

Co-Creation in Provider Side for Developing Innovative Services: How New Technology-Based Firms Benefit from Social Media Platforms

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Abstract

Purpose: Co-creation of business value has attracted research attention in recent years. However, few of them studied this subject from the provider side. Due to intensive competition in the markets to present new services that meet consumers' needs, this study aims to answer the question of how value co-creation activities on social media platforms enable the new technology-based firms to create innovative services.

Methodology: An online questionnaire distributed to a list of NTBFs that are officially registered and use Facebook and Instagram for customer relationship. 230 completed forms analysed by PLS-SEM using SmartPLS3 software in order to estimate the measurement and structural model parameters as well as to test the research hypotheses.

Findings/Contribution: Findings revealed that value co-creation facilitates building innovative services on social media platforms. It is shown that such a relationship is moderated by social co-creation activities that take place over social media. Most of studies in the subject of co-creation focused on the customer side and few researches studied provider side. These findings underscore the importance of using social media as a critical tool to co-create value with users to develop innovative services. This knowledge is useful for practitioners and business owners to make better decision on if and how to use social media for becoming more innovative and competitive.

Keywords: Social Media; Innovative Services; Co-creation; New Technology-Based Firms.

Received: 10 March 2021, **Revised:** 13 August 2021, **Accepted:** 20 August 2021

1. Introduction

The emergence of social media networks created a ground for co-creation activities and resulted in a raise in media entrepreneurship activities (Achtenhagen, 2017; Horst, 2019; Roshandel Arbatani *et al.*, 2019). In particular, people access social media networks predominantly through smartphones, which serve as a ubiquitous form of media in their pockets (Hossain, 2019). They use social media in different activities of everyday life, ranging from health (Korda and Itany, 2013), to travel (Ebrahimi

Paper Type: Research article

To Cite This Article: Horst, S-O; Salamzadeh, A; Ebrahimi, P ; Kolli, S. (2021). Co-Creation in Provider Side for Developing Innovative Services: How New Technology-Based Firms Benefit from Social Media Platforms. *Nordic Journal of Media Management*, 2(2), 109-126. DOI: 10.5278/njmm.2597-0445.7089



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et al., 2019) or following the latest updates of their favourite influencers and start-up ideas (Horst, Järventie-Thesleff and Perez-Latre, 2019). Essentially, users spend a considerable amount of time on different social media platforms, including online marketplaces, platforms for crowdsourcing, and other types of social platforms that facilitate interaction and knowledge sharing (Parker, Van Alstyne and Choudary, 2016; Reillier and Reillier, 2017). Such a level of engagement creates valuable big data (Murschetz and Prandner, 2018; Nemati and Khajeheian, 2018) and recognizable patterns of users in a network (Kolli and Khajeheian, 2020) that enterprises can use for furthering, testing and sharing their ideas. While Web 1.0 was web of cognition and Web 2.0 was web of connection, Web 3.0 is the web of collaboration and co-creation (Fuchs, 2017). Thus social media platforms that represent Web 3.0 are the grounds for co-creation activities and collaboration among customers, organizations and other stakeholders, as well as a source for understanding the customers' needs. Using the Web 3.0 and its functions strategically can allow organizations to respond their customers' needs by creating innovative services in strategic manner (Oliver, 2014; Horst, 2019). However, current research shows that most enterprises are unable to leverage the potential of social media platforms for co-creation activities and usually stick to the usual functions of Web 2.0 social media, and focus on "connecting better" with their customers (Parker, Van Alstyne and Choudary, 2016). This is surprising, because such lack in use of Web 3.0 affordances may deprive enterprises of obtaining and strategically using ideas, insights and creativity of their users and customers for developing innovative services to address their needs. In a fast paced competitive environment this might mean falling behind the competition (Wiścicka-Fernando, Misiak-Kwit and Fernando, 2019; Hamidi, Shams Gharneh and Khajeheian, 2020).

In the age of disruptive technologies, competitive advantage of firms is based on their capacities for innovation. Here, co-creation can be one way to use and capitalize on the potential for innovation and creativity of users and audiences for create innovative services that satisfy customers' needs. However, encouraging customers to participate in co-creation activities is not easy, and in the service domain, the issue of co-creation in the development of new services is even more complicated (Hamidi, Shams Gharneh and Khajeheian, 2020). Research of Khajeheian and Ebrahimi (2021) shows that among various effective variables, the central incentives for co-creation are rooted in behavioural characteristics of customers. They suggest that co-creation behaviours are derived from co-created values with customers. They suggested that a firm can deliver economic, enjoyment and relational values to motivate customers' participation in co-creation. However, identifying and delivering such values is complicated. Kang (2014) discusses social co-creation in e-marketplaces as an important factor that influences customer loyalty, and showed that co-creation activities on social platforms reduce the cost of interaction among users and firms. This study suggested that commitment, value equity, perceived website quality, aesthetic appreciation, and opinion leaders are effective variables to encourage customers' social co-creation behaviours. They suggested that website or platform quality effects value equity and results in commitment and loyalty; meanwhile, taking aesthetic appreciation and opinion leaders as moderating effects. However, this fails to show how this behavior influences innovative services. For example, Edvardsson et al. (2011) used a social construction approach for expanding the understanding of service exchange and value creation and show how it effects service innovation. Nevertheless, this research failed to identify the incentives that influence co-creation behaviours. In summary, therefore, it can be said that the previous research recognized the effect of customers' behaviours on co-creation activities and development of innovative services, but does not address the incentives that lead to such behaviours. Moreover, these studies were conducted with a focus on consumers of innovative services on the business side. None of these were conducted on new technology based firms, which are producers of such innovative services.

Therefore, this study aimed to address the complicated issue of value co-creation in development of new/innovative products and services in new technology-based firms (NTBFs) from a behavioural approach. The importance of focusing on such firms lies in their role in developing

entrepreneurial ecosystems (Rathore, Ilavarasan and Dwivedi, 2016) and their effect on building innovative services. As such, understanding how to encourage the customers and users to participate in value co-creation of such firms will benefit them with better user of social media platforms for their success (Valmohammadi, Sofiyabadi and Kolahi, 2019). To measure behavioural approach, customer citizenship behaviour (CCB) (Estiri *et al.*, 2018) and customer participation behaviour (CPB) (Ahn and Chun, 2016) are used to address the gap in the previous researches and to investigate the incentives that encourage customers to play an active role in creating and delivery of such services. A theoretical contribution of the present article is to expand our knowledge about the incentives of co-creation behaviour of customers on social media platforms to develop innovative services (Rathore, Ilavarasan and Dwivedi, 2016). While the web 3.0 and research on co-creation behaviours on social media platforms are almost recent, such understanding will contribute in our knowledge in this field. Therefore, the research question becomes:

RQ: “How value co-creation activities of customers on social media platforms influence the creation of innovative services in new technology-based firms?”

To address this research question, the paper is structured as follows. To begin with, a review of the existing literature develops a theoretical framework, which is then tested through a structural equation modelling (SEM) approach. Subsequently, materials and methods are discussed, and results are elaborated. Finally, the paper concludes with remarks on how value co-creation influences the creation of innovative services on media platforms.

2. Theoretical Background and Hypotheses

2.1. Value Co-Creation Behaviour

The concept of co-creation attracted a large number of scholars (Hoyer *et al.*, 2010) and several papers and books were published primarily on the concern of engaging customers to produce innovative products and render innovative services (Tain, 2018). Edvardsson *et al.* (2011) consider value co-creation as a result of customers' or stakeholders' contributions in creating value for the firm. Vargo & Lusch (2010) argue that value is created commonly and to some extent, equally by a firm and its customers in a continuous process. Value co-creation is not only about the interaction among customers and employees of a firm, but also relates to the interaction and communication among different customer segments of a typical firm or their relations with virtual environments (Sharafi Farzad *et al.*, 2019), especially in social media platforms in which interactions are an integral part of their nature (Matosas-López and Romero-Ania, 2021). Xie *et al.* (2008) put more emphasis on customers' behaviour in creating value. In such a process, customers' and firms' needs are met by following a collaborative process.

On the other hand, new product and service development activities are done through collaborating with customers and sharing their visions with firms (Hamidi, Shams Gharneh and Khajeheian, 2020). Indeed, any successful product or service development is proved to be a function of knowing customers' needs. This is of paramount importance when it comes to innovative products and services, as such products and services having a variety of details, which makes providing or offering them impossible for firms without understanding customers' new ideas and needs (Shamim and Ghazali, 2014). As mentioned earlier, Yi & Gong have introduced two types of value co-creation behaviours, i.e., (i) customer citizenship behaviour, and (ii) customer participation behaviour (Yi and Gong, 2013). The first one is a voluntary behaviour which is not necessary for the successful production of goods and services. However, it helps improve the status of a firm (Estiri *et al.*, 2018). The second one is the participative behaviour of customers, which is necessary for producing winning goods and services (Khajeheian and Ebrahimi, 2021).

2.2. Value co-creation behaviour and rendering innovative services

Innovation is the key to succeed in this competitive world. There is a continuum of innovative activities that range from radical to imitative innovation. According to this approach, there might be a range of innovative services that could be rendered to customers (Nambisan and Nambisan, 2009). The more creative a firm be, the more it becomes able to co-create value. According to the literature, some scholars have used value co-creation and co-innovation interchangeably, as these two are, in some ways, entangled phenomena. To some scholars, service innovation is viewed as a function of customers' role in value-co-creation (Tajpour and Salamzadeh, 2019). By performing more actively, customers will be able to be a part of value co-creation in companies, especially when they are receiving an innovative service that depends highly on their conception about and views toward such a service (Martínez-Cañas *et al.*, 2016; Merz, Zarantonello and Grappi, 2018; Zhang *et al.*, 2018). Innovative services are often a function of firms' and customers' competences, prerequisites of the service offerings, as well as how that two parties-i.e. firm and customer- interact to co-create value (Cheng, Chen and Tsou, 2012; Yang, Weng and Hsiao, 2014).

Hertog (2000) considers four dimensions for describing innovative services, which includes the following aspects:

(i) Service concept: While products are typically tangible, services lack this characteristic. Nevertheless, generally, service innovations are visible as they touch the emotions as well as the mind of customers. However, it might depend on customers' perception of the service that to what extent the service concept is understood. It shall be mentioned that not all service innovations convey substantial novel conceptual aspects. However, it is crystal clear that if a service providing firm puts enough effort into it, it would be more visible to its customers than in manufacturing firms.

(ii) Client interface: The design of the interface between service providers and customers is another dimension of service innovation. Despite the neglect of innovation studies to client interface- due to their focus on mass manufacturing and not service innovations- it is critical to consider its role, especially in value co-creation. The way the client interface acts affect how customers would become a source of innovation in the value co-creation process. Such a platform might make a firm able to get engaged in a variety of activities such as co-design, co-production, or even co-service provision.

(iii) Service delivery system/organization: This system deals with all internal activities that a firm could take care of and manage in order to let employees of the service providing department have enough authority to develop and render innovative services properly. This system is considered as a part of the customer relations process. This aspect refers to the linkage between the last two aspects.

(iv) Technological options: Although this aspect is of paramount importance, it should be noted that service innovation is not necessarily dependent on technological options. Yet, technological issues and innovative services could be highly related. It could be marginally considered as a facilitator to innovative services or drive innovation. The more firms become aware of technological changes, the more they will become able to respond to them, and design and render better services.

Following the above, the first hypothesis developed as the below:

H1: Value co-creation behaviour affects rendering innovative services on social media platforms.

2.3. Customer Citizenship Behaviour

This type of behaviour is "an extra-role customer's behaviour, which is not really required for value co-creation, but if performed, it will give supplementary value to the firm" (Shamim and Ghazali, 2014). Such behaviours improve the quality of social and mental environments in the workplace and finally lead to improved performance of the firm (Estiri et al., 2018). These behaviours

are mainly proposed voluntarily by customers, and there is no pressure on them to act so in the long term. Then, it is affected by external rather than internal factors of the firm. These behaviours are categorized into four groups as follows (Shamim and Ghazali, 2014):

(i) Helping: It refers to those actions done to help other customers. Since, in a typical co-creation process, customers mostly help each other instead of asking for help from employees of the firms. They show empathy to each other as they are receiving a similar service or buying a similar good. Then, they must have similar needs which make them closer to feel they have social responsibility.

(ii) Feedback: Customers provide employees of the firms with relevant information about how they feel while using a specific service or buying a specific good. They do this to receive better services or more quality goods in the long run. Customer feedbacks, their suggestions, and views make firms more capable, and thus their performance will be improved.

(iii) Tolerance: Customers tolerate, to some extent, some of the imperfections and pains they feel through their buying experience. Sometimes services might not be as perfect as they would like to receive. Therefore, their tolerance level might protect profitability and market share of the firm, or vice versa.

(iv) Advocacy: This means that customers recommend goods or services to others, such as their family members, friends, acquaintances, or colleagues. Thus, such customers might become more loyal and passionate about goods or services that a firm produces or renders. This is critical to promote the firm's brand, credit, as well as its quality. Moreover, it helps the firm to make a better evaluation of its business model.

These four aspects of customer citizenship behaviour ensure the success or failure of the firms. The more such behaviours become popular, the better a typical firm might be able to act in this competitive world. Therefore, one could mention customer citizenship behaviour as a multi-dimensional phenomenon. As one could see, such behaviours will add extraordinary value to the firm but are not inevitably required for value co-creation. Some scholars have compared this phenomenon with concepts such as organizational citizenship behaviour. However, it should be noted that customer citizenship behaviour is an extra-role of customers standing outside or close to organization boundaries (Anaza, 2014).

H1a: Customer citizenship behaviour affects rendering innovative services on social media platforms.

2.3. Customer Participation Behaviour

The second type of behaviour is customer participation behaviour which is "an in-role customer's behaviour essential for value co-creation" (Shamim and Ghazali, 2014). It should be noted that participation is a behavioural concept that engages customers in providing resources or acting actively in the process of product or service development and delivery. Such behaviour is participative in nature, which emerges during the value co-creation process. According to a general categorization, it is reflected in four dimensions as follows (Nambisan and Nambisan, 2009; Yi and Gong, 2013; Shamim and Ghazali, 2014):

(i) Information seeking: Information is a critical issue for customers to make their buying decision. It should be noted that similar information might be interpreted differently by customers. Therefore, customers initially need to seek relevant information. This is vital for them, as it decreases uncertainty level and provides customers with a better understanding of their peripheral environment. Also, it provides a fertile ground for customers to get engaged in the value co-creation process.

(ii) Responsible behaviour: Such behaviour is an integral part of the value co-creation process as it makes customers responsible regarding how they act and what they shall do as a customer to receive a better service or a higher quality product. Customers would become aware of the firm's rules and regulations as well as policies, and would optimally act as an active player in the value co-creation process.

(iii) Information sharing: Information sharing is another aspect of customer participation behaviours which makes it possible for customers and employees of the firms to become aware of what is exactly going on in the firm and its peripherals. Customers share their information with employees, and due to a better mutual understanding and sharing similar values, performance measures will be improved, and the firm would be able to act more efficiently. In addition to this, customers' needs and preferences will be met more perfectly, and they will become more satisfied.

(iv) Personal interaction: Personal interactions among customers and employees make them feel more comfortable, and thus friendship, respect, and positive thinking will be shaped accordingly. In this way, customers feel better and engage more actively in the value co-creation process.

H1b: Customer participation behaviour affects rendering innovative services on social media platforms.

2.4. Value co-creation in Social co-creation

Social media platforms provide several sources of detailed information about a variety of topics, goods, and services which could pave the way for value co-creation activities. In fact, value co-creation is facilitated on social media platforms, and therefore it is possible to offer innovative services accordingly. Kang (2014) referred to Social co-creation as the process of using social media as a vehicle to carry out customer co-creation engagements. In the extant literature, social co-creation is referred to as the co-creation of value by customers on social media (Rathore, Ilavarasan and Dwivedi, 2016; Salamzadeh, Radovic Markovic and Masjed, 2019). By using social media, customers have changed their role as passive entities to active or even proactive agents who could facilitate the offering of innovative services. This concept is defined explicitly by Kennedy and Guzmán (2016) as a phenomenon which is shaped by the following factors:

(i) Peer pressure: this element deals with what extent peers encourage an individual to act as per a typical pressure group's instructions. In fact, it shows that whether people in social media are affected by their peers or not.

(ii) Popularity: It shows how popular is an individual in social media. Indeed, popularity might affect the position of an individual in social media.

(iii) Trend: It shows how trends might affect the behaviour of the members of a typical social media. Such trends might be created internally or externally.

(iv) Social status: It shows that if a person is at the core of a network with several ties or not. The more a person becomes a central point in social media and its networks, the more he/she becomes able to create value

The mediating role of social co-creation is not studied in the literature (Rathore, Ilavarasan and Dwivedi, 2016; Salamzadeh, Radovic Markovic and Masjed, 2019). Therefore, it is interesting to see if this mediating role affects the relationship between value co-creation behaviour and rendering innovative services on social media platforms; especially when one intends to examine the different aspects of value co-creation behaviour. The following hypotheses are proposed accordingly:

H2: The effect of value co-creation behaviour on rendering innovative services on social media platforms is moderated by social co-creation.

H2a: The effect of customer citizenship behaviour on rendering innovative services on social media platforms is moderated by social co-creation.

H2b: The effect of customer participation behaviour on rendering innovative services on social media platforms is moderated by social co-creation.

3. Theoretical framework

Figure 1 shows the theoretical framework of the research, which is developed by researchers in an exploratory way, as shown. It followed by two main hypotheses and four sub-hypotheses. The hypotheses are proposed according to the main subjects which are not clearly studied and investigated in the existing literature of the field.

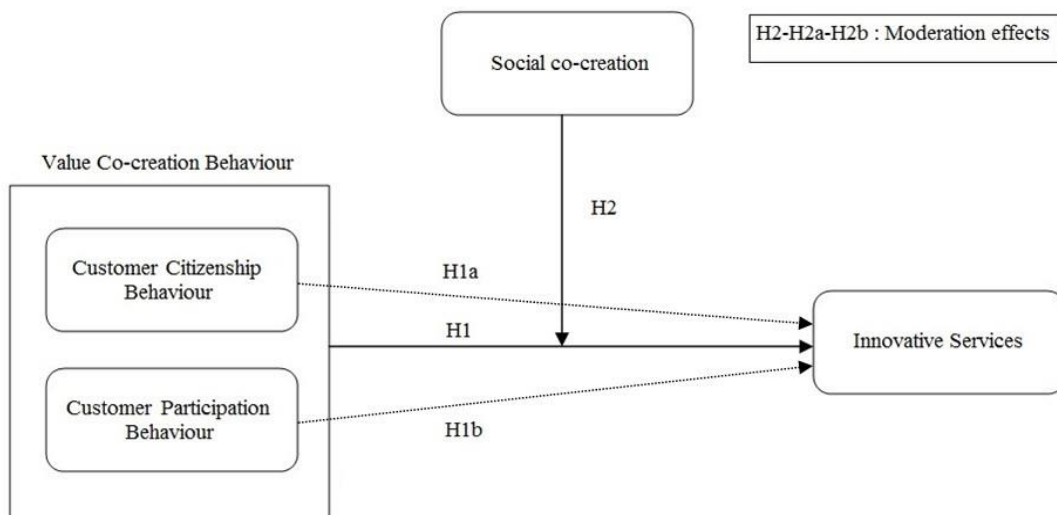


Figure 1. Theoretical framework (self-elaborated by the authors, based on Yi and Gong (2013); Hertog (2000); Kennedy and Guzmán (2016), Foroudi et al. (2019).

4. Methodology

4.1. Sample size and variable measurement

The research population in this research includes owners of the new technology-based firms (NTBFs), which used social media- such as Instagram and Facebook- as a primary tool for running their business. The reason is that these two- Instagram and Facebook- have been the most used social media platform in the country at the time of doing the research.

The sample companies are selected from a list of new technology-based firms that have been registered in the Presidential Deputy for Science and Technology, which is responsible for approving NTBFs nation-wide. The authors used SPSS Sample Power software to determine the sample size. According to the research model, the minimum sample size was 216. Most of the respondents (67%) were between 20 to 30 years old, and most of them were female (62.7%). In terms of experience in running a social media platforms based business, most of the respondents had 2 to 5 years of experience (45.5%), which shows that they were new firms, and also it reveals the rise of social media usage in Iranian firms as a critical tool to succeed. Moreover, most of the respondents had a bachelor's degree (59.8%).

The survey was online for about two months in 2019 (April-May) on the official website of the Presidential Deputy for Science and Technology and its affiliates who are in close contact with the registered NTBFs. The authors also distributed this questionnaire online through social media platforms by sending its URL to the owners of the firms. The largest number variables in the set multivariate regression model were 3, where considering the confidence level of 95%, power of increment of 0.99, and increment to R-squared of 0.10. In order to improve the quality of responses, the authors distributed more questionnaires (n=237), then eliminated the incomplete ones, and finally, 230 completed questionnaires were analysed.

The researcher-made questionnaire included two main parts: (i) general demographic information, and (ii) the main body with 22 close-ended questions. Six questions measured each of the customer participation behaviour and customer citizenship behaviour variables. These questions were borrowed from Yi and Gong (2013), Foroudi et al. (2019). Moreover, social co-creation as a moderator variable was measured by four questions which are extracted from Kennedy and Guzmán (2016). Finally, six questions were used to measure innovative services according to Hertog (2000), as the dependent variable. A five-point Likert scale was used and divided the responses from 5 ("strongly agree") to 1 ("strongly disagree").

4.2. Validity and Reliability

The content validity of the questionnaire was approved by social media experts who reviewed the questions in detail. Also, convergent validity was analysed according to outer loadings and AVE index. Therefore, as it is shown in table 1, the outer loadings were more than 0.4 (Ebrahimi et al., 2017, 2018), and AVE was above 0.5, and then convergent validity was approved (Soleimani et al., 2021). The reliability of the questionnaire was evaluated by CR and DG rho, as it is shown in table 1. Some researchers suggest 0.7 and above as the favourable point for CR and DG rho (Sanchez, 2013; Hair Jr et al., 2016; Ebrahimi and Mirbargkar, 2017; Janavi et al., 2021). Hence, as the value of these coefficients is higher than 0.7, the reliability of the research tool was confirmed (Fekete-Farkas et al., 2021; Bouzari et al., 2021). Moreover, outer VIF values were analysed. The results revealed that there was no multicollinearity between the designed items, as VIF was greater than 5 (Hair Jr et al., 2016; Ebrahimi et al., 2021).

Table 1. Measurement models, Convergent validity, Reliability and Multicollinearity

Constructs	Outer loadings	VIF	AVE	CR	DG rho	Model type
Customer Participation Behaviour (SD=0.665, M=4.265)			0.614	0.905	0.878	Reflective
CPB 1	0.816	2.774				
CPB 2	0.785	2.182				
CPB 3	0.848	2.759				
CPB 4	0.675	1.796				
CPB 5	0.736	1.932				
CPB 6	0.828	2.868				
Customer Citizenship Behaviour (SD=0.649, M=4.288)			0.673	0.925	0.905	Reflective
CCB 1	0.737	1.818				
CCB 2	0.801	2.213				
CCB 3	0.865	2.776				
CCB 4	0.860	3.299				
CCB 5	0.825	2.821				
CCB 6	0.829	2.474				
Social co-creation (SD=0.659, M=4.308)			0.666	0.888	0.843	Reflective
SCC 1	0.723	1.454				
SCC 2	0.893	2.479				

SCC 3	0.813	1.881				
SCC 4	0.825	1.905				
Innovative Service (SD=0.613, M=4.408)			0.677	0.926	0.912	Reflective
IS 1	0.835	2.253				
IS 2	0.766	2.047				
IS 3	0.767	2.013				
IS 4	0.785	2.197				
IS 5	0.875	3.529				
IS 6	0.900	4.358				

Notes: AVE, an average of variance extracted; CR, Composite Reliability; SD, Std. Deviation; M, Mean; CPB, Customer Participation Behaviour; CCB, Customer Citizenship Behaviour; SCC, Social co-creation; IS, Innovative Service.

The Fornell and Larcker criterion was used to assess discriminant validity (Fornell and Larcker, 1981). This indicates the appropriate fitting of the measurement models in terms of discriminant validity at the factor level.

Table 2. Discriminant validity

Constructs	CCB	CPB	IS	SCC
CCB	0.821			
CPB	0.727	0.783		
IS	0.734	0.724	0.823	
SCC	0.718	0.753	0.771	0.816

Note: Bold diagonal elements are the square root of AVE

5. Results

In this research, PLS-SEM approach was followed using the SmartPLS 3 software in order to estimate the measurement and structural model parameters as well as to test the research hypotheses. In this approach, the researchers examined the structural model by assessing the path coefficients among constructs, and also calculated the t-statistics for both main hypotheses as well as sub-hypotheses. The authors also examined the goodness-of-fit indexes of the structural model. The most important indexes are R² and R² Adjusted, which are shown in the table below. Moreover, in order to examine the predictability of the model, Q² index- including Construct Cross-validated Redundancy (CC-Red) and Construct Cross-validated Community (CC-Com) was used, which should be closer to 1 (Geisser, 1974; Stone, 1974). In addition to this, SRMR value was used as the most crucial index in order to evaluate the model (Ebrahimi et al., 2019). SRMR value in the estimated model and saturated models was reported as 0.078, which shows the goodness of fit of both measurement and structural models. Also, AIC, BIC, and HQ indices were highly negative, which shows the fitness of the model.

Table 3. Assessment of structural model indicators and model criteria

Variable	R ²	R ² adjusted	CC-Red	CC-Com	AIC	BIC	HQ
CCB	92.1%	92.1%	0.571	0.515	-581.588	-574.712	-578.814
CPB	90.6%	90.5%	0.515	0.445	-539.949	-533.072	-537.175
IS	79.9%	79.7%	0.488	0.519	-362.391	-348.638	-356.843
SCC				0.428			

Note: AIC: Akaike information criterion; BIC: Bayesian information criterion; HQ: Hannan–Quinn information criterion.

In order to test the first hypothesis (H1), the direct effect was examined. According to figure 2, this hypothesis was supported (H1: $\beta = 0.558$, SD = 0.068, $t = 8.246$, $p = 0.000$). According to figure 3, H1a and H1b were analysed according to their direct effect. The results showed that both hypotheses were supported [H1a (H1a: $\beta = 0.275$, SD = 0.074, $t = 3.700$, $p = 0.000$) and H1b (H1b: $\beta = 0.295$, SD = 0.073, $t = 4.058$, $p = 0.000$)]. In the second hypothesis (H2), the moderating effects were examined. The

product indicators approach was used to test this hypothesis, which showed that this hypothesis was also supported (H2: $\beta = 0.169$, $SD = 0.030$, $t = 5.630$, $p = 0.000$). Base on the positive coefficients, the authors could conclude that increased social co-creation could lead to rendering more innovative services based on value co-creation behaviour of the owners of the studied firms. The two sub-hypotheses H2a and H2b were not supported according to the test results (Table 4).

Table 4. Assessment of structural model indicators and model criteria

Hypotheses	Path coefficient	SD	t-statistics	p-value	Decision
H1	0.558	0.068	8.246***	0.000	Supported
H1a	0.275	0.074	3.700***	0.000	Supported
H1b	0.295	0.073	4.058***	0.000	Supported
H2	0.169	0.030	5.630***	0.000	Supported
H2a	0.014	0.139	0.104	0.917	Not Supported
H2b	0.191	0.147	1.298	0.195	Not Supported

Note: $t > 1.96$ at $*p < 0.05$; $t > 2.58$ at $**p < 0.01$; $t > 3.29$ at $***p < 0.001$; two-tailed test

6. Discussion

As it is mentioned earlier, value co-creation activities could create a friendlier and interactive environment for a company and its customers (Hamidi, Shams Gharneh and Khajeheian, 2020). This is a critical issue for creating new services. On the one hand, value co-creation behaviour (VCB), which includes customer citizenship behaviour (CCB) and customer participation behaviour (CPB), is vital for realizing any type of value, either economic or social. On the other hand, its effect on nurturing innovative services is a key concern. Taking this into account, two issues become important. First, the use of social media platforms. These platforms allow for real-time and intimate interaction among a company and its customers. Second, social co-creation is a newly phenomenon that could profoundly affect this relationship, and thus facilitate building innovative services for customers. The extant literature does not examine these concrete issues, while some others are insufficiently discussed.

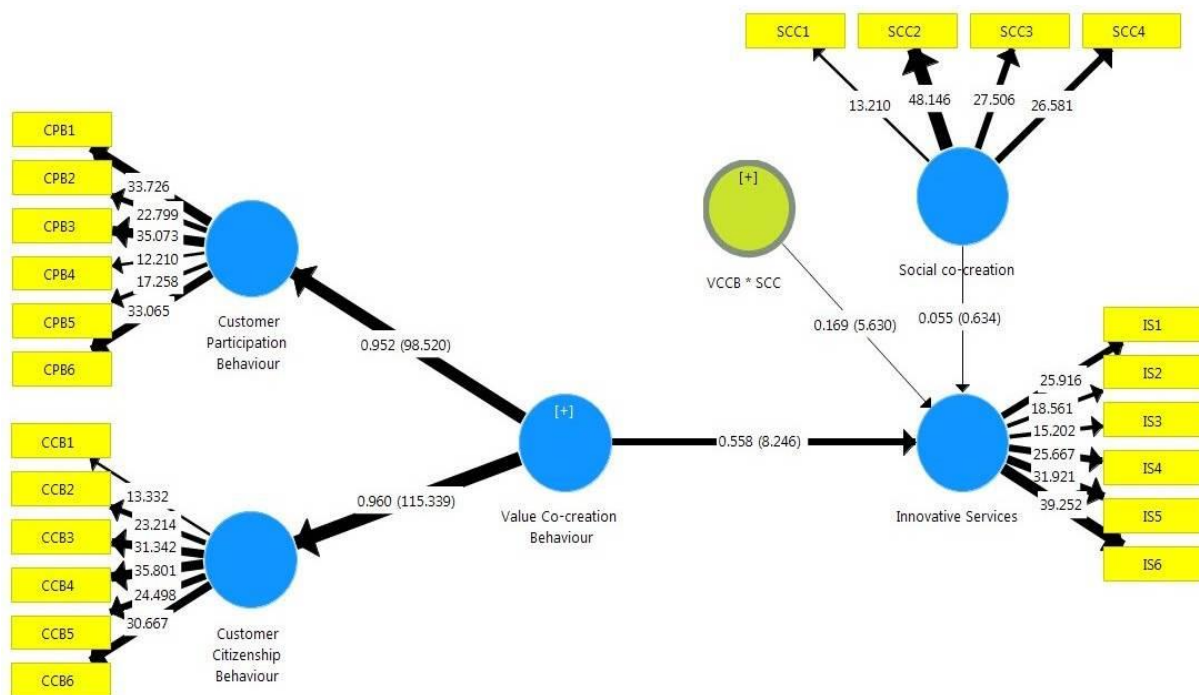


Figure 2. Path coefficients and T-statistics (H1-H2)

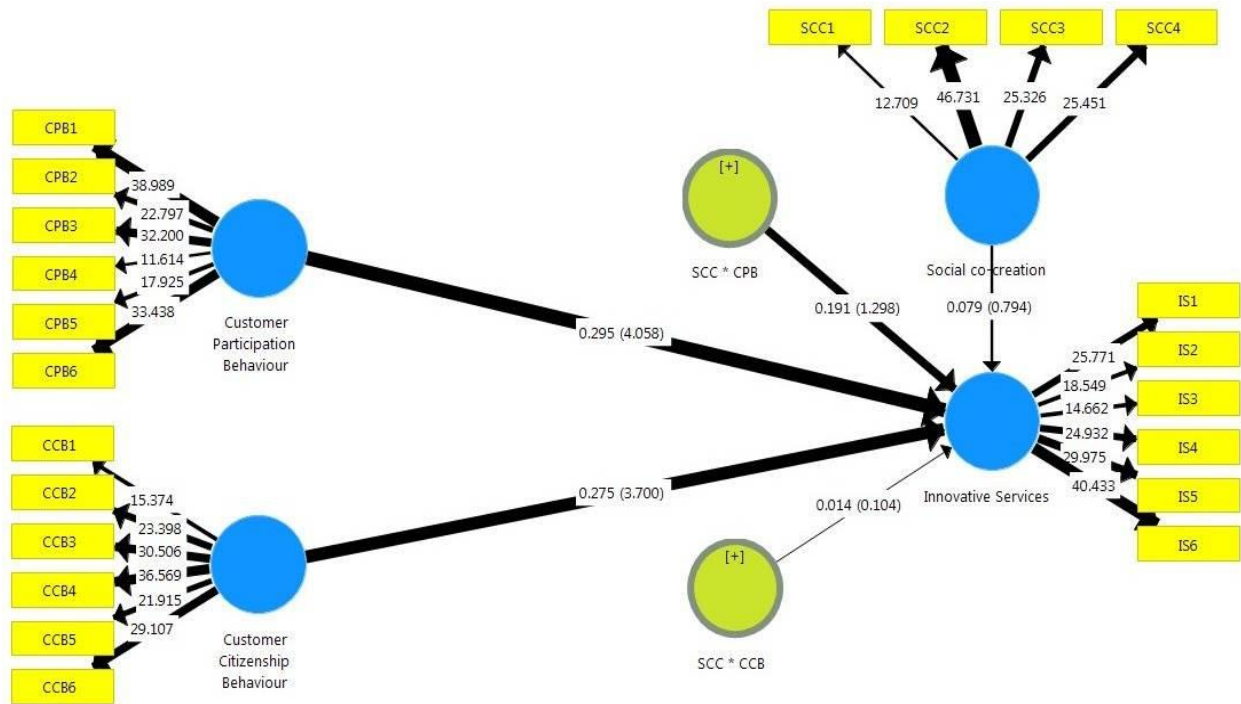


Figure 3. Path coefficients and T-statistics (H1a-H1b-H2a-H2b)

The relationship between co-production activities and rendering innovative services is explicitly mentioned by Hertog (2000). In his seminal work, he described different dimensions of service innovation. He considers co-production -not co-creation- as a critical issue to be taken into account in service innovation. Koelling et al. (2010) consider value co-creation as a strategy toward innovative services. However, their approach does not explicitly highlight the relationship between value co-creation behaviour and how these support the creation of innovative services. Instead, they focused on the actors, i.e., the "successful strategic service innovators." Similarly, while Yang et al. (2014) measured blog service innovation in social media services, they do not explicitly mention the co-creation of services on social media platforms. In advancing our knowledge of these issues, the present study reveals that value co-creation behaviour positively affects developing innovative services on social media platforms (H1). These findings are in line with Rajala et al. (2016) and Chen et al. (2017), in terms of the relationship between value co-creation and service innovation.

Customer citizenship behaviour (CCB) and customer participation behaviour (CPB) and their relationship with rendering innovative services is also another critical theoretical contribution of this research (H1a, H1b). Shamim and Ghazali have studied customer value co-creation behaviour in retailing but did not consider their effect on rendering innovative services- especially on social media platforms (Shamim and Ghazali, 2014). Our findings revealed that both customer citizenship behaviour and customer participation behaviour positively affect rendering innovative services on social media platforms. Bidar (2018) highlighted the importance of customer citizenship behaviour and customer participation behaviour in the stages of the innovation process. Nevertheless, her study was mostly focused on service co-creation, and not on innovative services, especially on social media platforms. Then, this research has become distinguished from other related research works by focusing on a specific research question in which the importance of social media in rendering innovative services is scrutinized.

According to the second central hypothesis, the effect of value co-creation behaviour on rendering innovative services on social media platforms is moderated by social co-creation. This could be considered as another theoretical contribution of the authors, as it deals with a newly emerged concept, i.e., "social co-creation." He and Wang (2016) define it as "using social media for

customer co-creation." In their seminal work, they mention that some chain hotels have used social media to co-create innovative services. This research is one of the few studies which highlighted this issue as a critical point to create a competitive advantage. He and Yan (2015) have also explicitly pointed out this issue. But, their work was mainly focused on mining blogs and forums in order to understand the effect of social media in customer co-creation, and not necessarily on service innovation. Another strand of research has addressed the effect of social co-creation in product innovation, (e.g., see Lorenzo-Romero, Constantinides and Brünink, 2014; Rathore, Ilavarasan and Dwivedi, 2016).

The authors have also studied the effect of customer citizenship behaviour and customer participation behaviour on rendering innovative services on social media platforms considering the moderating effect of social co-creation. Based on our findings, these propositions were not supported. This issue was rarely examined in the existing literature. However, it was implicitly noted in some studies, e.g., see (Zhang, 2017; Binti Ishak, 2018). This shows that social co-creation moderates the role of customer citizenship behaviour and customer participation behaviour in rendering innovative services on social media platforms, which makes the findings more interesting.

7. Conclusion

In conclusion, this study shows that enterprises, especially in the service sector must pay specific attention to the co-creation activities, as a source of ideas and insights to envision and create innovative services. As is shown by (Hamidi, Shams Gharneh and Khajeheian, 2020; Kolli and Khajeheian, 2020), if firms provide a space for sharing and listening to users' ideas and insights, they will benefit from new sources of creativity and innovation, which are especially helpful for understanding which innovative services are needed. Therefore, social media platforms following the logic of Web 3.0 (co-creation and collaboration) are a suitable space for such sharing ideas and resources to use customers' ideas. They are particularly helpful for building an entrepreneurial brand (Horst, 2019) and developing a digitally-driven start-up in strategic manner (Horst, Järventie-Thesleff and Perez-Latre, 2019; Horst and Hitters, 2020). However, and despite of these significant advantages, a considerable number of firms, even new technology based firms, use social platforms merely for connecting with customers, which is logic of Web 2.0, and not for co-creation that is a built-in function of Web 3.0. These findings reveal that enterprises can take a step further and make use of the new affordances of the social media platforms for co-creation of services (Google docs, logo building app, etc.). They can even go beyond these social media platform, and embed functions and possibilities for customers to create an image or prototype of their ideas in their own platforms. Overall, social co-creation is a moderator for use of such behaviours to develop new services by NTBFs, and facilitate such activities in their platforms.

The findings also emphasised on the importance of keeping customers loyal to use their customer citizenship behaviour (CCB) and customer participation behaviour (CPB) for benefiting from co-creation activities. Some researches propose strategies for encouraging co-creational behaviours in customers and to keep them loyal, such as enjoyment, economic and relational values (Khajeheian and Ebrahimi, 2021). Such findings can be used in intensifying social co-creation, that mentioned as moderator for co-creation activities. Provision of respective values for customers, encourage co-creation behaviours and keep them more loyal to the enterprise and increase the chance of their participation in innovative service development. This research contributed to the literature of co-creation in the service sector on social platforms, the area that our knowledge is poorly developed.

7.1. Managerial Implications

The findings revealed that managers of service companies who would like to render more innovative services should take advantage of value co-creation behaviour on social media platforms.

In order to do so, they might use social media platforms such as Facebook and Instagram to communicate with their customers proactively and to make necessary changes in their current services based on the open innovation approach they follow through social co-creation. In addition to this, managers should use different techniques in order to improve customer citizenship behaviour and customer participation behaviour in line with the mentioned strategies. Moreover, social co-creation strategies could be designed and translated to create business models and, respectively, to innovative processes in their companies in order to succeed. Our findings and their connections to the extant literature revealed that lack of such strategies might lead to becoming less competitive in rendering innovative services.

7.2. Theoretical Implications

According to our findings, social media platforms help firms render more innovative services by engaging customers via different value co-creation techniques. Then, theoretically, it is possible to measure such issue and use the existing model to test which type(s) of social media platforms are more suitable and effective. A recent research have raised a similar debate on this issue, which is not clearly answered by the existing body of literature (Olanrewaju *et al.*, 2020). Then, this research could open new windows of opportunity for researching this domain. Moreover, the proposed model adds “social co-creation” as a key concept, which, despite its importance, is less studied by researchers (Lorenzo-Romero, Constantinides and Brünink, 2014; Rathore, Ilavarasan and Dwivedi, 2016).

In sum, firstly, this research contributes to the existing literature by empirically investigating and testing the relationship among value co-creation behaviour and innovative services, considering social co-creation as a moderating variable. Secondly, a behavioural approach to value co-creation has received relatively less attention. Last but not least, is testing the model in a unique research population which are distinguished in terms of their performance and outcomes, i.e. NTBFs.

7.3. Limitations and Future Research

One of the limitations of this research was that there was not enough data available about how the firm owners use their social media accounts, and if they had a specific social media strategy. Another limitation was that it was hard to access the research sample and set face to face meetings. But, hopefully, the authors accessed them through an online questionnaire, which implicitly shows their use of online platforms. In addition to this, the newness of the concepts such as social co-creation was another concern. Therefore, the researchers used simple questions that did not require respondents to know any specific terms. Instead, the respondents had to answer some very straightforward questions.

Future researchers might study the impact of different aspects of social co-creation on rendering innovative services, beyond considering it as a moderating variable. The findings of such research could help researchers and practitioners focus on specific issues such as peer pressure, popularity, trend, and social status. Also, service concept, client interface, service delivery system/organization, and technological options- as different aspects of innovative services- could be studied in more detail. In this research, the authors were mostly focused on some general hypotheses to open up some new windows for those who would be interested in scrutinizing similar or more detailed research problems. Finally, one could examine the last two hypotheses which were not supported in this research and find out what the reason would be.

Funding: This research received no external funding.

Conflicts of Interest: The author declares no conflict of interest.

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Appendix: Questionnaire items

Customer Participation Behaviour (based on Yi and Gong (2013), Foroudi et al. (2019))

CPB 1: Information seeking on social media platforms plays an essential role in my business.

CPB 2: I have provided the necessary information to my employees regarding information sharing about our products.

CPB 3: I perform all the tasks that are required and complete all the expected behaviours.

CPB 4: I consider myself responsibilities to the customers.

CPB 5: I am friendly and polite to the employees.

CPB 6: Respect is a critical principle in my business.

Customer Citizenship Behaviour (based on Yi and Gong (2013), Foroudi et al. (2019))

CCB 1: If I have a useful idea on how to improve the company's services, I let the staff and even customers know.

CCB 2: I use customers' feedback in order to improve the services.

CCB 3: I encourage friends and relatives to use the services.

CCB 4: I help customers if they need support or seem to have any problems regarding the services.

CCB 5: If the services are not delivered as expected, I would be willing to find some better solutions patiently.

CCB 6: If employees make some mistakes during service provision, I would be willing to be patient.

Social co-creation (based on Kennedy and Guzmán (2016))

SCC 1: My customers use their friends' recommendations on social media platforms in order to buy our services.

SCC 2: Popularity of some individuals on social media platforms makes others use similar services.

SCC 3: The existing trends in social media platforms leads to higher engagement of their members in putting comments regarding the services.

SCC 4: By improving the social status of my business in social media platforms, there will be a higher rate of contribution among those individuals who put comments about the services.

Innovative Service (based on Hertog (2000))

IS 1: I believe that our services and their concepts are innovative.

IS 2: I believe that our innovative services consider customer expectations.

IS 3: I believe that our innovative services are well-understood by our customers.

IS 4: Our employees are capable and have the required set of skills and authority to render innovative services.

IS 5: The existing technologies in the company facilitate service innovation.

IS 6: The existing technologies in the company makes service innovation more efficient and effective.

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Sven-Ove Horst is Senior Assistant Professor for Media and Creative Industries at Erasmus University Rotterdam. He has held previous positions at Bauhaus-University Weimar and Aalto University School of Business. His research centers on strategic media management, media entrepreneurship and organization theory, and has been published in for example the *International Journal on Media Management*, the *Journal of Media Business Studies*, and the *Journal of Media Management and Entrepreneurship*, for which he serves as associate editor. He generally likes exploring emergent phenomena, such as strategy, identity work and entrepreneurial branding during times of digitalization. He enjoys speaking at conferences and is interested in connecting theory with practice through leadership development workshops, networking activities, and consulting.

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