.938	0,79	0,76
Satisfaction	3 items	Unidimensional	0.722	0.868	79.213	0,85	0,75
Trust	3 items	Unidimensional	0.730	0.848	76.926	0,87	0,82
Strength of relationship	6 items	Unidimensional	0.873	0.893	65.366	0,74	0,72
Loyalty	5 items	Unidimensional	0.843	0.886	69.310	0,86	0,83

To measure the reliability and validity of the scales, a confirmatory factor analysis was performed using the SEM method with AMOS 20. Based on the measurement model, the Joreskog's Rho was used in order to measure the reliability and the internal consistency of each scale (Akrou, 2010). The reliability of the measures of all eight variables was confirmed as all the indices of Joreskog's Rho are above 0, 7, which is the limit set by Bagozzi and Phillips (1982). The reliability is a necessary, but not sufficient condition for

the validity of a measure (see Table 1). Therefore, the study first tested the convergent validity by the average variance extracted from the constructs, which is, in this study, satisfactory with values over 0.7 (Akrou, 2010; Fornell and Larcker, 1981; Houston and Rothschild, 1987). Second, to determine the discriminant validity of the overall model, we use the approach of Fornell and Larcker (1981). This question is to ensure that the average variance extracted PVC (calculated for the evaluation of convergent validity) exceeds

the square of correlations between latent variables. The following table summarizes the results of this comparison.

Table 2: Discriminant Validity Results

	Convergent Validity (Joreskog's Rho)	Personal integration	Social integration	Learning	Co-creation	Trust	Satisfaction	Strength of relationship	Loyalty
Personal integration	0,91	1							
Social integration	0,84	0,623	1						
Learning	0,85	0,438	0,270	1					
Co-creation	0,79	0,608	0,557	0,258	1				
Trust	0,85	0,442	0,404	0,187	0,726	1			
Satisfaction	0,87	0,387	0,353	0,164	0,634	0,461	1		
Strength of relationship	0,74	0,423	0,387	0,179	0,694	0,731	0,648	1	
Loyalty	0,86	0,352	0,321	0,149	0,578	0,642	0,540	0,832	1

The discriminant validity results show that the average variance extracted PVC (calculated for the evaluation of convergent validity) exceeds the square of correlations between latent variables. Our model appears therefore parsimonious.

The fit of the conceptual model

The fit indicators were measured in order to assess how the model studied fits in relation to the theoretical model. The results provided satisfactory support for the eight dimensional model with Chi2/df = 3,143 (< 5), with values of GFI (0,8), AGFI (0,904), CFI (0,9) and FI (0,88) which tend to 1, and RMSEA= 0,077 (< 0,1) (Figure 2). Thus, the model was found to be acceptable.

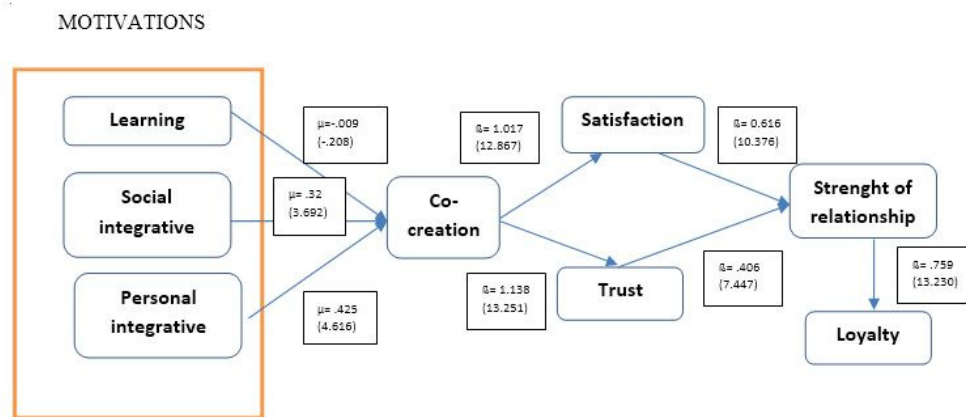


Figure 2: Results of structural model

Hypothesis testing

The results (Tab 3) showed that the relationship between the cognitive aspect (learning) and co-creation was rejected. The effect is, however, less significant and negative (estimate= -0.009, t-value= -0.208, p= 0.835). Therefore, H1a was not retained. The second hypothesis H1b, which stipulates that the social integration affects positively the co-creation, was confirmed and with a strong positive coefficient (estimate = 0.302, t-value = 369.2, p= 0.000). The direct effect between social integration and co-creation was also confirmed (estimate= 0.302, t= 3.692, p= 0.00). The third hypothesis H1c showed that the personal integration benefits have a significant and positive impact on the co-creation. The test was significant with a strong positive coefficient (estimate= 0.425, t-value= 4,616, p= 0,000). So, consequently the H1c was confirmed. The H2 hypothesis, which stipulates that the co-creation has a positive effect on customer

satisfaction, was confirmed with a strong positive coefficient (estimate= 1,017, t-value= 12,867 and p= 0.000). In the same way, the results of the H3 hypothesis showed that co-creation positively influences the level of trust with the customer with a strong positive coefficient (estimate= 1,138; t-value= 13,251 and p= 0.000). Furthermore, the H4 hypothesis which stipulates that the satisfaction has a positive effect on the strength of relationship was confirmed with a strong positive coefficient (estimate= 0,616, t-value= 10,376, p= 0.000). Further, the results of H5 hypothesis have showed that Trust influences positively and deeply the strength of relationship (estimate= 0,406, t-value= 7,447 and p = 0.000). Finally, the H6 hypothesis, which stipulates that the strength of the relationship affects positively the customer loyalty, has also been confirmed with a strong positive coefficient (estimate= 0,759, t-value =13,230, and p= 0.000).

Table 3: Hypothesis results

Hypothesis	Estimate	C.R	Pv	Results
Co-creation ⇔ Learning	-0,009	-0,208	,835	Rejected
Co-creation ⇔ Social Integration	0,302	3,692	***	Confirmed
Co-creation ⇔ personal Integration	,425	4,616	***	Confirmed
satisfaction ⇔ Co-creation	1,017	12,867	***	Confirmed
Trust ⇔ Co-creation	1,138	13,251	***	Confirmed
Strenght of relationship ⇔ Satisfaction	0,616	10,376	***	Confirmed
Strenght of relationship ⇔ Trust	0,406	7,447	***	Confirmed
Loyalty ⇔ Strenght of relationship	0,759	13,230	***	Confirmed

Discussion and Conclusion

This research was dedicated to the identification of motivational factors leading to the involvement of the consumer in a co-creation activity, by stressing the impact of the latter on the quality of the client-brand relationship and his degree of loyalty.

We succeeded to demonstrate the impact of the motivational factors (U&G approach) on the consumer's responses vis-a-vis the co-creation. This relationship, which was

less tested in the literature, has been confirmed empirically and has added to the proposal made by (Hoyer et al., 2010) in their conceptual model.

In consequence, the research confirms that the online co-creation between the producer of Coca Cola and the Internet users on social media influences positively the consumers' satisfaction. This positive relation influences, consequently, the strength of the relationship between the consumer and the brand, and therefore converges with (Rajah et al., 2012), Dong

(2007), Leadbeater (2006) and Boyle (2007) studies' results. Finally, we have come to estimate the effects of the strength of the relationship on the consumer's loyalty and to reinforce the results of the previous research of Evanchitzky, (2006); Zerbini et al., (2007), Auh et al., (2007). At the end of these empirical tests, we validated a model that showed schematically the direct consequences of co-creation. The results coincided with previous research of Rajah et al., (2012), Hoyer et al., (2010). Similarly, social and personal contexts in our study have a direct impact on co-creation, which in their turn disclose a positive influence on the consumer satisfaction (Bendapudi and Leone, 2003) and trust (Leadbeater, 2006; Evans and Wolf, 2005; Lundkvist and Yaklef 2004; Mascarenhas et al., 2004; Malaviya and Spargo, 2002). This promotes the strength of customer-brand relationship and positively enhances and contributes to reinforcing the consumers' loyalty toward the brand and product (Evanschitzky et al., 2006).

However, learning's effect on co-creation is absent in the context of this study, which diverges with the literature yet can be explained by the choice of the selected industrial brand (Coca-Cola). We can advance that the consumers benefits achieved through their participation in the co-creation experience are related to the social and personal integration in the virtual community, far from the learning attitude. This behavior is affected by the variables that affect perception *vis-à-vis* the product implication.

Research contributions, limitations and future pathways

As part of this research, it is legitimate to ask about its contributions, at both theoretical and managerial level.

Theoretical and managerial Contributions

This study has enriched the knowledge of this new concept of co-creation (Rajah et al., 2008; Romero et al., 2014). This work has also helped to integrate an old concept, the one of loyalty, in the study of a new tool

for online co-creation and its indirect impact.

In fact, literature, allowed us to understand how to create value, and accurately understand the act of the online co-creation with the producer to broadcasted different stimuli. Hence, this pushed us to address the concept of co-creation and its relationship with the motivational factors that led the Internet user to co-create, and study the causal relationship with the benefits of the brand, trust and satisfaction. These relationships, upstreaming and down streaming co-creation, allow us to identify the different types of benefits, both for the customers and the brand. Although the concept of co-creation, or rather of "value creation", has been the subject of several studies in various fields, it has never been used in the field of web 3.0, nor has it been used in particular to describe the association between motivation and co-creation itself. Additionally, our work is the first marketing using the methodology of dynamic panel logistics. Furthermore, our research is listed as the first work that has successfully confirmed the existence of a direct link or relationship between the U & G approach and co-creation. Moreover, following this study, we can confirm all assumptions and highlight the effect of co creation on the strength of the relationship, which in its turn influences loyalty. Finally, this work has helped to highlight the importance of co-creating online brands in the Tunisian context and especially in the context of Web 3.0. Similarly, our results are to help enrich the research on the subject by focusing on a specific case of co-creation experience, namely mass customization (Cova, 2008).

When talking about managerial contribution, this study allows some operational observations. These include the importance of strategic consequences from participation in a virtual co-creation activity online, that gives to the consumer a sense of belonging to the brand. In other words, the user identifies with the brand, which triggers a positive attitude and behavioral loyalty. It is also essential to emphasize the relational importance felt after participating in a virtual activity of co-

creation, with the important role of trust and satisfaction attributed to the Internet user. It also stresses the way in which we can create common value between the customer and the brand and how to keep this relational quality (loyalty). This means that great importance should be given to web 3.0 marketing as an essential tool for co-creation, yet it can and should also be used in other Tunisian contexts. Thus, the inclusion of these variables in determining the effect of co-creation enriches the analytical framework in the industrial sector and consumer products.

Research limitations

The sampling technique adopted is that of a sampling by convenience. Only one exchange context, namely "chniatarbijtik" Coca Cola in Tunisia, was studied. The model could be tested in two different contexts to generalize the results. Finally, the scale of Co-Creation was created only recently by Rajah et al., (2008). This is an orphan variable of marketing studies and there is a shortage of literature in this area.

Future pathways of the research

It follows from all the foregoing, some future pathways of research:

- A qualitative study with Co-creators online allows us to deeply understand the why of the behavior and its root causes through the recovery of rich, deep and variable data.
- To test the same model with other people online with any products or services, at both the national and international level.
- To conduct the same survey with a sampling stratum.
- To conduct the same survey with a larger sample.
- To include the instruments of mediation variables, i.e. the costs of switching and affective commitment.

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Appendix Items

Variables	items
Social Integrative Hoyer et al., 2010); (Nambisan and Baron, 2007).	- I participate in online co-creation activities when they expand my personal network. - I participate in online co-creation activities when they raise my status/ reputation as product expert in my personal network. - I participate in online co-creation activities when they enhance my strength of my affiliation with the customer community.
Learning Nambisan and Baron, 2007); (Nambisan and Baron, 2009)	- I participate in online co-creation activities when they enhance my knowledge about the product and its usage. - I participate in online co-creation activities when they enhance my knowledge on product trends, related products and technology. - I participate in online co-creation activities when they help me make better product decisions as consumer.
Personal Integrative Nambisan and Baron, 2007); (Nambisan and Baron, 2009)	- I participate in online co-creation activities when they are likely to positively affect my professional career. - I participate in online co-creation activities when they offer me satisfaction from influencing product design and development. - I participate in online co-creation activities when they offer me satisfaction from influencing product usage by other customers.
Co-creation (Rajah et al., 2008)	- The brand went out of its way to work with me - I contributed actively to my final customer solution - My final marketing solution was arrived through the joint efforts of the brand and me - It did not matter whether the customer participated in the marketing transaction, the company would have been able to deliver the same final solution - My final customer solution evolved from the active participation of the brand and me - Overall, I would describe my final customer solution as a high level of co-creation
Strength of Relationship: (Rajah et al., 2008)	-I got a good price deal from the brand -The (travel agency) has good pricing for its product offerings - I like my interactions I have with the brand

	<ul style="list-style-type: none"> - The travel agency makes a strong effort to get to know me -The brand is flexible and adaptable in its marketing approach to the customer -I am willing to share information and knowledge with the brand -My relationship to this specific brand is strong -My relationship to this specific brand is important to me -My relationship to this specific brand is something I care about
Trust (Pralhad and Ramaswamy 2003)	<ul style="list-style-type: none"> -In our relationship, the brand can be counted to do what is right - In our relationship, the brand has high integrity - In our relationship, the brand can be trusted at all times
Satisfaction (Pralhad and Ramaswamy, 2003)	<ul style="list-style-type: none"> - I think I did the right thing when I chose brand - The service offerings of this brand meet my expectations - Overall, I am pleased with the services offerings of this brand
Loyalty (Pritchard et al., 1999); (Swanson and Kelley, 2001)	<ul style="list-style-type: none"> - I consider myself to be a loyal patron of this brand - If I had to do it all over again, I would do business with this brand - I use this brand because it is the best choice for me - This brand is distinct from other brands - To me XYX is the same as other brand - If I had a choice, I would use this brand again - I am likely to go back to this brand the next time I need products or services - I am likely to repurchase from this travel agency in the future - I am not likely to switch to another brand

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